THE LAST OF MR. BROWN'S MOSQUITO FLEET: A HISTORY AND
ARCHAEOLOGY OF THE AMERICAN ROW GALLEY ALLEN ON
LAKE CHAMPLAIN, 1814-1825

A Dissertation

by

ERIC BRANDON EMERY

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

DOCTOR OF PHILOSOPHY

August 2003

Major Subject: Anthropology
THE LAST OF MR. BROWN’S MOSQUITO FLEET: A HISTORY AND
ARCHAEOLOGY OF THE AMERICAN ROW GALLEY ALLEN ON
LAKE CHAMPLAIN, 1814-1825

A Dissertation

by

ERIC BRANDON EMERY

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

DOCTOR OF PHILOSOPHY

Approved as to style and content by:

Kevin J. Crisman
(Chair of Committee)

James C. Bradford
(Member)

Donny L. Hamilton
(Member)

L. Filipe Vieira de Castro
(Member)

David L. Carlson
(Head of Department)

August 2003

Major Subject: Anthropology
ABSTRACT


Eric Brandon Emery, B.A., University of Vermont; M.A., University of Vermont
Chair of Advisory Committee: Dr. Kevin J. Crisman

The early nineteenth century witnessed a surge in oared warship production within the U.S. Navy. Shipwrights modified hull and rigging plans in order to develop armed vessels capable of navigating inland waterways under both canvas and sweeps. Unfortunately, primary evidence of the materials and construction practices actually used to transform these designs into reality has largely been lost, as well as information on the living and working conditions of the men who served at the sails, guns, and oars.

Commodore Thomas Macdonough relied upon the versatility of row galleys and gunboats to secure U.S. naval control of Lake Champlain during the War of 1812. Originally intended to spearhead an amphibious offensive into British Canada via the Richelieu River, these vessels were relegated to a support role by a shift in American military strategy. They helped combat the smuggling of naval stores, performed reconnaissance missions, transported communications, bombarded shore targets, and even provided a tow for the larger warships when the winds failed.

This dissertation investigates the history and archaeology of *Allen*, an American row galley built at Vergennes, Vermont, in 1814 by Master Shipwright Noah Brown of New York City. The galley cruised the waters of Lake Champlain in the final year of the war and participated in the Battle of Plattsburgh Bay on 11 September 1814. Abandoned in the Poultnay River, just above Whitehall, New York, *Allen* was rediscovered in 1981 and subsequently made the subject of an archaeological excavation in 1995.

The first half of the dissertation reviews the history of *Allen* and the Champlain galley flotilla, while the second half describes the archaeological procedures used to document the galley’s hull and associated artifacts. The study concludes with a reconstruction of *Allen*, as it would have appeared in 1814.
For Jon Faucher
ACKNOWLEDGMENTS

The historical and archaeological study of Allen and the Lake Champlain galley flotilla depended heavily on support and assistance provided by a number of individuals and organizations. It is my pleasure to acknowledge the many contributions of time, information, and encouragement that led to the completion of this story.

Dr. Kevin J. Crisman of Texas A&M University's Nautical Archaeology Program deserves special recognition as the Master Builder who never once lost faith in his apprentice. It is impossible to list all of the ways in which Kevin has contributed to this project since its inception. He has always remained a dedicated mentor and a patient friend. I am truly grateful for his skillful guidance so generously offered these past years. Arthur B. Cohn of the Lake Champlain Maritime Museum (LCMM) spearheaded the logistical side of the project. His charisma, sound judgment, organizational abilities, and all around savvy in the field provided invaluable hands-on training in the ways of effective leadership.

Ken, Leeann, and Kristopher Emery graciously made their presence felt with love and support at every turn in the seemingly endless process of researching and writing. Kenneth George Emery, Sr., Doris Mae Emery, Mildred Bates, and Corine Cavanaugh placed me back on track at some of the most critical junctures with their enthusiasm, kindness, and generosity. Although Doris Emery did not live to see the finished product, the memory of her unwavering commitment to purpose often served as an inspiration. Thank you as well to Adeline and Alvin Worthley who invited me into their home in Manassas Park, Virginia during my trips to the U.S. National Archives. Gwendolyn Haugen also owns my warmest thoughts, as she has kept me focused on the important things with her affection and understanding.

Dr. Alfred Andrea, my “pater familias” at the University of Vermont History Department, has always been a guiding force along this journey. Al may not realize it, but he played a key role in shaping my interest in history and archaeology. He is a true professional and friend. Special appreciation also goes to Dr. Patrick Hutton of the University of Vermont, Dr. Blanche Brick and Cathy Lively of Blinn College, and Donny L. Hamilton of Texas A&M University for keeping me gainfully employed throughout my graduate experience.

Composing the history of Allen relied on the assistance of a host of staff members at the following institutions: The U.S. National Archives; the U.S. Library of Congress; the U.S. Cartographic Archives in College Park, Maryland; the Bailey Howe Library at the University of Vermont; the Naval Historical Center; the New York State Library and Archives in Albany; the
Shelburne Museum in Shelburne, Vermont; the Bixby Library in Vergennes, Vermont; the Sterling Evans Library at Texas A&M University; the Benjamin F. Feinberg Library in Plattsburgh, New York; the Vermont Historical Society; the National Archives of Canada in Ottawa, Ontario; the Pennsylvania Historical Society; and the Vermont Archaeological Society. In particular, I would like to mention Christine Hughes at the Naval Historical Center, Angie Vandereeedt and Rich Pfizer at the U.S. National Archives, and Karen Stites Campbell and Pat Mardeusz at Bailey Howe Library.

Allen's reconstruction hinged almost entirely on the efforts of a talented and diligent group of fieldschool divers from Texas A&M University and the University of Vermont. These young men and women invested a rigorous month of physical labor—under less than optimal conditions—in order to gather the thousands of measurements necessary to complete the archaeological analysis of the galley's hull and artifacts. The Lake Champlain Maritime Museum (LCMM) and the Institute of Nautical Archaeology (INA) sponsored the fieldwork with funding provided through a U.S. Navy Legacy grant administered by the Naval Historical Center. INA Director Harlan Crow provided additional funding for the purchase of a compressed air "surface supply" unit and various other important pieces of equipment. Philip Lord, Jr. of the New York State Education Department helped arrange the documents needed for the official sanctioning of the study. The Vermont Division for Historic Preservation provided additional support. Special thanks to the 1995 Whitehall Project Crew: Dr. Kevin J. Crisman, Arthur B. Cohn, Dr. Robert Neyland, Steve Bilicki, Steve Butler, Erich Heinold, Pierre LaRocque, Scott McLaughlin, Scott Padeni, Ron Plouff, Cheryl Quinn, Rob Wilczynski, and Erika Washburn.

Certain individuals continued to make vital post-exavcation contributions to this study between 1995 and 2003. Conservators Elizabeth Baldwin, John Bratten, and Scott McLaughlin oversaw the preservation and display of Allen's artifact collection at the LCMM. Erik Tichonuk lent his artistic skills to the completion of the artifact drawings. Roy Whitmore of the University of Vermont Forestry Department identified over forty wood samples taken from different components in Allen's hull. Special thanks goes to Anne Lessman for reading through the stickier portions of my initial draft with a strong pen and kind words of encouragement. Dr. Tom Holland and my colleagues at the U.S. Army Central Identification Laboratory in Hawaii also deserve mention for their support during the final stages of rewrites and formatting.
My dissertation committee helped refine and polish this work, providing a number of valuable editorial suggestions along the way. Dr. Kevin J. Crisman served as the chair of the committee and devoted a great deal of his time and energy to my steady barrage of questions. The remaining members included Dr. Donny L. Hamilton, Dr. James C. Bradford, Dr. L. Filipe Vieira de Castro, and Dr. Lori R. Bernstein, all of Texas A&M University. Their individual expertise was greatly appreciated.

*Concordia* brought my rudimentary knowledge of sailing ships and seamanship to life on our odyssey around Cape Horn in March 2001. Boatswain Piotr Leszcynski, in particular, spent hours on end patiently guiding me through the myriad of commands, lines, and sails that have carried vessels safely home for centuries. The only thing he asked in return was a few stories over a hot cup of tea. The Faculty and Student Crew of 2000-2001 also provided a wealth of fond memories that will certainly enrich my studies for years to come.

Several good friends blessed this project throughout its duration with heartfelt cheerfulness: Stefan Claesson, Filipe and Siaska Castro, Joe Cozzi and Hera Konstantinou, Layne and Kendra Hedrick, Erich Heinold, Jason “Shnip” Feingold, Pete and Molly Hitchcock, Allen and Lucy Gillespie, Brian and Julie Jordan, Pierre LaRocque, Anne Lessman, Piotr Leszcynski, Ben Liu, Regina McCarthy, Joel Muscatello, Mike Nobes, Jon Pare, Taras and Charlotte Pevny, Kendra and Zane Quinn-Warton, Kristin Romey, Bill Reed, Pilar Rivadeneira, Chris Sabick, Pat Schaub, Rick Velasquez, Dan and Jen Walker, Erika Washburn, Thanos Webb, Rob Wilczynski, Richard K. Wills, and of course Beardo. “The Man Who Stole Atlantis” deserves special notice, along with Stefan Claesson, Thanos Webb, and Rich Wills who stole it back for me.

Finally, there would be no dissertation at all if it were not for the bravery of Jonathan Faucher, my friend and fellow graduate student of archaeology. Jon, thank you for refusing to leave me behind...I owe you my life. With deep admiration, this first one is for you.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>iv</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>v</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xi</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xiv</td>
</tr>
</tbody>
</table>

## CHAPTER I

**INTRODUCTION** ................................................................. 1

Lake Champlain, September 1814 ........................................... 1
Background .............................................................................. 2
Literature Review .................................................................... 4
Research Procedure .................................................................. 5

## CHAPTER II

**“NO ORDERS TO PUT THEM IN REPAIR”: THE WAR OF 1812 ARRIVES IN THE LAKE CHAMPLAIN VALLEY** ........................................ 9

The American Conquest of Canada........................................... 12
A Corridor Unguarded: Sidney Smith and Gunboats *No. 169 and No. 170* ....... 18

## CHAPTER III

**“A PERFECT WILLINGNESS TO SEE THE ENEMY ON FAIR TERMS”: THOMAS MACDONOUGH’S ROW GALLEY STRATEGY FOR THE LAKE CHAMPLAIN-RICHELIEU RIVER CORRIDOR** .................. 32

Assembling the American Squadron at Whitehall, New York............. 36
Tactical Trials I: The Loss of *Growler and Eagle* in the Richelieu River...... 40
Tactical Trials II: The Wilkinson-Hampton Debacle ................................ 45
Preparations for an Arms Race .................................................. 48

## CHAPTER IV

**“GALLIES ARE UNQUESTIONABLY THE BEST DESCRIPTION OF VESSELS FOR THE NORTHERN PARTS OF THIS LAKE”: THE CONSTRUCTION AND OUTFITTING OF THE U.S. NAVY ROW GALLEY *ALLEN*” .......................................................... 58

Building Mr. Brown’s “Mosquito Fleet” ..................................... 59
Outfitting .................................................................................. 67

## CHAPTER V

**“ENTERING ANY SERVICE IN PREFERENCE TO THIS”: THE ORDEAL OF MANNING AND DUTY ON LAKE CHAMPLAIN** ...................... 76

Manning the Row Galleys ......................................................... 77
Officers, Crews, and Compensation ........................................... 82
Oared Patrol Duty Along the Northern Lines ................................. 86
A Prelude to Battle: The Dead Creek Road Bombardment ............... 90
# Table of Contents

**CHAPTER** | **Page**
--- | ---
VI  | "A DIVISION OF 5 GUNBOATS ON EACH FLANK": THE ROLE OF *ALLEN* AND THE CHAMPLAIN GALLEY FLOTILLA AT THE BATTLE OF PLATTSBURGH BAY, 11 SEPTEMBER 1814................................. 100
   | Tactical Planning and Preparations ............................................. 102
   | The Battle of Plattsburgh Bay ................................................ 108
   | The Aftermath ............................................................................. 123
VII | "AS LONG AS WORMS AND ROT ALLOW": *ALLEN*'S ABANDONMENT AND FINAL DISPOSITION, 1815-1825 ................................................................. 137
   | "In Ordinary" at the Whitehall Naval Station .................................. 140
   | Canals, Steam, and the Rush-Bagot Agreement .................................. 148
   | The Panic of 1819, Naval Retrenchment, and *ALLEN*'s Final Disposition .... 153
   | The Whitehall Project, 1995: Project Organization and Partners ........ 171
   | The Whitehall Project, 1995: Archaeological Documentation of *ALLEN* .... 172
   | The Whitehall Project, 1995: Fieldwork Week 1 ................................... 175
   | The Whitehall Project, 1995: Fieldwork Week 2 .................................. 184
   | The Whitehall Project, 1995: Fieldwork Week 3 .................................. 192
   | Concluding Remarks ..................................................................... 199
IX  | INSIDE *ALLEN*'S BILGES: MATERIAL EVIDENCE OF SHIPBOARD LIFE AND CONDITIONS ON LAKE CHAMPLAIN DURING THE WAR OF 1812.......................... 202
   | Recovery, Field Processing, and Cataloging ...................................... 202
   | General Description of the Material Evidence .................................. 204
   | Hull-Related Artifacts .................................................................. 205
   | Crew-Related Artifacts .................................................................. 214
   | Weaponry-Related Artifacts ............................................................ 222
   | Concluding Remarks ..................................................................... 227
X  | THE ANATOMY OF A ROW GALLEY: *ALLEN*'S HULL CONSTRUCTION .235
   | The Keel ..................................................................................... 235
   | The Stem and Sternpost Assemblies ............................................... 237
   | The Frames .................................................................................. 242
   | The Keelson ................................................................................ 249
   | External, Ceiling, and Transverse Planking ..................................... 250
   | Concluding Remarks ..................................................................... 253
XI | CONCLUSION ............................................................................. 256
   | Evidence for Reconstruction ....................................................... 256
   | Hull Lines .................................................................................... 257
   | Construction and Rig .................................................................... 263
   | Concluding Remarks ..................................................................... 272
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Map of the Champlain Valley, 1812-1814</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Daniel D. Tompkins, Governor of New York State (1807-1817)</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>Paul Hamilton, Secretary of the Navy (1809-1813)</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>James Madison, President of the United States (1808-1816)</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>Sir George Prevost, Governor-General of British Canada (1811-1815)</td>
<td>19</td>
</tr>
<tr>
<td>6</td>
<td>Basin Harbor, Vermont, early 1800s</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>Commodore Thomas Macdonough, U.S. Navy</td>
<td>33</td>
</tr>
<tr>
<td>8</td>
<td>“Stephen Decatur Boarding the Tripolitan Gunboat”</td>
<td>34</td>
</tr>
<tr>
<td>9</td>
<td>Battle of Queenston Heights, 13 October 1812</td>
<td>39</td>
</tr>
<tr>
<td>10</td>
<td>William Jones, Secretary of the Navy (1813-1814)</td>
<td>41</td>
</tr>
<tr>
<td>11</td>
<td>William Doughty, Chief Naval Constructor, Washington Navy Yard</td>
<td>43</td>
</tr>
<tr>
<td>12</td>
<td>General Wade Hampton’s campaign into Lower Canada, 1813</td>
<td>47</td>
</tr>
<tr>
<td>13</td>
<td>Design plan for a “first class” (75-foot) row galley</td>
<td>58</td>
</tr>
<tr>
<td>14</td>
<td>A view of Otter Creek Falls below Vergennes, Vermont, circa 1850s</td>
<td>60</td>
</tr>
<tr>
<td>15</td>
<td>Contemporary sketch map of the American defenses at Fort Cassin, May 1814</td>
<td>78</td>
</tr>
<tr>
<td>16</td>
<td>Map of American galley bombardment of Dead Creek Road, 6 September 1814</td>
<td>92</td>
</tr>
<tr>
<td>17</td>
<td>Position of the American squadron at Plattsburgh Bay, 11 September 1814</td>
<td>100</td>
</tr>
<tr>
<td>18</td>
<td>A photograph of Daniel S. Stewlven’s signal book</td>
<td>105</td>
</tr>
<tr>
<td>19</td>
<td>British battle map “No. 1” at Plattsburgh Bay, 11 September 1814</td>
<td>110</td>
</tr>
<tr>
<td>20</td>
<td>Detail of map “No. 1.”</td>
<td>111</td>
</tr>
<tr>
<td>21</td>
<td>British battle map “No. 2” at Plattsburgh Bay, 11 September 1814</td>
<td>112</td>
</tr>
<tr>
<td>22</td>
<td>Detail of map “No. 2.”</td>
<td>113</td>
</tr>
<tr>
<td>23</td>
<td>British battle map “No. 3” at Plattsburgh Bay, 11 September 1814</td>
<td>114</td>
</tr>
<tr>
<td>24</td>
<td>Detail of map “No. 3.”</td>
<td>115</td>
</tr>
<tr>
<td>25</td>
<td>British battle map “No. 4” at Plattsburgh Bay, 11 September 1814</td>
<td>116</td>
</tr>
<tr>
<td>26</td>
<td>Detail of map “No. 4.”</td>
<td>117</td>
</tr>
<tr>
<td>27</td>
<td>“MacDonough’s Victory on Lake Champlain”</td>
<td>122</td>
</tr>
<tr>
<td>28</td>
<td>American galley divisions at anchor following the Battle of Plattsburgh Bay</td>
<td>124</td>
</tr>
<tr>
<td>29</td>
<td>Copy of a parolee list following the Battle of Plattsburgh Bay</td>
<td>126</td>
</tr>
<tr>
<td>FIGURE</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>“We Owe Allegiance to No Crown”</td>
<td>137</td>
</tr>
<tr>
<td>31</td>
<td>Captain James T. Leonard, U.S. Navy</td>
<td>141</td>
</tr>
<tr>
<td>32</td>
<td>The American squadron “in ordinary” near Whitehall, New York, circa 1816</td>
<td>147</td>
</tr>
<tr>
<td>33</td>
<td>A steamer heading northward on Lake Champlain</td>
<td>155</td>
</tr>
<tr>
<td>34</td>
<td>Map of Vermont</td>
<td>165</td>
</tr>
<tr>
<td>35</td>
<td>Approximate topographic location of the <em>Allen</em> site</td>
<td>166</td>
</tr>
<tr>
<td>36</td>
<td>Aerial view of <em>Allen</em> site inside Lower Poulney River</td>
<td>166</td>
</tr>
<tr>
<td>37</td>
<td>U.S. Army 13th Infantry Regiment button from the War of 1812</td>
<td>170</td>
</tr>
<tr>
<td>38</td>
<td>The “Achilles” inflatable rounding into the Poulney River</td>
<td>176</td>
</tr>
<tr>
<td>39</td>
<td>The team began assembling the grid intended for <em>Allen</em>’s starboard hull</td>
<td>176</td>
</tr>
<tr>
<td>40</td>
<td>Maneuvering the grid</td>
<td>177</td>
</tr>
<tr>
<td>41</td>
<td>Situating the grid over <em>Allen</em>’s remains</td>
<td>178</td>
</tr>
<tr>
<td>42</td>
<td>Divers gearing up on tarps prior to entering the water</td>
<td>179</td>
</tr>
<tr>
<td>43</td>
<td>Kevin Crisman sketching hull components</td>
<td>181</td>
</tr>
<tr>
<td>44</td>
<td>Crisman assists a diver preparing for a work shift</td>
<td>183</td>
</tr>
<tr>
<td>45</td>
<td>Crisman tending divers</td>
<td>183</td>
</tr>
<tr>
<td>46</td>
<td>Transferring dive gear and archaeological equipment</td>
<td>184</td>
</tr>
<tr>
<td>47</td>
<td>Off-loading equipment at the work area</td>
<td>185</td>
</tr>
<tr>
<td>48</td>
<td>Art Cohn dredging <em>Allen</em>’s stern</td>
<td>187</td>
</tr>
<tr>
<td>49</td>
<td>Cohn removes an iron grapeshot after the artifact had been recorded <em>in situ</em></td>
<td>187</td>
</tr>
<tr>
<td>50</td>
<td>Bathymetric map of <em>Allen</em> site</td>
<td>188</td>
</tr>
<tr>
<td>51</td>
<td>Cohn and Marjory Power sift through a dredge spoil bag from <em>Allen</em></td>
<td>191</td>
</tr>
<tr>
<td>52</td>
<td>Cohn carving a penetration trench along <em>Allen</em>’s stern assembly</td>
<td>191</td>
</tr>
<tr>
<td>53</td>
<td>Crisman, Cohn, and Rob Wilczynski recovering ballast from <em>Allen</em>’s stern area</td>
<td>193</td>
</tr>
<tr>
<td>54</td>
<td>Scott McLaughlin and Cheryl Quinn recording samples of ceiling planking</td>
<td>194</td>
</tr>
<tr>
<td>55</td>
<td>The goniometer used to record the curvature of <em>Allen</em>’s frames in 1995</td>
<td>195</td>
</tr>
<tr>
<td>56</td>
<td>Diver conducting a survey in the Lower Poulney River</td>
<td>198</td>
</tr>
<tr>
<td>57</td>
<td>A representative sample of hull-related artifacts recovered from <em>Allen</em> in 1995</td>
<td>207</td>
</tr>
<tr>
<td>58</td>
<td>Additional hull-related artifacts recovered from <em>Allen</em> in 1995</td>
<td>208</td>
</tr>
<tr>
<td>59</td>
<td>Detail of <em>Allen</em>’s port and starboard stern ballast concentration</td>
<td>211</td>
</tr>
<tr>
<td>60</td>
<td>A representative sample of crew-related artifacts recovered from <em>Allen</em> in 1995</td>
<td>215</td>
</tr>
<tr>
<td>FIGURE</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>61</td>
<td>Photograph of the salt-glazed stoneware jug (05-018) recovered from <em>Allen</em></td>
<td>218</td>
</tr>
<tr>
<td>62</td>
<td>Sample of weaponry-related artifacts recovered from <em>Allen</em> in 1995</td>
<td>224</td>
</tr>
<tr>
<td>63</td>
<td>Detail of various sizes of munitions recovered from <em>Allen</em></td>
<td>224</td>
</tr>
<tr>
<td>64</td>
<td>Detail of <em>Allen's</em> stem assembly as found in 1995</td>
<td>238</td>
</tr>
<tr>
<td>65</td>
<td>Detail of <em>Allen's</em> stern assembly as found in 1995</td>
<td>241</td>
</tr>
<tr>
<td>66</td>
<td>Section views of Frames O, M, K, and I as recorded <em>in situ</em> in 1995</td>
<td>243</td>
</tr>
<tr>
<td>67</td>
<td>Section views of Frames G, E, C, and A as recorded <em>in situ</em> in 1995</td>
<td>244</td>
</tr>
<tr>
<td>68</td>
<td>Section views of Frames 2, 10, 14, and 15 as recorded <em>in situ</em> in 1995</td>
<td>245</td>
</tr>
<tr>
<td>69</td>
<td>Section views of Frames 16, 18, and 20 as recorded <em>in situ</em> in 1995</td>
<td>246</td>
</tr>
<tr>
<td>70</td>
<td>Hull remains believed to be associated with the U.S. Navy Row Galley <em>Allen</em></td>
<td>254</td>
</tr>
<tr>
<td>71</td>
<td>Plan of a Doughty-designed &quot;third class&quot; row galley, 7 February 1814</td>
<td>258</td>
</tr>
<tr>
<td>72</td>
<td><em>Allen's</em> reconstructed lines</td>
<td>262</td>
</tr>
<tr>
<td>73</td>
<td><em>Allen's</em> construction plan</td>
<td>264</td>
</tr>
<tr>
<td>74</td>
<td>Possible rigging plan for <em>Allen</em></td>
<td>270</td>
</tr>
<tr>
<td>75</td>
<td>Distribution of hull-related artifacts found among the remains of <em>Allen</em></td>
<td>335</td>
</tr>
<tr>
<td>76</td>
<td>Distribution of crew-related artifacts found among the remains of <em>Allen</em></td>
<td>335</td>
</tr>
<tr>
<td>77</td>
<td>Distribution of weaponry-related artifacts found among the remains of <em>Allen</em></td>
<td>335</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Profiles of Row Galley and Gunboat Commanders on Lake Champlain, Spring-Summer 1814</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

Lake Champlain, September 1814

Sailing Master William M. Robins surveyed his battered passengers through the pouring rain on the morning of 16 September 1814. Almost a week had passed since the Battle of Plattsburgh Bay and still the aftershocks of this engagement were being felt in his daily activities. Robins counted ten wounded British sailors and marines on the deck of his command, the U.S. Navy row galley Allen. Attendants John Pearson and Augustus Barbes had carefully stowed them into sitting positions to clear enough room for the galley’s crew. The injured bore expressions of pain carved deeply into their faces, but there was one consolation to ease their suffering—they were going home.¹

The previous day, Robins and his galleymen left the American naval squadron at anchor off Plattsburgh, New York, on an official mission into British Canada. Their orders were to help transport a total of sixty wounded prisoners-of-war to the Royal Navy yard at Isle aux Noix, inside the Richelieu River. “Owing to my hospital establishment being small and having such few surgeons,” lamented Commodore Thomas Macdonough, “I thought it not improper to place these persons (being badly wounded) on Isle aux Noix where they could receive the medical attention so much needed.” He felt assured that the U.S. Navy Department would assent to such a courtesy, especially when intended to express “feelings of humanity and liberality to a brave enemy.”²

Stiff-fingered oarsmen pulled vigorously in time to ward off the cold as Allen scudded down the Richelieu River. Light, variable winds pinwheeled spray over the galley’s bow gun, leaving the crew shivering beneath sodden uniforms.³ As the outline of Isle aux Noix approached low on the horizon, Robins may have reminisced about his enlistment in the U.S. Navy, just days after the official declaration of hostilities, or the moment that he first assumed command of Allen at Vergennes, Vermont. The most vivid recollection, however, had to be the “highly honorable” conduct that distinguished his galley division at the Battle of Plattsburgh Bay.⁴ This American victory helped lift the young republic from its darkest hour and altered the course of the War of 1812. Yet in the wave of relief and patriotic celebration that followed, the

---

¹ The journal used as a model for style and format is *American Neptune.*
original mission of Allen and the Lake Champlain galley flotilla was soon forgotten. This is their story.

**Background**

Allen and the other vessels of the Lake Champlain galley flotilla emerged piecemeal during the War of 1812 against a somber background of waffling strategic plans, disjointed military campaigns, and financial insolvency. Well before the start of the conflict, President James Madison and his advisors made the invasion of Canada a principal objective of the war. This lightly-defended territory could be useful as a bargaining chip or perhaps even be annexed outright by the United States. The key to American success was Montreal, the crossroads of communication, transportation, and trade between Upper and Lower Canada. The city’s capture would cleave the vital St. Lawrence River lifeline that sustained Canadian defenses. However, all of the plans made in 1812 and 1813 to seize this decisive position had one serious tactical omission. The United States failed to create a flotilla of oared warships capable of operating on the Richelieu River (also known as the ‘Sorrell’) that straddled the border and emptied into the St. Lawrence River a short distance below Montreal.

The construction of Allen and its sister galleys was first proposed on 23 November 1813, when Thomas Macdonough submitted a plan to the U.S. Navy Department for invading Canada via the Lake Champlain-Richelieu River corridor. His proposal hinged on the use of row galleys to control the river. “We should be prepared,” wrote Macdonough, “to go down the Sorrell River pass the Chamblee Rapids (of six miles) and enter the St. Lawrence, there to cooperate with the Army.” The Richelieu contained open water, shoals, and rapids, conditions that called for long, shallow-draft vessels able to navigate under sails and oars, and rugged enough to endure a pounding without falling apart. In addition, they had to be sufficiently armed to challenge the fortifications at Isle aux Noix and St. John that guarded the river’s passage into Lower Canada.

By 1813, oared warships were hardly a novelty in this particular theater of North America. The Great War for Empire (1756-1763) and the American Revolution (1775-1783) had demonstrated the usefulness of these vessels for blockades, shore bombardment, raids, and amphibious troop movements in confined waterways. Gunboats of the barge and row galley classes boasted a number of unique advantages. The simplicity of their designs meant that the same set of plans could be used to mass-produce a flotilla in a short period of time. Compared to larger warships, they were inexpensive to build and outfit. Their shallow draft allowed them to
go almost anywhere on lakes, rivers, bays, and inlets without running the risk of grounding, and the use of oars as well as sails enabled them to move regardless of the winds and currents. The large number of oarsmen needed to row one of these vessels could also provide a numerical advantage in the event of a boarding action. Finally, their narrow breadth and low freeboard made them extremely difficult targets to hit when engaging an enemy on a direct approach. There were drawbacks, of course: they required large numbers of sailors or soldiers to row them, oarsmen found it unsettling with their backs to the enemy and sometimes avoided close action, and in open waters these tiny vessels were vulnerable to both rough weather and larger warships.  

The U.S. Navy Department authorized the building of six new row galleys for its squadron on Lake Champlain during the winter of 1813-1814. Secretary William Jones let the contract to Master Shipwright Noah Brown of New York City in February, specifying that he follow a hull design recently prepared by William Doughty, Chief Naval Constructor at the Washington Navy Yard. Brown drove his men through the project at a record pace despite harsh weather, poor working conditions, and sickness. By 9 May, roughly two months after laying down their keels, *Allen, Borer, Burrows, Centipede, Nettle*, and *Viper* had been built, launched, and outfitted along the Otter Creek near Vergennes, Vermont. Although originally intended to spearhead Macdonough’s proposed amphibious offensive into Lower Canada, a shift in American military strategy eventually forced these new warships into a support role before the opening of navigation in 1814. *Allen* and the other new galleys helped combat the smuggling of naval stores, perform reconnaissance missions, transport communications, bombard shore targets, and even provide a tow for the larger warships of the squadron when the winds failed. Finally, when the British Royal Navy crossed into the United States and attacked Plattsburgh, New York, on 11 September 1814, the galleys helped stopgap weaknesses in the American line of battle.  

The Treaty of Ghent, signed on 24 December 1814, brought a close to the fighting on Lake Champlain shortly after the Battle of Plattsburgh Bay. The Navy Department promptly ordered that the American squadron be placed in storage near its station at Whitehall, New York. Only *Allen* enjoyed a brief renaissance as a patrol boat operating under the provisions of the Rush-Bagot Agreement of April 1817. When the Whitehall Naval Station permanently closed its doors in 1825, *Allen* settled into its final resting place—the soft, muddy floor of the Lower
Poultney River, or "East Bay," a nearby tributary of Lake Champlain. The exposed portions of Allen's hull disappeared over time, but the submerged structure remained well preserved.

The primary focus of this dissertation is to investigate the history and archaeology of Allen, the last of Mr. Brown's six row gunboats to remain in service on Lake Champlain after the War of 1812. Abandoned for more than 150 years, the tiny warship was rediscovered in 1981 and subsequently made the subject of an intensive archaeological excavation in 1995. Four main objectives have been defined for this study: (1) to trace the evolution of Allen and its fellow gunboats, barges, and row galleys that constituted the U.S. Navy's oared warship flotilla on Lake Champlain during the War of 1812; (2) to describe the archaeological discovery, survey, excavation, and documentation of Allen inside the Poultney River; (3) to reconstruct Allen's hull as it would have appeared during the war using lines and construction drawings generated from historical and archaeological data; and (4) to provide a detailed assessment of the living and working conditions aboard Allen between 1814 and 1825.

Literature Review

Although many volumes have been written in the past two decades about the War of 1812, few have dealt specifically with the oared warship flotillas that augmented the ranks of the U.S. Navy, and none have examined the tactical potential of these gunboats, barges, and row galleys in offensives on the Great Lakes and Lake Champlain. By the second campaign season of the war, strategically-minded leaders recognized the key role of interservice cooperation if victory was to be had along the American-Canadian border. In particular, exploiting the Lake Champlain-Richelieu River invasion corridor required a joint army-navy operation facilitated in large part by the use of armed, shallow-draft rowing vessels. American military historical writing, however, has demonstrated an almost complete lack of understanding of the intended offensive role of these specialized warships in this theater of the war.

Howard I. Chapelle represents one of the first to deviate from this tradition with his work The History of the American Sailing Navy (1949). Chapelle compiled plans and historical data for more than twenty different designs of gunboats, barges, and row galleys that emerged during the early nineteenth century in North America. This study has proven indispensable for establishing a visual understanding of the evolution of oared warship design through the period of the War of 1812. Chapelle illustrated that the designs adapted for use on inland waterways were significantly reduced in size and draft in order to better suit the environment in which they were to be used. He correctly stated that these vessels were not intended to be seagoing coastal
defense gunboats, but instead were likened to the armed launches being used by the British to
counter boarding actions and inshore raids. Unfortunately, Chapelle’s spare documentation
style has made it difficult to verify much of the historical information provided in his text.9

Spencer C. Tucker followed Chapelle’s approach with *The Jeffersonian Gunboat Navy*
(1993), but with greater attention to the surrounding historical context. Tucker’s work was
almost exclusively geared toward the gunboat-class vessels authorized and built for the U.S.
Navy during the Jefferson Administration. He discussed such topics as the national defense
policies that brought these vessels into being, design plans and construction details, gunnery and
equipment, and manning.10 Tucker accurately concluded that many Jeffersonian gunboats
played only a modest role as convoy vessels and transports during the War of 1812. However,
he made only brief mention of the new classes of barges and row galleys that emerged on the
Chesapeake, Great Lakes, and Lake Champlain theaters between 1813 and 1814.

Finally, Gene A. Smith’s ‘For the Purposes of Defense’: *The Politics of the Jeffersonian
Gunboat Program* (1995) demonstrated that gunboats, barges, and row galleys contributed to the
American defensive victories on Lake Erie (1813) and Lake Champlain (1814), as well as at
New Orleans (1815). He further claimed that oared warships helped delay the British attack on
Washington, D.C., and that they prevented the Royal Navy from bombardng Charleston, South
Carolina, and Savannah, Georgia.11 Excellent in its coverage of the defensive capabilities of
oared warships, Smith’s study offered no mention of proposals to use row galleys for assaults
into Canada, including Thomas Macdonough’s plan to strike Montreal via the Richelieu River—
submitted almost a year prior to the Battle of Plattsburgh Bay.

This dissertation takes full advantage of the available written and graphic historical
records from the War of 1812, including official naval correspondence, journals, lines drawings,
and other contemporary sources. In addition, the archaeological data generated from the
excavation of *Allen*—a physical example of a row galley from this period—promises to add a
useful body of data to our understanding of these vessels on the Great Lakes and Lake
Champlain.

*Research Procedure*

No comprehensive analysis of *Allen*, its crew, or its associated shipboard artifacts has
been produced to date. This is surprising considering the galley’s significance. First and
foremost, *Allen* represents the only example of a row galley ever found on Lake Champlain from
the War of 1812. Indeed, it may be the only known example of an American row galley from
this period that is readily accessible for study inside the United States. Second, Allen is the only example of Noah Brown’s work known to exist. New clues pertaining to the materials, methods, and modifications employed by Brown and his shipwrights will add considerably to our understanding of this skilled craftsman, of the constraints and challenges he faced, and of the ways he experimented within his trade. Third, and finally, Allen illustrates one of the U.S. Navy’s early efforts at mass-producing warships from a single set of plans. Allen can provide interesting parallels between the American row galley flotilla built for Lake Champlain and those built for Chesapeake Bay and Lake Ontario.

Chapters I through VII of this dissertation review the history of Allen and the U.S. Navy’s oared warship flotilla on Lake Champlain, beginning with the belated refit of Jeffersonian Gunboats No. 169 and No. 170 during the first campaign season of 1812, and ending with the closing of the Whitehall Naval Station in 1825. This narrative will include the events surrounding the construction, outfitting, and service of Allen, along with an examination of the factors that influenced its design and assembly. Chapter VIII describes the archaeological survey, excavation, and documentation of the abandoned hulk in 1995. Chapter IX catalogues and discusses the artifacts associated with Allen’s remains and what these items can teach us about life on an early-nineteenth-century row galley in times of war and peace. Chapter X illustrates the construction and assembly techniques used in Allen’s hull from the keel upward. Finally, Chapter XI will conclude the study with a reconstruction of Allen, as it would have appeared in 1814, along with a comparison of its design and construction with contemporary vessels of a similar type and purpose. The U.S. National Archives contain contracts for the building of “first class” (75-foot [22.8 m]) Doughty-designed row galleys for Joshua Barney’s Chesapeake Bay flotilla, which will be useful for comparative purposes when examining Allen’s hull remains.12

In summary, there is a dearth of information concerning the construction features of American row galleys built in the early nineteenth century and the living and working conditions faced by their crews. This is especially the case for row galleys from the period encompassing the War of 1812 on Lake Champlain. Surviving contemporary documents and plans enumerate only some of the components and assembly techniques employed in building these vessels. The study of Allen’s remains provides the information necessary to fill in the gaps that exist in the historical record. Allen stands alone as material evidence of row galley construction practices from this period, including the three years spanning the War of 1812. By developing a more
complete picture of Allen’s construction, outfitting, service, and crew, I hope to help historians and archaeologists better illustrate this unique era of shipbuilding technology from North America’s maritime past.¹³

Endnotes: Chapter I

1. “List of Paroled Wounded Men Sent to Isle aux Noix, US Galley Allen, 16 September 1814,” Subject Files, Class R, Subclass RB, Prisoners of War Rolls and Lists (Hostile or Foreign Nationalities), Box 575, Folder 2, Naval Records Collection of the Office of Naval Records and Library, Record Group (hereafter cited as RG) 45, National Archives and Records Administration, Washington, D.C. (hereafter cited as NARA). Note that a total of sixty sailors and marines were carried to Isle aux Noix after the Battle of Plattsburgh Bay. However, only ten of the parolees were in the load carried by Allen described in the document of 16 September 1814.

2. Thomas Macdonough to William Jones, 17 September 1814, Letters Received by the Secretary of the Navy from Captains (hereafter cited as Captains’ Letters), RG-45, Microfilm Collection (hereafter cited as M) 125, Reel 39, No. 62, NARA. At least three women were listed among the prisoners paroled to Isle aux Noix. They were sent on 13 September 1814. See “Stations Lake Champlain and Whitehall, 1813-1825” (hereafter cited as “Stations Lake Champlain and Whitehall”), Muster and Pay Rolls of Shore Establishments of the U.S. Navy (hereafter cited as Muster and Pay Rolls), RG-45, Collection Entry (hereafter cited as Entry) 92, T829, 147, Nos. 51-61, NARA.


4. William M. Robins to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 55, NARA.

5. Thomas Macdonough to William Jones, 23 November 1813, Letters Received by the Secretary of the Navy from Commanders (hereafter cited as Commanders’ Letters), RG-45, M147, Reel 5, Pt. 1, No. 169, NARA.

6. Ibid.

7. Although the contemporary vernacular terminology used to describe oared warships of the U.S. Navy varies greatly from the period spanning the Barbary Wars (1801-1805) and the War of 1812, this dissertation will use the term “gunboat” to refer to an armed warship measuring between 25 and 75 feet in length that is capable of operating by both oars and sails and that carries at least one piece of mounted ordnance. Furthermore, the terms “barge” and “row galley” refer to the two types of U.S. Navy gunboat designs prepared by Chief Naval Constructor William Doughty at the Washington Navy Yard in Washington, D.C., during the War of 1812. For additional information on the role of oared warships in early nineteenth-century American naval history see: Howard I. Chapelle, The History of the American Sailing Navy: The Ships and Their Development (New York: Bonanza Books, 1949), 179-241, 274-279. Chapelle is useful specifically for design and construction details. See also Dean R. Mayhew, “Jeffersonian Gunboats in the War of 1812,” American Neptune 42, no. 2 (1982): 101-117; Spencer C. Tucker, The Jeffersonian Gunboat Navy (Columbia, S.C.: University of South Carolina Press, 1993), 77-176; and Gene A. Smith, ‘For the Purposes of Defense’: The Politics of the Jeffersonian Gunboat Program (Newark, Del.: University of Delaware Press, 1995), 1-128.

8. Thomas Macdonough to William Jones, 11 April 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 103, NARA. The sick list had grown to forty men less than two weeks after Brown and his shipwrights began work at Vergennes.

10. Tucker, Jeffersonian Gunboat Navy, 10-76, 77-176. Chapters 2 through 4 deal specifically with the technical details of Jeffersonian Gunboats, while Chapters 5 through 13 discuss their role during the Jefferson Embargo of 1808, the Barbary Wars (1801-1805), and the War of 1812.

11. Smith, ‘For the Purposes of Defense’, 114-128. Donald R. Hickey’s recent historiographic article entitled “The War of 1812: Still a Forgotten Conflict?” suggests that Gene Smith takes the defensive nature of the Jeffersonian gunboats used during the War of 1812 much too far. A copy of this article (last revised on 10 July 2000) has been posted on the World Wide Web at the following address: www2.h-net.msu.edu/~shear/s2000.d/pa/HickeyDon3.htm.

12. The majority of contemporary journals, correspondence, inventory and equipment lists, sketches, ship plans, and other primary sources used in this dissertation came from the Naval Records Collection of the Office of Naval Records and Library, RG-45, NARA. Additional plans and maps came from the Records of the Bureau of Ships, Cartographic and Architectural Records, RG-19, National Archives and Records Administration II, College Park, Maryland (hereafter cited as NARA-II); and Civil Works Map Files, RG-77, NARA-II.

13. Two oared warships from the period of the War of 1812 have been located for archaeological study in North America as of 2003. However, neither of these vessels represents a U.S. Navy row galley. The first example is a British gunboat located near Browns Bay, Ontario, in the St. Lawrence River. Archaeologist Christopher Amer made this gunboat the subject of his Masters Thesis at Texas A&M University. See Christopher Amer, “The Construction of the Browns Bay Vessel” (master’s thesis, Texas A&M University, 1986). Robert Malcomson has also contributed a series of articles on American and British oared warships from Lake Ontario during the war. See Robert Malcomson, “Gunboats on Lake Ontario in the 1812 War,” parts 1, 2, and 3, Seaways Ships in Scale 7, no. 1 (1996): 31-38; no. 2 (1996): 27-31; and no. 3 (1996): 40-44. The second example, thought at first to be a Doughty-designed row galley from the war, was discovered in the Patuxent River in Maryland. Donald Shomette led a team from the Calvert Marine Museum between 1977 and 1980 to investigate a wreck believed to be part of Joshua Barney’s Chesapeake Bay row galley flotilla built by the U.S. Navy at Baltimore, Md., in 1813. Shomette contended that Barney had scuttled his row galleys near present-day Patuxent River Park during the British assault on Washington, D.C., in August 1814. See Donald Shomette, Flotilla: Battle for the Patuxent (Solomons, Md.: The Calvert Museum Press, 1981), 1-42, 166-197. In 1996, the Maryland National Capital Park and Planning Commission and the Living Classrooms Foundation followed up Shomette’s work by building a 4/5th-scale row galley along Doughty’s design plan from October 1813. These efforts helped spark interest for further archaeological investigations in the Patuxent River. See Maryland Historical Trust, “Phase One Research Yields Remarkable Data,” Sails & Oars: A Newsletter About the Chesapeake Flotilla Project 1, no. 2 (1996): 1-4. However, after closer examination, Shomette determined that the wreckage was more consistent with Barney’s flagship, the sloop Scorpion, rather than a row galley. See Maryland Historical Trust, “About the Discovery of the Chesapeake Flotilla,” Sails & Oars: A Newsletter About the Chesapeake Flotilla Project 1, no. 2 (1997): 3; and Donald Shomette, Tidewater Time Capsule: History Beneath the Patuxent (Centreville, Md.: Tidewater Publishers, 1995), 52-81. It is safe to say, at present, that Allen is the only example of a U.S. Navy row galley from the War of 1812 that has undergone archaeological study and analysis. Consequently, Allen provides a unique source of comparative data for future discoveries of oared warship remains from the early nineteenth century.
CHAPTER II

"NO ORDERS TO PUT THEM IN REPAIR": THE WAR OF 1812 ARRIVES IN THE LAKE CHAMPLAIN VALLEY

On 13 July 1812, Governor Daniel D. Tompkins of New York State sat before his desk in Albany with his mind in turmoil. Mobilization for war against the British forces in Canada had been underway for more than a month and still the U.S. Navy Department showed no intention of providing for the protection of Lake Champlain—the 118-mile-long (189.9 km) freshwater highway bordered by New York, Vermont, and Lower Canada (Figure 1). The Governor found this disinterest extremely unsettling. Military advisors in Washington, D.C. planned to restore an honorable balance of power with Great Britain by conquering its territories in Canada, but they had given little consideration to the theater in which that objective was to be obtained. Tompkins (Figure 2) understood that a successful land invasion depended upon naval control of the freshwater lakes and rivers that straddled the American-Canadian border. Naval ascendancy on the Great Lakes and Lake Champlain granted access to all practical routes for moving armies, military materiel, and communiqués in that region of North America.¹

American strategy for the opening campaign of 1812 included subduing Lower Canada by seizing Montreal and applying pressure upon Quebec City. The obvious flaw, according to Tompkins, was leaving the key invasion route along Lake Champlain and the Richelieu River completely unguarded and unexploited. The U.S. Army on the northern frontier had grown lethargic from a want of direction, and its ranks appeared under-manned, poorly supplied, and untrained. Moreover, the U.S. Navy on Lake Champlain consisted of two derelict gunboats (one beached, one partially submerged) at Basin Harbor, Vermont, and no orders had been transmitted to their commander Lieutenant Sidney Smith to prepare them for action. Borderland residents of New York bombarded Albany on a daily basis with pleas for protection, and many were threatening to abandon their homesteads and flee to the south.

Tompkins sharpened his quill to a point and let his dissatisfaction flow into a letter addressed to U.S. Navy Agent John Bullus in New York City:

I find the arrangements of the Navy Department for our Northern Waters are complained of by the inhabitants and officers of the frontiers. A person was here about ten days since from Lake Champlain to get some oakum &c for the two gun boats there. They were then in Bason Harbour, one of them partly sunk in the water, and the seams of
Figure 1. Map of the Champlain Valley, 1812-1814.
both of them so open as almost to admit the hand; and I understand from Plattsburgh [New York] that no orders to put them in repair were received...

Those two gun boats manned and equipped in season would have given us command of the lake; and ought to have been in readiness to have retained that command; but the British are repairing with great industry a vessel at St. Johns which will probably render our gun boats, by the time they are repaired, manned, and equipped, useless or nearly so.²

Figure 2. Daniel D. Tompkins, Governor of New York State (1807-1817). Portrait by John Wesley Jarvis. Collection of the New York Historical Society.

It appeared as though the lessons of the Great War for Empire (1756-1763) and the American Revolution (1775-1783) had been wasted on U.S. Navy Secretary Paul Hamilton (Figure 3). These contests had demonstrated that Lake Champlain and the Richelieu River provided the only viable avenues of military transportation in this quarter. Thus an inland naval force capable of controlling both arteries was indispensable for protecting and maintaining armies, supply lines, and retreat routes. Yet as American plans for an assault on Montreal materialized that season, the roads of New York, Vermont, and Lower Canada still represented the tactical and logistical pivot-points, rather than the adjacent waterways.³

Hamilton had little notion of the obstacles that the U.S. Army was about to face along the northern frontier, including dense wilderness, poor roads, and a limited season for campaigning. Originally a planter from South Carolina, he had no naval experience and
subsequently no understanding of the importance of warships and transports on Lake Champlain. Moreover, President Madison initially excluded him from the war strategy meetings

Figure 3. Paul Hamilton, Secretary of the Navy (1809-1813). Portrait by G. B. Matthews. Courtesy Navy Art Collection, Naval Historical Center, Washington, D.C.

of June 1812. Many American leaders felt confident that an inland naval force would be unnecessary during the war, but they miscalculated. Tenuous lines of equipment, supplies, and correspondence had to be maintained over long distances. Adding to these challenges were humid summers, pouring rains in the spring, and frigid, snow-bound winters that played havoc on troop morale and health. Clearly, naval preparedness meant the difference between success and disaster for the U.S. Army’s efforts in the Champlain Valley.

*The American Conquest of Canada*

On 18 June 1812, the Congress of the United States formally announced its declaration of war against Great Britain, the second conflict between Americans and Britons in less than forty years. President James Madison and his military advisors immediately pointed to an invasion of Canada as the means to settle the larger maritime quarrel between the two belligerents (Figure 4). Britain’s “Orders in Council” and issues of sailors’ rights precipitated war, but as U.S. Speaker of the House Henry Clay observed, Canada provided a bargaining chip, or “the instrument by which...redress was to be obtained.”*4* Challenging Great Britain at sea
threatened instant annihilation. The fledgling U.S. Navy could barely bring 350 guns to bear on their enemy, while the Royal Navy boasted more than 700 commissioned warships. The Royal Navy's North Atlantic squadron alone outnumbered, outclassed, and outgunned the handful of "fir-built frigates" that the Americans had ready for action. Great Britain's only vulnerability in North America was its lightly-defended territories in Canada.

Figure 4. James Madison, President of the United States (1808-1816). Portrait by John Vanderlyn. White House Collection, Courtesy of the White House Historical Association.

At the onset of hostilities, British Canada covered roughly 10 million acres (4.04 million hectares) with a population that barely exceeded 500,000. Citizens of the United States outnumbered their northern neighbors by more than ten to one, drawing armies from a pool of 7.5 million persons. These odds, however, never proved relevant. Martial spirit among Americans was uneven, suffering from bitter divisions along regional and political lines. Arguments over the justifications for war, the methods in which it should be conducted, and the economic feasibility of such a venture generated numerous occasions for conflict within the United States. Throughout this period, Republicans in the American West and South used the war to vigorously pursue an expansionist agenda against Amerindian tribes, including the Shawnee, Chippewa, Sioux, and Ottawa. Meanwhile, Federalist opponents of the war in New
England refused to hold Canadians accountable for the cavalier attitude of the Royal Navy and talked openly of secession from the United States.\textsuperscript{6}

War advocates in Washington, D.C., appeared overly optimistic during the opening moves of the first campaign season. Republican “Warhawks” made bombastic claims that Canada would fall at the first sight of the U.S. Army amassing upon its borders. Thomas Jefferson even boasted that annexation would be “a mere matter of marching.”\textsuperscript{7} This appeared to be a hasty prediction, however, considering the state of disarray that plagued the United States military establishment in 1812. Government officials barely had enough money to conduct their daily operations let alone a full-scale invasion of a neighboring territory, and the U.S. Army consisted largely of antiquated generals leading inadequate numbers of ill-equipped and unseasoned soldiers. To make matters worse, the state militias, expected to reinforce the rank and file, proved reluctant to fight in foreign territory.\textsuperscript{8}

A lack of skilled administrators and a parsimonious treasury crippled the U.S. War and Navy Departments almost immediately. Both branches labored under the weight of an inexperienced staff and quickly became overwhelmed by the deluge of correspondence required to wage war. One of the ten clerks assigned to the War Department in 1813 described the building’s attic as a repository “filled with books, old letters, and papers of various kinds (some important) in great disorder.”\textsuperscript{9} President Madison appointed a weak duo to the chief administrative positions of each department: Dr. William Eustis of Massachusetts as the Secretary of War, and former South Carolina governor Paul Hamilton as Secretary of the Navy. The former, an uninspiring leader who habitually acted without consulting the professional advice of his field officers, while the latter was devoid of experience in naval matters and corroded in reputation by accusations of ineptitude and alcoholism. Although Eustis and Hamilton roamed the same two-and-one-half-story brick building west of the White House, their inability to cooperate with each other left them conducting two separate wars—a problem that often carried over to their respective officers fighting at the front.\textsuperscript{10}

The condition of the U.S. Army left much to be desired in 1812. Although Congress sought to fill its columns to a strength of 30,000 that summer, the actual enrollment hovered at 6,000 regulars.\textsuperscript{11} Political appointments crowded the upper tier of command with incompetence and old age. Major General Henry Dearborn of Massachusetts and Brigadier General William Hull of Michigan (both veterans of the American Revolution) held the two most senior positions
in the U.S. Army at the ages of sixty-one and fifty-nine. British Colonel Edward Baynes described Dearborn as “healthy” but completely dispossessed of “the energy of mind or activity of body requisite for the important station he fills.”12 Eventually a younger set of professionals arose to replace the superannuated, but by that time the U.S. Army had been forced into a defensive posture and hobbled by previous failures.

State militias and volunteers supplied the largest and most unreliable source of manpower throughout the war. Jefferson, Madison, and other visionaries of the Republican Party saw these men as the key to operations on land.13 The units mustered in 1812, however, failed to live up to the Jeffersonian ideal of the citizen-farmer rushing to the defense of his country. The volunteers often bore the mark of an organized mob “freely engaged in...disorderly & mutinous conduct,” while some state militias in New England refused to even acknowledge the President’s call for action.14 Connecticut Governor John C. Smith and Massachusetts Governor Caleb Strong contended that the use of state militias in Canada was unconstitutional. Article 1, Section 8 explicitly stated that Congress shall have the power to “provide for the common defense and general welfare of the United States” by “calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions.”15 Smith and Strong contended that the American conquest of Canada met none of these requirements.

War strained the United States’ economy by forcing the Treasury Department to rely on domestic taxes and foreign loans in order to remain solvent. According to Henry Clay, “Our greatest difficulty will be revenue. This is the delicate and trying topic...I fear on which we shall have the greatest desertion.”16 The Navy Department experienced this “desertion” when Congress, deeming it imprudent to build seagoing warships simply to hand them over to the better equipped British Royal Navy, balked at appropriations intended to stockpile naval stores and increase shipbuilding programs.17

When Secretary Hamilton finally joined in the strategic planning later in 1812, he remained committed to a blue-water navy and resisted the development of naval forces on the Great Lakes and Lake Champlain. This shortsightedness coupled with tight-fisted monetary decisions left the U.S. Navy in a neglected state on the Atlantic, and virtually non-existent along the border with Canada.18

Americans predicting an easy victory counted on a number of dangerous assumptions. First, they believed that the French population in Lower Canada (Quebec) would be uncertain in
its loyalty. The St. Lawrence River Valley had once been the seat of a French colonial empire called “New France,” until it was toppled by Great Britain in 1760.¹⁹ Some Americans expected disaffected habitants to refuse to fight for the British when the U.S. Army crossed the border in 1812. Second, war advocates predicted that large numbers of ex-patriots who left the United States for cheap lands in Upper Canada (Ontario) would take up the cause of their former comrades and furnish them with men and supplies. Indeed British Major General Isaac Brock complained that residents in Upper Canada seemed “either indifferent to what is passing, or so completely American as to rejoice in the prospect of a change of governments.”²⁰ Finally, Great Britain’s preoccupation with Napoleon in Europe falsely reassured many Americans that their invasion would be over before the British could dispatch the necessary forces to North America.

Certainly, British military resources in Canada paled in comparison with those operating against Napoleon in Europe. Yet this did not preclude other strategic advantages largely ignored by American “warhawks.” Canada had aggressive field officers, like Lieutenant General Coape Sherbrooke in Nova Scotia, Major General Isaac Brock in Upper Canada, and Major General Francis, Baron de Rottenburg in Lower Canada.²¹ Some of them had distinguished themselves in the Netherlands, India, Sicily, and with the Duke of Wellington during the Peninsular War in Spain.

The 5,600 British regulars serving in Canada came largely from veteran regiments, such as the 49th, 100th, and 103rd Foot. Fighting alongside these seasoned troops were an additional 4,000 “fencibles” or Canadian regulars.²² Despite their deficiency in numbers, these men were well disciplined and familiar with the rigors of war. Amerindian alliances also provided another valuable asset. They filled in gaps with small detachments of snipers, scouts, and raiders, and shored up British garrisons in the wilderness. In short, the Canadian strategy called for patience and perseverance. Each year of survival could be interpreted as a victory, in that it allowed the British to focus on their more important struggle with France without sacrificing their holdings in North America.²³

Madison and his military cabinet understood Canada’s strategic position to be like a mighty oak tree—the roots planted firmly in the Atlantic Ocean for sustenance, the St. Lawrence River as the sturdy trunk, and the Great Lakes basin as the branches and bloom radiating outward in all directions. Felling the trunk three-quarters-up at Montreal meant certain death for the rest of the tree.²⁴ Almost all of the uniforms, weapons, gunpowder, and naval stores bound
for the Canadian theater traveled directly across the Atlantic from Great Britain and eventually made their way up the St. Lawrence River as far as Montreal. This city marked a crossroads of communications, transportation, and trade. Northwest of Montreal the Ottawa River provided access to the more remote regions of Upper Canada; the St. Lawrence itself marked the city’s waterfront and connected it to the Great Lakes as well as the Maritime Provinces and Atlantic Ocean; and the Richelieu River converged to the northeast linking Lower Canada with Lake Champlain and the Hudson River Valley. Lower Canada was accessible from only three directions: the Atlantic Ocean and Gulf of the St. Lawrence, the Great Lakes and the Upper St. Lawrence, and the Lake Champlain-Richelieu River corridor. In 1812, the Royal Navy effectively controlled the Atlantic and Lower St. Lawrence, but the latter two gateways could potentially be pried open.

Secretary Eustis and General Dearborn assisted Madison in developing the U.S. Army’s invasion plan for 1812. In April, before the declaration of war, this dubious military triumvirate (composed of a doctor, aged general, and scholar) decided upon a three-pronged attack: simultaneous thrusts against Montreal through the Champlain Valley and against Amherstburg across the Detroit River, supported by a diversionary crossing along the Niagara River Frontier. One crippling blow against Montreal was attractive, but impractical. Madison could not afford to ignore Republican war enthusiasm in the American West and the lack of cooperation from Federalists in New England. Moreover, the two states flanking the Champlain Valley invasion route—New York and Vermont—had strong commercial ties to Lower Canada and Montreal. A number of borderland communities in the region vacillated between full cooperation and open defiance in regards to the war. Advancing along three different columns, if successful, promised to protect the Northwestern Territories from Amerindian incursions, subdue Upper Canada and the Great Lakes region by cutting its supply lines to Montreal, and provide a foothold in Lower Canada for an attack the following year against Quebec City.

Although ambitious, the American strategy showed nothing original from a tactical standpoint. The Great War for Empire (1756-1763) had witnessed the British attempt multi-pronged strategies against French Canada from the Great Lakes, Lake Champlain, and the St. Lawrence River Valley. A joint army-navy amphibious attack on Quebec City (1759) eventually severed the St. Lawrence River and forced the surrender of the last French bastion at Montreal in 1760. The American invasion slated for 1812 almost mirrored that of its British
predecessors with one glaring exception: no provisions had been made for sailing and oared warships to support the land forces on the lakes and rivers. In their rush to provide the U.S. Army with a cogent plan of attack, Madison’s advisors had omitted a key tactical component necessary for a successful invasion.

Not everyone in the United States failed to appreciate the strategic importance of Lake Champlain and the Richelieu River. As early as January 1812, John Armstrong, a veteran general of the American Revolution, had recommended to the War and Navy Departments that they waste no time securing these waterways to Montreal, the “object of important...decisive character.”28 General William Hull shared a similar point with Secretary Eustis that spring. “I have always been of the opinion,” claimed Hull, “that we ought to have built as many armed vessels on the lakes as would have commanded them.” He proposed leaving the Northwestern Territories to their fate and directing the majority of the U.S. Army toward Montreal. “It is more expedient to...direct the force to Montreal. This will prevent all communications by the St. Lawrence with Upper Canada, and it must of course surrender.”29 The Madison administration made a few stirrings of agreement and then dropped the issue entirely.

The British Commander-in-Chief of Canada, Lieutenant General Sir George Prevost, also grasped the significance of these borderland waterways (Figure 5). He stationed the bulk of his defenses in Lower Canada between Kingston on the eastern edge of Lake Ontario and the confluence of the St. Lawrence and Richelieu Rivers.20 British officers along this front were cautioned against needlessly agitating or otherwise pushing their neighbors to the south into a pro-war sentiment.31 Clearly Prevost’s distribution of force made no secret of the fact that he planned to sacrifice Upper Canada, if necessary, in order to fall back on the St. Lawrence River Valley and await reinforcements from Great Britain.32

A Corridor Unguarded: Sidney Smith and Gunboats No. 169 and No. 170

U.S. Army operations against Canada commenced in the Northwestern Territories (present-day Illinois, Michigan, and Ohio) on 12 July 1812. Brigadier General William Hull crossed the Detroit River into Upper Canada with approximately 2,500 soldiers from the 4th U.S. Infantry Regiment and the Ohio and Michigan militias. The goal of this opening campaign was Fort Malden (Amherstburg). However, logistical difficulties soon played havoc on Hull’s nerves and the assault disintegrated. British and Amerindian raids cut his men off from
overland supplies and communications, while the Royal Navy followed suit on Lakes Erie, Huron, and Michigan with its recently outfitted fleet comprised of the ship *Queen Charlotte* (10 guns), the schooner *Lady Prevost* (12 guns), and the two brigs *General Hunter* (10 guns) and *Caledonia* (3 guns). After a few weeks of confused, ineffective skirmishing, Hull withdrew back to Fort Detroit.

The surrender of Fort Michilimackinac, at the narrows between Lake Huron and Lake Michigan, helped prompt Hull's decision, as it encouraged a number of Amerindian tribes to pledge their support to the Governor of Upper Canada, General Isaac Brock. On 16 August, Brock led a tiny force of British Regulars, Canadian Militia, and Amerindians into Michigan Territory and surrounded Fort Detroit. Amidst a barrage of artillery fire, Hull dispatched orders to evacuate Fort Dearborn (Chicago) and the following day he surrendered. So ended the first prong of the American strategy—a rather inauspicious start. Brock had succeeded in folding up the entire left wing of the U.S. Army, thus diverting efforts away from the St. Lawrence River Valley and Lower Canada.
As the U.S. War Department transmitted orders for Hull’s attack upon the distant wilderness of Upper Canada, the main gateway toward Montreal remained wide open. Secretary Eustis and General Dearborn had yet to organize a substantial army in the Lake Champlain Valley, and the burden of naval command rested entirely upon an ailing officer with two derelict gunboats. Lieutenant Sidney Smith, a native of Plattsburgh, New York, had joined the U.S. Navy as a midshipman aboard the frigate President in July 1800. He began his career with distinction, serving in the Barbary Wars off North Africa with Commodore Samuel Barron’s “Fourth Squadron” (1804-1805). Smith returned home, after less than two years, in command of the bomb ketch Vengeance and received the promotion to lieutenant in 1807. While the ink dried on this new commission, however, certain events conspired to arrest his meteoric rise and deposit him on Lake Champlain.

On 3 March 1807 Smith reported to Norfolk, Virginia, to open a rendezvous as part of his latest assignment to the U.S. frigate Chesapeake. The Navy Department had again ordered him to the Mediterranean Sea, this time as Captain James Barron’s fifth lieutenant in charge of signals. Smith emerged unscathed from the Chesapeake-Leopard Affair later that summer, only to be swept up in its acrimonious wake. Public outrage and embarrassment surrounding the incident demanded a scapegoat—Captain Barron. Smith, along with Lieutenants William Henry Allen, John Orde Creighton, William Crane, and Benjamin Smith, avoided implication by heaping blame upon their commanding officer. Sidney Smith testified that Barron “appeared much agitated and confused, which combined with other circumstances, induces me to believe it was the result of fear.” He further concluded that at no time did his captain “intend bravely to defend the ship.”37 Barron responded to this betrayal in kind, questioning the resolve and competence of these men—certain death to a young naval officer’s professional reputation.

Barron identified Sidney and Benjamin Smith, in particular, as wanting in courage and seamanship abilities. “They would have been as useful to me,” he wrote, “if they had been in the infernal regions, where they will go if an abominable design of cowardice will send a man there, as neither of these men I am confident ever had the use of their reason after the first gun was fired from the Leopard until the fire was over.”38 The Navy Department found the whole exchange unbecoming and eventually disposed of Sidney Smith by ordering him into the gunboat service. Perhaps his willingness to discredit a superior officer in court struck a dissonant chord somewhere in the chain of command. Smith spent the next year enforcing
President Jefferson's embargo aboard No. 3I, stationed at New York City and Newport, Rhode Island. Plagued by chronic respiratory infections, however, he petitioned for medical leave or an assignment on shore. During this time, he turned into an acerbic officer, regularly complaining of his command, his finances, and his health in his letters to the Navy Department. On 28 March 1809 Smith requested a transfer from No. 3I to Lake Champlain, ostensibly to help settle his debts with the Navy Department. "I am in arrears by the recruiting service," he observed, "and as I understand there are two gunboats about to be commissioned on Lake Champlain, which is in the vicinity of my property—by appointing me to that station I shall have it in my power to collect a sum of money to make up the deficiency of my accounts."

In reality, Smith envisioned Lake Champlain as a perfect spot to "afford me an opportunity to recruit my health," as the repeal of the Embargo Act that month promised to reduce the station to a state of relative inactivity. Secretary Hamilton refused Smith's request and ordered him to join Captain James Lawrence aboard the sloop of war Wasp at New York City. Smith failed to report to Wasp for the entire year.

Presumably Smith went on sick leave, or remained with No. 3I. "The service would be highly gratifying to me," he wrote of his appointment to Wasp, "but that my health is extremely impaired and I do not therefore at present feel myself adequate to the duty." Ironically, when Smith learned that his rank entitled him to the second command slot aboard Wasp, and that he would not be expected to stand "night watch," he attempted to rejoin the vessel as first lieutenant on 22 March 1810. However, Lieutenant John Montresor Haswell, formerly in command on Lake Champlain, had already arrived days earlier and filled the position.

Smith's disabilities robbed him of valuable training and experience. The Navy Department began to lose confidence in him, silently earmarking the lieutenant for assignments of limited responsibility. He was no longer considered reliable. Indeed, when Smith resumed active status, he insisted that his health, although improved, "will not permit me to keep a night watch without manifest injury" and "should my services be required, to be ordered to any situation in which I may be excused from doing that part of my duty." Hamilton eventually sent him to convalesce on Lake Champlain.

Smith assumed command of the U.S. Navy flotilla laid up at Basin Harbor, Vermont on 27 March 1810 (Figure 6). Gunboats No. 169 and No. 170—stripped of guns, rigging, and
equipment—constituted the only public armed vessels flying American colors on Lake Champlain. Largely forgotten by the Navy Department, they slipped into a dilapidated condition over the next two years. When the war officially began, one sat beached and the other partially sunk, with hull timbers badly deteriorated and planks “so open as almost to admit the hand.”

Smith suffered a similar fate, being left to languish in professional obscurity. While the rest of the nation prepared for action throughout the spring and summer of 1812, he remained disconnected. “The rumors of inevitable war are continually circulating in this quarter,” he noted, “these as well as information I have received from a gentleman direct from Washington that orders have been issued for fitting out all gunboats, have induced me to suspect that my orders have miscarried.” He even felt compelled to remind his superiors at the Navy Department that the “nearest post office” to his location was Vergennes, Vermont. “Letters directed to that place would more probably come direct, as the local name of ‘Bason Harbour’ is but little known.” Smith’s orders, however, had not been lost, or misdirected—they were never sent.

Figure 6. Basin Harbor, Vermont, early 1800s. Artist Unknown. Courtesy of the Beach Family, Basin Harbor, Vermont.
The Navy Department omitted No. 169 and No. 170 from its call for gunboat mobilization on 4 April 1812.50 A number of factors prompted this decision, but the most important was cost. This particular class of vessel deteriorated quickly when not in active service, and at a certain point they became a total loss. Secretary Hamilton believed that one year “in ordinary” marked this point of no return. “If a gunboat is suffered to lie in port for one year, without giving her any kind of repair,” he argued to Congress, “she will probably be found, at the expiration of that year, wholly unworthy of being repaired.”51 No. 169 and No. 170 had been in a state of inactivity for twice as long, thus placing them low on the list of priorities. Moreover, the gunboats were attached to a station that, for the present moment, had been relegated a backwater of naval activity.

Lieutenant Smith, unaware of the Navy Department’s stance on Lake Champlain, went ahead with re-commissioning No. 169 and No. 170. He found the dearth of official correspondence vexing, but attributed it to poor overland transportation and communications.52 Resurrecting the gunboats must have been a sobering chore, especially without direction or financial support from Washington. The hulls required substantial work, the two 12-pounder guns were missing and had to be replaced, and most of the rigging elements, equipment, and other stores had been allowed to rot in storage or had been sold. Nevertheless, Smith had a man requisitioning oakum, pitch, and other stores at Albany, New York by July 1812.53

Gunboats No. 169 and No. 170 required a prodigious investment of time, money, and labor to refit them for active duty. They traced their origins back to the Embargo Act of 1808. President Thomas Jefferson authorized the building of a small gunboat flotilla on the lake to help capture smugglers “combining and confederating together...for the purposes of forming insurrections against the authority of the laws of the United States.”54 Lieutenant Melancthon Taylor Woolsey and his subordinate Lieutenant John Montresor Haswell—both descendants of influential Champlain Valley families—were charged with overseeing the project. Shipwright John Winans of Poughkeepsie, New York attended to the construction and outfitting of the two hulls at the foot of King Street in Burlington, Vermont throughout the summer and late fall of 1808.55

Sparse clues remain concerning the design plan used for No. 169 and No. 170. Winans’ contract only specified that the vessels “not exceed twenty tons each” and that they be “sufficiently large to carry one long twelve pounder.”56 Cost considerations presumably kept
the hull design simple and practical—perhaps along the lines of a small, shallow-draft merchant vessel, such as a sloop or schooner. Winans had promised the Navy Department that he could complete No. 169 and No. 170 (including sails and rigging for a schooner rig, anchors, and gun carriages) for a total of $4,040. This underbid his closest competitors Henry Eckford and Christian Bergh by more than $2,000 per hull.\textsuperscript{57} Unfortunately, few people had the opportunity to comment on the appearance of the two gunboats before the Navy Department ordered them stripped and sunk for preservation. The repeal of the Embargo Act in 1809 prompted the hasty demise of Jefferson's "Gunboat Navy" on Lake Champlain. Thus No. 169 and No. 170 punctuated their spotted career as revenue watchdogs with three years of inactivity and neglect before rejoining the public service.\textsuperscript{58}

Since Secretary Hamilton had yet to officially activate No. 169 and No. 170, Smith technically could not draw upon local credit to purchase the sundries required to refit the gunboats. How he arranged for payment remains unknown. Perhaps local sentiments played a role. Merchants, farmers, and professionals residing along the New York frontier all stood to lose homes and property in any fighting that ensued and many had begun to petition the government for protection. Governor Tompkins of New York, for one, supported the war effort and was an outspoken proponent of naval building on Lake Champlain.\textsuperscript{59} He and other influential citizens may have helped Smith find the means to begin refitting the gunboats. Whatever the case, Smith had at least one of the gunboats ready to take on a single 9-pounder gun at Burlington, Vermont, by 1 September 1812.\textsuperscript{60}

This local initiative only provided a temporary solution, however, as the Navy Department ultimately owned and directed the two gunboats. Consequently, Secretary Hamilton began to receive polite, but anxious, letters requesting that something be done to support the efforts already started. "From the multiplicity of business attending your office," wrote Benjamin Moore of Plattsburgh, "I expect it must have escaped your notice, that there are two gunboats, belonging to the United States, upon Lake Champlain, under the charge & care of Lieut. Sidney Smith of the Navy, which have not yet been ordered into service." A situation, he pressed, "that has been for some time very mortifying to many of the friends of the administration and the well wishers of our common country."\textsuperscript{61}

By late August 1812, the humiliating losses at Forts Michilimackinac, Dearborn, and Detroit had remedied the Navy Department's disinterest in the Great Lakes and Lake
Champlain. The plight of the U.S. Army in the Northwestern Territories forced Madison’s advisors to rethink the wisdom of fighting along the American-Canadian border without control of the surrounding waterways. The British had already taken the initiative and secured Lakes Michigan, Superior, Huron, and Erie with a hastily-assembled fleet bearing fewer than fifty guns.\textsuperscript{62} The Americans now faced the difficult task of establishing naval stations in these regions and catching up in size and strength to the Royal Navy.

On 29 August, President Madison tasked Secretary Hamilton with securing the ‘Northern Lakes.’ The Navy Department selected Captain Isaac Chauncey, commandant of the New York Navy Yard near Brooklyn, to spearhead the project from Lake Ontario.\textsuperscript{63} Ironically, Lake Champlain, which already had one gunboat nearly prepared for service, remained of secondary importance until late September 1812. At this point, Hamilton assigned the station to Lieutenant Thomas Macdonough.\textsuperscript{64} With this belated appointment, the last age of fighting warships officially began in the Champlain Valley.

\textit{Endnotes: Chapter II}


5. \textit{London Times}, 21 October 1812. This derogatory reference to U.S. Navy warships as “fir-built frigates” became widely known throughout North America during the War of 1812. More detailed


8. Edward C. Skeen, *Citizen Soldiers in the War of 1812* (Lexington, Ky.: University of Kentucky Press, 1999), 62-76. This is an up-to-date analysis of the role, or lack thereof, that volunteers and state militias played during the War of 1812.


15. U.S. Constitution, art. 1, sec. 8.


23. Great Britain’s position inside Canada remained primarily defensive in nature until after Napoleon’s failed Russian campaign (11 December 1812) and eventual abdication to the Sixth Coalition (6 April 1814). Meanwhile, the raw U.S. Army proved to be no match in formal battlefield tactics, or guerrilla warfare throughout the first two years of the conflict. See Hitsman, *Incredible War*, 38-44.


25. Contemporaries of President Madison, such as U.S. Navy Captain Arthur Sinclair, argued that: “Montreal is the root at which the axe should have been first directed [to] cut off the communication from their resources, and the upper provinces must fall of course.” See Arthur Sinclair to John H. Cocke, 25 August 1813, John Hartwell Cocke Collection, Alderman Library, University of Virginia, Charlottesville, Va. For an excerpt of the same see Skaggs and Altoff, *A Signal Victory*, 9. Captain Isaac Chauncey seconded Sinclair’s observation: “It has always been my opinion that among the best means to conquer Canada was…taking and maintaining a position on the St. Lawrence—this would be killing the tree by ‘girdling’—the branches deprived of their ordinary supplies from the root, die of necessity.” See Isaac Chauncey to William Jones, 5 November 1814, Captains’ Letters, RG-45, M125, Reel 40, NARA. For an excerpt of the same see Skaggs and Altoff, *A Signal Victory*, 9.


30. Prevost had approximately 4,000 troops in place by the end of July 1812, including 1,600 between St. Jean on the Richelieu River and La Prairie in Quebec. Another 600 troops were positioned at Lacadie and 300 at Isle aux Noix, as well as small garrisons at St. Jean and Chambly. Isle aux Noix was fortified as an advance post and preparations were being made for gunboats to be disassembled, brought around the rapids at Chambly, and then reassembled at St. Jean or Isle aux Noix. See Hitsman, *Incredible War*, 3-23, 29-36, 38-44.

31. George Prevost to Isaac Brock, 7 and 10 July 1812, British Military and Naval Records, RG-8, ser. 1, C1218, vols. 301, 306, PAC, cited in Mahon, *The War of 1812*, 34. For additional information on Prevost’s strategy see Hitsman, *Incredible War*, 29-36, 38-44. Prevost also urged officials in Great Britain to support the Provincial Marine squadron at St. Jean on the Richelieu River to help close off the potential Lake Champlain-Richelieu River invasion route. The Provincial Marine was a Royal Navy detachment that dated back to the Great War for Empire (1756-1763). It was transferred to the command of the Quartermaster General’s Department as a transport service for the British Army shortly after the American Revolution (1775-1783). For the state of the British Provincial Marine on the Great Lakes and Lake Champlain in 1812 see Dennis M. Lewis, *British Naval Activity on Lake Champlain During the War of 1812* (Plattsburgh, N.Y.: Clinton County Historical Association, 1994), 1-5; Robert Malcomson, *Lords of the Lake: The Naval War on Lake Ontario, 1812-1814* (Toronto: Robin Brass Studio, 1998), 25-37; and Gardiner, *The Naval War of 1812*, 98-103.


34. Namely the Potawatomi, Kickapoos, Chippewa, Menomini, Ottawa, Winnebago, and Sioux.

35. Skaggs and Altoff, *A Signal Victory*, 30-32; and Millet and Maslowski, *For the Common Defense*, 110-111. Hull later claimed at his court martial that he capitulated in order to save the needless slaughter of women and children living inside the garrison.

36. Abstracts of Service Records of Naval Officers, Records of the Bureau of Naval Personnel (hereafter cited as Service Record Abstracts), RG-24, M330, NARA.

37. Smith’s testimony, among others, led to Commodore James Barron being found guilty of negligence for failing "on the probability of an engagement, to clear the ship for action." The resulting sentence called for him "to be suspended from all command in the Navy of the United States, and that without pay or official emoluments of any kind, for the period and term of five years." See Spencer Tucker, *Injured Honor: The Chesapeake-Leopard Affair June 22, 1807* (Annapolis, Md.: Naval Institute Press, 1996), 155, 167, 182-183.


40. Sidney Smith to Paul Hamilton, 28 March 1809, Letters Received by the Secretary of the Navy from Commissioned Officers Below the Rank of Commander and from Warrant Officers (hereafter cited as Officers' Letters), RG-45, M148, Reel 5, Pt. 2, No. 155, NARA; Sidney Smith to Paul Hamilton, 10 March 1810, Officers' Letters, RG-45, M148, Reel 7, Pt. 2, No. 63, NARA; and Sidney Smith to Paul Hamilton, 22 March 1810, Officers' Letters, RG-45, M148, Reel 7, Pt. 2, No. 73, NARA.

41. Sidney Smith to Paul Hamilton, 28 March 1809, Officers' Letters, RG-45, M148, Reel 5, Pt. 2, No. 155, NARA.

42. Ibid.

43. Ibid.

44. Sidney Smith to Paul Hamilton, 10 March 1810, Officers' Letters, RG-45, M148, Reel 7, Pt. 2, No. 63, NARA; and Sidney Smith to Paul Hamilton, 22 March 1810, Officers' Letters, RG-45, M148, Reel 7, Pt. 2, No. 73, NARA. Lieutenant John Montresor Haswell left the Champlain Valley in July 1809. This occurred after having written a number of requests for transfer starting in the spring of 1809. He reported to *Wasp* by the fall of 1809. See Service Record Abstracts, RG-24, M330, NARA; John Montresor Haswell to Paul Hamilton, 5 April 1809, Officers' Letters, RG-45, M148, Reel 6, Pt. 1, No. 13, NARA; and John Montresor Haswell to Paul Hamilton, 12 May 1809, Officers' Letters, RG-45, M148, Reel 6, Pt. 1, No. 104, NARA.

45. Sidney Smith to Paul Hamilton, 22 March 1810, Officers' Letters, RG-45, M148, Reel 7, Pt. 2, No. 73.

46. Service Record Abstracts, RG-24, M330, NARA. Historian Dennis Lewis also found a copy of the actual orders sending Smith to Lake Champlain in 1810. See Paul Hamilton to Sidney Smith, 27 March 1810, Manuscripts and Special Collections, MS #3662, New York State Library, Albany, N.Y. For an excerpt of the same see Lewis, *British Naval Activity*, 1.


49. Ibid.


52. Indeed, the War of 1812 helped identify the need for internal improvements inside the United States, especially along the frontier regions along the American-Canadian borderlands.


56. John Rodgers to Robert Smith, 7 July 1808, Captains’ Letters, RG-45, M125, Reel 12, Pt. 1, No. 6, NARA; and “Proposal of John Winans for Building Two Gunboats on Lake Champlain,” in John Rodgers to Robert Smith, 16 July 1808, Captains’ Letters, RG-45, M125, Reel 12, Pt. 1, No. 25, NARA.

57. To compare Winans proposal and cost estimate with that of Eckford and Bergh, see “Proposal of John Winans for Building Two Gunboats on Lake Champlain,” in John Rodgers to Robert Smith, 16 July 1808, Captains’ Letters, RG-45, M125, Reel 12, Pt. 1, No. 25, NARA; and “Proposal of Henry Eckford and Christian Bergh for Building Two Gunboats on Lake Champlain,” in John Rodgers to Robert Smith, 13 July 1808, Captains’ Letters, RG-45, M125, Reel 12, Pt. 1, No. 20, NARA.


59. Daniel D. Tompkins to John Bullus and Paul Hamilton, 13 July 1812, Dudley, *The Naval War of 1812*, 1: 282-283. It is difficult to piece together the financial records pertaining to Sidney Smith's refit of one of the gunboat on Lake Champlain in August-September 1812. This may be partly the result of Smith acting without official sanction from the Navy Department. It is equally plausible, however, that such historical documentation has been lost over time, or has yet to be discovered.

60. Smith had refurnished one of the gunboats, loaded it with supplies, and armed it with a single 9-pounder at Burlington, Vt., by August-September 1812—prior to Macdonough's appointment as commander on Lake Champlain. See Isaac Clark to Benjamin Moore, 1 September 1812, Moore Collection, Feinberg Library Special Collections, State University of New York, Plattsburgh, N.Y.; Lewis,
*British Naval Activity*, 1; and Crisman, *The Eagle*, 5. Moore was also convinced, either by Clark or Smith, to direct military contractors at Plattsburgh to issue enough supplies for outfitting Smith and a potential gunboat crew without the official sanction of the Navy Department. See Benjamin Mooers [sic] to Contractor, 1 September 1812, Moore Collection, Feinberg Library Special Collections, State University of New York, Plattsburgh, N.Y.; and Lewis, *British Naval Activity*, 1. This all occurred at least two weeks before Secretary Hamilton officially instructed Smith to prepare *No. 169* and *No. 170* for active duty. See Paul Hamilton to Sidney Smith, 14 September 1812, Dudley, *The Naval War of 1812*, 1: 320. Hamilton also ordered Isaac Chauncey to send the required equipment and stores for fitting out *No. 169* and *No. 170* on 14 September, along with at least thirty able seamen, which he failed to do. See Paul Hamilton to Isaac Chauncey, 14 September 1812, Dudley, *The Naval War of 1812*, 1: 320. Smith appears to have had only two sailors helping him on Lake Champlain prior to Macdonough’s arrival in October 1812.


64. By late September 1812, Hamilton had begun to consider Lake Champlain too distant for Chauncey to manage from Lake Ontario and too rigorous for Sidney Smith—hence the appointment of Thomas Macdonough. For a copy of Macdonough’s orders see Paul Hamilton to Thomas Macdonough, 28 September 1812, Dudley, *The Naval War of 1812*, 1: 319-320. Secretaries Eustis and Hamilton remained hesitant to give Lake Champlain the same strategic weight as Lake Ontario through the initial campaign season of 1812. For a full discussion of the Navy Department’s command appointments for the Great Lakes and Lake Champlain, along with a brief background on the decision-making process see Dudley, *The Naval War of 1812*, 1: 267-268, 296-302; Crisman, “Jefferson,” 16-19; Crisman, “Cleared for Action,” 5; and Malcomson, *Lords of the Lake*, 38-43.
CHAPTER III

“A PERFECT WILLINGNESS TO SEE THE ENEMY ON FAIR TERMS”: THOMAS MACDONOUGH’S ROW GALLEY STRATEGY FOR THE LAKE CHAMPLAIN-RICHELIEU RIVER CORRIDOR

Lieutenant Thomas Macdonough showed impressive credentials for his twelve years in the U.S. Navy and he appeared able to breathe life into the Lake Champlain station late in the campaign season of 1812 (Figure 7). The twenty-eight-year-old officer had an active service record aboard large, seagoing warships, as well as experience building, outfitting, and commanding gunboats. Born in Delaware in December 1783, Macdonough first went to work as a clerk before obtaining a midshipman’s warrant in February 1800. It is possible that he gravitated toward the navy as a result of his older brother James, who fought against France during the Quasi War (1798-1800) and received a pension for the wounds he suffered aboard the U.S. frigate Constellation. Thomas shipped aboard Ganges only months before the conflict ended and spent most of his tour fighting yellow fever in a Cuban hospital. Upon returning to the United States in 1801, he scarcely avoided the Navy Department’s post-war reduction of active officers.¹

The bulk of Macdonough’s shipboard education came during the Barbary Wars (1801-1805) while serving under Captain Alexander Murray aboard Constellation, and later with Captain William Bainbridge on the U.S. frigate Philadelphia. He logged nearly five years of ship handling, navigation, and gunnery experience while patrolling the North African coast of the Mediterranean Sea.² Macdonough also received his first exposure to oared warship maneuvers and shoal-water tactics during this tour—observations that he later would apply to his command on Lake Champlain. On 22 July 1802, he participated in a mismatched engagement less than two miles from the city of Tripoli. Standing on the deck of Constellation, Macdonough watched as the lighter Tripolitian galleys eased through contrary winds and rough surf while Murray’s pilot appeared “very much alarmed in standing in so near the land.”³

The Bashaw of Tripoli, Yusuf Karamanli, had fleets of gunboats and row galleys that he used to raid and annoy the U.S. squadron during its blockade of Tripoli Harbor. These shallow-draft vessels could navigate close to land and they carried sweeps as well as lateen-rigged sails, giving them the added advantage of operating with or without the wind.⁴ Macdonough had many a brush with the Bashaw’s small oared warships, but it was Captain Bainbridge and the
crew of *Philadelphia* who provided the most humbling demonstration of their versatility. On 31 October 1803, while chasing a galley into Tripoli Harbor, *Philadelphia* ran hard aground on the southeastern edge of Kaliusa Reef. A swarm of galleys quickly came out from under the protection of their land batteries and concentrated a heavy fire on the American frigate for more than three hours until its colors were struck. In his report of the incident Bainbridge made a point of noting how the enemy's galleys “took their position in such a manner that we could not bring our guns to bear on them” thus robbing him of even “the smallest chance of injuring them in resistance.”


Macdonough had the good fortune to be absent from *Philadelphia* when it surrendered, but the lesson of his comrades’ misfortune was not wasted on him or the Navy Department. Vessels better suited for close action in protected waters became a mainstay of the American Mediterranean Squadron. Two 16-gun brigs, *Siren* and *Argus*, three 12-gun schooners, *Nautilus*, *Vixen*, and *Enterprise*, and six flat-bottomed gunboats (borrowed from the King of Naples) assisted Commodore Edward Preble between 1803 and 1806. Macdonough transferred to the schooner *Enterprise* under Lieutenant Stephen Decatur during the winter of 1803 and spent the
remainder of the war gathering intelligence, raiding and destroying enemy supply transports, and conducting actions in and around Tripoli Harbor.

His reputation as an intelligent officer with a cool presence of mind under pressure matured while serving with Enterprise. Like many of his peers, Macdonough developed an almost draconian sense of military rank and honor, for as one of his biographers noted: "In a vessel the size of Enterprise the crew and officers were naturally brought more immediately under the eye of their commander, and while dereliction of duty was more easily detected and punished, conspicuous bravery was more quickly noted and rewarded." Two missions in particular gained Macdonough the praise of his superiors and the temporary rank of "acting lieutenant" aboard one of Commodore Preble's gunboats. In February 1804 he helped Stephen Decatur convert a small prize-vessel into the ketch Intrepid and served as a volunteer when the young lieutenant sailed into Tripoli Harbor under the cover of darkness and burned Philadelphia at her moorings. The following summer Macdonough stood as Decatur's second-in-command during a hard-fought boarding action against two Tripolitan galleys and was recognized for his "zeal, courage, and readiness" (Figure 8).

Figure 8. "Stephen Decatur Boarding the Tripolitan Gunboat." Depiction contemporary with the U.S. Navy's bombardment of Tripoli Harbor, 3 August 1804. Painting by Dennis Malone Carter. Courtesy Navy Art Collection, Naval Historical Center, Washington, D.C.
When Macdonough returned home to the United States in 1806, the Navy Department ordered him to Middletown, Connecticut, to help Captain Isaac Hull superintend the building of four gunboats. President Thomas Jefferson’s second reduction of the U.S. Navy following the Barbary Wars, and his advocacy of a defensive “Gunboat Navy,” provided ample opportunities for service on oared warships but few berths on seagoing ships. Undoubtedly, Macdonough’s former experience fitting out warships for Commodore Preble at Ancona, Italy, also made him an attractive candidate for the job. He spent only three months at Middletown, but during that time he acquired valuable training in the design, construction, and outfitting of gunboats.

The tiny shipyard at Middletown marked the final phase in Macdonough’s education. The Navy Department advanced him to lieutenant in January 1807, and by the time of William Hull’s surrender at Detroit, Macdonough was preparing to succeed Lieutenant Joseph J. Nicholson as commander of a gunboat division at Portland, Maine. He spent three weeks at Portland “exercising the guns, sweeps & sails” and “keeping a good look out for the enemy” before receiving orders to take command on Lake Champlain.

Assembling a naval force on Lake Champlain promised to be a demanding test of Macdonough’s talents. However, his appointment to that station on 28 September 1812 acknowledged more than Secretary Hamilton’s faith in his abilities; it also revealed a belated urgency for action along the Niagara Frontier and the Champlain Valley. Macdonough’s orders read:

The President of the United States has selected you, to command the vessels on Lake Champlain & you are required to proceed to that lake & assume the command accordingly, without a moments delay. Commodore Bainbridge, or Capt. Hull, will appoint an officer, to take your place at Portland during your absence; but, you are not to wait the arrival of such officer at Portland.

You will therefore, immediately, on receipt of this letter, proceed to Lake Champlain & make every arrangement necessary. Six vessels, have been purchased, by the War Department & there are two gunboats, built by the Navy Department, on the lake; the whole of which, is to be under your direction & command.

On your arrival, you will communicate with Genl. Dearborn, or the Commanding Genl. who will afford you, every requisite assistance & with whom you are to co-operate with the force under your command.

These instructions were perfectly clear: waste no time reporting to your station, take command of all public armed vessels, and consult with General Dearborn on how to best cooperate with the U.S. Army.
Assembling the American Squadron at Whitehall, New York

The U.S. War Department wanted to establish a foothold in Canada before the onset of winter, for the Madison administration, and the president in particular, wanted a victory to show the Twelfth Congress when it convened in November. Secretary Eustis thus urged General Dearborn, as the overall commander of U.S. Army operations, to carry out the remaining two prongs of the American invasion plan for 1812. He originally envisioned Dearborn coordinating simultaneous attacks from Northwestern New York on the Niagara River and Northeastern New York along Lake Champlain and the Richelieu River. By late September, however, Eustis had turned over responsibility for the Niagara Frontier to Major General Stephen Van Rensselaer of the New York Militia and U.S. Army Brigadier General Alexander Smyth. He hoped that this shift in command might free Dearborn to focus on the Champlain Valley.13

Macdonough assumed full command of the U.S. Navy on Lake Champlain at Whitehall, New York, on 13 October 1812.14 His new squadron consisted of one hastily-refitted gunboat bearing a small 9-pounder gun, another with a rot-peppered hull, and six merchant sloops in various stages of decay—"the whole totally unprepared."15 Macdonough undoubtedly found this motley inheritance to be puzzling. Secretary Hamilton’s orders suggested that all of the vessels would be consolidated under the U.S. Navy, and that they would already be in a state of readiness by the time of his arrival. The thirty able seamen Hamilton instructed Captain Isaac Chauncey to send to Lake Champlain in September had never arrived.16 Chauncey failed to comply, citing his own manpower shortages on Lake Ontario. Lieutenant Smith spent a frustrating month working shorthanded and relying on Brigadier General Joseph Bloomfield, Quartermaster General Morgan Lewis, and New York Militia Major General Benjamin Moore for money, materials, and labor.17

Although the Navy Department owned the gunboats, the six sloops, purchased by the War Department earlier that year to serve as armed troop transports, remained the property of the U.S. Army. Only three proved fit for naval service. Macdonough took possession of the sloops President, Bulldog, and Hunter, while Juno, Champlain, and Jupiter returned to transport status, as they appeared “too old to carry guns.”18

Initially, Dearborn refused to hand President over to the American squadron, claiming that the U.S. Army needed the sloop and that a “Mr. Billings” would retain command of the vessel. Macdonough found this arrangement to be completely unacceptable and enumerated his concerns in a letter to Secretary Hamilton:
It is the intention of Genl. Dearborn to continue Mr. Billings, for some unaccountable cause, in the command of this vessel [President]...I have no hesitation in saying that this man is not a suitable person to have the command he holds. He is subject to no martial law, neither can I at present regulate a single movement of the vessel in aid, or cooperation, with the Army, I am strangely deprived of more than half of the force in having this vessel in the hands of those, who know not, what to do with her. 19

Perhaps Mr. Billings had aspirations of becoming an inland privateer. It is more likely, however, that Dearborn wanted a vessel solely at his disposal. Macdonough’s persistence on the subject eventually swayed the War and Navy Departments to come to an agreement and the vessel joined the American squadron as his flagship for the first navigation season. 20

On 15 October, Macdonough, in company with Lieutenant Smith, Midshipmen Joseph Smith and Horace B. Sawyer, and Master’s Mate John Trumbull, began refitting Hunter, Bulldog, No. 169, and No. 170. Macdonough initially hired local carpenters for the project, but only eleven days later he was seeking their replacements. Finding individuals with naval building experience in this region proved difficult. The labor force appeared well-versed in preparing sloops and schooners for the carrying trade, but was sadly inexperienced with the fitting out of warships. Macdonough complained privately in his memoirs that he had been sent to a part of New England where “nobody knew anything that was necessary to be done.” 21 He eventually resolved this issue by hiring shipwrights from New York City, a practice that the young commodore continued throughout the war. 22

Arming and outfitting the American squadron required constant effort from such a remote location as Whitehall. The village rested at the head of Lake Champlain more than 100 miles (160.9 km) south of the border with British Canada. Its local waterfront bustled with maritime commerce, but offered little in the way of naval equipment. To make matters worse, the roads comprising the overland route from Albany to Whitehall often proved treacherous and in some cases impassable during poor weather. Shipments traveled via the Hudson River from New York City to Albany without complication, but the eighty miles from Albany to Whitehall relied entirely on wagons. This meant that support from the New York Navy Yard would be sporadic through the early spring of each campaigning year. 23

Throughout his tenure on Lake Champlain Macdonough turned to local entrepreneurs and industries to correct deficiencies in his squadron. On 19 October he appointed “Messrs. Reid and Hart,” two merchants based in Troy, New York, as temporary navy agents responsible for supplying his warships. 23 Richard P. Hart and his partner issued the U.S. Navy a line of
credit, helped coordinate transportation and shipping from Albany, and supplied provisions such as flour, peas, and beef.

Macdonough eventually opened a reliable line of communication with Navy Agent John Bullus as well as the Brooklyn Navy Yard in New York City. Rigging elements, cordage, and other naval stores began to arrive more regularly and with fewer complications by the end of October. Sail makers at Albany also provided a suit of sails for one of the sloops. Shortages in recruits, however, remained a sore issue, for sailors were unwilling to serve on Lake Champlain. The station promised little in the way of career advancement and prize money. A berth on a seagoing frigate or an independent privateer offered at least the possibility of lucrative captures and somewhat better living conditions.

Macdonough’s squadron could not take control of Lake Champlain without men to operate the warships and serve the guns. He tried desperately to impart upon Secretary Hamilton the urgency of the situation. “The men that Captain Chauncey was directed to send on, have not yet come,” he wrote, “I have heard nothing of them & I want them here about the rigging [so] that I can remove the vessels from this place.” Hamilton dragged his feet, prompting Macdonough to send a letter to Captain Isaac Hull at New York City, requesting that he “anticipate directions” from the Navy Department and send on twenty men for each of his three sloops and twenty-four men for the two gunboats. Hull simply replied: “Men are not to be got...what you will do, I cannot tell.”

Despite such difficulties, President, Growler (formerly Hunter), Eagle (formerly Bulldog), No. 169, and No. 170 reentered the lake in early November 1812. President’s hull had been reinforced to hold six 18-pounder columbiads and two long 12-pounders. Growler and Eagle each bore seven guns—one 18-pounder on a circle mount and six 6-pounders. No. 169 and No. 170 were among the last to join the squadron, each mounting a single 12-pounder on a circle just abaft the foremost. Macdonough attributed this delay once again to “the difficulty of getting proper workmen & materials.” Given the deteriorated state of the gunboats, they may have required extensive repairs, such as the replacement of fasteners, timbers, planks, and caulking.

Macdonough ultimately relied on the U.S. Army to remedy the shortages that still plagued his warships. Dearborn commanded all of the military arsenals in the Champlain Valley in 1812, and he also had the power to detach soldiers to temporarily fill out Macdonough’s crews. Except for their guns, President, Growler, and Eagle were typical of the commercial
sloops that dotted the lake. All of them measured less than 70 feet (21.34 m) in length and presumably carried the standard rig of a sloop: a single fore-and-aft rigged mainsail, a square topsail, and a jib. Gunboats No. 169 and No. 170 maintained their original schooner rig along with eighteen sweeps—nine per side.28

The American squadron, newly fitted and armed, sailed Lake Champlain unchallenged through the waning months of 1812. Certainly the appearance of Macdonough’s warships off Plattsburgh, Chazy, and other villages of Northeastern New York came as a welcomed relief just weeks after news reached the valley of the U.S. Army’s demoralizing failure at Queenston Heights (Figure 9). General Van Renssalaer’s long-awaited invasion of Upper Canada by way of the Niagara Frontier had melted away within a few hours of its commencement on the early morning of 13 October. A detachment of U.S. Army regulars, under Captain John E. Wool, managed to cross the Niagara River near Lewiston, New York, storm the heights on the opposite shore, and briefly hold the position before finding themselves overrun by British reinforcements from Fort George. Much to the chagrin of Wool and his men, the roughly 2,000 American militia soldiers ordered to lend them support decided at the last minute to invokes their constitutional rights and refused to fight on foreign soil. Thus ended the U.S. Army’s second attempted invasion of Canada in 1812. Van Renssalaer could only watch in dismay as the British rounded up an estimated 958 American prisoners.29

Figure 9. Battle of Queenston Heights, 13 October 1812. Painting by Captain James Dennis of the British 49th Regiment of Foot. Courtesy of River Brink, Home of the Weir Collection, Queenston, Ontario.
The British victory at the Battle of Queenston Heights opened up the entire Northwestern New York frontier for a potential counterattack. Therefore, if it could not reverse the disasters of Detroit and Niagara, it was crucial that the U.S. Army draw attention away from these regions until the onset of winter eliminated all further campaigning. On 8 November, Dearborn assured the War Department that he intended to personally assist General Bloomfield at Plattsburgh, New York in staging an offensive against Montreal—the only unexploited prong of the original American invasion plan. “I trust General Bloomfield will be able to move toward Montreal,” he wrote to Secretary Eustis, “and with the addition of three thousand regular troops that place might be carried and held.”

Although Dearborn had not planned on actually leading the operation in the Champlain Valley, he was eventually forced into the position by extenuating circumstances. Bloomfield inconveniently became bedridden shortly after dispatching the majority of his forces to the border. Dearborn had no choice but to proceed north and assume command—largely to keep up appearances. On 18 November he reached the American troops encamped near Champlain, New York. At dawn the following day, Dearborn hastily assessed the situation and determined that the expedition was inadequately prepared to carry Montreal.

Dearborn’s intelligence reports indicated that the British had nearly 1,600 regulars and 2,000 militia stationed around Montreal. He also learned that they had obstructed all land movement north of the lines by felling trees onto the roads that passed through the surrounding wilderness. Equally disturbing were the three Royal Navy gunboats stationed at Isle aux Noix, Quebec, which blocked his fastest escape route back to the Champlain Valley. After holding a brief council with his officers, Dearborn, once an outspoken critic of Hull and Van Rensselaer, decided to abort the strike and withdraw to winter quarters at Plattsburgh.

Macdonough kept the American squadron on patrol duty near the outlet of the Richelieu River well into the next month. Finally, on 12 December, with “the weather so boisterous and the ice making,” he placed his warships into temporary storage at Shelburne Bay just below Burlington, Vermont. By this time, President Madison’s hopes for an easy victory in Canada had collapsed in ruins.

Tactical Trials I: The Loss of Growler and Eagle in the Richelieu River

The U.S. War and Navy Departments, under the newly appointed Secretary of War John Armstrong and Secretary of the Navy William Jones (Figure 10), fully recognized the importance of controlling the Great Lakes and Lake Champlain by the time hostilities resumed in
the spring of 1813. "The success of the ensuing campaign," declared Jones, "will depend absolutely upon our superiority on all the lakes—& every effort, & resource, must be directed to that object." Unfortunately for Macdonough, administrators in Washington, D.C. still did not fully recognize the diverse types of warships that were needed to accomplish this task.

Figure 10. William Jones, Secretary of the Navy (1813-1814). Portrait by Gilbert Stuart. Courtesy Navy Art Collection, Naval Historical Center, Washington, D.C.

Lake Champlain and the Richelieu River presented a unique tactical scenario. Together the waterways comprised a single invasion route capable of striking at the heart of American and Canadian defenses, yet conditions on the lake and river called for significantly different warship designs. On Lake Champlain, armed sloops, schooners, brigs, and even frigates were suited to the broad, relatively deep waters where larger warships could maneuver under sail. In the confined waters of the Richelieu River, oared warships with a shallow draft were considerably more effective.

The hazards associated with using large sailing warships to conduct operations inside the Richelieu became painfully apparent to the Navy Department early in 1813. On 3 June, Lieutenant Sidney Smith and Sailing Master Jairus Loomis surrendered the American sloops Growler and Eagle to a detachment of British row galleys less than three miles (4.8 km) from
Isle aux Noix. Macdonough had dispatched the two vessels for patrol duty along the border "to prevent smuggling and the enemy’s gunboats (or galleys) from making excursions in our waters." On the morning of 3 June, Smith sighted the British hovering off Rouses Point, New York, and pursued them into the Richelieu River. By the time he realized his mistake it was already too late.  

Major George Taylor of the British Army received word of the approaching American sloops and sent his three row galleys to intercept them along with a contingent of Royal Artillery and the 100th Regiment of Foot. Smith tried desperately to beat his way back upriver to safety, but with no success. Facing narrow, shoal waters, adverse winds, and an opposing current, Growler and Eagle made only minimal headway as they tacked back and forth inside the channel. The British galleys used their oars to out maneuver their prey, swarming upon the two vessels like stinging insects. Round shot and sniper fire from the opposing riverbanks cut indiscriminately through the Americans’ rigging, hulls, and crews for more than three hours before they finally struck their colors. In one swift stroke, half of Macdonough’s squadron had been captured, thus stripping him of naval supremacy on Lake Champlain.  

Lieutenant Smith’s fiasco in the Richelieu River awakened the Navy Department to the importance of augmenting its force with smaller, more versatile oared warships. Secretary Jones subsequently gave Macdonough a free hand to rebuild his squadron in such a manner that would ensure his control of not only the broad lake, but the surrounding river systems as well. "You are to understand," wrote the Secretary, "that upon no account are you to suffer the enemy to gain the ascendancy on Lake Champlain." Specifically, Macdonough’s orders gave him permission to add "4 or 5 barges, of 50 or 60 feet long, to carry a 12 or 18 pound carronade."  

The "barges" of which Secretary Jones spoke are interchangeably referred to as "gallies" in his correspondence with Macdonough. However, they were a smaller, lighter-built version of the two-gun row galleys that would come into service on the lake the following year. William Doughty (Figure 11), Chief Naval Constructor at the Washington Navy Yard in Washington, D.C., completed the first design for this new class of gunboat in June 1813. His drawings showed a shallow, open, double-ended vessel with no living quarters; it measured 50 feet (15.24 m) in length, 12 feet (3.65 m) in beam, with a depth of 3 feet, 6 inches (1.06 m) and a displacement of 19 tons. Doughty never specified a particular type of sail rig, but his design did include stations for up to 28 oars. The specified armament for each barge was a single gun mounted on the bow. When fitted for sail, they stepped a single mast and the rig varied from a
triangular (or sometimes quadrilateral) lateen sail to a lug sail depending upon the shipwright's preference. Doughty's barge clearly bore the mark of a specialized warship intended for use on inland and coastal waterways where maneuverability was essential.

After the loss of Growler and Eagle, Macdonough worked diligently at Burlington, Vermont, to reassemble his squadron. He focused his efforts on outfitting the new sloops Preble (11 guns), Montgomery (11 guns), Frances (6 guns), and Wasp (3 guns), as well as laying keels for two of Doughty's 50-foot barges. His shipwrights also built two scows each mounting a single 12-pounder. These floating batteries were most likely flat-bottomed boats with broad, square ends. Only three of Macdonough's original warships—the sloop President and the two gunboats—remained on the lake at this time. He employed them as guard vessels, along with the scows, to protect his building operations in Burlington Harbor.

Figure 11. William Doughty, Chief Naval Constructor, Washington Navy Yard. Doughty prepared designs for two classes of row galleys in 1813. The 50-foot barge was considered to be a light or "second class" galley, while the 75-foot row galley constituted a heavier "first class" version intended to carry a larger crew and more firepower. Both classes were employed on Lake Champlain by 1814. Portrait by Charles B. King. Photograph Courtesy of the Peabody Essex Museum, Salem, Massachusetts.
The sloop President had recently undergone repairs after running aground off Plattsburgh that spring. Meanwhile, Gunboats No. 169 and No. 170 had spent most of the year out of service. One sustained hull damage after blowing ashore near Shelburne Bay in January and the other capsized four months later off Cumberland Head, New York. Macdonough temporarily laid up the two vessels near Plattsburgh at the end of May in order to provide crews for Growler and Eagle. Smith’s loss of the two sloops forced him to borrow a detachment of soldiers from the U.S. Army’s cantonment at Burlington and place No. 169 and No. 170 back on duty. By 11 July, however, the gunboats had been mothballed once again. Macdonough had them moored next to President, which was protected by a battery of guns situated on the bluffs overlooking Burlington Harbor. “This should not have been done,” noted the commodore, “had I officers & men of my own.”

Macdonough had his new barges Ludlow and Wilmer built and ready for their guns within a month of receiving the Navy Department’s orders. He opted to leave them unarmed, however, until the remainder of his squadron was prepared to sail. Macdonough intended to take two long 18-pounder cannon from the Burlington Battery and mount them on the barges. Yet for the time being these guns helped protect his other warships fitting out in the harbor. Moreover, he still lacked the officers and sailors needed to man the barges and place them into service. The U.S. Army’s battery afforded the best protection under the present circumstances. On 11 July, Macdonough informed the Navy Department of his plan and assured Secretary Jones that the barges would be armed “as soon as I get a little more forward with the naval force to make it prudent to take them [the guns] from the battery.”

In late July of 1813, before the new American warships were ready, the British carried out a raid on Lake Champlain. Commanded by Lieutenant Colonel John Murray of the Royal Army, the expedition left Isle aux Noix with the sloops Broke (formerly Growler) and Shannon (formerly Eagle), three gunboats, and forty bateaux. Eight local merchant ships were captured or destroyed and government buildings at Plattsburgh, New York, and Swanton, Vermont, were burned.

Rather than risk losing any more of his vessels at such a crucial hour, Macdonough took a defensive position inside Burlington Harbor. On 2 August, British Captain Thomas Everard approached with Broke, Shannon, and one gunboat to within range of the American squadron. He reported an exchange of fire with two “gun schooners” and two “scows mounting one gun
each as floating batteries."48 Failing to lure the Americans out of the harbor, the British withdrew and two days later returned to Canada.

Evidence supports the notion that the "gun schooners" were in fact No. 169 and No. 170. Macdonough had them under the protection of the Burlington Battery since July and they were the only schooner-rigged vessels in his squadron in 1813. The gunboats' original armament consisted of one 12-pounder on a circle just forward of amidships, which we can assume was still serviceable at the time of the raid.49 Shortly after the engagement, Macdonough removed their rigs and converted them into strictly rowing vessels. This subsequently allowed him to increase their armament. "I have anticipated your permission," he wrote to Secretary Jones, "and have taken the masts out of our two gunboats which boats from their rig and construction would only carry a light twelve pdr. and have fitted them with thirty oars each & to carry a long twenty-four, but not having such guns here, they are completed with an eighteen pdr. on each."50 No. 169 and No. 170 probably emerged from this refit looking much like Ludlow and Wilmer.51

On 6 September 1813, Macdonough's refurbished squadron left Burlington Harbor. He proudly announced to Secretary Jones three days later that the British "if not acknowledging our ascendancy" certainly evinced "an unwillingness...to determine it."52 At this point, Macdonough apparently chose to lay up at least two of his oared warships, as they did not offer any real advantage for patrols on the open lake. In fact, the commodore was learning that they demanded a disproportionate number of sailors for the number of guns they could bring to bear. He hesitated to take them permanently out of service, however, should he need them for maneuvers along the northern reaches of the lake.53 Macdonough had no intention of venturing over the border at such a late point in the season, for Secretary Jones' instructions had been to regain the lake, stay on the defensive, and keep all enemy ships confined within the Richelieu River until the onset of winter made navigation impossible.

Tactical Trials II: The Wilkinson-Hampton Debacle

The War Department had different plans for the American squadron on Lake Champlain. Secretary of War John Armstrong had long championed an assault on the St. Lawrence River Valley via Lake Champlain and the Richelieu River, but many of his colleagues considered it too well defended in early 1813. The American strategy focused instead on Kingston, York, and Forts George and Erie inside Upper Canada.54 Pecuniary concerns, factionalism, and regionalism also played a role in this decision. President Madison and the Republican Party garnered extensive support from the frontier settlements of New York, Pennsylvania, and Ohio,
and war fervor in those areas proved the greatest. However, a successful raid on York (Toronto) in late April was quickly overshadowed by humiliating defeats at Stoney Creek (6 June) and Beaver Dams (24 June) along the Niagara River. Armstrong seized upon these failures to redirect efforts toward Lower Canada.55

Secretary Armstrong's strategy called for a pincer assault on Montreal by way of the Upper St. Lawrence River and the Lake Champlain-Richelieu River corridor. If executed correctly, the twin attacks would force the British to split their armies in opposite directions. Armstrong entrusted this complex operation to a pair of profoundly incompetent leaders: Major General James Wilkinson, who was massing troops at Sackets Harbor, Lake Ontario, and Major General Wade Hampton, commander of the U.S. Army in the Champlain Valley. From the outset Wilkinson and Hampton procrastinated, bickered, and mismanaged logistics. Separated by less than one hundred and fifty miles, they nevertheless ignored one another and stubbornly insisted on conducting their own ill-conceived offensives.56 In the disorder that prevailed, Macdonough remained uninformed about the operation until a few days before its intended departure.

General Hampton and the War Department incorrectly assumed that the Richelieu River presented the U.S. Navy with the same tactical and navigational considerations as Lake Champlain, and that one squadron could manage with equal facility on both waterways. This simply was not true, for as Growler and Eagle had demonstrated in June, Macdonough's cumbersome sloops could not safely enter the river. Thus Macdonough's claim to naval superiority did not extend farther north than Rouses Point, New York, in the fall of 1813. Ludlow, Wilmer, No. 16, and No. 170 were suited for river service, but they only mounted a single cannon each and together carried less than 150 sailors and soldiers. Their numbers and firepower were not sufficient to the task. Consequently, when Hampton finally consulted Macdonough on 7 September about using his squadron against British positions on the Richelieu River, the commodore flatly rejected the plan.57

Seeing no hope of success on the Richelieu without naval support, Hampton chose instead to cross the border to the west and proceed down the Chateauguay River in the direction of Lachine, situated a few miles above Montreal on the St. Lawrence. However, French-Canadian regulars and militia turned back the Americans at Chateauguay, New York. By November, Hampton had dismissed any expectation of a rendezvous with Wilkinson's army and
retreated to winter quarters at Plattsburgh (Figure 12). Secretary Armstrong scrambled to deflect the blame for this dismal expedition toward Wilkinson, Hampton, and of course, Macdonough.58

Figure 12. General Wade Hampton’s campaign into Lower Canada, 1813. Superimposed dashed-arrow and place names provided by author to denote the track of the American march and for geographical reference. “Skeleton Map, Explanatory of Operations of Wilkinson and Hampton, Oct. and Nov. 1813,” National Archives of Canada, NMC-6755.

Macdonough’s refusal to assist the War Department caused immediate controversy in Washington, D.C. Armstrong insinuated that mismanagement of the American squadron had undermined Hampton’s chances for success. “It is much to be regretted,” carped the Secretary, “that our naval means on Lake Champlain should have fallen so far short of their object.”59 In Armstrong’s opinion, Macdonough should have been ready to go on the offensive in the Richelieu River and help reduce Isle aux Noix, St. John, and Montreal. Macdonough’s failure to take command “of the narrow waters on which these posts stand” forced the U.S. Army to “pass up the enemy in their fortresses.”60

Even President Madison slighted the young commodore’s sense of reputation when he extolled the accomplishments of Oliver Hazard Perry on Lake Erie and omitted mention of Lake
Champlain during his annual address to Congress. Perhaps Madison wanted to downplay the recent setbacks in this theater. Nevertheless, Macdonough felt it necessary "to lament [this] apparent tacit disapprobation" in a letter to Secretary Jones.61 The Navy Department had made it plain that control of Lake Champlain was a top priority in 1813. To risk losing it for the second time in one year was unnecessarily reckless. Macdonough further reminded Jones that he had always kept the "one great object of the war in vision (the conquest of Canada)," and that he "manifested a perfect willingness to see the enemy on fair terms."62

The American oared warships on Lake Champlain in 1813 were weak in comparison to those of the British Royal Navy stationed inside the Richelieu River. Operating against heavily gunned opposition in such a challenging environment would have required the construction of a superior number of these vessels well in advance. Macdonough's sloops could not stand in at the last moment as a substitute. An amphibious attack staged deep inside the confines of the Richelieu River demanded maneuverability under sails and oars in order to land troops, support their advance with a steady bombardment, and to protect supply lines.63

*Preparations for an Arms Race*

Although Macdonough's squadron never accompanied Hampton over the lines that fall, his gunboats and barges did offer a degree of added security by blockading the mouth of the Richelieu River for the remainder of the navigation season. These patrols protected the U.S. Army's eastern flank after it entered winter quarters at Plattsburgh. Macdonough kept his oared warships close to the border despite the fact that the area appeared "full of rocks" due to the water level being "about three feet lower than it was ever known."64 Luckily for the Americans, *Ludlow, Wilmer, No. 169*, and *No. 170* excelled under these circumstances, and Macdonough assured Secretary Jones of their "vigilance in preventing any molestation of the enemy in these waters."65 He gave Lieutenant Stephen Cassin command of the detachment, as he considered the young officer to be "a man of firmness when put to the test...whose judgment is good."66

The British Royal Navy made several forays out of the Richelieu River through the months of November and December. One of the boldest occurred on 3 November when Captain Daniel Pring succeeded in burning the U.S. Customs House and barracks at Windmill Point, Vermont.67 American spies reported that these attacks were likely to get worse the following year, for the British were bringing up an additional twelve row galleys from the St. Lawrence River to Isle aux Noix. The galleys, it was said, each mounted a long 24-pounder in the bow fixed in line with the keel and a traversing 32-pounder cannonade in the stern."68 "Every
exertion will be made by the enemy,” wrote Macdonough, “to have a superior force on the lake by [its] opening.”

It was in this deteriorating situation that Macdonough penned a letter to the Navy Department on 23 November proposing that twenty to twenty-five row galleys be added to the American squadron over the upcoming winter. These warships would counterbalance the British increases and strengthen the American blockade of the northern reaches of the lake. But more importantly, an expanded flotilla of heavy, first class row galleys would enable Macdonough to effectively cooperate with the army in the next invasion of Lower Canada.

On 7 December 1813, Secretary Jones instructed Macdonough to build fifteen galleys “for which plans and draughts will be immediately forwarded to you, similar to those now constructing...at Baltimore for the flotilla of the Chesapeake.” The wisdom of this decision was confirmed when Jones received news of a British incursion of “six heavy galleys manned with upwards of 400 men” that had recently outrun Macdonough’s larger warships off Chazy, New York. Contrary winds left the American sloops unable to follow, although Lieutenant Cassin “instantly weighed and swept in pursuit” with Ludlow, Wilmer, No. 169, and No. 170. He attempted to delay the British galleys “thereby to enable the sloops to get up.” The chase continued for three hours before the British escaped back into the Richelieu River.

This brief encounter marked the close of naval maneuvers on the lake in 1813. By 9 December, all of Captain Pring’s oared vessels were being pulled ashore for storage at Isle aux Noix. It appeared as though the British had become equally reluctant to gamble their vessels and crews at such a late point in the year. Less than two weeks later, Macdonough sailed the American squadron up the Otter Creek to winter quarters and began preparing for a massive shipbuilding program at Vergennes, Vermont. Largely ignored throughout the initial two years of the war, the Lake Champlain-Richelieu River corridor was about to become the site of a feverish Anglo-American arms race.

Endnotes: Chapter III

1. Thomas Macdonough’s career in the U.S. Navy has been a popular aspect of many histories dealing with the War of 1812. A wealth of primary source material exists on his professional life, including wartime correspondence with the U.S. Navy Department available at the National Archives in Washington, D.C. In addition, local historical societies and repositories contain valuable materials. The Bailey Howe Library Special Collections Department, for example, at the University of Vermont in Burlington, Vt., has one of Macdonough’s personal account ledgers spanning the years 1813 to 1823, and the Shelburne Museum of Shelburne, Vt., holds a private collection of his papers donated by Rodney Macdonough after the completion of his biography of Thomas, his grandfather. See Macdonough, Life of Commodore Macdonough, 11-19, 33-264. Thomas Macdonough’s autobiography, written in 1823, is also

3. Alexander Murray to Robert Smith, 22 July 1802, Macdonough, Life of Commodore Macdonough, 55-56; Alexander Murray to Robert Smith, 20 August 1802, Bauer, Naval Affairs, 4: 89. Elijah Shaw also provides a detailed eyewitness account of Macdonough's and Decatur's adventures off Tripoli Harbor during the Barbary Wars. He provides information on the Tripolitans' use of row galleys, along with descriptions of these warships, and he further describes how the U.S. Navy eventually adopted the use of similar vessels in its Mediterranean Squadron. See Elijah Shaw, A Short Sketch of the Life of Elijah Shaw, Who Served for Twenty-Two Years in the Navy of the United States, Taking an Active Part in Four Different Wars Between the United States & Foreign Powers (Rochester, N.Y.: Strong & Dawson Printers, 1843), 19-52.


5. William Bainbridge to Robert Smith, 1 November 1803, Bauer, Naval Affairs, 4: 100.

6. Descriptions of these vessels and the dates that they joined the U.S. Navy's Mediterranean Squadron are provided in Bauer, Naval Affairs, 4: 91-120; and Macdonough, Life of Commodore Macdonough, 58-64, 72-73.

7. Macdonough, Life of Commodore Macdonough, 64.


13. Under Dearborn's leadership, American campaigning in the Niagara and Champlain theaters had stalled by late summer 1812. Despite the rhetoric of an intended invasion, Dearborn attempted to negotiate an unauthorized ceasefire with British Lieutenant General Prevost in late August. This may have had a significant influence of Secretary Eustis' decision to turn over at least one prong of the invasion plan to Rensselaer and Smyth. President Madison, for one, felt that Dearborn's inactivity granted the British time to augment their defenses in Canada, which in turn undermined the U.S. Army's efforts to cross the border. On 26 August 1812, Madison sharply denounced Dearborn's ceasefire talks, thus eliminating the idea altogether and increasing the tempo of American mobilization along the border to a desperate pace. William Hull later complained at his court martial that Dearborn had failed to divert British troops away from Detroit toward the Niagara and Champlain Valley frontiers due to his preoccupation with this ceasefire. Dearborn dismissed Hull's accusations, and as one of the presiding officers at the general's trial he had the power to end discussion of the matter. Primary source accounts of this exchange include:

14. Macdonough left Portland, Maine on 4 October 1812. His autobiography states that it took him "about 4 days" journey. Macdonough arrived at Burlington, Vt., on or around 8 October 1812. The next day he crossed Lake Champlain to meet with General Joseph Bloomfield, at which point he officially assumed command of the American squadron. However, he did not reach Whitehall, N.Y., to inspect and actually take over the preparation of his new vessels, until 13 October 1812. See Macdonough, Life of Commodore Macdonough, 26-27, 106-133.


17. In addition to Smith's work on the gunboats, discussed in Chapter II of this dissertation, he also had one of the sloops rebuilding and two others stripped down by the time of Macdonough's arrival to Lake Champlain in October 1812. See Thomas Macdonough to Paul Hamilton, 14 October 1812. Officers' Letters, RG-45, M148, Reel 10, Pt. 2, No. 107, NARA. General Dearborn did not arrive in the Champlain Valley until November 1812. Up to that point General Bloomfield commanded the U.S. Army for all of Military District No. 9 (i.e., Western New York State, the Champlain Valley, and Vermont).

18. President measured 65 feet (19.81 m). Bulldog measured 64 feet (19.51 m), and Hunter measured 61 feet (18.60 m). Gideon King, a local shipowner on Lake Champlain, had kept Juno, Champlain, and Jupiter in constant use since their launching in 1802. See Thomas Macdonough to Paul Hamilton, 26 October 1812. Officers' Letters, RG-45, M148, Reel 10, Pt. 2, No. 124, NARA; Russell P. Bellico, Sails and Steam in the Mountains: A Maritime and Military History of Lake George and Lake Champlain (Fleischmanns, N.Y.: Purple Mountain Press, 1992, 205-207, 259; Lewis, British Naval Activity, 1-2; Crisman, The Eagle, 6-9; and Macdonough, Life of Commodore Macdonough, 106-119.

19. Thomas Macdonough to Paul Hamilton, 26 October 1812, Officers' Letters, RG-45, M148, Reel 10, Pt. 2, No. 124, NARA.

20. Henry Dearborn immediately wrote to Secretary Eustis requesting clarification of the chain of command on Lake Champlain and Military District No. 9. See Henry Dearborn to William Eustis, 16 October 1812, cited in Mahon, The War of 1812, 94. This request came just days after Macdonough had sent a letter along with a copy of his orders to Dearborn requesting that President be placed under his command, as it was proper according to his instructions from Navy Secretary Hamilton. The issue remained unresolved as late as 26 October 1812. By November, however, President had joined the American squadron as Macdonough's flagship.


22. Shipwrights Adam and Noah Brown of New York City contracted to refit and build warships for the U.S. Navy on Lake Champlain in 1813 and 1814. See Adam and Noah Brown to Thomas Macdonough, 15 September 1813, Macdonough Manuscript Collection (hereafter cited as Macdonough Collection), Manuscript Number (hereafter cited as MS #) 41.31, Shelburne Museum, Shelburne, Vt. (hereafter cited as SMV); William Jones to Thomas Macdonough, 28 January 1814, Bauer, Naval Affairs, 4: 330-331; William Jones to John Bullus, 10 February 1814, Bauer, Naval Affairs, 4: 333; and Noah Brown,

23. Thomas Macdonough to Messrs. Reed and Hart, Merchants of Whitehall, 19 October 1812, Miscellaneous Letters Received by the Secretary of the Navy (hereafter cited as Miscellaneous Letters Received), RG-45, M124, Reel 65, Pt. 1, No. 95, NARA. See also Richard P. Hart and Reed to Thomas Macdonough, 19 April 1814, Macdonough Collection, MS #4152, SMV.


25. Thomas Macdonough to Paul Hamilton, 14 October 1812, Officers' Letters, RG-45, M148, Reel 10, Pt. 2, No. 107, NARA.

26. Macdonough, *Life of Commodore Macdonough*, 109. See also Thomas Macdonough to Paul Hamilton, 26 October 1812, Officer's Letters, RG-45, M148, Reel 10, Pt. 2, No. 124, NARA. Macdonough noted in this letter that his "sloops will require at least twenty men each, the gunboats will require twelve, for their proper management."

27. Thomas Macdonough to Paul Hamilton, 26 October 1812, Officers' Letters, RG-45, M148, Reel 10, Pt. 2, No. 124, NARA.


30. Had the U.S. Army achieved success at Montreal this late in the season it would have gained a decisive advantage for the upcoming campaign year of 1813. However, even feinting at such a significant target served American interests by causing the British Army to recall its troops from Upper Canada, thus reducing its ability to launch a counterattack along the Niagara Frontier. For a full explanation of Dearborn's reasoning see Henry Dearborn to William Eustis, 3 November 1812, 8 November 1812, cited in Quimby, *The U.S. Army in the War of 1812*, 81; and Mahon, *The War of 1812*, 94.


33. Lieutenant Colonel Zebulon Pike led the only U.S. Army force that crossed into Canada during Dearborn's expedition in 1812. On 19 November, Pike and a small detachment of men advanced over the lines and forded the Lacolle River, a tributary of the Richelieu, where they besieged a blockhouse. The garrison of Canadians and Amerindians inside the blockhouse opened fire on their attackers. In the confusion that ensued, Pike's men accidentally began firing upon each other from different positions
around the building, while the majority of the Canadians and Amerindians escaped into the wilderness. Pike did succeed in burning the blockhouse, but suffered at least eleven friendly-fire casualties in the skirmish. For a detailed account of the operation, see Quimby, *The U.S. Army in the War of 1812*, 81-82; and Everest, *Champlain Valley*, 92.

34. Thomas Macdonough to Paul Hamilton, 20 December 1812, Officers’ Letters, RG-45, M148, Reel 10, Pt. 2, No. 227, NARA. The unpredictable weather had already begun to threaten the American squadron as Macdonough pushed the limits of the navigation season. Lieutenant Sidney Smith, in command of Growler, reported to Macdonough earlier in December that his sloop had been dismasted in a squall—a harbinger of the trials and tribulations that would confront the squadron through the upcoming year. Ironically, Dearborn cited the failure of the U.S. Navy to assert control over the Richelieu River as one of the key factors that undermined his expedition in 1812. He further contended that any push against Montreal along the Lake Champlain-Richelieu River would suffer from the presence of a British gunboat flotilla at Isle aux Noix, Quebec. As Macdonough understood the strategic plan for 1812, his squadron was to be engaged as soon as possible in assisting Dearborn and the U.S. Army by establishing control of Lake Champlain, not the riverways of the surrounding watershed. Macdonough had prepared a force capable of operating on the lake from the American-Canadian border to the southernmost terminus at Whitehall, N.Y.


36. Thomas Macdonough to William Jones, 4 June 1813, Officers’ Letters, RG-45, M148, Reel 11, Pt. 2, No. 110, NARA. The British Royal Navy had been conducting raids and harassing shipping in that quarter since the opening of navigation in 1813. Macdonough expressly cautioned Smith against crossing the border into the Richelieu River lest the American sloops might become trapped inside enemy territory.

37. Thomas Macdonough entered the U.S. Navy in February 1800, only five months earlier than Sidney Smith who entered on 26 July 1800, and both men were at the rank of lieutenant at the time of Macdonough’s appointment as commander on Lake Champlain in September 1812. Macdonough was somewhat younger than Smith. Perhaps Smith’s bravado while in command of Growler and Eagle can be attributed in part to an injured sense of honor suffered when Macdonough was sent by the Navy Department to replace him as the ranking officer on the lake. Being passed over for the command may have been particularly stinging after Smith had just finished completing one of the gunboats for service with virtually no support from the Navy Department. See Service Record Abstracts, RG-24, M330, NARA. For Macdonough’s impression of Smith as a naval officer, see Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815, Subject Files, Class N, Subclass NI, Promotion and Privileges, Rank, Retirement, and Reinstatement (hereafter cited as Promotion and Privileges), Box 224, RG-45, NARA; and “Roll of Commissioned & Warrant Officers Late Under Command of Capt. Th. Macdonough to May 6th, 1815” (hereafter cited as “Roll of Commissioned & Warrant Officers Under Capt. Macdonough”), Subject Files, Class N, Subclass NA, Complements, Rolls, and Lists of Persons Serving in or with Vessels or Stations (hereafter cited as Lists of Persons Serving With Vessels or Stations), Box 224, RG-45, NARA.


40. As a point of clarification, it is important to note that Secretary Jones and Thomas Macdonough continued this practice throughout their wartime correspondence. In fact, by the time of the Battle of Plattsburgh Bay (11 September 1814), Macdonough technically has gunboats, barges, and row galleys in his oared flottilla, but they are all referred to interchangeably as his “gallies.” Essentially the word became used to describe any oared warship attached to the American squadron by time of the Battle of Plattsburgh Bay.

41. A copy of William Doughty’s 50-foot barge design of June 1813 (the predecessor of his larger, 75-foot “first class” row galleys) has been reproduced in Chapelle, American Sailing Navy, 275. A contemporary description of this design can be found in William Jones to Thomas Macdonough, 7 December 1813, Letters Sent by the Secretary of the Navy to Officers (hereafter cited as Letters Sent to Officers), RG-45, M149, Reel 11, Pt. 2, No. 163, NARA; and Charles W. Dulles, Extracts from the Diary of Joseph Healy Dulles (Philadelphia: J. B. Lippincott Co., 1911): 5.


45. Thomas Macdonough to William Jones, 11 July 1813, Dudley, The Naval War of 1812, 2: 514-515. Macdonough was ready to ballast the vessels by 14 July 1813. See Benjamin Welles to Thomas Macdonough, 14 July 1813, Monkton Iron Works Papers (hereafter cited as Monkton Iron Works), No. 73, Bixby Library, Vergennes, Vt. (hereafter cited as BixL). Welles writes: “I send by your boat eighty bars ¾ inch square iron & sixty bars 1 inch iron weight 14. 1.25 being 710 feet—I shall lodge in Burlington tomorrow night and will hand you a regular bill of it and not detain your men now to make it out.” It is also important to note that the names of the barges (Ludlow and Wilmer) may not have been given to the warships until June 1814. Evidence suggests that they were simply referred to in the squadron as No. 1 and No. 2 until being incorporated into Sailing Master Daniel Stellwagon’s Division No. 3 of Galleys later in the summer of 1814.


47. Bellico, Sails and Steam, 208-210; Everest, Champlain Valley, 103-122; and Crisman, The Eagle, 10.


49. “Inventory Stores Belonging to U.S. Gunboat No. 169, Schooner Rigged,” in “Agreement of Storage for Gunboat No. 169 between J. Montresor Haswell and John Winans,” 23 June 1809, in “Court Martial Records, John Montresor Haswell, 16 February 1810,” Court Martial Records, RG-45, M273, Reel 5, No. 75, NARA. This inventory was performed as part of a storage agreement for No. 169 and No. 170 between John M. Haswell and John Winans at Whitehall, N.Y. As mentioned earlier in this chapter, a quick glance at this inventory shows all of the rigging components needed for a schooner-rigged vessel.

50. Thomas Macdonough to William Jones, 14 August 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 106, NARA.

51. Macdonough’s decision to convert Gunboats No. 169 and No. 170 from a schooner-rig into open, undecked galleys deserves some note. The gunboats only required twelve-man crews when rigged as schooners. See Thomas Macdonough to Paul Hamilton, 26 October 1812, Officers’ Letters, RG-45, M148, Reel 10, Pt. 2, No. 124, NARA. Refitting the two gunboats as strictly oared warships increased the number of men needed to more than sixty total. On a station already desperate for recruits, this was a serious investment for such a minimal gain in firepower. One possible explanation might be found in how
these vessels were perceived to be most useful to the navy. Macdonough saw his oared warships as a purpose-built auxiliary force that could be brought in and out of service as needed to patrol shallow or confined waters and deal with contrary winds and currents.

52. Thomas Macdonough to William Jones, 9 September 1813, Commanders' Letters, RG-45, M147, Reel 5, Pt. 1, No. 122, NARA.

53. Macdonough admitted that he hoped to avoid a situation in which the British galleys "could work where I should want room." Perhaps the specter of Growler and Eagle made him cautious of the rivers and shoal waters straddling the northern border of Lake Champlain. See Thomas Macdonough to William Jones, 9 September 1813, Commanders' Letters, RG-45, M147, Reel 5, Pt. 1, No. 122, NARA.

54. John Armstrong to William Eustis, 2 January 1812, Cruikshank, Niagara Frontier, 1: 31-33; and Skaggs and Altop, A Signal Victory, 9.

55. Quimby, The U.S. Army in the War of 1812, 217-229, 301-313, 319-347; and Hickey, A Forgotten Conflict, 126-130, 143-146.

56. Wade Hampton to John Armstrong, 23 August 1813, cited in Quimby, The U.S. Army in the War of 1812, 308-309; and Cruikshank, Niagara Frontier, 7: 54-55. All hopes for a coordinated, dual advance evaporated as the two generals became more fixated on clarifying the nature of their respective commands than on military objectives. Wilkinson's checkered reputation for political intrigue had left him eager to reassert his authority in the field. Hampton, for his part, detested Wilkinson and threatened to resign unless given a "distinct and separate command." Armstrong eventually mediated a vague agreement between the feuding dilettantes to ensure that their efforts would be directed toward Montreal. Hampton decided to send Colonel Isaac Clark with a small detachment of soldiers to make a convincing feint at St. Armand, near Missisquoi Bay, while he led a joint army-navy force down the Richelieu River taking possession of Isle aux Noix, St. John, and eventually Montreal. Clark's "petty war" along the Vermont-Canadian border was intended to distract the British, thus opening the way for the main thrust of the attack embarking from Plattsburgh on the opposite side of the lake. See Vermont Centinel, 15 October 1813 cited in Karen S. Campbell, "Propaganda, Pestilence, and Prosperity: Burlington's Camptown Days during the War of 1812," Vermont History, 64, no. 3 (1996), 150. See also Isaac Clark Papers, Bailey Howe Special Collections, University of Vermont, Burlington, Vt.

57. Bellico, Sails and Steam, 211; Dudley, The Naval War of 1812, 2: 583; Macdonough, Life of Commodore Macdonough, 128-129; and Quimby, The U.S. Army in the War of 1812, 324-325.

58. Hickey, A Forgotten Conflict, 126-158; Quimby, The U.S. Army in the War of 1812, 346-347; and Macdonough, Life of Commodore Macdonough, 128-129.

59. John Armstrong to Wade Hampton, 11 September 1813, cited in Macdonough, Life of Commodore Macdonough, 128; John Armstrong to James Madison, 21 September 1813, James Madison Papers, ser. 1, vol. 53, 47, Manuscript Division, Library of Congress, Washington, D.C. Copies of the same correspondence, with explanatory notes, can also be found in Dudley, The Naval War of 1812, 2: 583. See also Hickey, A Forgotten Conflict, 144; and Quimby, The U.S. Army in the War of 1812, 325.


61. Thomas Macdonough to William Jones, 18 December 1813, Commanders' Letters, RG-45, M147, Reel 5, Pt. 1, No. 190, NARA. Macdonough's words best illustrate his slighted sense of honor: "It has never been my good fortune to fall in with the enemy and I have to lament the apparent tacit disapproval of the President of the United States in his late communication to Congress by failing no mention made of this part of our force employed against our enemy in Canada."

62. Ibid.

63. Comparative information on tactical considerations involved in the planning of amphibious operations during the early nineteenth century can be found in Charles J. Fedorak, "The Royal Navy and British
Amphibious Operations during the Revolutionary and Napoleonic Wars," Military Affairs, 52, no. 3 (1988), 141-146. For details on the layout and construction of Isle aux Noix’s defenses during the War of 1812, see Andre Charbonneau, The Fortifications of Isle aux Noix, A Portrait of the Defensive Strategy on the Upper Richelieu River Border in the 18th and 19th Centuries (Ottawa, Ontario: National Historic Sites Parks Canada, Studies in Archaeology, Architecture, and History, 1994), 119-145. For information on the number of oared warships that the British had at Isle aux Noix by 1813, see Lewis, British Naval Activity, 2-30. Lewis estimates five Royal Navy galleys present in September, six in November, and a plan to add another nine to thirteen through the month of December. Most of these vessels would have carried between one and two 24-pounder guns. See also Thomas Macdonough to William Jones, 23 November 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 169, NARA.

64. Thomas Macdonough to William Jones, 18 October 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 144, NARA.

65. Thomas Macdonough to William Jones, 18 October 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 144, NARA. A bill sent to the Navy Department by Adam and Noah Brown of New York City shows that Macdonough still had shipwrights employed on the lake in the final weeks of September 1813. See Adam and Noah Brown to Thomas Macdonough, 15 September 1813, Macdonough Collection, MS #41.31, SMV.

66. Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815, Subject Files, Class N, Subclass NI, Promotion and Privileges, Box 224, RG-45, NARA; and “Roll of Commissioned & Warrant Officers Under Capt. Macdonough,” Subject Files, Class N, Subclass NA, Lists of Persons Serving With Vessels or Stations, Box 224, RG-45, NARA.

67. Daniel Pring to George Prevost, 3 November 1813, British Military and Naval Records, RG-8, ser. 1, vol. 731, C-3244. See also Plattsburgh Republican, 20 November 1813, 3, c. 1 for details concerning another British raid on 17 November 1813. Lewis provides an overview of these raids late in the navigation season of 1813. See Lewis, British Naval Activity, 17.

68. Thomas Macdonough to William Jones, 23 November 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 169, NARA.

69. Thomas Macdonough to William Jones, 9 December 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 187, NARA.

70. Thomas Macdonough to William Jones, 23 November 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 169, NARA. Macdonough wanted the flotilla “to go down the Sorrell River [Richelieu River] pass the Chamblee Rapids (of six miles) and enter the St. Lawrence, there to cooperate with the Army.” See also Chapter I of this dissertation.

71. William Jones to Thomas Macdonough, 7 December 1813, Letters Sent to Officers, RG-45, M149, Reel 11, Pt. 2, No. 163, NARA.

72. Thomas Macdonough to William Jones, 5 December 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 185, NARA.

73. Thomas Macdonough to William Jones, 9 December 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 187, NARA.
74. Thomas Macdonough to William Jones, 18 December 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 190, NARA; Thomas Macdonough to William Jones, 23 December 1813, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 1, No. 196, NARA. By January 1814, Macdonough informed Secretary Jones that he had “made arrangements for timber, iron, &c for building the galleys as you directed & have waited your orders to send for carpenters and commence building.” See Thomas Macdonough to William Jones, 17 January 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 14, NARA; and Thomas Macdonough to William Jones, 6 February 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 46, NARA.
CHAPTER IV

"GALLIES ARE UNQUESTIONABLY THE BEST DESCRIPTION OF VESSELS FOR THE NORTHERN PARTS OF THIS LAKE": THE CONSTRUCTION AND OUTFITTING OF THE U.S. NAVY ROW GALLEY *ALLEN*

The U.S. Navy Department added one final class of oared warship into its squadron on Lake Champlain during the winter of 1813-1814. Along the north bank of Otter Creek, just below the falls at Vergennes, the row galleys *Allen*, *Borer*, *Burrows*, *Centipede*, *Nettle*, and *Viper* took shape under the direction of master shipwright Noah Brown of New York City. Their design came straight from draughts recently prepared by William Doughty in Washington, D.C. On paper, the galleys resembled a larger, more heavily armed version of the barges *Ludlow* and *Wilmer* built the previous year. They measured 75 feet (22.9 m) in length, 15 feet (4.6 m) in beam, and drew no more than 22 inches (55.9 cm) of water when fully loaded (Figure 13). Their ideal armament called for a 42-pounder carronade on the bow and a long 24-pounder in the stern, both mounted on slides with a 1/8-of-a-circle traverse. Although Doughty provided the guidelines for building the galleys, Brown ultimately modified the design.¹

---

Figure 13. Design plan for a "first class" (75-foot) row galley. Plan approved by Chief Naval Constructor William Doughty at the Washington Navy Yard in Washington, D.C. on 11 October 1813. National Archives II, College Park, Maryland. Ink tracing of original by E. B. Emery.
Secretary Jones’ approval of the project must have surprised some of his acquaintances in light of his known disdain for oared warships. Earlier in the war he warned that these vessels offered few advantages and that the hard labor at the sweeps and lack of onboard accommodations would scare off recruits. In a letter to Lloyd Jones, his brother, the Secretary complained that such vessels were “scattered about in every creek and corner as receptacles of idleness and objects of waste and extravagance without utility.” His view changed, however, as the war continued and the federal government slipped deeper into debt. Doughty’s row galleys could be cheaply mass-produced in remote areas using local resources. Furthermore they appeared equally suited for offensive and defensive operations on both Lake Champlain and the Richelieu River.

Building Mr. Brown’s “Mosquito Fleet”

Noah Brown arrived at Vergennes by the last week in February leading a procession of tools and equipment as well as carpenters, dubbers, joiners, caulkers, and other laborers. Scores of shipwrights in New York, Philadelphia, and Baltimore had found themselves abruptly out of work when the British Royal Navy tightened its blockade along the Mid-Atlantic in 1813. Many sought alternative sources of work, including projects that took them deep inland to brave the rigors of the northern lakes. Brown brought hundreds of these men with him to Lake Champlain promising at least two months of steady work, lodgings, and pay.

The Browns came highly recommended by the Navy Department. Noah, and his brother Adam had already spent a good deal of their careers building smaller vessels such as sloops, schooners, and gunboats. Noah, in particular, developed a reputation as an energetic and resourceful craftsman while assembling two brigs and three gunboats for Oliver Hazard Perry’s squadron on Lake Erie in 1813. He kept the job simple and employed shortcuts, but never sacrificed structural integrity. When one employee complained of being rushed to the point of shoddy workmanship, Brown reminded him that “plain work is all that is required; they will only be wanted for one battle; if we win, that is all that is wanted of them; if the enemy are victorious, the work is good enough to be captured.”

Macdonough’s temporary shipyard at Vergennes must have seemed a great improvement over the previous winter’s yard on Lake Erie (Figure 14). The village offered local industry, raw materials, and somewhat reliable overland connections with New York City
and the Hudson River Valley, Burlington, Vermont, and Boston, Massachusetts. A sawmill on the Otter Creek could be employed to cut thousands of feet of planks, the furnaces and forges of the nearby Monkton Iron Works could produce iron fasteners and even round shot, and the surrounding forests held an abundance of white and red oak, pine, ash, hard maple, and beech. Finally, the yard was located seven miles (11.3 km) upstream of the lake, providing a measure of protection from enemy raiding parties. Within days of Brown's arrival, the tiny community resounded with the noise of axes, adzes, hammers, and saws transforming raw timber into hull components.

Brown's building program met with its first major alteration almost immediately after beginning work. New intelligence from American spies in Canada indicated that the British were preparing a large warship capable of overpowering a galley flotilla on the open lake. This had a profound impact on Macdonough's plans, as he had little choice but to respond to this new threat with a warship of equal or greater size. Brown was ordered to cut timber for a ship of 26 guns, and the original number of row galleys slated for construction was reduced from fifteen to six. This change in the American squadron's composition marked the beginning of a shift from an offensive to a defensive strategy for 1814.

Figure 14. A view of Otter Creek Falls below Vergennes, Vermont, circa 1850s. Macdonough's temporary navy yard would have been located along this basin. Unknown Artist. Courtesy of the Shelburne Museum, Shelburne, Vermont.
By 7 March, Brown’s shipwrights reportedly had the 26-gun Saratoga under construction and sufficient logs for “five gallies.” Building the row galleys started with an inspection of the hull lines and construction plans forwarded by Navy Agent John Bullus in New York City. These plans had to be enlarged to life size before any wood could be shaped and assembled. Brown presumably began the tedious work of enlarging the lines by tracing them in chalk at full scale onto a large, flat floor. This is called “mold lofting,” as it is from these drawings that templates, or “molds,” are made for the hull frames and other structural timbers. Brown most likely had to build his own loft that winter, or improvise another solution. Based on the dimensions provided in the plans, the galleys required a minimum loft space of 7 feet, 6 inches (2.3 m) with an extra cushion of room on all sides for moving and working around the drawing. Flexible battens, temporarily pinned to the floor, helped guide the loftsmen’s hand, ensuring the reproduction of smooth curves. The molds themselves consisted of thin wooden pieces cut and assembled to match the chalked outlines. Brown’s shipwrights could use these patterns to transform raw material into finished hull components. Allen and its five sister galleys probably followed the same lines, which saved time and effort by allowing them to be constructed from one set of patterns.

Brown drove his men at a feverish pace in a shipyard that must have quickly become a quagmire of snow, slush, mud, and wood chips. The archaeological and historical evidence surrounding Allen suggests that they began by laying down a wooden backbone assembly comprised of a keel, stem, and sternpost temporarily supported upright on a bed of heavy blocks called a “slipway.” These components defined the galley’s overall length between perpendiculars and the rake or angle of its ends. Translating the designer’s vision into reality raised a number of issues concerning time constraints, the materials available, and the skill of the hired help. Macdonough’s input concerning the conditions in which the galley would be expected to navigate and fight also required consideration. The timbers going into this assembly had to be carefully cut, shaped, smoothed, and fastened together, for they provided the foundation upon which the hull would be built.11

The keel was Allen’s principle centerline timber, giving it longitudinal strength and protecting the more vulnerable areas of the galleys’ hull in the event of an amphibious troop landing or an accidental grounding. Although many plans and contracts for row galleys called for a single keel timber, it appears that Allen’s keel consisted of two pieces flat-scarfed together
and held tight with iron through-bolts. Once the scarf joint had been properly trimmed to size, pieces of flannel soaked in tar would have been used to line the two corresponding surfaces before fastening. Brown’s men then cut angular grooves, or “rabbets,” along the upper sides of the keel to seat the garboard strake, the lowest run of external planking on the hull. The top edge of these rabbet lines also served as a level baseline from which a number of vertical measurements would be taken later during construction—except at the galley’s ends. At the bow and stern, these grooves were shaped to fit the planking ends where they met the stem and sternpost.

Fairing out Allen’s rigid keel timbers must have been a test of patience and skill. It required an experienced eye to sight the keel along its length and point out places where it deviated from a straight line. Laborers may have used chalk lines to double-check shape and large mallets to knock the timbers back into alignment before securing them in place on the slipway. At least one of Allen’s keel timbers was fashioned out of white oak. This would have undoubtedly been the preferred wood of choice for its stiffness, strength, and ability to hold fasteners. Straightening out all of the bumps and hollows of Allen’s keel must have demanded a generous amount of manpower and patience.

No shoe protected the underside of Allen’s keel. The absence of this “false keel” suggested that the flotilla was not expected to have a lengthy service. Row galleys had a design well suited for deploying troops, equipment, and supplies directly onto shore, activities that involved repeated groundings and would have made covering the bottom of Allen’s keel an important consideration. False keels also increased draft, thus improving the galley’s ability to resist slippage to leeward while underway. Brown may have been saving time by omitting this component or perhaps he felt that the added weight of a false keel might increase the risk of hull distortion on such a long, narrow design. Most importantly, Brown needed to keep the draft of the galley to a minimum in order to allow it to navigate shallow waters and to avoid slowing its turning speed and overall maneuverability.

Allen’s stem included two pieces—a main stem of American elm and an apron of white ash—fayed to one another and seated on a flat scarf at the keel’s forward end. The keel itself tapered slightly in its sided dimension fore and aft in order to better match the basal dimensions of the stem and sternpost. The apron reinforced the stem and fit the heels of the cant frames that presumably rounded out the bow. The forward edge of Allen’s main stem lacked a gripe to cut
the water as the galley advanced and protect the stem in the event of a collision. On such a light, slender vessel, a gripe was probably not needed.

Brown altered Allen's stern design, deviating from Doughty's double-ended design that had curved posts at both ends. In the original plan, the rudder appeared as the only feature distinguishing the stern from the bow. Brown chose to keep Allen sharp at both ends with no stern transom, but opted for a straight white oak sternpost instead of a curved post. He also used a peculiar method of joining the main sternpost to the keel. Larger ships at this time typically had the post mortised into the top surface of the keel and fastened with iron fishplates and bolts. Brown instead extended Allen's main sternpost to the bottom of the hull and joined it to the keel with a flat-scarf, in much the same way that the stem fits the keel's forward end. He reinforced the junction of the horizontal keel and vertical post with a stern knee of American elm. He then attached an outer sternpost of red oak to the after surface of the main post and drove two iron eyebolts into this timber to serve as makeshift gudgeons, a fast and uncomplicated way to hang the rudder.

Brown's choice of red oak and elm at such a crucial location in Allen's hull deserves some discussion. Many shipwrights today find these particular species of wood to be weaker and less durable than white oak and will avoid using them if at all possible. So why would such an accomplished craftsman as Brown use inferior materials? Possibly to reduce the weight in the stern where an enormous gun was to be permanently mounted. White oak is one of the strongest shipbuilding woods, but it is also one of the heaviest at approximately 4.2 pounds (1.9 kg) per board foot. This number increased dramatically if the wood was recently cut. Unseasoned or "green" trees that went fresh from the stump into a hull often contained large quantities of sap. A simpler explanation, however, may be availability.

Ideally, all of the major structural elements comprising Allen's stern would have been fashioned from individual pieces of white oak. If felled in the winter months (when most of the rot-inducing sap collected down in the roots and lower trunk) and allowed to dry up off the ground, this particular species of oak yielded the highest degree of durability. However, Brown's work on Macdonough's warships required hundreds of white oak trees, and his supply of this timber must have been limited, thus requiring a conservative approach to its use at the yard. The main sternpost represented a key component that needed to be of the sturdiest, most durable material available. This did not necessarily hold true for the stern knee and the outer
sternpost. Moreover, red oak and elm are in great supply throughout New England and North America.\textsuperscript{17}

Other than the elm knee, \textit{Allen}'s stern lacked an extensive deadwood structure, a feature typical of larger ships that produced a distinct tapering effect in their run aft. The galley instead showed a taper in its lower, aftermost stern, while the upper portion of this assembly maintained a full, rounded appearance. As a shallow-drafted vessel intended to carry the weight of a 24-pounder cannon far aft, \textit{Allen} would have required substantial buoyancy at its ends. Thus Brown gave the galley’s hull a relatively full, rounded stern—despite its straight post—with the stern knee acting as a deadwood to support its aftermost frames.

Once the keel, stem, and sternpost assemblage had been set up, aligned, and shored for each galley, the shipwrights began the time-consuming task of establishing the breadth or “beam.” Framing the six galleys required more than thirteen hundred floor timbers, first futtocks, and second futtocks to be cut, shaped, and assembled into individual horseshoe-shaped square frames and secured to the galleys’ keels with iron bolts and spikes.\textsuperscript{18} Each frame station comprised five overlapping pieces: a single floor timber that crossed the top of the keel at a right angle along with port and starboard first futtocks and second futtocks. Brown used white oak for \textit{Allen}'s frames, but pieces of American beech, red oak, and white ash also found their way into the assembly.\textsuperscript{19}

Compass timber, grown in a natural curve, was valued for \textit{Allen}'s frames because it best followed the shapes in the mold-loft patterns and offered the greatest strength. The goal was to cut the floors and futtocks along the curve keeping with the grain as much as possible.\textsuperscript{20} The typical order of construction began with the floor timbers. Each floor extended athwartships on a slight upward rise and maintained its moulded and sided dimension over its length. The first futtocks were fastened laterally to the floors and defined the “turn of the bilge,” the curve that united the bottom to the sides of the hull. The second futtocks served as extensions of the floors running parallel to the first futtocks. The heads of the second futtocks completed each square frame, terminating at the level of the sheer line. Nothing fancy in the way of dovetail, mortise-and-tenon, or scarf joints was ever used to secure \textit{Allen}'s frame assemblages. Instead, Brown employed a combination of iron through bolts, spikes, and occasionally hardwood treenails driven fore and aft.\textsuperscript{21}
Erecting Allen's square frames promised to be an awkward business even in skilled hands. They were heavy, bulky objects with little to keep them from twisting and distorting while being hoisted into position. Brown may have used cross-braces to help keep their shape through this vulnerable phase. Once upright and set at a right angle to the keel, or "horned," laborers shored up the frames and secured them in place using an alternating pattern of iron spikes and iron drift bolts. Since saltwater corrosion hardly presented a threat on Lake Champlain, and copper sheathing was not needed to protect from wood-boring teredo worms, Brown opted to use wrought iron fasteners rather than their more expensive copper counterparts.²²

Allen's amidships area consisted of thirteen square frames of the same dimensions and shape.²³ In a long narrow vessel this was commonly referred to as a "dead flat" and it defined the widest point in the hull. The square frames fore and aft of the dead flat narrowed toward the bow and stern. Cant frames then rounded out the galleys' fore and after ends. These were half-frames set at angles against the sides of the apron and stern knee, presenting a flatter surface for attaching the external planking.²⁴ Brown probably fitted hawse pieces in the space between the last of the cant frames and the sides of Allen's stem and sternpost.

With the actual framing of the galleys completed, the next step involved locking these new components securely together into rigid structures. A number of pieces were added for this purpose. Allen's keelson, composed of two flat-scarfed white oak timbers, was laid down atop the floor timbers parallel to the keel. Iron drift bolts and through bolts passed through keelson, floor, and keel at alternating frame stations.²⁵ Those square frames temporarily tacked to the keel with iron spikes were now further pinned by bolts. Unlike other oared warships of the period, no interlocking joint connected the keelson to the apron and the stern knee.²⁶ Brown simply had the keelson tapered in its moulded dimension fore and aft where it terminated into the upward sweep of Allen's ends.

Breasthooks, clamps, thwarts, and deck beams also helped lock the frames in place. Clamps ran fore and aft along the inner faces of the upper futtocks and provided a shelf for the outboard ends of the rowing thwarts. Slightly arched deck beams added lateral stiffness to the hull and supported the planks making up the port and starboard gangways. These deck beams were fastened parallel to and atop the outboard quarter of each thwart, while the center portions of the thwarts provided seats for the oarsmen. Hanging (vertical) and lodging (horizontal) knees
probably reinforced the junction between the square frames and beams at critical points in the hull. The two rowing stations closest to the gun mounts were critical areas that needed reinforcement, for recoil forces from the guns threatened to work the fasteners and components loose over time. Finally, breasthooks, fashioned from compass timber, would have presumably tied the cant frames into the stem, apron, stern knee, and sternpost. These thick crescent-shaped timbers usually bolted directly into the bow and stern assemblages on a horizontal plane.²⁷

At this point, Brown may have nailed long flexible pieces of strapping or “ribbands” to the outboard surfaces of Allen’s square frames. Dubbers could then sight along the ribbands and use adzes to adjust any of the frame surfaces that protruded outboard beyond a fair line. This final shaping and smoothing prepared the galley for its external planking. Allen’s frames in many places did not seat well with the external planking. This appeared consistent with Brown’s “no extras” building philosophy, as a certain degree of roughness would have been acceptable as long as it remained cosmetic in nature.

Under ideal working conditions, Brown might have left Allen’s framework exposed to the weather for a period of time in order to further “season” the wood and allow its main structural components to settle into place before planking.²⁸ However, he did not have the luxury of time at Vergennes in 1814. Once Brown had Allen’s frames set up, he immediately began sheathing them with external and internal planking. This process required hours of sawing and planing. The strakes had to be shaped to fit the hull curvature, pressed flat to the frames, and fastened in place. In addition, the seams of their abutting ends had to be properly staggered or “shifted” so as to prevent them from lining up.²⁹

Typically great care went into choosing long planks free of knots and other imperfections. Brown parted with this convention, for Allen’s hull features rough-edged strakes of varying thickness and the occasional springy spot indicating a fastener that had failed to hit its desired target. Brown even minimized the use of treenails, one of the stronger means of fastening planks to their corresponding frames. Unfortunately, these hardwood dowels had to be split by hand, inserted into pre-drilled holes, pounded home with a mallet, and cut off flush with the sides of the hull—a labor intensive process. Brown reserved these types of fasteners for a few key locations along the footwales and otherwise relied upon iron nails to hold the majority of Allen’s planks in place. Although not the best method available, it saved time and freed up laborers for other tasks.³⁰
As Allen’s planking approached the bow and stern, it was necessary to bend the strakes onto the frames. Shipyards of this period had a number of different ways to accomplish this task. Special kilns were sometimes used to boil the planks in hot water or expose them to steam in order to make them more pliable. This technique also made the wood swell, which meant that the planks would shrink as they dried. The resulting change in dimensions could leave gaps between the edges of the planks making them difficult to caulk and seal. Once dried, the planks could be further adjusted into place. Brown undoubtedly chose the most time efficient method available based on the tools and equipment at hand. On the American brig Eagle, archaeologists found scorch marks on the hull planking suggesting that fire or heat had been applied to make the wood more pliable.31

After forty days, Allen and its five sister galleys were almost ready for launch. The final step involved making the hulls watertight. Caulkers gathered coils of hemp rope and buckets of tar for the job. They started by untwisting the rope and soaking it in the tar to create a type of seam filler called “oakum.” This material was then driven between the planking seams with a caulking iron and mallet.32 Typically, a generous coat of tar was applied over the seams as a final sealant.

Allen slid into Otter Creek on 17 April 1814. At a glance, she resembled a large warship’s launch reinforced to carry two heavy guns at opposite ends. Sleek, shallow, and fast looking, Allen differed from Doughty’s original design plan by showing more pronounced frame deadrise. Joshua Barney’s Chesapeake Bay galleys, built with a low angle of deadrise and full turn-of-the-bilge, had problems with lateral slippage during sail trials earlier that year.33 Brown must have been aware of this, or perhaps he intuitively saw the problem in the design plan, for he attempted to improve the lateral resistance of his galleys by increasing their deadrise. This adaptation also allowed the water to pass more efficiently along the hull and over the rudder enabling Allen to better answer its helm.34 Macdonough later admitted that from a design standpoint, his galleys appeared to be “unquestionably the best description of vessels for the northern parts of this lake.”35

Outfitting

The Champlain galley flotilla took to its element well, but the race for naval ascendancy had hardly been won. A multitude of tasks employing joiners, blacksmiths, riggers, and other laborers remained unfinished. Outfitting Allen’s hull as a fighting machine demanded tons of
equipment and supplies. Brown’s men prepared gun mounts and tackle, oars, masts, and yards. Riggers prepared sails and an intricate array of standing and running lines, wooden blocks, and other elements. Joiners also partitioned off storage spaces and prepared level gunnery areas floored with decking for the galley's crew to walk on during battle.

*Allen* stepped two lateen-rigged masts. In addition, the galley held twenty wooden thwarts as benches for seating up to forty oarsmen. These men sat less than 3 feet (0.9 m) above the ceiling planking and presumably braced their heels against foot-stretchers for leverage. No crew accommodations were present—there was simply not enough room to sling a hammock or stow much personal gear. Instead, Macdonough assigned sloops to the different galley divisions to carry provisions and spare equipment, and to provide living quarters. *Allen*’s crew could also camp on shore when operating inside American territory.36

The two primary compartments in *Allen* consisted of small, cupboard-like lockers at opposite ends of the hull for the stowage of powder, shot, and miscellaneous gunnery equipment. Additional space may have been allotted for the commanding officer’s incidentals (charts, signal book, spyglass, etc.), boatswain’s stores, and some minor carpentry supplies. Most of these areas were defined by crude bulkheads of various sizes and shapes fashioned from softwoods such as white pine. *Allen*’s partitions may have had whitewash, paint, or other types of preservatives applied. The hull was almost entirely undecked, leaving its inboard works exposed to the elements.37 The gunpowder magazines were presumably lined with copper sheets to eliminate the risk of accidental metal-on-metal sparks, since this was a common practice in U.S. Navy warship construction.

*Allen* had only been in the Otter Creek a few days when Sailing Master William M. Robins, a forty-year old native of Maryland, assumed direct responsibility for fitting out the galley. Robins, hastily warranted by the U.S. Navy on the day war was declared, had yet to command a public warship. Although Macdonough remained the principal agent for bringing forward the ordnance, equipment, and supplies from New York City, Boston, and Albany, Robins oversaw the actual installation of these items.38 In particular, *Allen*’s rigging and guns would have required a great deal of work to prepare.

Rigging *Allen* depended on experienced sailors who understood how to configure the necessary lines and apparatus that supported the galley’s two masts, yards, and sails. This demanded considerable force to set in place. *Allen* stepped two masts of different heights with
the foremast measuring considerably less than the mainmast. The heels of the masts stepped in mortises cut into the top surface of the keelson.\textsuperscript{39} Stays and shrouds held these rigid poles upright, and running rigging enabled the crew to hoist, sway, or strike the long unwieldy lateen yards and their sails. In rainy weather, light stanchions could be erected to support an awning of painted canvas over the rowing stations.\textsuperscript{40}

\emph{Allen} had a full bow and stern providing a wide fighting platform with plenty of buoyancy below the waterline to help support its guns. Robins mounted one short and one long-range gun: an 18-pounder columbiad in the bow and a long 24-pounder in the stern. Together the two guns weighed around 8,000 pounds (3,629 kg) exclusive of their wooden mounts.\textsuperscript{41} \emph{Allen}'s long, narrow, lightly-built hull may have been particularly prone to hogging, the settling of the ends that caused an upward bowing of the keel amidships. Mounting guns at opposite ends of the galley made the situation even worse, for they applied immense downward pressure and further encouraged this gradual deterioration in hull integrity and performance. The extra displacement volume provided by Doughty's bluff bow and stern design, and the use of lighter columbiads, may have partially alleviated the problem of excessive weight at the ends. Short, large-bore columbiads appeared as a forerunner of the shell gun and proved considerably lighter in weight than a typical naval gun of equal strength.\textsuperscript{42}

Brown and his men secured \emph{Allen}'s guns on sliding mounts, a configuration that absorbed recoil better than traditional wheeled carriages. The guns were not fixed on a centerline azimuth-of-fire, but instead pivoted on a bolt at the forward end of the mount, while the after end traversed on iron trucks that ran atop a \textfrac{1}{8}\-of-a-circle track fastened to the gun platform's deck. This arrangement allowed \emph{Allen}'s crew to fire shot dead ahead or along a 45-degree arc of fire—22-1/2 degrees off the centerline to port and to starboard.\textsuperscript{43}

Although \emph{Allen} and the other heavy, first class galleys mounted powerful guns, individually they were not much of a challenge to larger sailing warships. Their advantage always lay in the ability to maneuver, to swarm and pester rather than slug it out at close range. Macdonough hinted as much by naming four of them \emph{Borer, Centipede, Nettle,} and \emph{Viper}. The remaining two galleys of the flotilla honored U.S. Navy officers killed in action the previous year—Lieutenant William Henry Allen of the brig-sloop \emph{Argus} and Lieutenant William Burrows of the brig \emph{Enterprise}.\textsuperscript{44}
On 30 April 1814, Macdonough appeared optimistic about the forward state of his new warships despite a number of shipping delays. A particularly inclement spring had ruined the overland routes connecting Vergennes with Albany and Boston. Wagoneers transporting heavy cargoes of ordnance, shot, gun tackle, powder, pistols, canvas, cordage, blocks, clothing, shoes, and other important supplies were having great difficulty navigating the mud and standing water. Even in favorable weather conditions, experienced drivers found these isolated dirt roads to be barely passable. Nevertheless, Macdonough assured Secretary Jones that “the new galleys are all finished & some of their guns have arrived, which we are also mounting; the other guns are daily expected and will be mounted immediately upon their arrival.” He anticipated them to be outfitted for battle in a matter of days as “all the powder…and all my other supplies of every kind are on, with few exceptions.”

Within a week of Macdonough’s prediction, however, his confidence began to wane, as the manning of his newly constructed galleys grew increasingly difficult. In spite of numerous requests, the Navy Department firmly refused to provide the estimated 240 sailors needed to fill the crews of the tiny warships. Macdonough managed to create partial crews by shuffling personnel within his squadron, a solution that involved retiring the sloops Francis and Wasp, reducing President and Montgomery to the status of transports, and temporarily laying up No. 169, No. 170, Ludlow, and Wilmer.

By 13 May, Macdonough still had no immediate prospects for strengthening the crews of Allen and the other galleys with new enlistments. “The recruiting service is very dull, particularly for this lake,” he stewed, “the sailors having an objection to the gunboats or galleys.”

Endnotes: Chapter IV


...
2. William Jones to Lloyd Jones, 27 February 1813, Papers of William Jones, Uselma C. Smith Collection, Historical Society of Pennsylvania, Philadelphia, Pa. For an excerpt of the same letter, see Tucker, Jeffersonian Gunboat Navy, 104-107. For additional information on Jones’ plans to reduce and apportion gunboats among the different naval stations in early February 1813, see Dudley, The Naval War of 1812, 2: 52-54.

3. Thomas Macdonough to William Jones, 22 February 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 63, NARA.


5. Oliver H. Perry to Isaac Chauncey, 18 April 1813, Oliver Hazard Perry Papers, William L. Clements Library, University of Michigan, Ann Arbor, Mich. For analysis of the same correspondence, see Skaggs and Altoff, A Signal Victory, 72. For a detailed account of Noah Brown’s building exploits on Lake Erie, see W. W. Dobbins, History of the Battle of Lake Erie (Erie, Pa.: Ashby Printing Co., 1913), 31-32.

6. Crisman, The Eagle, 16-18; Bellico, Sails and Steam, 211-212. The Monkton Iron Works had an air furnace, blast furnace, forges, a rolling mill, a wire factory, and its own saw, fulling, and grist mills by the winter of 1814. The yard itself was presumably near Jahaziels Sherman’s dock and warehouse below Otter Creek Falls in Vergennes. Sherman was involved in the budding Lake Champlain Steamboat Company.

7. Thomas Macdonough to William Jones, 7 March 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 77, NARA.

8. Peter Sailly to Thomas Macdonough, 11-12 February 1814, Macdonough Collection, MS #41.38, SMV.

9. William Jones to Thomas Macdonough, 22 February 1814, Letters Sent to Officers, RG-45, M149, Reel 11, Pt. 2, No. 223, NARA; Thomas Macdonough to William Jones, 7 March 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 77, NARA.

10. Thomas Macdonough to William Jones, 7 March 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 77, NARA. Noah Brown built one extra galley putting the total number at six by April 1814.

11. The narrative spanning the following pages addresses the building and outfitting of the American row galley flotilla at Vergennes, Vt. This interpretation relies on a combination of primary sources, including the following: “Articles of Agreement Entered into Upon this Twenty-Fourth Day of July, Eighteen Hundred and Thirteen Between William Parsons of Baltimore, Shipwright of the One Part and James Beatty Navy Agent of the United States of America at Baltimore Acting For & On Behalf of the Said United States of the Other Part,” Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA; a copy of William Doughty’s lines plan for a 75-foot, “first class” row galley design (dated 11 October 1813) cited earlier in this chapter; and a copy of the Whitehall Project 1995, Alien Hull Excavation Database, Texas A&M University Anthropology Department, Nautical Archaeology Program, College Station, Tex. The first and last of these sources provide interesting comparative data. The contract is associated with the building of Commodore Joshua Barney’s row galley flotilla on Chesapeake Bay during the war. It includes an insert entitled “Dimensions and Description of a Row Galley.” As the same Doughty galley design was the proposed vessel type to be built for Macdonough at Vergennes, Vt., the contract let by the Navy Department to Noah Brown presumably included a similar “Dimensions and Description” section as the contracts for the flotilla on Chesapeake Bay.
12. First-growth timber in the Champlain Valley had been largely forested by this time. Finding white oak trees large enough to provide a single-piece keel for each of the six galleys would have been extremely difficult, if not impossible.

13. See "Row Galley, Copied from Original, City Washington, October 11, 1813, [signed] William Doughty, Chief Naval Constructor," in Figure 13 of this chapter of the dissertation.


16. Thomas Macdonough to William Jones, 17 January 1814, Commanders' Letters, RG-45, M147, Reel 5, Pt. 2, No. 14, NARA; and Thomas Macdonough to William Jones, 6 February 1814, Commanders' Letters, RG-45, M147, Reel 5, Pt. 2, No. 46, NARA.


18. These numbers are based on the number of frames that made up Allen's hull, multiplied by six—the total number of galleys built at Vergennes that winter/spring. See also Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex.


24. Using square frames throughout the curvature of Allen's bow and stern areas would have required the cutting away of an excessive amount of their outboard faces in order to attain the correct bevel for fitting the external planking. This reduction would have weakened the frames to a dangerous point. Canted or angled frames eliminated the problem by reducing the amount of bevel needed. See J. Richard Steffy, Wooden Ship Building and The Interpretation of Shipwrecks (College Station, Tex.: Texas A&M University Press, 1994), 268; and Longridge, Anatomy, 21.

25. The frames that were originally held in place on the keel with spikes received an iron bolt later on that passed through the keelson, frame, and keel. This is why the use of drift bolts to hold the frames to the keel alternated. In the end, once the keelson was in place, every frame should have had an iron bolt either passing through frame and keel or passing through keelson, frame, and keel.

26. British gunboats usually had interlocking face between the keelson and frames, keelson and apron, and keelson and stern knee. See Amer, "Brown's Bay Vessel," 79-83. Design plans for American gunboats,
barges, and row galleys typically did not include an interlocking face between the keelson and frames. However, both British and American designs employed some sort of interlocking assembly at the stem and stern. See Chapelle, *American Sailing Navy*, 277.

27. If Allen’s bow and stern employed breasthooks, the forward angle of the lowest example would have been more acute than those above the waterline.


29. Similar to the way a mason would configure a brick wall.


32. It was reputed that an accomplished caulker in the early nineteenth century could set the oakum along the midline of the planking edges by listening for the different tonal sound made when the material reached its desired location between the planks.


34. Macdonough’s Champlain galley flotilla appeared better suited for sailing as well as rowing. Barney’s Chesapeake Bay galleys, on the other hand, probably held their guns equally as well but sailed miserably in comparison. Barney complained that his prototype galley performed poorly due to “her long shallow body, and trimming on an even keel—the resistance of the water on the lee bow, pressing her to windward, having so little hold of the water abaft, to resist her flying to.” Barney eventually had to employ skegs on each of the warships to correct the problem. For a full discussion of these problems, see Donald Shomette. “Thirteen Barges,” Unpublished Chapter (January 1997), 161. A copy of this paper was provided by Shomette to the author at the Society for Historical Archaeology Underwater Proceedings Conference in Corpus Christi, Tex., in January 1997. See also Tucker, *Jeffersonian Gunboat Navy*, 130-136; Dudley, *The Naval War of 1812*, 2: 373-402.

35. Thomas Macdonough to William Jones, 11 June 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 145.

36. Row galleys operated on a short logistical tether—an inescapable product of the warships’ minimal stowage area and large complement of men. Because Allen and the other oared warships in Macdonough’s squadron were bound to Montgomery and President, the sloops were a critical part of keeping the American gunboats, barges, and row galleys on Lake Champlain.

37. This is a speculation based on the design of the galley, as no archaeological evidence of these preservatives was actually found on Allen in 1995.

38. For bills of lading and an inventory of the different cargos being transported from New York City and Albany to Macdonough’s Navy Yard at Vergennes (through the spring of 1814), see the following letters from the Macdonough Collection, SMV: U.S. Quartermaster General Elisha Jenkins to Thomas Macdonough, 23 March 1814, MS #41.43; Amos Binney to Thomas Macdonough, 28 March 1814, MS #41.45; New York Teamster Samuel T. Anderson to Thomas Macdonough, 14 April 1814, MS #41.49; John Bullus to Thomas Macdonough, 15 April 1814, MS #41.50; Merchants Richard P. Hart and Reed to Thomas Macdonough, 19 April 1814, MS #41.52; and Barent and Jn. R. Blucher to Thomas Macdonough 22 April 1814, MS #41.51.

39. For evidence of the mast heights see Chapter VI, Figure 28 in this dissertation. This figure shows a watercolor painting of the American galley flotilla at anchor on Lake Champlain following the Battle of Plattsburgh Bay in 1814. The mast heights are clearly uneven. This painting is housed at the Shelburne
Museum in Shelburne, Vermont. For evidence of the mast step mortise locations on Allen's keelson, see Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex.

40. Secretary Jones provided a detailed description of the awning system intended for use on Doughty's 75-foot row galleys in a letter to Commodore Isaac Chauncey on 7 June 1814. Jones ordered Chauncey to "construct and equip fifteen large barges at Sackets Harbor, as soon as possible" and pointed out that "a considerable number of them have been built for the flotilla service on the Chesapeake and elsewhere [Lake Champlain], and they perfectly answer all the purposes for which they were intended." Jones included a packet carrying lines and construction plans along with directions from William Doughty with this cover letter. He also pointed out that if Chauncey deemed it proper, individual awnings "made of light stanchions and cedar top covered with painted canvas like the top of a stage coach, with canvas curtains at the sides" could be erected down the centerline of amidships on each of the galleys "where the men sit at the oars." See William Jones to Isaac Chauncey, 7 June 1814, Bauer, Naval Affairs, 4: 358-359. On Lake Champlain, Joseph Healy Dulles inspected one of Macdonough's first class (75-foot) galleys while anchored off Chazy, N.Y., on 14 August 1814. Dulles recorded in his diary that the larger galleys "are open boats" and that "tents are used on them in rainy weather." See Dulles, Diary, 6.

41. Allen's gun types, along with those used on all of the different warships comprising Macdonough's squadron, are described in the "Report of the State and Condition of the Naval Force Employed in the Defense of the Harbors & Waters of the United States Under the Command of Thomas Macdonough, on the 31st Day of August, 1814," Lake Champlain Maritime Museum, Ferrisburgh, Vt. (hereafter cited as LCM). A copy of this document was provided courtesy of Arthur B. Cohn. Gun weights provided are from Spencer C. Tucker, Arming the Fleet: U.S. Navy Ordnance in the Muzzle-Loading Era (Annapolis, Md.: Naval Institute Press, 1989), 125. Columbiads were experimental guns designed to fire solid shot or shells, combining the characteristics of the carronade, long gun, and howitzer. They were not widely used on ships during the War of 1812, the Lake Champlain squadron being one of the rare examples. They must have fired solid shot exclusively, since there is no mention of shells being used by Allen or any other warship in the squadron. The average weight of an 18-pounder columbiad is unknown, but was likely around 2,200 pounds (1,000 kg). Most columbiads were classed as 18-pounders during the War of 1812. See Tucker, Arming the Fleet, 182-184; and Chapelle, American Sailing Navy, 276.

42. Tucker, Arming the Fleet, 182-184; Chapelle, American Sailing Navy, 276.

43. Allen's gun mounts, along with those used on all of the different warships comprising Macdonough's squadron, are described in the "Report of the State and Condition of the Naval Force Employed in the Defense of the Harbors & Waters of the United States Under the Command of Thomas Macdonough, on the 31st Day of August, 1814," Lake Champlain Maritime Museum, Ferrisburgh, Vt.

44. Names such as Allen and Burrows also fit with the "swarm and pester" theme, as William Henry Allen and William Burrows were most well known in the U.S. Navy for having shown great bravery and tenacity in the face of a larger enemy. For details on the circumstances of Lieutenant Allen's loss, see American Vice Consul John Hawker to William Allen Sr., 19 August 1813, Dudley, The Naval War of 1812, 2: 224. For details on the circumstances of Lieutenant Burrows' loss, see British Royal Navy Lieutenant David McCrery to British Royal Navy Commander Alexander Gordon, 6 September 1813, Dudley, The Naval War of 1812, 2: 234-235; and U.S. Navy Lieutenant Edward R. McColl to U.S. Navy Captain Isaac Hull, 7 September 1813, Dudley, The Naval War of 1812, 2: 235-238. For additional background information on the two American lieutenants, see Roosevelt, Naval War, 198-200, 206-208.

45. For a description of the difficulties shipping overland to Vergennes during the spring of 1814, see Samuel T. Anderson to Thomas Macdonough, 14 April 1814, Macdonough Collection, MS #41.49, SMV. For wagon lading lists showing the different cargos being sent to Vergennes that spring, and the names of the individual wagoneers transporting the items, see Barent and Jn. R. Blucker to Thomas Macdonough, 22 April 1814, Macdonough Collection, MS #41.51, SMV. Boston Navy Agent Amos Binney advised
Macdonough to save overland shipping costs and avoid delays by entering into agreement with Colonel James Perkins, a proprietor of the Monkton Iron Works in Vergennes, Vt., to cast round shot for his squadron. See Amos Binney to Thomas Macdonough, 10 May 1814, Macdonough Collection, MS #41.58, SMV. Perkins was from the Boston area, hence the connection to Amos Binney. The U.S. Army began contracting with the Monkton Iron Works for shot, camp kettles, entrenchment tools, and other miscellaneous iron items starting in November 1812. Macdonough had been purchasing ballast and iron work from the company since building the 50-foot barges at Burlington in the fall of 1813. He paid out an additional $6,000 to the company during the building of his row galleys and the ship Saratoga during the winter/spring of 1814. See Benjamin Wells to Phillip Tucker, 21 March 1814, Monkton Iron Works, BixL; and Benjamin Welles to Merchants Prime and Ward of New York, 6 May 1814, Monkton Iron Works, BixL. Shortly after the Battle of Plattsburgh Bay, Perkins claimed in a letter to his partner Benjamin Welles that “I believe in my heart that Macdonough saved our works, but I believe too, that our works saved his ships by furnishing a large supply of shot...so that I think it an even bargain.” See James Perkins to Benjamin Welles, 14 October 1814, Monkton Iron Works, BixL.

46. Thomas Macdonough to William Jones, 30 April 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 115, NARA.

47. Thomas Macdonough to William Jones, 30 April 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 115, NARA. Macdonough had already decided to take the guns out of the sloops Frances and Wasp, along with those of No. 169, No. 170, Ludlow, and Wilmer, in order fill out the battery of his new steamboat-turned-schooner Ticonderoga. Macdonough advised Jones in this letter that Ticonderoga’s armament “will be composed of two of the sloops guns (these sloops being miserable sailors) and some spare guns which we have here, and the guns of the four old galleys; two of which are very rotten, as they were built in 1808; thus making a saving of men and creating a much more efficient force.”

48. Thomas Macdonough to William Jones, 6 May 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 121, NARA.
CHAPTER V

"ENTERING ANY SERVICE IN PREFERENCE TO THIS": THE ORDEAL OF MANNING AND DUTY ON LAKE CHAMPLAIN

*Allen, Borer, Burrows, Centipede, Nettle, and Viper* barely had their hulls caulked, sails bent, and guns mounted before the U.S. Navy’s mission on Lake Champlain changed dramatically. In April 1814 Napoleon Bonaparte abdicated the French throne and Great Britain sent him into exile on the island of Elba off the coast of Italy. For the first time since the Peace of Amiens (1802-1803), the struggle between these two belligerents appeared to be ending. Ships and soldiers could now be spared to mount a major offensive in North America. This gravely reduced American hopes of taking Canada. General George Prevost had a substantial squadron building at Isle aux Noix and his government’s promise of veteran troops straight from the Duke of Wellington’s army for waging a full-scale counteroffensive. Thus Macdonough’s proposal to lead his newly completed row galleys into Lower Canada via the Richelieu River was shelved before the campaigning season even started.¹

On 9 May the Royal Navy commenced maneuvers outside the Richelieu River. Captain Daniel Pring left Isle aux Noix with the brig *Linnet*, the sloops *Chub, Finch, Canada*, and *Icicle*, and seven row galleys.² He set a course for Otter Creek carrying instructions to capture local merchant vessels and sink them at the mouth of the river to prevent the American squadron from entering the lake. Once trapped, Macdonough’s vessels would be an easy target for a detachment of Royal Marines intent on burning them to the waterline. As the British passed out of the Richelieu River, Major General Wilkinson sent a warning to Vergennes. Macdonough dispatched Lieutenant Cassin to the mouth of Otter Creek to build a makeshift battery of 12-pounders (taken from the squadron) later dubbed “Fort Cassin.” Artillery Captain Arthur Thornton assisted in the project along with fifty of his men. *Allen, Borer, Burrows, Centipede, Nettle, and Viper* kept guard at the mouth of Otter Creek while the earthworks were prepared. It was off Fort Cassin that Macdonough’s new galleys received their first trial under fire.

Captain Pring appeared on 14 May to find three of the American galleys positioned in a line adjacent to the south side of Fort Cassin and facing across the lake toward New York. The remaining three sat inside the river to protect the battery’s flank (Figure 15). These vessels, shipping only partial crews, posed the last line of defense should the British disable the battery.
Pring’s bombardment of Fort Cassin lasted less than two hours before he aborted the operation and withdrew. However, deficiencies in officers and sailors prevented Macdonough from pursuing his aggressors for almost two weeks. In this time the British squadron roamed unopposed, continuing its depredations near the American-Canadian line. Although Macdonough believed that “gallies are unquestionably the best description of vessels for the northern parts of this lake,” he soon learned that “the number of men they require is a very serious objection to them.”

Manning the Row Galleys

A lack of sailors bedeviled Macdonough’s oared warships throughout his tenure on Lake Champlain. Officers and sailors willing to serve on the ‘Northern Lakes’ were in critically low supply during the war. “The recruiting service is very dull,” wrote Macdonough that spring, “particularly for this lake—the sailors having an objection to the gunboats or gallies—entering any service in preference to this.” The remote location and harsh climate typical of this region made the already difficult duties of naval service even more challenging. Compounding the problem was the fact that one of the greatest incentives—profits from captured enemy vessels—proved virtually non-existent on inland lakes compared to the open ocean. Eventually, the U.S. Congress resorted to offering “bounties,” or cash bonuses, to individuals willing to serve at these stations. By the spring of 1814, it had authorized a 25-percent increase in pay for officers, warrant officers, petty officers, midshipmen, seamen, and marines serving on the Great Lakes and Lake Champlain—a tour of duty considered to be “of peculiar hardship and privation.”

Presumably the only thing worse than being assigned to an inland lake squadron during the war was being sent there to serve aboard an oared warship. These open vessels lay totally exposed to enemy fire, the threat of drowning, and all kinds of weather. Allen and the Champlain galley flotilla lacked the creature comforts of larger warships. The crews lived mostly aboard transport sloops, but during maneuvers they often spent the night on shore in tents, or even at their oar stations. This increased the risk of illness, especially when the presence of the enemy obliged the squadron to stay active on the lake into the early winter months.

Pneumonia and dysentery headed the list of deadly ailments found among the American forces in the Champlain Valley during the war. Gunner Thomas Butler, aboard Allen, even
agreed to stay fighting on the lake “provided he does not remain in a galley, which his health...makes it bad.” Officers and sailors like Butler bombarded the Navy Department each

Figure 15. Contemporary sketch map of the American defenses at Fort Cassin, May 1814. The battery was set up at the mouth of Otter Creek and flanked on one side by galleys. Manuscripts and Special Collections, New York State Library, Albany, New York.

winter with requests for relocation due to health reasons. Desertion cases also spiked to disproportionately high levels between the months of December and March. In many cases, the sailors willing to volunteer for oared warship duty lacked the training and discipline commonly found elsewhere in the U.S. Navy. Secretary Jones complained that “the temptations to insubordination and vice are much greater in this scattered and amphibious kind of force.” This introduced an added element of risk, for weapons of any kind in unskilled, or unruly hands, are bound to result in disaster. Lieutenant George Evans provided a gruesome illustration of this problem from his command aboard the U.S. Gunboat No. 147 off Wilmington, North Carolina. On 23 August 1814, he reported to the Navy Department that his
counterpart *No. 146* “was within the last hour blown up” after one of its crewmen attempted “to draw or get a ball out of a musket by striking it with the muzzle on the deck over the magazine when unfortunately the musket went off.” Evans promised to “save all that can be saved” but admitted that “it will not be much.”

Naval officers had more than deficient crews to worry about when taking an appointment aboard oared warships. These vessels provided inadequate training and had the potential to retard one’s career. The Navy Department even referred to time logged on gunboats, barges, and row galleys as “a service in which those who are to form the officers for the ships of war ought not to be engaged.” Lieutenant and midshipmen commanded such vessels when necessary, but the position appeared best suited for sailing masters. Macdonough’s oared warships seemed to bring out the best and the worst in his officers. At times they served as a proving ground for leadership and bravery. Conversely, they also opened a convenient dumping ground for unwanted officers destined to expend their careers moving laterally amongst positions of lesser responsibility.

As early as February 1814, Macdonough had opened a rendezvous at Boston, Salem, and New York City to recruit crews for his new galley flotilla. Oared warships, although diminutive in size and gun weight, possessed a voracious appetite for manpower. Subsequently, as demands grew to desperate levels that spring and summer, so did the methods employed by his representatives at the different recruiting stations. Lieutenant Charles C. B. Thompson, in particular, developed a reputation for welcoming men into the navy in ways not entirely palatable to Macdonough’s sense of military professionalism.

Thompson operated from a tiny office on Market Street in New York City. Formerly known as George’s Street, this area of the seaport was endowed with drinking establishments and a number of “red light” accessories, including places to gamble and solicit prostitutes. Thompson made liberal use of these surroundings to fill his quotas, as Market Street appeared rife with victims of sickness, desperation, and dulled judgment. The double-talk and maneuvers employed for such ends often resembled a muted form of the Royal Navy’s hated practice of “impressment.” In the case of John Kortz, Jr. of Hudson, New York, Thompson’s “egregious & abominable” methods left Macdonough scrambling to parry accusations of kidnapping and the corruption of a minor.
John Kortz, Jr., enlisted for service on Lake Champlain during a brief excursion into New York City on 12 July 1814. Fired by alcohol and the romanticized stories of a self-proclaimed veteran named Jacob Acker, the young boy passed a surgeon’s inspection, signed his mark, and received a pay advance of twelve dollars. When Kortz and Acker sobered up a few days later, it was too late to change their minds. Mr. Kortz, Sr., flew into a rage upon hearing the news, entreating Governor Daniel Tompkins at Albany to intercede on the behalf of his son. When Macdonough failed to respond on the matter, Kortz released a scathing letter, peppering the commodore with open insults and abuse:

Sir, It is now one month since my poor son John Kortz, Junior was, in the City of New York, inveigled & allured by Charles C. B. Thompson, a Navy Officer, through the instrumentality of one Jacob Acker who enlisted at the same time, to enlist. Acker is a very bad fellow & undoubtedly was paid by the recruiting officer to bring him. Thompson confessed to me that Acker brought him there to Market Street—formerly George’s Street—the worst place in New York where, to the disgrace of America, the officer has his flag up to kidnap unwary children & any whom he may entrap. My son enlisted without my knowledge, I repeat, or consent. I have discovered that he was sorry for it before he came to Albany, but they had him fast & he could not help himself. They undoubtedly made him intoxicated & got him to put his name to the roll. The officer told me he had orders to enlist all the boys he could get & would do so & sneered at me, by way of contempt of right.

I wrote you twenty-four days ago on the subject from New York & stated that my son was under age, not seventeen years of age, & implored you to discharge him. The Governor also wrote you & you have answered neither of us. Letters go by mail rapid & certain. It is not in your power to deny that you have received our letters. I can prove my writing to you. I know that a sufficient length of time has elapsed for me to have received your answer if you had written me & that in violation of an express law it is evident enough that you neither intend to give up my child, till I oblige you...Acker is a bad fellow & may perhaps persuade my unfortunate son to desert—should this happen & my child be shot or hanged for the offense it will be as bad as murder viz. you—because you know he is under age...

It was an egregious & abominable outrage of the recruiting officer to enlist my son—contrary to law, contrary to my rights, & contrary to common honesty & it is equally criminal in you to detain him...My wife is in tears—I cannot rest day or night as my child’s morals will be corrupted, he may die of distempers incident to fleets, or be killed in battle. If he does, our hearts will be broken & you will be the cause of his death—have you no pity for afflicted parents, have you no respect for the laws of your country, which you are bound to defend & not violate, not contemptuously to break, merely because you have or happen to have a little power at present. Where is the boasted freedom of our institutions in this Republic if such injustice is practiced & we must submit to it.

I shall send depositions of my son’s age to the Secretary of the Navy & solicit his interference & state to him the nefarious practices in New York & if you do not send me home my son to whom I have a right...I shall expose to the world the whole transaction
& call you to account for your conduct in a Court of Justice & get my son discharged by habeas corpus & in case of your disobeying such a writ, by an attachment, rely on it—the matter shall not rest...I will seek my right if my friends will lend me money to do it with & our magistrates are willing to administer the laws.\textsuperscript{16}

Kortz eventually secured an honorable discharge for his son later that summer, shortly after his threats to involve the Navy Department reached Macdonough. Although it is impossible to glean the boy’s true wishes, his father’s outpouring of concern appeared somewhat vindicated when Jacob Acker deserted less than two months later while convalescing at the Burlington Hospital.\textsuperscript{17}

Indeed Mr. and Mrs. Kortz’s notion of the brutality that accompanied a life of naval service appeared well grounded. Inexperienced recruits often faced a harsh indoctrination period of violence, privation, manipulation, and intolerance at the hands of their more seasoned fellows. Sailor Hendrick Johnson, for one, lost his life during his initiation into naval life. Thompson had enlisted the man in late June, just weeks before John Kortz, Jr. and Jacob Acker stumbled onto Market Street.\textsuperscript{18} On the passage up to Lake Champlain, Johnson, amidst a brief scuffle, was thrown from the deck of a transport sloop and drowned. “I regret to be constrained to report the death of Hendrick Johnson,” wrote Thompson to Macdonough, “occasioned, as I am informed, by the violence of William Connor, Seaman, who threw him overboard in the North River.”\textsuperscript{19}

Although it is impossible to say for certain, the historical documents recounting Johnson’s misfortune insinuate that he was African-American. Certainly ethnic and racial bigotry provided one of the more popular invitations in the nineteenth century for unprovoked abuse. This may help explain Macdonough’s reluctance to sign up black sailors for the squadron on Lake Champlain in 1814. By July, Thompson had express orders from the commodore to sign only white males, to which he responded: “The colored men already shipped, I cannot otherwise dispose of than by sending them to you…There shall be none, however, engaged after this, but such men as you have described.”\textsuperscript{20}

Fortunately, the skirmish off Otter Creek in May helped resolve some of Macdonough’s immediate recruiting difficulties. U.S. Army General George Izard agreed to lend his counterpart a detachment of regulars to fill out the crews of the galleys at Vergennes.\textsuperscript{21} Although Macdonough felt strongly that “soldiers are miserable creatures on shipboard,” he could not afford to leave any part of his squadron unmanned.\textsuperscript{22} Izard supported the arrangement
with the understanding that the navy would replace his men with sailors as soon as possible. However, many of the men remained at the oars through the summer and fall of 1814. Allen and its five sister galleys were each to be manned by 40 oarsmen and 10 sailors to work the guns. Even with the soldiers, however, it appears that they rarely had full complements.

On 26 May 1814, the Champlain galley flotilla left Otter Creek and in company with the rest of the American squadron sailed for Plattsburgh, New York. The six new row galleys, described by Macdonough as “remarkably fine vessels,” were organized into two divisions. Division No. 1 under Lieutenant Francis J. Mitchell consisted of Borer, Nettle, and Viper, while Division No. 2 under Sailing Master William M. Robins included Allen, Burrows, and Centipede. Gunboats Alvyn and Ballard (formerly No. 169 and No. 170) and the barges Ludlow and Wilmer were temporarily taken out of service to provide 18-pounders for the schooner Ticonderoga, but later rejoined the squadron in June as Division No. 3, commanded by Sailing Master Daniel Stellwagen.

Officer, Crews, and Compensation

Sailing Masters occupied the majority of command positions within Macdonough’s oared flotilla in 1814 (Table 1). He had originally hoped to use a junior commissioned officer, such as a lieutenant, to lead each of the three divisions. However, finding a sufficient number of individuals at this grade proved extremely difficult. Furthermore, Macdonough felt that when these officers could be found they were “indispensably necessary” for operating the larger warships in the squadron. The one exception to the rule—Lieutenant Francis J. Mitchell—was jettisoned from the brig Eagle for incompetence before assuming command of the galley Viper and Division No. 1. “I have not much faith in his abilities,” wrote Macdonough, “all of my officers are young, but his services can best be dispensed with.”

In total, one lieutenant, five sailing masters, three midshipmen, and one petty officer commanded the galleys and gunboats. Master’s mates, boatswains, and gunners supported them, performing specialized tasks, including the care of navigation equipment, naval stores, and weaponry. Other daily jobs (i.e., scraping, cleaning, and treating decks and stowage spaces, repairing sails and rigging, lacquering iron guns, tackle, and hull fittings, and bailing out the bilges) were divided among the remaining enlisted crewmembers.

The Navy Department had advocated the use of warrant officers to command its gunboats since the time of the Chesapeake-Leopard Affair in 1807. Sailing masters were
experienced in navigation, pilotage, and the art of keeping a wooden hull trim in the water.\textsuperscript{26}

For the most part, they existed on a dead-end career track, but always with the faint hope of crossing over to the promotion ladder if blessed by "particular merit and circumstances."\textsuperscript{27}

Sailing masters were generally adults, older than the average midshipman, and from less influential socio-economic backgrounds. In general, professional mariners hailing from New York, New Jersey, Pennsylvania, and Delaware contributed the majority of warrant applicants during the war.\textsuperscript{28}

Midshipmen and petty officers rarely exhibited the maturity, seamanship ability, and discretion required to effectively handle an independent command on a station as rigorous as

<table>
<thead>
<tr>
<th>Vessel</th>
<th>Commanding Officer</th>
<th>Rank</th>
<th>Age</th>
<th>State of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viper</td>
<td>Francis J. Mitchell</td>
<td>Lieutenant</td>
<td>32</td>
<td>Virginia</td>
</tr>
<tr>
<td>Borer</td>
<td>Thomas A. Conover</td>
<td>Midshipman</td>
<td>20</td>
<td>New Jersey</td>
</tr>
<tr>
<td>Nettle</td>
<td>Samuel L. Breeze</td>
<td>Midshipman</td>
<td>20</td>
<td>New York</td>
</tr>
<tr>
<td>Allen</td>
<td>William M. Robins</td>
<td>Sailing Master</td>
<td>40</td>
<td>Maryland</td>
</tr>
<tr>
<td>Burrows</td>
<td>Eli A. F. Vallette *</td>
<td>Sailing Master</td>
<td>28</td>
<td>New Jersey</td>
</tr>
<tr>
<td>Centipede</td>
<td>Daniel Hazard</td>
<td>Sailing Master</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Ludlow</td>
<td>James M. Freeman</td>
<td>Midshipman</td>
<td>--</td>
<td>Massachusetts</td>
</tr>
<tr>
<td>Wilmer</td>
<td>Daniel S. Stellwagen</td>
<td>Sailing Master</td>
<td>42</td>
<td>Pennsylvania</td>
</tr>
<tr>
<td>Alwyn</td>
<td>Henry Bancroft</td>
<td>Sailing Master</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Ballard</td>
<td>Stephen Holland</td>
<td>Master’s Mate</td>
<td>--</td>
<td>Rhode Island</td>
</tr>
</tbody>
</table>

Sources: Data compiled from "A Register of Officers and Agents Civil, Military, and Naval in the Service of the United States Together with the Names, Force, and Condition of All the Ships and Vessels Belonging to the United States, and When and Where Built," Box 5200, Publications of the U.S. Government, RG-287, NARA. See the years 1814, 1815, 1816, 1817, 1818, and 1819. These documents provide rank, pay, and state of origin for each man. See also Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815, Subject Files, Class N, Subclass NI, Promotion and Privileges, Box 224, RG-45, NARA; "Roll of Commissioned & Warrant Officers Under Capt. Macdonough," Subject Files, Class N, Subclass NA, Lists of Persons Serving With Vessels or Stations, Box 224, RG-45, NARA; and "Register of Officers of the Navy," RG-45, Entry 237, Vol. 1, NARA.

* Sailing Master Eli A. F. Vallette was promoted to ‘Acting Lieutenant’ and transferred to Saratoga by the time of the Battle of Plattsburgh Bay. Sailing Master Samuel Kettleas replaced him as the commanding officer aboard Burrows sometime before 11 September 1814.
Lake Champlain. Instead, Macdonough used his sailing masters to provide these men with shipboard instruction and better prepare them for appointments as ‘acting lieutenants.’ On a gunboat or galley this typically meant assuming the role of second-in-command under an experienced master. Midshipmen Thomas A. Conover (Borer), Samuel L. Breeze (Nettle), and James M. Freeman (Ludlow), along with Master’s Mate Stephen Holland (Ballard), must have shown exceptional promise to be trusted with their own vessels. Indeed, Macdonough’s opinion of Midshipmen Breeze suggested as much: “A smart young man” who will “I think, make a good officer.”

Sailing Master William M. Robins assumed command over Allen shortly after the galley’s launch. He had requested a transfer to Lake Champlain from the USS Alert in August 1813. Alert was temporarily inactive at New York City at the time and many of her crew members were looking for new duty stations. Robins learned that Macdonough needed officers so he volunteered. He had never commanded a naval vessel before stepping aboard Allen that spring. Warrant officers on the northern lakes had a chance of being elevated to command of a vessel, one of the few career opportunities that the inland navies offered. Although Macdonough found a number of these men completely unsuited for such a responsibility, he had few alternatives.

The selection process for oared warship officers relied heavily on a calculated risk until the individual could be observed in action. Lieutenant Mitchell of Viper fit the ignominious profile of having a rank that outshone his merits. Macdonough considered him to be “the most profane man in the service” who “does the service more disgrace than honor.” Sailing Master Daniel S. Stellwagen was described by the commodore as “a man who in my opinion cannot think he has much claim to public favor or patronage…but feels more calling to be supported by the service than to give his individual aid to the service.”

Two successful appointments, however, included Samuel Kettletas, who received a promotion to Sailing Master and eventually commanded Burrows, as well as Midshipman Silas Duncan, the Acting Lieutenant aboard Saratoga. Robins fell somewhere in the middle of the spectrum during his command of Allen. He developed a reputation as being “old & infirm, subject to intoxication occasionally;” and “not to be trusted with much.” Yet he appeared “careful of public property” and always kept the galley “neat in arrangement.”
Only a fragmentary glimpse of Allen's enlisted sailors and marines can be reconstructed from historical documents. Gunboat and row galley crews during the war originated primarily from the Mid-Atlantic States between New York and Virginia. They carried few possessions other than their clothes—perhaps a knife, marlinespike, gaming pieces, and a few tangible memories of home. As the Navy Department had no official uniform for its enlisted sailors and landsmen at this time, it issued a standard allotment of clothing for dress occasions as well as everyday work.\footnote{35}

Typically the sailors wore any combination of blue cloth jacket with matching trousers, red vest, white flannel shirt, black silk handkerchief, yarn stockings, shoes, and hat.\footnote{36} Canvas duck frocks and trousers, fashioned of more durable materials, appeared better suited for deck work, sailing maneuvers, and battle. Thick woolen coats, called “pea jackets,” were also issued for use in cold, wet weather conditions. Presumably the enlisted crew had the freedom to adopt a clothing style that best suited their daily activities, as long as it drew from these basic items. Soldiers acting as sailors or marines wore the uniforms of their respective U.S. Army infantry regiments. Without question the rowing combatants on Lake Champlain presented a colorful assortment of dress styles in 1814.

Rank and special appointments of responsibility played a significant role in determining monthly pay rates aboard the gunboats and galleys on Lake Champlain. Lieutenant Mitchell, as the only commissioned officer among the flotilla commanders, stood at the top of the scale earning $62.50 in base pay per month and three extra rations. This placed his total annual income at $1,020. Sailing Masters Robins (Allen), Vallette (Burrows), Hazard (Centipede), Stellwagen (Wilmer), and Bancroft (Ahwyn) drew $50 per month and one extra ration per day giving each man a total annual income of $690. Midshipmen Thomas Conover (Borer), Samuel L. Breeze (Nettle), and James M. Freeman (Ludlow) enjoyed the same pay and food allotment as the sailing masters while in command of an oared warship. Otherwise their rank would have only entitled them to $20 per month and no extra rations.\footnote{37}

Master’s Mate Stephen Holland (Ballard) enjoyed the single largest pay increase in the squadron, as the majority of petty officers (i.e., master’s mates, boatswains, gunners, etc.) earned $20 to $25 per month, remaining only slightly better off than stewards and cooks who made up to $18 per month. Holland’s command of Ballard entitled him to the pay and benefits of a sailing master.\footnote{38} At the bottom of the pay scale rested the seaman, ordinary seaman,
landsmen, and boys. They were expected to live off $15, $12, $10, and $8 per month, respectively, with no extra rations. Soldiers barely drew higher than their normal wage while serving as marines or at the rowing stations of the galleys and gunboats. Sergeants earned $11 per month, while corporals and privates received $10 and $8 per month, respectively.39

Oared Patrol Duty Along the Northern Lines

Allen and the Champlain galley flotilla cruised the U.S.-Canadian border in the vicinity of Isle La Motte, Vermont, during the summer of 1814. They conducted sailing, rowing, and gunnery drills, attended to the general needs of the larger warships, gathered intelligence, and patrolled for British raiders and American smugglers.40 The trafficking of contraband into Lower Canada was a constant source of friction between the U.S. Navy and the local residents in the Champlain Valley who depended on this trade for their survival. Macdonough found the movement of naval stores, including spars, ship timber, and tar, to be particularly distressing. Smugglers deftly skirted the watchful eyes of revenue officials and landed these items into the hands of British shipbuilders at Isle aux Noix. The American galleys patrolled both day and night, but only snared a fraction of these shipments.41

Robins’ division proved particularly adept at capturing smugglers as they emerged from their hiding places. During the months of June and July it seized over $6,000 worth of illegal goods. On 29 June, Sailing Master Eli A. F. Vallette of Burrows intercepted four local men attempting to float spars into the Richelieu River. On 23 July he captured a raft carrying 13,000 feet of plank, oak ship timbers, and tar through “a narrow and unfrequented passage.” Vallette also apprehended the persons involved in the incident, but the Navy Department had no formal policy for dealing with smugglers once arrested on Lake Champlain. Macdonough requested instructions from Secretary Jones concerning the detainees, adding with a tone of frustration that “the supplying of the enemy by many citizens of Vermont is in daily practice.”42

The Navy Department had to maintain a cautious application of force that summer, even with “profligate citizens” willing to commit “an offense of so deep a dye.”43 A harsher interpretation and enforcement of the law might provoke existing local dislike of the war into open opposition.44 Occasionally the American squadron had to turn a blind eye on evasions involving goods of no obvious military value, especially in cases when the smugglers provided intelligence of British activities in the Richelieu River.45 Both the Americans and the British had networks of spies at work in the valley, but reliable information remained difficult to obtain.
Smugglers crossed the border on a regular basis; this meant that they often had current, first-hand accounts of warship construction, the stockpiling of naval stores, and troop numbers. Eventually suspicious that the British were passing false reports through these people as a type of subterfuge, Macdonough placed his trust in only a handful of informants.  

Employing spies to any advantage required that “intelligence and succors” be prevented from traveling back over the lines to the British. Unfortunately, Secretary Jones waffled on the degree to which this needed to be enforced, instructing his commanders “to exercise the strictest vigilance” and a willingness “to stop & detain all vessels or craft, whatsoever, proceeding, or apparently intending to proceed, toward the enemy’s vessels...or toward any station occupied by the enemy,” but also warning them to “be careful to guard against injuring those who may be pursuing their lawful occupations.”

Maintaining a comfortable distance between American naval personnel and local communities prevented tensions from exploding into violence. Local residents had mixed feelings about public armed vessels moored off their shores. On the one hand they offered protection from enemy incursions, but on the other they brought a “reckless class that always shows itself in times of war” dangerously close to their homes and families. Similar to any organized community, the squadron struggled to control its own distinct brand of social deviance and crime. The mobile nature of this community, however, increased the risk of its malcontents clashing with the surrounding populace. This precarious relationship began to unravel as the summer drew to a close, leaving at least one local farmer dead and another wounded on Isle La Motte.

Isle La Motte lies off the southwestern projection of the Alburg Peninsula on Lake Champlain. During the embargo years, it served as one of the principal waypoints for smugglers trading with Lower Canada. By early August of 1814, Macdonough had stationed his squadron off the island at Blanchard’s Point within sight of a tiny farmstead owned by Captain Caleb Hill of the 3rd Division of Vermont Militia. The purpose of the visit, ostensibly to gather depth soundings, had more to do with monitoring British Captain Peter Fisher and his squadron at Ash Island, a forward base inside the Richelieu River. Fisher enjoyed keeping his American opponents on tenterhooks, even going as far as sending a penciled note that summer brazenly challenging Macdonough to a gunboat duel “on any morning between Point aux Fer & Windmill
Point.” Macdonough found that Isle La Motte afforded him the best position for keeping Fisher in check, while continuing to facilitate his pursuit of naval contraband near the border. Relations with the islanders appeared cordial at first. Captain Hill assumed the role of purveyor, furnishing supplies of corn, potatoes, butter, and beef to the squadron. Unfortunately, he also converted his home into a local tavern, serving beer and sweetened rum to those at liberty to go ashore. Within a week complaints began to reach Saratoga concerning “a small body of men” bent on sneaking away from the squadron at night to get drunk. Afterwards they would skulk about “stealing chickens, pilfering gardens, and generally harassing the island inhabitants.” Macdonough was particularly furious to learn that the perpetrators were officers and sailors from his guard patrols—a gross dereliction of duty that risked the safety of the entire American squadron. Determined to identify and apprehend this criminal element, he devised a rather elaborate sting operation under the direction of Lieutenant John T. Drury.

On 16 August, Drury and a detachment of six armed men paid a reconnaissance visit to Blanchard’s Point shortly after the squadron’s guard boats had been dispatched for the evening. Finding no sign of mischief, they went ashore and made for Hill’s Tavern. Disguised as a British landing party, Drury and his men rousted the tiny household with a series of loud knocks before forcing their way through the back door. Captain Hill and his son Ira offered the strangers rum, sugar, and glasses as they stood around discussing “the hard trip before them in returning to Canada.” Drury carried the performance to its height, however, when he interrogated Captain Hill as to the whereabouts of the American squadron and his impression of Commodore Macdonough as an officer, to which Hill replied plainly: “He will do his duty.”

But then things started to go terribly wrong. The *ruse de guerre* worked—perhaps too well. Brandishing muskets taken from an adjoining storeroom, Captain Hill and his son abruptly turned on their uninvited guests, demanding that they “ground arms.” The Hills had a duty as militia soldiers to capture anyone purporting to be a combatant or spy for the British. Drury, dropping his glass to the floor, sprang toward his assailants with his sword drawn before remembering the nature of his deception. Before he could defuse the misunderstanding, two of the sailors guarding the front door opened fire, having witnessed what they perceived to be a hostile threat against a superior officer.

The first ball struck Captain Hill in the chest, spinning him to the right. As the man’s body started to fall, a second ball entered his left side passing through the heart with fatal effect.
Ira managed to slip away in the confusion and hide behind a woodpile near the house until the men had dispersed. Drury attempted to prevent the young boy’s escape, but succeeded only in cutting his face open between the left eye and chin. Blood poured from the long slash wound across his jaw for hours, which Ira later recalled, “left me with a scar for life.”\textsuperscript{58} Shaken, befuddled, and culpable, Drury and his men hurried back to their boat and promptly fled the scene. Macdonough’s plan, intended to apprehend a handful of the squadron’s more notorious drunkards and rascals, was a grim failure and a public relations nightmare.

The Navy Department agreed to discharge the accused parties from the squadron and give them up to civil authorities—all except for Lieutenant Drury. Shortly after professing his innocence to friends in Saratoga’s wardroom, Drury disappeared without leave and eventually resurfaced in Alexandria, Virginia.\textsuperscript{59} Less than two days after the incident, Macdonough discharged Landsman George Moore, providing a brief notation in his muster book: “given up to civil authorities.”\textsuperscript{60} He then gathered depositions from the remaining men for almost a week before submitting a final report to Washington, D.C.\textsuperscript{61}

On 20 August, Macdonough assured Secretary Jones that those implicated in the affair would be turned over to the local courts and “charged with willful murder.”\textsuperscript{62} Presumably he hoped to quell any suspicions that he had lost control of his sailors, while assuring the local residents of his commitment to swift justice. Much to the chagrin of Ira Hill and his mother Cynthia, however, a rash of desertions coincided with this investigation period, and at least four of the individuals associated with the case “managed to escape from the fleet and were never afterwards apprehended.”\textsuperscript{63}

Caleb Hill’s murder threatened to set off a powder keg of anti-navy and anti-war sentiment in Vermont. The timing could not have been worse. On 24 August 1814, the British army and navy began a counter invasion of the United States through the Chesapeake Bay. Major General Robert Ross sacked Washington, D.C., by night, setting fire to the Capitol, the White House, and the Navy Yard on the Potomac River. Macdonough’s intelligence network provided ample evidence that the British had a similar offensive planned for the Champlain Valley. His spies reported that a large army of veteran troops—up to 10,000 in number—was prepared to advance south along the shore of Upper New York State before the arrival of winter. General Prevost only appeared to be awaiting the completion of a frigate at Isle aux Noix to commence his arm of the invasion.\textsuperscript{64}
Despite reservations in the Navy Department, Macdonough was also expecting a late addition to his forces on the lake—a brig of twenty guns. Secretary Jones, in particular, objected to the augmentation, hoping to avoid another expensive shipbuilding arms race. Captain Isaac Chauncey, on Lake Ontario, had already assembled the largest land-locked naval squadron in the country’s history, drawing vast quantities of men, money, and equipment from other stations only to engage the British in a series of indecisive fleet maneuvers and distant skirmishes.65

Macdonough proposed other options for Lake Champlain, including the establishment of land batteries to block the outlet of the Richelieu River at Rouses Point, and a reactivation of his original plan of November 1813—to descend the river in row galleys and conduct a preemptive strike against Isle aux Noix, St. Jean, and Montreal. Failing in this, he settled on the construction of “a brig of 20 18pr long guns.”66 Noah Brown’s older brother Adam laid down a keel for the new brig at Vergennes on 23 July and launched the hull in the record time of only nineteen days. The brig, first named Surprise, and later Eagle, spent the rest of the month outfitting before it joined the American squadron on 27 August, just days after news of the burning of Washington, D.C., reached the Champlain Valley.67 Macdonough was undoubtedly relieved to have his squadron strengthened by this new battery of twenty guns, for now the firepower of the two belligerents was closely matched.

A Prelude to Battle: The Dead Creek Road Bombardment

On 1 September, General Prevost’s troops began their march, forcing Macdonough to continue his withdrawal to the south past Isle La Motte and wait for the Royal Navy at Plattsburgh Bay. During the passage, the winds shifted to a point dead ahead and slowly vanished, thus retarding the progress of the squadron. Macdonough briefly employed his oared divisions as towboats when the larger warships became immobilized, so as not to waste valuable time.68 It was imperative that they reach their destination ahead of Prevost’s advance, in order to better support Brigadier General Alexander Macomb and the U.S. Army at Plattsburgh. The War Department, in a bizarrely timed moment of indecision, had recently ordered General Izard and approximately 4,000 regulars to leave the Champlain Valley and join the fighting along the Niagara River.69 This left General Macomb with fewer than 3,000 regulars and militia defending a handful of partially built earthwork fortifications—hardly a favorable military situation in the face of imminent attack.70
The British Army reached Dead Creek, just a few miles north of Plattsburgh, in less than a week. Macdonough dispatched the galley divisions of Mitchell and Robins to take a position close in to shore and harass the enemy’s movement (Figure 16). The galleymen spent the night at their stations amidst poor weather. On 6 September, Divisions No. 1 and No. 2 formed a line abreast facing Dead Creek Road between the outlet of the Saranac River and the northern shoreline of Cumberland Bay. The British came into sight “passing a defile in the woods through which the roads lie” only to discover that “their progress was considerably checked by the fire of the gallies.”

The advantage turned, however, when a stiff wind churned up the bay making it impossible for the galleys to aim their guns with any effect. British artillerymen “being enabled by their situation in the woods, in which they were screened, to aim with precision at our vessels” bombarded the galleys killing two marines and wounding an officer.

Macdonough had spent the morning watching the skirmish unfold before him from the deck of his flagship Saratoga. He released a volley of signals from the warship’s masthead recalling the galleys, but it failed to produce the desired response. Macdonough finally sent Acting Lieutenant Silas Duncan in a gig to carry the order in person. While communicating the message aboard Allen, a British round shot came crashing home sending a shower of lethal splinters in all directions. Duncan had part of his shoulder destroyed by a chunk of flying metal. Macdonough transferred the young officer to Dr. James Mann at Burlington’s military hospital.

Duncan’s wounds, based on the medical technology of the day, called for a full amputation of the arm. The shot had passed between his scapula, on the back of the shoulder, and his humerus, or upper arm. The muscles were completely destroyed, but the brachial artery had not been severed. Duncan firmly refused the surgery, claiming that he would rather die than live with one arm. Dr. Mann, along with attending surgeons Dr. Brown and Dr. Walker, removed all of the ragged pieces of bone and muscle, including the head of the humerus protruding into view, and sutured the wound. Aside from a sloping of the shoulder, Duncan healed well. For the rest of his life he carried a vivid reminder of how lethal shrapnel and wooden splinters could be as they flew about the tight fighting spaces of a row galley. Seaman David McKenny, also being treated at the hospital that same day, considered his debt to the
public service to be paid in full. McKenny slipped away unnoticed that night and deserted from the U.S. Navy.  

Figure 16. Map of American galley bombardment of Dead Creek Road, 6 September 1814. An unknown artist recorded this image, revealing the position of Division No. 1 and No. 2 off Dead Creek Road during their bombardment of the advancing British Army. National Archives II, College Park, Maryland. Ink tracing by E.B. Emery from a photocopy of the original.

Events moved swiftly after the American bombardment of Dead Creek Road. General Prevost was poised to sweep into New York State as soon as the danger of being flanked by the U.S. Navy had been eliminated. Just five days later, the Royal Navy squadron, comprised of a new frigate, one brig, two sloops, and twelve gunboats, rounded Cumberland Head and sailed into Plattsburgh Bay. Ready to extend a warm reception, Macdonough had anchored the largest of his warships in a “line ahead” and reinforced the formation with his three oared divisions. After two years of preparations and maneuvers, the battle for Lake Champlain had finally begun.
Endnotes: Chapter V


4. Thomas Macdonough to William Jones, 11 June 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 145, NARA.

5. Thomas Macdonough to William Jones, 6 May 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 121, NARA.


8. Thomas Macdonough to William M. Robbins, 9 August 1814, Macdonough Collection, MS #41.83, SMV.

9. “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, Entry 92, T829, 147, NARA. Photocopies of the same have also been provided by Christine Hughes at the Naval Historical Center, Washington Navy Yard, Washington, D.C.


11. George Evans to William Jones, 23 August 1814, Officers’ Letters, RG-45, M148, Reel 13, Pt. 3, No. 82, NARA.


13. Macdonough originally assigned Sailing Master William M. Robins the task of opening a rendezvous at Salem, Mass. However, Robins fell ill prior to reaching his post. By 10 February 1814 he is still convalescing at the “Stage House” in Poulteney, Vt., where he appears to have had relatives. See U.S. Census Report, Addison County, Vt., 1814 for the listing “Moses Robins.” Macdonough wrote to William Robins rescinding his previous order to proceed to Salem (due to Robins’ illness) and instructed him to return to Vergennes “that your health may be better attended to.” See Thomas Macdonough to William M. Robins, 10 February 1814, Macdonough Collection, MS #41.37, SMV.
14. John Kortz, Sr. of Hudson, New York to Thomas Macdonough, 12 August 1814, Macdonough Collection, MS #41.85, SMV.

15. Ibid. As an ‘Ordinary Seaman’, Kortz Jr. could have received up to $12 (one months wages) as an advance upon enlistment, not counting the extra bounty for the “privations and suffering, which those who are employed on the Lakes service sustain.” See William Jones to Thomas Macdonough, Letters Sent to Officers, RG-45, M149, Reel 11, No. 223, NARA.

16. Ibid.

17. John Kortz, Jr. (Ordinary Seaman) can be found in Macdonough’s muster roll for the Lake Champlain station during the war. See “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, Entry 92, T829, 147, No. 26, NARA. According to Macdonough’s roll, Kortz Jr. entered the service on 12 July 1814, appeared for duty on 21 July 1814, and was discharged “by order of Capt. Macdonough” on 29 August 1814. Jacob Acker (Ordinary Seaman) was the man who allegedly convinced the younger Kortz to enlist in the U.S. Navy—the same person that Kortz, Sr. held responsible for his son’s predicament. Acker deserted on 8 October 1814, shortly after the Battle of Plattsburgh Bay, from the military hospital in Burlington, Vt. He also entered and reported for duty on the same days as Kortz Jr. The two young men are Muster Roll Entries 792 (Acker) and 793 (Kortz Jr.) on Lake Champlain. John Kortz Sr. also intimated in his letter to Macdonough that he had family in the local area that could further press his case. “I have sent to my Brother-in-Law, John Green, a ship carpenter at Vergennes,” wrote Kortz, “depositions with regard to my son’s age with a request to forward them to you, or if possible, to call on you with them himself & endeavor to get you to discharge my son & to endeavor to see him & advise him by no means to suffer himself to be persuaded to desert—but to wait until he is discharged by you—otherwise he would be punished.” There is also a “Henry Kortz” who served as a private of marines in Macdonough’s squadron during the Battle of Plattsburgh. He appears on the muster roll for Lake Champlain as well. However, it has yet to be determined if Henry Kortz was a family relation of John Kortz, Sr.

18. Charles C. B. Thompson to Thomas Macdonough, 1 July 1814, Macdonough Collection, MS #41.72, SMV.

19. Ibid.

20. Ibid. Johnson had been sent with “the draft before the last” which had prompted Macdonough to write this letter to Thompson requesting no more African-American recruits. William Tobey, a black indentured servant, is presently the only African-American positively known to have served with the American squadron on Lake Champlain during the war. See John Reed to Benjamin Crowninshield, 25 April 1815, Miscellaneous Letters Received, RG-45, M124, Reel 71, No. 84, NARA. John Reed wrote this letter on behalf of a Captain Joshua Gray, who wished to recover wages and prize money due to William Tobey, a black indentured servant who served under Macdonough at Plattsburgh Bay. Other African-American sailors made up a percentage of the sailors who served on Lake Champlain, as on Lakes Ontario and Erie. For more information on the role of African-American sailors in the War of 1812, see Gerard T. Altfott, *Among My Best Men*: African-Americans and the War of 1812 (Put-in-Bay, Ohio: Perry Group, 1996).

21. Macdonough turned to the U.S. Army on numerous occasions for soldiers to fill his warship crews. Generals Henry Dearborn, Wade Hampton, and George Izard all loaned soldiers to the U.S. Navy on Lake Champlain at different times between 1812 and 1814.


23. Thomas Macdonough to William Jones, 22 February 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 63, NARA; Thomas Macdonough to William Jones, 7 March 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 77, NARA; Thomas Macdonough to William Jones, 23 March, 30 April, 18 May, 29 May 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 89; No. 115; No. 129; No.
24. By the time Macdonough reactivated No. 169 and No. 170, along with his two Doughty-designed 50-foot barges, and consolidated them as his “Third Division of Gallies” (June 1814), all four of the oared warships had been renamed. The two barges became Ludlow and Wilmer, while No. 169 and No. 170 became Alwyn and Ballard. Again, Macdonough kept with his practice of commemorating fallen comrades as these names corresponded to Lieutenant James P. Wilmer who was knocked overboard by a splinter and drowned while serving with Captain David Porter on Essex off Valparaiso, South America in an action with the British frigate Phoebe and sloop of war Cherub on 28 March 1814; and August C. Ludlow and Edward J. Ballard served as 1st Lieutenant and 4th Lieutenant aboard the U.S. frigate Chesapeake under Captain James Lawrence. Both Ludlow and Ballard were killed during Chesapeake’s action with the British frigate Shannon on 1 June 1813. Finally, Lieutenant J.C. Alwyn was killed in action on 29 December 1812. The galley names making up each of Macdonough’s divisions on Lake Champlain are listed in Sailing Master Daniel S. Stellwagen’s signal book for Lake Champlain. See “Daniel S. Stellwagen, Commander, 3rd Division of Galleys, Lake Champlain, June 1814” (hereafter cited as Stellwagen Signal Book), Manuscript Division, Library of Congress, Washington, D.C. (hereafter cited as LOC). In addition, the names of the individual galley commanders are provided in the after-action reports prepared for Macdonough following the Battle of Plattsburgh Bay. One letter came from Mitchell, one from Robins, and one from Stellwagen. These after-action reports are discussed in detail in this chapter of the dissertation. It is also interesting to note that No. 169, and the two Doughty-designed 50-foot barges are listed in Macdonough’s squadron records as “Gunboats No. 1, No. 2, No. 3, and No. 4.” See “Report of the State and Condition of the Naval Force Employed in the Defense of the Harbors & Waters of the United States Under the Command of Thomas Macdonough, on the 31st Day of August, 1814,” LCMM. This document shows No. 1 and No. 2 as having a long 18-pounder each, while No. 3 and No. 4 have a long 12-pounder each—as of 31 August 1814. The Doughty-designed barges were originally outfitted with 18-pounders and the original Gunboats No. 169 and No. 170 had 12-pounders. Stellwagen’s signal book also included a copy of a letter from Daniel Stellwagen to Thomas Macdonough listing No. 1 as Ludlow, No. 2 as Wilmer, No. 3 as Alwyn, and No. 4 as Ballard. See Daniel S. Stellwagen to Thomas Macdonough, 24 August 1814, Stellwagen Signal Book, LOC.

25. Thomas Macdonough to William Jones, 9 August 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 3 No. 12, NARA.


29. Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815, Subject Files, Class N, Subclass NI, Promotion and Privileges, Box 224, RG-45, NARA; and “Roll of Commissioned & Warrant Officers Under Capt. Macdonough,” Subject Files, Class N, Subclass NA, Lists of Persons Serving With Vessels or Stations, Box 224, RG-45, NARA.

30. Service Record Abstracts, RG-24, M330, NARA.

31. Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815, Subject Files, Class N, Subclass NI, Promotion and Privileges, Box 224, RG-45, NARA; and “Roll of Commissioned & Warrant Officers Under Capt. Macdonough,” Subject Files, Class N, Subclass NA, Lists of Persons Serving With Vessels or Stations, Box 224, RG-45, NARA. See the entries pertaining to Stellwagen and Robins in particular.
32. Ibid. Despite these feelings, Macdonough still had no choice but to entrust Mitchell with Division No. 1 of his row galleys, and as the ranking officer among the oared warship commanders, Mitchell presumably served as overall commander of the flotilla.

33. Ibid.

34. Ibid.

35. "The Following Orders are to be Observed for the Regulation of the Navy at Whitehall, Lake Champlain, James T. Leonard" (hereafter cited as “Orders Observed for the Regulation of the Navy at Whitehall”), n.d., Subject Files, Class P, Subclass PB, Administration of Stations, Rules and Regulations Pertaining to U.S. Naval Stations (hereafter cited as Rules and Regulations Pertaining to Naval Stations), Box 498, RG-45, NARA.

36. Ibid.

37. For information on the pay of enlisted men, see “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, Entry 92, T829, 147, NARA; and “Roll of Seamen of the Squadron on Lake Champlain,” Muster and Pay Rolls, RG-45, Entry 92, T829, 141, NARA. For additional information pertaining to officer pay, see McKee, A Gentlemanly and Honorable Profession, 490-491.

38. Ibid.

39. “Roll of Seamen of the Squadron on Lake Champlain,” Muster and Pay Rolls, RG-45, Entry 92, T829, 141, NARA. See also John Edsall, Incidents in the Life of John Edsall (Catskill: John Edsall, 1831), 118. Edsall claimed to have been paid $25 for his services as a "Master-of-Arms" aboard Saratoga during the Battle of Plattsburgh Bay. Edsall’s pay would have been equal to that of a 2nd Lieutenant of Marines. See "A Register of Officers and Agents Civil, Military, and Naval in the Service of the United States Together with the Names, Force, and Condition of All the Ships and Vessels Belonging to the United States, and When and Where Built," 1814, Box 5200, RG-287, NARA.

40. As of June 1814, Macdonough had many of these drills coded into a series of signals, recorded into books and distributed to the commanding officers of each oared warship division in his squadron. To understand the types of drills being conducted through the summer and fall of 1814, see Stellwagen Signal Book, LOC.

41. H. Nicholas Muller, ""A Traitorous and Diabolical Traffic: The Commerce of the Champlain-Richelieu Corridor During the War of 1812," Vermont History 44 (1976): 78-96; and Thomas Macdonough to William Jones, 23 July 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 3, No. 8, NARA.

42. Thomas Macdonough to William Jones, 23 July 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 3, No. 8, NARA; and Bellico, Sails and Steam in the Mountains, 218-219. Short of linking a cordon of floating barricades in the waters between Rouses Point, N.Y. and Highgate, Vt., Macdonough’s row galleys provided the next best solution for dealing with smugglers.


with merchants living in Montreal proved to be one example of "acceptable" smuggling during the War of 1812. See Muller, "‘Traitorous and Diabolical Traffic,’" 78-80, 83-84; and Everest, Champlain Valley, 67-86.

46. Thomas Macdonough to William Jones, 9 December 1813, Commanders' Letters, RG-45, M147, Reel 5, Pt. 1, No. 187, NARA. Macdonough appeared to place the greatest trust in a "John Sax" and "John Smith"—presumably these are false names, should his correspondence be captured by the British.


50. Blanchard's Point is on the west side of Isle La Motte, Vt.

51. British Royal Navy Captain Peter Fisher to Thomas Macdonough, 22 August 1814, Macdonough Collection, MS #41.88, SMV.

52. John Edsall noted that "armed boats were nightly stationed near the lines, with directions to keep a sharp look out, and upon the appearance of any of the enemy's vessels, to give the alarm." See Edsall, Incidents in the Life, 119. Emphasis is Edsall's.


54. Thomas Macdonough to William Jones, 20 August 1814, Commanders' Letters, RG-45, M147, Reel 5, Pt. 3, No. 23, NARA.


57. Hill, "Personal Reminisces," 53; and Thomas Macdonough to William Jones, 20 August 1814, Commanders' Letters, RG-45, M147, Reel 5, Pt. 3, No. 23, NARA.


59. The Navy Department never dropped John T. Drury from its lists following this incident. Instead, Jones ordered him to report to Captain John Rodgers at Alexandria, Va., "for such temporary duty as he might assign" on 5 September 1814. See Service Record Abstracts, RG-24, M330, NARA. Drury allegedly sunk into a deep depression and began drinking heavily after the ill-fated affair on Lake Champlain. Macdonough learned of Drury's descent and urged the young lieutenant to give up alcohol and turn to religion to combat his tendency to brood upon the affair about which he could now do nothing: "Now let me advise you in the most earnest and strong manner to refrain from such a mode of quieting or alleviating your feelings," he wrote on 12 November 1814. "Your own good sense will, I trust, and sincerely hope, point out the fallacy of such a remedy. It will be momentary, and returning to the same thing again [will] be sure and natural consequence, which will ultimately terminate in destruction and misery to yourself and be to your family an everlasting sting of bitter pain and regret. No, my dear Sir, you would do extremely wrong even to indulge at all in this deceiving and destroying substitute to exterminate any affection of the mind. Believe me, it leads to ruin, certain ruin." See Thomas Macdonough to John T. Drury, 12 November 1814, in John T. Drury to William Jones, 1 December 1814, Officers' Letters, RG-45, M148, cited in McKee, A Gentlemanly and Honorable Profession, 454. An excerpt of the same letter is also included in Hill, "Personal Reminisces," 55. In this excerpt Macdonough refers to the whole affair as an unfortunate "accident." Emphasis is Macdonough's.
60. “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, Entry 92, T829, 147, NARA. Roll Entry 20 is “George Moore.” Photocopies of the same microfilm can be found at the Naval Historical Center, Washington, D.C.

61. Thomas Macdonough to William Jones, 20 August 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 3, No. 23, NARA.

62. Ibid.

63. Hill, “Personal Reminiscences,” 53. Eli Fisk (Boy) deserted from Plattsburgh on 17 August 1814, the night after the affair. A rash of desertions among the enlisted personnel followed in the remaining weeks of August 1814. Lieutenant John T. Drury is listed on 17 August 1814 as having “Left the Station.” Macdonough, apparently in an act of professional courtesy, listed Drury as “D” for “Discharged,” rather than “R” for “Ran.” For a complete list of names for all individuals who left the Lake Champlain Station between 17 August and 31 August 1814, see “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, Entry 92, T829, 147, NARA. Naval justice served among other things to maintain order and protect officers and men from the vengeance of civil authorities on shore. It was considered almost a moral duty for an officer to do his best to keep his men out of the hands of the civil courts, where they would likely meet with injustice. In this case, however, withholding the men threatened to sour relations with the local residents of the Champlain Valley at a critical point in the war.

64. Hickey, A Forgotten Conflict, 182-185, 195-204, 221-254. For details on Prevost’s invasion of the Champlain Valley via Northeastern New York State, see Everest, Champlain Valley, 141-192; Lewis, British Naval Activity, 23-26; and Crisman, The Eagle, 26-32.


68. The American brig Eagle had to be towed by a division of Macdonough’s row galleys on at least two different occasions when he could not afford to wait for the winds to change direction or pick up. This must have been exhausting work for the galleymen. See “The Log Book Kept On Board the United States Sloop of War Surprise of Twenty Guns,” Crisman, The Eagle, 223. Daniel Records’ entry in the logbook for 31 August 1814 recounted the following: “At 5 P.M. calm, three galleys towing the brig [Eagle].” The entry for 1 September 1814 also shows the galleys towing the warship: “At 15 minutes after 1 P.M. weighed the anchor and proceeded up the lake, the galleys ahead towing, the wind being ahead and very light.”

69. Everest, Champlain Valley, 164-167; and Crisman, The Eagle, 56.

70. Everest, Champlain Valley, 164-167; and Crisman, The Eagle, 56.

71. Thomas Macdonough to William Jones, 7 September 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 3, No. 41, NARA.

72. Thomas Macdonough to William Jones, 7 September 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 3, No. 41, NARA. Macdonough reported one seaman killed and three marines wounded, but it appears that he was mistaken, for Acting Lieutenant Silas Duncan did not die from his injuries sustained on 6 September. In addition, Macdonough’s muster roll for Lake Champlain lists Marine Privates Hiram Wooster and Edmund Townes as “Killed in Action” on 6 September 1814. See “Soldiers of the 15th and
33rd Regiment U.S. Infantry Acting as Marines,” in “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, Entry 92, T829, 147, Nos. 36, 41, NARA. Townes and Wooster are Roll Entries 190 and 336, respectively.

73. Thomas Macdonough to William Jones, 7 September 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 3, No. 41, NARA.

74. James Mann, Medical Sketches, 208-209. Dr. Mann described Duncan’s wounds with impressive detail: “Lieutenant Duncan of the Navy, was wounded by a cannon ball, which passed in a direction of the scapulo-humeral articulation. The superior muscles of the shoulder with part of the subjacent were destroyed, leaving a small portion in the axilla connected with the principal artery, which received no injury. The acromion process and clavicle were fractured. The head of the humerus was broken, and four inches of its substance forced away by the ball, leaving an inch of its extreme head attached to its socket.” The Navy Department promoted Duncan to the rank of lieutenant on 9 December 1814 and ordered him from Lake Champlain to the USS Torch at New York City. He continued to serve on sailing warships for the remainder of his career—including the USS Independence—despite his use of only one arm. See Service Record Abstracts, RG-24, M330, NARA. Duncan spent a great deal of time working out the details of his pension after suffering his injuries on Lake Champlain. The Navy Department vacillated on how to classify the young lieutenant’s situation, as his arm had not been amputated and therefore technically did not constitute the status “loss of one arm.” See Silas Duncan to Benjamin Crowninshield, 17 April 1815, Officers’ Letters, RG-45, M148, Reel 14, Pt. 2, No. 180, NARA; Silas Duncan to Benjamin Crowninshield, 3 August 1816, Officers’ Letters, RG-45, M148, Reel 17, Pt. 1, No. 90, NARA; Silas Duncan to Benjamin Thomas, Esq. Acting U.S. Navy Secretary, 6 September 1817, Officers’ Letters, RG-45, M148, Reel 17, Pt. 1, No. 95, NARA; U.S. Navy Secretary Samuel Southard to Silas Duncan, 7 June 1825, Letters Sent to Officers, RG-45, M149, Reel 16, Nos. 68, 76, NARA; Samuel Southard to Silas Duncan, 11 July 1825, Letters Sent to Officers, RG-45, M149, Reel 16, No. 110, NARA; Samuel Southard to Silas Duncan, 18 July 1825, Letters Sent to Officers, RG-45, M149, Reel 16, No. 123, NARA; and Samuel Southard to Silas Duncan, 5 August 1826, Letters Sent to Officers, RG-45, M149, Reel 16, No. 479, NARA.

CHAPTER VI
"A DIVISION OF 5 GUNBOATS ON EACH FLANK": THE ROLE OF ALLEN AND THE CHAMPLAIN GALLEY FLOTILLA AT THE BATTLE OF PLATTSBURGH BAY, 11 SEPTEMBER 1814

On Sunday, 11 September 1814, the first stirrings of daylight showed along the horizon at 0527. A dim, flat gray slowly began to outline the warships of the American line of battle situated on a northeast-by-southwest axis inside Plattsburgh Bay. *Eagle* held the van of the line approximately two miles from the mouth of the Saranac River. *Saratoga, Ticonderoga,* and *Preble* followed in consecutive order, stretched out at intervals to within one mile of the shoal waters off Crab Island. Meanwhile, the American oared flotilla constituted a secondary, but mobile force situated parallel to the larger warships in three separate "line abreast" formations closer inshore (Figure 17).

Figure 17. Position of the American squadron at Plattsburgh Bay, 11 September 1814. Ovals denote the main line of warships; horizontal dashes represent the oared divisions. Symbols indicating warships and galleys are not to scale. Drawing by E.B. Emery.
Macdonough's choice of this arrangement may have been influenced in part by the low numbers and inexperience of his crews. While at anchor, a warship became a relatively stable platform and the hands normally required to operate the sails could man the guns. The American galleys and gunboats carried minimal complements of soldiers at the oars and sailors at the guns, but they could not be left static in the event that one of the larger warships of the line required assistance. Should the enemy attempt to board a ship, for example, the divisions of oared warships could quickly provide extra sailors and marines. Macdonough thus held his galley flotilla in reserve, instructing their commanding officers to keep along the disengaged side of the line and to "fire when they get a chance.""\(^2\)

Later that morning, the Royal Navy squadron came into partial view as it skirted the northeast side of Cumberland Head. From behind the low, intervening land of the point came an imposing procession of warships, including the frigate *Confiance* (37 guns), the brig *Linnet* (16 guns), the sloops *Chub* (11 guns) and *Finch* (11 guns), thirteen gunboats (17 guns total), and a number of support vessels including a small barge and the tenders *Canada* and *Icicle*.\(^3\) The total armament of the British warships consisted of 92 guns capable of firing 1,804 pounds (818.2 kg) of metal in a broadside, and the available crew numbered approximately 917.\(^4\) Before rounding into the bay, the squadron reduced sail and hove to while Commodore George Downie disembarked from *Confiance* in the flagship's gig to reconnoiter the size, firepower, and position of the American line.\(^5\)

Downie settled on a plan of attack and sent the word for his commanding officers to report for instructions aboard *Confiance*. Captain Daniel Pring of *Linnet* and Lieutenant James McGhie of *Chub* received orders to engage the van by sailing past *Eagle*, crossing ahead of the brig's bow, and anchoring in a situation best suited to disable her crew and guns. Lieutenant Raynham and the twelve gunboats were to conduct a boarding action against *Ticonderoga* with the assistance of Lieutenant James Hicks and the sloop *Finch*. Once *Ticonderoga* had been overrun, Lieutenant Hicks would proceed down the line to fight *Preble*. Finally, Downie planned to follow closely behind *Linnet* and *Chub* with *Confiance*, breaking off early enough to come hard about and deliver the frigate's starboard broadside at pointblank range into *Eagle*. At this point, *Confiance* would pass *Eagle*'s stern, cross *Saratoga*'s bow, drop anchor, and rake the enemy flagship with a series port broadsides.\(^6\)

At 0740, Downie's squadron weighed anchor, formed the line of battle, and got underway. Upon entering the bay, Captain Pring, standing on the weather deck of *Linnet*, caught
his first glimpse of the much-discussed American line: “a ship, brig, schooner, and sloop, moored in a line...with a division of 5 gunboats on each flank.” This last reference is puzzling, as it contradicts the traditionally accepted formation consisting of three separate oared divisions hidden behind the American squadron’s larger warships. It is possible, though not likely, that the galleys and gunboats were reorganized at such a late date to make better advantage of their mobility and firepower. Certainly, a reasonable explanation would be that Captain Pring identified an obvious distinction based on class. Perhaps he was referring to the two different versions of oared warships observed that morning in the American line—in other words the six double-gun lateen galleys and the four smaller gunboats. At a distance, the two row galle divisions could have easily appeared as one division, while the gunboat division constituted the second. Pring may have simply miscounted, or failed to see one of the galleys behind Eagle or Saratoga. Whatever the case, Commodore Downie had made no provisions in his attack plan to deal with these ten “gunboats” inconspicuously hovering behind the enemy’s main line—an oversight that he would not live long to regret.

Tactical Planning and Preparations

Macdonough had spent days carefully preparing his position inside Plattsburgh Bay. Eagle, Saratoga, Ticonderoga, and Preble constituted the main bulwark of defense, while the galleys and gunboats served as mobile stopgaps. Certain precautions, however, had to be taken in order to support this formation. The prevailing winds blew from the north, thus it was imperative that the American warships be anchored deep enough inside the bay to keep to windward of the approaching Royal Navy. This promised to slow the attackers by forcing them to beat against the wind, but it also may have placed his own oared warships at a disadvantage. Holding the galleys and gunboats against the winds and waves must have demanded additional human energy at the sweeps and subsequently reduced the overall maneuverability and effectiveness of the vessels.

Macdonough also instructed Eagle, Saratoga, Ticonderoga, and Preble to have anchors set off the bow and stern along with cables rigged to kedge anchors that ran fore and aft. Such a configuration allowed his crews to spin or “wind” each warship about in place, ensuring that the squadron’s port and starboard batteries could be presented to the enemy regardless of damages sustained to the sails and rigging. Stretched out across the bay, Macdonough’s squadron appeared relatively even to that of his opponent with 14 vessels displacing a total of 2,244 tons and carrying 86 guns. His total battery had a broadside throw weight of 1,194 pounds (480 lbs.
[217.7 kg] from long guns and 714 lbs. [323.8 kg] from short guns) and was manned by approximately 882 sailors and soldiers.\textsuperscript{12}

Assuming that Captain Pring's account is partially accurate, Macdonough appears to have placed Division No. 1 and Division No. 3 of his galleys farther out toward the ends of the American line in the direction of Dead Creek Road and Crab Island.\textsuperscript{13} This alteration can be commended on two grounds. First, the shift provided a mobile force at the extreme head and foot of the line to help repel any attempts to turn his flank. Division No. 1, stationed off the windward side of \textit{Eagle}, could use long 24-pounders to engage the enemy squadron upon its approach, or use 18-pounder columbiads loaded with anti-personnel shot in order to soften an opponent before a boarding action. Most importantly, the combined long-range weapon capability of Divisions No. 1 and No. 2 allowed \textit{Eagle}, \textit{Saratoga}, \textit{Ticonderoga}, and \textit{Preble} to conserve their shot while the Royal Navy stood in to position. Division No. 3, stationed off \textit{Ticonderoga} and \textit{Preble}, had less powerful 18- and 12-pounders, but this appeared sufficient as it was only intended to help prevent the schooner and sloop from being surrounded.

Secondly, extending the flanks used the shoal waters at the opposite ends of the American line to the fullest possible advantage. Turning the head of the line now required navigating close in to a lee shore in order to pass between Division No. 1 and the inner expanse of Cumberland Head—a less than favorable situation for any helmsman. At the opposite end of the line, a wide ledge of rocks off Crab Island posed an equally dangerous navigation hazard. In both scenarios, \textit{Linnet}, \textit{Confiance}, \textit{Finch}, and \textit{Chubb} faced the risk of grounding amidst heavy gunfire. Maneuvers under such difficult circumstances only promised to unravel into an embarrassing debacle if one of the larger warships became accidentally stranded. Macdonough's galleys and gunboats could easily penetrate the shallows, regardless of wind direction, and overtake an immobilized target—they had the right design, construction, and armament. Most importantly, however, they had a disproportionate number of men compared to a typical sailing warship. The number of soldiers and sailors attached to the oared divisions by the opening of the battle is estimated to have been 350—in other words, roughly 40% of the American squadron's total manpower. Moreover, the combined fire of these tiny warships equaled one of \textit{Eagle}'s broadsides.\textsuperscript{14}

Macdonough also prepared additional entries for the squadron's signal books—a collection of over three hundred numerical codes pertaining to battle tactics and orders. These are still preserved in the "Signal Book and Orders of the Third Division of Gallies" kept by
Sailing Master Daniel Stellwagon (Figure 18). Inside, Macdonough had prescribed directions for various important maneuvers, including the keeping of divisions, advancing on the enemy in a line abreast, retreating stern foremost to keep up a steady fire, taking the flagship in tow, and close action. President and Montgomery, the sloops attached to the oared warships, were not included in this book, as they limited their duties to supply, communications, and the transport of wounded during the battle.

Another document, entitled "Order of Battle," has also been attributed to Stellwagon's signal book, although it surfaced as an isolated sheet of paper from the collections of the United States Naval Academy Museum in Annapolis, Maryland. This document provides the only known contemporary description of how the oared flotilla was arranged behind the American line in early September 1814. A rough sketch and accompanying narrative contain the following information: Division No. 1 (Lieutenant Mitchell) consisted of the three northernmost galleys extending beyond Eagle's bow toward the inner shoreline of Cumberland Head; Division No. 2 (Sailing Master Robins) held the center with three galleys stretching from Eagle's stern to the bow of Ticonderoga; and Division No. 3 (Sailing Master Stellwagon) consisted of the four southernmost gunboats extending from Preble's bow southward in the direction of Crab Island.

The relative capabilities of the three American oared divisions—i.e., broadside strength and the types of guns projecting the firepower—are important elements to consider when assessing Macdonough's battle formation. Galleys and gunboats shared a near total dependence on human energy for tactical mobility and combat effectiveness—unlike sailing warships, the two appeared directly interrelated. Thus the distribution of these warships along the line proved critical to maximizing their respective performance. Since Division No. 3 consisted of four largely unsound hulls carrying the weakest and least diverse battery in the flotilla, Macdonough may have opted to station it at the foot of the line where the fighting was not expected to be as fierce. Thus Alwyn, Ballard, Ludlow, and Wilmer hovered in the vicinity of Preble, bolstering the sloop's position with an additional two long 12-pounders and two long 18-pounders. In this situation, Preble and Division No. 3 together almost equaled the long-range firepower of Ticonderoga, greatly strengthening the foot of the line by protecting it from flanking attacks.

Macdonough appeared to be placing the bulk of the oared flotilla's tactical versatility and power toward the head and center of the American line. The long gun broadsides of the first, second, and third oared divisions was 72 pounds (32.6 kg), 72 pounds (32.6 kg), and 60 pounds (27.2 kg), respectively. The short gun weights, however, were only 54 pounds (24.4 kg),
54 pounds (24.4 kg), and 0 pounds (0 kg). Yet broadside firepower is not simply a matter of dividing the number of guns in half and adding up their weight. The type of gun mounts employed and the horizontal azimuth-of-fire also have to be considered. Within Divisions No. 1 and No. 2, the galleys’ guns rested on pivot mounts. These specially-designed carriages enabled a gun to traverse—in this case in a 1/8-of-a-circle or 45-degree arc—without using the oars to reposition the entire vessel. This additional margin of error must have been extremely helpful in poor weather conditions, as it was difficult to keep a galley exactly on target amidst winds and swells. The traverse helped gun crews compensate by simply repositioning the muzzle to port or starboard as needed. Division No. 3 had only fixed slides, requiring the crew to aim the entire boat in order to hit a target.

As the American squadron beat to quarters, sailors and soldiers aboard the oared warships moved deftly about the guns, rowing stations, gangways, and rigging preparing for a fight. Gun crews swarmed about their stations organizing and distributing the necessary equipment, such as worms, ladles, rammers, handspikes, and buckets for extinguishing fires and soaking the sponges used to swab the gun barrels after each discharge. Once the tompions had been removed from the muzzles, the appropriate gun tackle had to be unshipped and flaked out onto the transverse decking, grape and round shot had to be thoroughly inspected, and if
available, slow match had to be ignited and kept as a reserve in the event that the flintlock firing mechanisms of the ordnance happened to fail. Gunners tended to the powder magazines, stacking loaded flannel cartridges in orderly piles. Cylindrical leather containers called “passing boxes” were typically used to safely transport powder cartridges back and forth from the magazine to the fighting stations. However, galleys had their magazines in close proximity to the guns fore and aft. This may have allowed the gunner or gunner’s mate to hand off cartridges to the crew. Finally, the transverse decking would have been lightly covered in sand to improve footing.\textsuperscript{23}

Soldiers assigned to rowing detail quickly ran out the galley’s oars, bracing the shaft of each against a vertical thole pin, and securing it with a loose grommet fashioned out of leather. Cutlasses and axes were presumably distributed either to conduct or repel a boarding action. Soldiers also readied pistols and muskets, fixing flints in place and making sure that cartridge boxes were full. Loose gear also had to be stowed out of the way of gun platforms and gangways. Such items had the potential to become flying projectiles if struck by incoming shot and unnecessarily increase the tally of killed and wounded.\textsuperscript{24}

Boatswains and a handful of sailors tended to the sails, yards, and rigging. The lateen yards on the main and foremast had to be lifted, but with the sail left on and ready to be set in the event that it became necessary to give pursuit, evade capture, or even retreat. Galleys and gunboats could only make their top hull speed with oars and sails working in conjunction. Amidst the flying debris of a battle, however, furling protected the sails by reducing the amount of exposed surface area being presented. A single lucky shot might cut through the rigging and bring the sail and yard down onto the oarsmen seated below, temporarily disabling the galley.

Macdonough’s oared warships relied on steering oars referred to as “sweeps” in order to maneuver and thus present their guns. Another reason for the use of sweeps related to rudder construction. The tiller on each galley had to be unshipped in order to allow its long 24-pounder stern gun to be run out into fighting position above the rudder head. Donald Shomette has suggested that a steering yoke could have been used to allow the helmsman to operate the rudder from a position forward of the stern gun without the use of a tiller, a configuration that Shomette believes was used on Joshua Barney’s galleys on Chesapeake Bay in August 1814.\textsuperscript{25} However, archaeologists found no evidence to support this steering method on Allen. It may have been considered superfluous, as the rowers could position the galleys’ guns on target as needed. Fortunately, all three divisions spent at least part of the summer conducting rowing, sailing, and
gunnery drills, meaning that many of these questions and deficiencies had already been settled with functional solutions.\textsuperscript{26}

The use of oars also posed some tactical drawbacks. Galleys and gunboats could only make their top rowing speed in short bursts, and the effort required left the majority of the crew—seated at the oars—in incapable of anything else, such as hand-to-hand combat. The key was to work at a moderate pace, thus maintaining an economical level of exertion. Speed also dropped with the added demands of trying to keep multiple vessels in a set approach formation. Engaging under sail was not much of an option, for in general, galleys and gunboats exhibited poor sailing qualities. The precise maneuvering required to stay in formation, successfully hit an enemy target with shot, or carry off a boarding action was best accomplished under oars.

Once the American squadron had been cleared for action, the respective crews settled in to await the Royal Navy’s approach. Mitchell, Robins, and Stellwagen stayed particularly vigilant, as the galleys and gunboats were not at anchor and required constant attention at the oars in order to maintain position. This must have been a distressing pause, especially for those veterans of oared warship service who already understood the potential carnage that could result from a close action. Some of the more gruesome realities aboard an open rowing vessel included round shot crashing through the bulwarks spraying wooden splinters in all directions with mutilating effect; grapeshot raking indiscriminately through tight quarters carrying away heads and limbs; the chaos of a boarding attempt with pistols, cutlasses, and hand axes; the threat of falling overboard and drowning; and of course, the terrifying experience of receiving medical treatment in an age of surgical bone saws and no dependable form of anesthetic. Furthermore, the prospect of spending an entire battle with one’s back turned on the enemy must have proved equally unnerving for at least a few of the men at the oars. Ned Meyers recalled a similar discomfort while serving on Lake Ontario in the attack on York (April 1813).\textsuperscript{27} Such fears marked a serious concern, as the motive power of a gunboat or galley in battle relied almost exclusively on human muscle.

Macdonough had a great deal of experience with the psychology of war from his service in Commodore Preble’s gunboats during the Barbary Wars.\textsuperscript{28} Contrary to the popular romanticized images of naval warfare portrayed in the newspapers of the day, many individuals who experienced such fighting never again lusted for the opportunity to prove their mettle. Presumably the normal fears of injury, mutilation, and death worked to undermine courage and morale throughout the American line as the different crews struggled with the imminent prospect
of a pitched fight. Macdonough and his officers harangued their men that morning with carefully designed battle rhetoric intended to bolster confidence, manage fear, and preserve calm. This technique had become commonplace in the U.S. Navy by the War of 1812.

Initially, Macdonough appealed to the sailors’ bravery and patriotism, righteousness of cause, desire for respect, and faith in divine intercession. Acting Marine John Edsall, aboard Saratoga, witnessed this address recalling a thinly-veiled challenge “that our ships had in almost all [other] engagements been victorious, and that with our exertions, the righteous cause of liberty, and the help of God, we should undoubtedly be at this time.” However, these abstract themes often had to be shored up by pragmatic arguments. On this level, the sailors were urged to fight with vigor, to kill, and if necessary, to die for such tangible incentives as prize money and the protection of family, property, reputation, and future prosperity. Finally, if the instinct to flee from danger still proved overwhelming, officers had the authority to punish men for abandoning their stations and attempting to hide from battle. Marine sentries, “with orders to blow out the brains of any who should retreat,” also kept crews orderly and prevented them from skulking away to a position of greater safety.

The crews of gunboats and galleys appeared particularly susceptible to flight in battle due to the reduced size, construction, and armament of their vessels. Up to this point, many of these men had only participated in patrols, blockade duty, and mock gun exercises. Moreover, the oared warships held large numbers of soldiers who had never experienced a naval battle. Lieutenant Mitchell and presumably Sailing Masters Robins and Stellwagon as well, addressed their men to ease tensions, build confidence, and reaffirm a sense of comradeship. Mitchell, in particular, felt his exhortations produced the desired effect as “one universal joy was passed throughout the division.”

In the silence just before the opening shots, Macdonough unfurled his last effort to curb fears and galvanize the squadron around his flagship. Atop Saratoga’s peak a signal burst into view reminding his men one more time of the American cause: “Impressed Seamen Call on Every Man to Do His Duty.” Moments later, the fighting began.

The Battle of Plattsburgh Bay

The Royal Navy commenced its attack on the American line of battle at approximately 0900 (Figures 19, 20, 21, 22, 23, 24, 25, and 26). Confiance, Linnet, and Chub encountered problems almost immediately. The north wind baffled their approach as Downie struggled to maintain a “line abreast” formation while tacking his warships back and forth toward Eagle and
Saratoga. As Confiance eased into range, Mitchell and Robins began to snipe at the frigate with their galleys. Months of gunnery drills began to tell as their crews lobbed 24-pound round shot into their target from a distance of over 1,500 yards. Captain Pring aboard Linnet observed with disbelief as these miniature warships—ignored in Downie’s battle plan—opened the day with “a heavy and galling fire on our line.”

Shortly after these first volleys, Eagle, Saratoga, Ticonderoga, and Preble began to pour broadsides into the approaching British warships with destructive results. Confiance suffered a brutal pounding while attempting to close with Saratoga. Downie pressed ahead in silence, unable to inflict any sort of retribution, as the guns of his squadron were pointed in the wrong direction to deliver a coordinated broadside. Reluctantly, after having two anchors shot clean away from his portside bow and with the casualty toll on the rise, Downie settled for an alternate station parallel to Saratoga at a distance of approximately 400 yards. By 0930, any lingering hopes of Confiance raking the enemy flagship from athwart its bow had to be abandoned. Instead, Downie finished securing Confiance at anchor and ordered a double-shotted broadside fired straight into Saratoga. The blast ripped through Macdonough’s flagship disabling nearly one-fifth of the vessel’s crew. Just minutes later, however, a return shot hit the muzzle of a long gun on the British frigate’s quarterdeck, sending the heavy iron tube flying into Captain Downie’s abdomen, crushing him to death.

Linnet and Chub stood in beyond Confiance and attempted to close with Eagle. Captain Pring managed to sail Linnet to its designated position off the starboard bow of Eagle. Dropping anchor within a mile of his opponent, Pring and his crew set to work at the guns, unleashing a barrage that U.S. Navy Master Commandant Robert Henley later described as “a raking and most destructive fire.” Chub, on the other hand, fell to windward on the approach and received a series of crippling broadsides from Eagle that carried away its bowsprit, cables, and main boom along with portions of its sails and rigging. Lieutenant James McGhie ordered the sloop’s colors struck approximately fifteen minutes into the battle, thus earning the dubious honor of being first to surrender. Chub’s shattered hull slowly drifted out of control between Confiance and Saratoga with the majority of its crew either dead, wounded, or hiding below in the hold. As one of Macdonough’s gunboats took possession of the sloop and towed it out of the way, the fight at the head of the line quickly settled into a slugfest at pointblank range—a murderous exchange that would claim hundreds of lives before noon.
Figure 19. British battle map “No. 1” at Plattsburgh Bay, 11 September 1814. The full title is “No. 1, A Plan of the Situation of the British and United States Squadrons” at the time the Confiance & Linnet Anchored.” The following letter designations are provided on the map to indicate each warship that participated in the Battle of Plattsburgh Bay: A (Confiance); B (Linnet); C (Chub); D (Finch); E (12 British Gunboats); F (Saratoga); G (Eagle); H (Ticonderoga); I (Preble); and K (10 American Galleys). Scale provided at top. Admiralty Records 1/5450, Public Record Office, London, England.
Figure 20. Detail of map “No. 1.” This provides a close-up of the positions and operations of the various warships from the American and British squadrons.
Figure 21. British battle map “No. 2” at Plattsburgh Bay, 11 September 1814. The full title is “No 2, A Plan of the Situation of the British and United States Squadrons half an hour after the Confiance Anchored.” The following letter designations are provided on the map to indicate each warship that participated in the Battle of Plattsburgh Bay: A (Confiance); B (Linnet); C (Chub); D (Finch); E (12 British Gunboats); F (Saratoga); G (Eagle); H (Ticonderoga); I (Preble); and K (10 American Galleys). Scale provided at top. Admiralty Records 1/5450, Public Record Office, London, England.
Figure 22. Detail of map “No. 2.” This provides a close-up of the positions and operations of the various warships from the American and British squadrons.
Figure 23. British battle map “No. 3” at Plattsburgh Bay, 11 September 1814. The full title is “No. 3, A Plan of the Situation of the British and United States Squadrons about the middle of the Action.” The following letter designations are provided on the map to indicate each warship that participated in the Battle of Plattsburgh Bay: A (Confiance); B (Linner); C (Chub); D (Finch); E (12 British Gunboats); F (Saratoga); G (Eagle); H (Ticonderoga); I (Preble); and K (10 American Galleys). Scale provided at top. Admiralty Records 1/5450, Public Record Office, London, England.
Figure 24. Detail of map “No. 3.” This provides a close-up of the positions and operations of the various warships from the American and British squadrons.
Figure 25. British battle map “No. 4” at Plattsburgh Bay, 11 September 1814. The full title is “No. 4, A Plan of the Situation of the British and American Squadrons at the time the Confiance Struck.” The following letter designations are provided on the map to indicate each warship that participated in the Battle of Plattsburgh Bay: A (Confiance); B (Linnet); C (Chub); D (Finch); E (12 British Gunboats); F (Saratoga); G (Eagle); H (Ticonderoga); I (Preble); and K (10 American Galleys). Scale provided at top. Admiralty Records 1/5450, Public Record Office, London, England.
Figure 26. Detail of map "No. 4." This provides a close-up of the positions and operations of the various warships from the American and British squadrons.
Mitchell, Robins, and Stellwagen spent the opening hour of the battle sweeping the American oared divisions forward in three “line abreast” formations and keeping up a concentrated, harassing fire against Confiance.44 Gunnery at long ranges presented a number of challenges for their crews. Practice drills helped familiarize the men with the motion of these strange warships, but hardly prepared them for the difficulties associated with live fire, winds, and waves. Assaulting Confiance under such conditions must have been no easy task. Plumes of smoke obstructed visibility and the recoil of the guns along with the natural pitch and roll of the hull all had a detrimental impact on performance and accuracy. Nevertheless, all three divisions spent the engagement firing almost exclusively into Confiance, as it was the largest warship of the British squadron and outclassed Saratoga by more than ten guns.45

Divisions No. 1 and No. 2 of the American galleys advanced with stern guns forward, spread out in a wide crescent formation. Initially, the galleys delivered a brisk flanking fire against Confiance, largely from the northwest and southwest. After the British squadron had anchored, however, Mitchell and Robins closed to within 800 yards and began to funnel their divisions into the gaps between Eagle, Saratoga, and Ticonderoga.46 At this point, the galley commanders had to maintain tight control over their respective warships, “keeping them together” in such a manner “that the whole can have room to work their guns to advantage without injuring each other.”47

Viper, Nettle, and Borer held steady under oars while petty officers and sailors labored faithfully at the guns discharging 24-pound round shot into the port bow of Confiance. Lieutenant Mitchell later boasted of the “calm integrity which was uniformly manifested” during these maneuvers, and “the rapidity with which the cannon were loaded and the destruction which their fire created.”48 Meanwhile, Allen, Burrows, and Centipede trained guns on the waist of the enemy flagship. Sailing Master Robins noted that the galleymen of his division attended to their duties “with a promptitude which could only be equaled by the bravery and good order with which they continued the action.”49

Although Macdonough had Sailing Master Stellwagen’s Division No. 3 in a position to support Ticonderoga and Preble, the reluctant British attack on the southern flank of the American line ensured that these four gunboats would never be called upon for such a purpose. Instead Macdonough kept their fire directed at Confiance throughout the battle. Stellwagen aimed Wilmer northeast at the frigate, along with Alwyn, Ballard, and Ludlow, before pulling to within 1,200 yards and firing 18-pound and 12-pound shot into the frigate’s port quarter.
Master’s Mate Stephen Holland, in command of *Ballard*, earned special notice during this bombardment as his crew “kept up a well directed fire.”

Division No. 3 experienced a brief pause in the action when *Chub* began drifting into its formation, shortly after being disabled by *Eagle*. Stellwagen’s gunboats quickly secured control of the sloop, towed it out of the way, and resumed fire on *Confiance*.

Meanwhile, a crisis of leadership swiftly demoralized the efforts of *Finch* and the British gunboat flotilla at the foot of the American line. Downie had ordered *Finch* to assist the twelve gunboats in turning the enemy’s southern flank, either by driving *Ticonderoga* and *Preble* from their stations, or better yet, by using the manpower advantage of the gunboats to board and capture the two vessels. Lieutenant William Hicks briefly pitted *Finch* against *Ticonderoga* in a negligible exchange of fire before turning his guns on *Preble*. By 0930, *Finch* was no longer in range for supporting the gunboats. Lieutenant Raynham, the commander of the British gunboat flotilla, continued to pull within range of *Ticonderoga* in attempt to seize the schooner “before she had fired the third broadside.”

Facing a hailstorm of iron grapeshot, Raynham gave the signal to “board enemy ship” and then promptly lost his nerve and fled. All but four of the gunboats followed his example “dropping off to leeward in great confusion” beyond the range of *Ticonderoga*’s guns.

Lieutenant Christopher Bell aboard the British gunboat *Murray* pressed ahead in company with *Marshall Beresford*, *Popham*, and *Blucher*. Bell managed to sweep to within a few hundred yards of *Ticonderoga*, at which point Lieutenant Stephen Cassin provided an ugly reception with his long guns and carronades. The discharge cut viciously through *Murray* causing the majority of Bell’s oarsmen to lie down on the bilges. Amidst this skirmishing at least one of the gunboats broke off the assault purportedly to assist *Finch* as it edged down to engage *Preble*.

American Lieutenant Charles A. Budd managed to keep some of *Preble*’s battery trained on *Finch* long enough to pierce the sloop with four shot holes and tear up its rigging. However, *Finch*’s return fire, along with the prospect of being boarded by a British gunboat, eventually induced Budd to slip his cable and retire inshore to the protection of Forts Scott and Moreau. Shortly after *Preble* wore round and left the line, *Finch* lost steerage while attempting to tack and ran hard aground off Crab Island. Thus by 1030, *Ticonderoga* had successfully isolated *Finch* and the entire British gunboat flotilla from the battle rendering the attack at the foot of the American line a complete failure.
Macdonough’s oared divisions never suffered the death and destruction that visited the rest of the American and British squadrons that morning. They held firm to his original instructions, using their sweeps to hover at a safe distance in support of the larger warships, but staying mobile enough to present a difficult target. However, as Ticonderoga finished securing the southern flank and turned its guns against Confiance, events at the van of the American line demanded that the galleys and gunboats join the fray.

Around 1030, Master Commandant Henley, with no warning, removed Eagle to a protected location between Saratoga and Ticonderoga after the loss of his starboard anchor spring turned the brig in such a direction that its remaining undamaged guns could no longer bear on Linnet. This maneuver exposed Saratoga to the combined fire of Linnet and Confiance at a point when the exchange of broadsides had reached the height of its intensity. Henley had violated one of the oldest naval fighting instructions—‘hold the line’—giving the appearance that he was overly cautious to the point of insubordination.58

Henley later attempted to bring Eagle’s port battery into action, only to discover that the majority of his gun crews could no longer find a good shot with Saratoga’s stern directly in the way. Macdonough’s flagship had effectively become a screen.59 Linnet and Confiance wasted no time taking full advantage of this new arrangement. Captain Pring and Lieutenant Robertson60 pounded at the American flagship hoping that if it struck the remainder of the line would crumble apart. Viper, Nettle, and Borer also suffered from this poorly timed maneuver. Pring devoted at least two of Linnet’s guns to “fire against the division of the enemy’s gunboats…which had so long annoyed us during our close engagement with the brig.”61

When Eagle broke formation, Macdonough signaled for his three oared divisions to commence a “close action” at the van of the line.62 Presumably, he hoped to fill the firepower vacuum left by the brig with the guns from his six galleys and four gunboats. Together their combined broadside equaled that of Eagle. Initially, Mitchell, Robins, and Stellwagon all failed to acknowledge the order amidst the surrounding confusion of the battle. This only made an already desperate situation worse. Macdonough’s flagship Saratoga had sustained tremendous damages in the fight with Confiance, with its masts, sails, and rigging elements cut to shreds, shot holes through the hull near the waterline, and virtually all of the starboard guns disabled. Now the added fire of Linnet promised to hasten Saratoga’s demise.

At this point, Marine Captain White Youngs, aboard Saratoga, volunteered to personally relay Macdonough’s instructions to the oared divisions in a badly-leaking gig.63 Divisions No. 1
and No. 2 responded immediately, grouping into a single line off Saratoga's bow. Stellwagon and Division No. 3 lingered astern before temporarily securing guns and sweeping around Saratoga's disengaged side to join the formation. Captain Pring of Linnet may have perceived these movements as an act of desperation to delay him from finishing off his newly acquired target. He thus kept all but two of his guns directed at the American flagship.64

Not long after the American oared divisions reached the van, the battle neared its conclusion. Macdonough ordered Saratoga's crew to employ the preset kedge anchors to swing the warship around and bring its fresh port battery into the action. The galleys and gunboats provided cover fire during this maneuver, as Saratoga could not aim its guns and haul the system of springs and cables at the same time. They helped occupy Linnet and Confiance while Saratoga rotated through a 180-degree-arc, briefly exposing its deck head-on to enemy shot. Viper, Nettle, and Borer engaged Linnet, while Allen, Burrows, Centipede, Alwyn, Ballard, Ludlow, and Wilmer advanced under Saratoga's stern quarter (as it rotated into its new position) and blasted away at Confiance from a range of less than 400 yards (Figure 27).65 Lieutenant Robertson sought to duplicate Saratoga's move amidst heavy opposition from the galleys, but failed. Confiance surrendered just after 1100.

At this point, Macdonough directed every available gun in the squadron to assist Viper, Nettle, and Borer in silencing Linnet. Pring resisted for a few minutes before finally submitting. Linnet struck her colors at approximately 1120.66 Lieutenant Hicks of Finch, stranded off Crab Island, discontinued his efforts to free the sloop and followed suit. The British gunboats had already taken a position well outside of the bay. Upon witnessing the general surrender, they abandoned their comrades and escaped back to the Richelieu River.67

Macdonough initially dispatched Viper, Nettle, Borer, Allen, Burrows, and Centipede to pursue the Royal Navy gunboats but he immediately had to rescind the command, as every able-bodied man was needed to help keep the sinking warships afloat. The galleys, in particular, had experienced a minimal loss of life, making their crews an important source of manpower for the pumps. His larger warships were in no condition to give chase. "I could only look at the enemy's galleys going off in a shattered condition," recalled the commodore, "for there was not a mast in either squadron that could stand to make sail on; the lower rigging, being nearly all shot away, hung down as though it had been just placed over the mastheads."68
General Alexander Macomb’s forces at Plattsburgh could see the American victory unfolding on the bay, and shortly thereafter received word that the U.S. Navy had secured control of Lake Champlain. The British Army suddenly appeared unwilling to push deeper into American territory with its eastern flank now completely exposed. The loss of Confiace and Limnet had broken the resolve of Macomb’s assailants. As the smoke cleared from the bay revealing the crippled warships, General Prevost’s offensive quickly collapsed into a disorderly retreat. Officers and troops fled leaving behind the wounded along with stockpiles of valuable provisions, camp equipment, weapons, ammunition, and other materiel. Most of these items were dumped into creeks, ponds, and even the lake at different points along the march back to Canada.

Small in comparison with the great fleet engagements of the Napoleonic Era, the Battle of Plattsburgh Bay still yielded massive carnage totaling nearly three hundred casualties over a period of roughly two hours and thirty minutes. Saratoga and Eagle absorbed the majority of these losses, as the fighting at the head of the American line proved to be particularly fierce. Ticonderoga and Preble only averted similar numbers by virtue of the poorly coordinated attack
carried out by Finch and the British gunboat flotilla. The American oared divisions, however, faired the best in the squadron. They spent over half of the battle at a relatively safe range, and upon closing with the line they used the larger warships to provide cover when needed. By the time Macdonough ordered them into close action with Linnet and Confiance, the British brig and frigate had already been severely weakened. Finally, Downie’s and Pring’s gun crews lacked experience and they may have found it difficult to hit such low profile targets. This problem would have also been magnified by a failure to reset the breech wedges or “coigns” on the British warships’ guns, which resulted in wildly inaccurate shots at high elevations. Many of these rounds even passed above the level of Saratoga’s bulwarks. Under such circumstances, the galleys and gunboats actually reduced the possibility of being hit as they closed in under the enemy’s batteries.

Nevertheless, casualties occurred. Borer, commanded by Midshipman Thomas Conover, received a direct hit that killed a purser’s steward, a boy, and a marine, and badly wounded a marine corporal. Centipede and Wilmer each had one sailor injured, but the remaining seven oared warships escaped with no casualties at all. Though the tally of dead and injured appeared slight, many of the galley and gunboat crewmen earned favorable conduct reports. Lieutenant Mitchell spoke positively of Viper and his division, claiming that the officers and enlisted men “acted in a manner worthy of being remembered by their country.” Robins noted that Allen, Burrows, and Centipede responded to the order for “close action” with “an alacrity...highly honorable to every officer & man.” In particular, he identified Sailing Master Samuel Kettleas of Burrows “who kept up perhaps the best fire of the division” and Master’s Mate Stephen G. Clark, Allen’s second-in-command, whom he considered “an excellent seaman and a fine officer.” Stellwagon went as far as referring to his officers in Division No. 3 as “gentlemen” and commended them “for their zeal and steadiness while under my immediate notice.” The American oared warships, though largely forgotten in the victory toasts and celebrations that followed the battle, deserve recognition for tenaciously engaging in battle with a foe completely disproportionate to their size.

The Aftermath

Macdonough’s galleys and gunboats may not have been at the forefront of the Battle of Plattsburgh Bay, but they proved immensely useful in its aftermath (Figure 28). The vessels’ crews helped operate the pumps of the riddled warships. Alwyn, Ballard, Ludlow, and Wilmer spent an entire day attending to the recovery of Finch from the rocks off Crab Island.
larger, first class galleys transported the wounded to hospitals ashore and recovered shot and naval stores dumped in the lake by the retreating British. Approximately 12,000 pounds (5,443 kg) of shells were recovered from the waters around Chazy, New York. The men also raised a supply vessel loaded with naval stores that had been scuttled off Isle La Motte.\textsuperscript{76}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure28.jpg}
\caption{American galley divisions at anchor following the Battle of Plattsburgh Bay. Artist Unknown. Courtesy of the Shelburne Museum, Shelburne, Vermont.}
\end{figure}

\textit{Allen}, sailing under a flag of truce, returned more than sixty paroled British officers and sailors to Canada on 16 and 17 September (Figure 29).\textsuperscript{77} Once the damages had been repaired, Macdonough sent the larger warships up the lake to Whitehall, New York, retaining only the brig \textit{Eagle} and his oared divisions to protect against incursions by the British gunboat flotilla still at large in the Richelieu River. The sloops \textit{President}, \textit{Montgomery}, \textit{Preble}, \textit{Chub}, and \textit{Finch} were also kept on the lake to accommodate the oared warship crews, a vital necessity as cold weather descended upon the Champlain Valley.

On 12 November 1814, Macdonough ordered Lieutenant Charles A. Budd to sail \textit{Eagle} and its consorts up the lake where they were to join the rest of the squadron already in winter
quarters at Whitehall. He apprised the Navy Department of this decision in a brief letter to Secretary Jones:

...The season being far advanced in this quarter, the enemy’s gallies down the Sorrel River, and from my best information, having no intention of being troublesome—this season at any rate—and our men suffering considerably from the severity of the weather, without fire, the squadron will...go to Whitehall in the course of a few days. I am further desirous that it should get there before the ice makes, as it will there be farthest from the enemy’s land forces during the winter... 78

Budd remained at Plattsburgh Bay for a few days longer to make the necessary preparations for the trip to Whitehall. This must have been a particularly miserable time to serve with the galleys and gunboats. Crews flirted with serious illness as sweat produced by the labor of loading and offloading cargo, changing sails, hauling lines, and of course rowing, chilled to ice on their bodies. The open hulls also left them exposed to rain, sleet, snow flurries, and piercing winds driving in under the canvas awnings. However, these final trials and tribulations marked the end of oared flotilla service on Lake Champlain.

The American naval victory at Plattsburgh Bay altered the course of the War of 1812. 79 Reports of General Prevost’s embarrassing retreat arrived in Europe as early as October 1814. President Madison’s diplomatic envoys subsequently gained a valuable bargaining chip that reinvigorated the stalled peace negotiations at Ghent, Belgium. More concerned with deliberations at the Congress of Vienna, British Prime Minister Lord Liverpool opted not to press for major American concessions. In fact, both parties essentially shelved their original demands and agreed to terms that would restore the status quo ante bellum in North America. On Christmas Eve, 1814, the Treaty of Ghent brought the conflict to an official close. 80

Demobilization proceeded rapidly that winter and into the spring on the Great Lakes and Lake Champlain. Newly appointed Navy Secretary Benjamin Crowninshield ordered Macdonough to “dismantle the fleet at Whitehall, land all of their stores, sails, cordage, etc. and deposit the same safely until it shall be determined where to transport them.” 81 Placing the American warships “in ordinary” required a great deal of work. All of the equipment, stores, and ballast had to be landed and the hold of each vessel “broken out, and thoroughly cleansed.” Keeping all of these items clean, properly aired, and dry was the key to long-term preservation. Even the ballast had to be “cleansed, whitewashed, and piled in squares, like cobwork.” 82 Rigging elements, such as masts, yards, and cordage, had to be laid out in good order, inspected, and housed. The rudder was typically unshipped and stored ashore as well. Officers of each row
Figure 29. Copy of a parolee list following the Battle of Plattsburgh Bay. This particular document shows the names of thirteen British prisoners being transferred to Isle aux Noix aboard Allen on 16 September 1814. “List of Paroled Wounded Men Sent to Isle aux Noix, US Galley Allen, 16 September 1814,” RG-45, Subject Files, Class R, Subclass RB, Box 575, Folder 2, NARA. Ink tracing by E.B. Emery.

galley presumably took responsibility for such tasks. Sailing Master Robins, in particular, had a reputation as one who kept his galley neat in arrangement, and his attention to detail was undoubtedly welcome that winter at Whitehall.83

At this point Macdonough’s carpenters focused their attention on the timbers and planks comprising the hulls of the warships. The external planking, in particular, represented a vital concern. This sheathing kept the vessels afloat at their moorings. Should the seams no longer remain watertight, the results could be costly in a number of ways. Adequately maintained hulls offered a number of short and long-term benefits: they could be brought back into service quicker and cheaper in the event of future hostilities; they virtually eliminated the need to rent living quarters and storage space on land; and finally, they eliminated the risk of accidentally obstructing or otherwise interfering with local maritime traffic on the lake. Macdonough presumably had all external planking and decking examined for decay and their corresponding
seams "hardened in, or caulked, if necessary, payed with pitch, and scraped." In addition, the internal partitioning and ceiling planking was removed allowing a "free circulation of air" and "the spaces between the frames...to be carefully cleansed and whitewashed." After the guns, spars, and other equipment had been stripped from each of the warships, their hulls were whitewashed and housed over with board roofs to protect them from the elements.

In reply to Secretary Crowninshield's request for advice on the best location for laying up the warships, Macdonough recommended that they be kept afloat, continually whitewashed and aired, and most importantly, "placed as much as can be out of the sun." By late March 1815, the American squadron had been properly mothballed and situated out of the way for the next officer slated to take command of the Whitehall Naval Station. The dramatic reduction in force that followed resulted in a number of reassignments, mostly to seaboard posts.

Macdonough departed for Washington, D.C., to settle the last of his wartime accounts with the Navy Department's bookkeepers and eventually transferred to the Portsmouth Navy Yard in New Hampshire. The majority of officers who served in his oared flotilla went on to pursue full careers in the U.S. Navy. The historical record preserves clues relating to many of these cases. William M. Robins of Allen, for one, managed the difficult cross-over to the rank of lieutenant. This involved no small feat considering that a warrant officer beyond the age of thirty-seven—at the point of entry into the service—had yet to achieve this goal. Robins received his sailing master's warrant (18 June 1812) at age thirty-eight, was forty while in command of Allen, and was around forty-two when commissioned lieutenant.

The Navy Department granted Robins a leave of absence shortly after he left the Whitehall Station in 1815. Upon returning to active duty he reported to Commodore William Bainbridge at Charlestown, Massachusetts in June 1815. After three months, he transferred to the Portsmouth Navy Yard in New Hampshire where he presumably attended to the gunboat flotilla attached to that station. On 1 April 1819, Robins briefly joined Commodore Thomas Tingey at the Washington Navy Yard before transferring to Sackets Harbor, New York. He remained at shore duty for the next five years. Finally, in September 1824, Robins joined Commodore David Porter's West Indies Squadron and spent the next few months cruising for pirates throughout the Greater and Lesser Antilles. He even found himself at the U.S. Navy's highly publicized intimidation of Fajardo, Puerto Rico that eventually resulted in an ugly diplomatic fiasco and Commodore Porter's resignation.
In all of the adventures that followed his participation at Plattsburgh Bay, however, Robins never again commanded a warship in battle. Although he may not have recognized it at the time of his departure from the lake, his single campaign season aboard Allen had included a significant milestone in the history of the U.S. Navy. Robins and his fellow galleymen survived the last age of fighting sail on Lake Champlain—a three-year struggle that ultimately helped establish the permanence of the American Republic.

Endnotes: Chapter VI

1. This assessment of the American line of battle situated inside Plattsburgh Bay on the early morning of 11 September 1814 came from a compilation of multiple sources. See “Order of Battle,” Naval Academy Collections, United States Naval Academy Museum, Annapolis, Md. (hereafter cited as “Order of Battle”). Historian Dennis Lewis attributed this document to Sailing Master Daniel Stellwagen, Commander of Division No. 3 of American galleys on Lake Champlain during the Battle of Plattsburgh Bay. Lewis transcribed a copy from the original at the Naval Academy Museum on 9 February 1981. A copy of the document for this dissertation was provided by Kevin J. Crisman at Texas A&M University, College Station, Tex. Stellwagen also kept diagrams of the different formations used by the American squadron in his signal book. See Stellwagen Signal Book, LOC. Finally, Historian Benson J. Lossing compiled a plan of the American line that morning from a rough pen-and-ink sketch made at the time of the battle by the late Chancellor R.H. Walworth, the Adjutant General for General Alexander Macomb in 1814. See Benson J. Lossing, Pictorial Fieldbook of the War of 1812 (New York: Harper & Brothers Publishers, 1868), 871. See also Crisman, The Eagle, 62; and Roosevelt, Naval War, 2: 122-123.

2. Ibid.

3. There is a discrepancy in the number of gunboats believed to be attached to the Royal Navy squadron at the Battle of Plattsburgh Bay. Dennis Lewis lists thirteen gunboats in the British squadron plus a barge type gunboat. See Lewis, British Naval Activity, 46-47. However, Lieutenant Robertson of Confiance listed eleven gunboats carrying 16 guns total. See Wood, Select British Documents, 3: Pt. 1: 476. George Prevost listed twelve gunboats carrying 16 guns total. Again, see Wood, Select British Documents, 3: Pt. 1: 366.

4. Conflicting statements surround the size and strength estimates of the American and British squadrons at Plattsburgh Bay on 11 September 1814. See “Statement of the American Force Engaged” and “Statement of the Enemy’s Force Engaged,” in Thomas Macdonough to William Jones, 13 September 1814, Macdonough, Life of Commodore Macdonough, 267-278. The Vermont Sentinel, a local newspaper from Burlington, Vt., also published a summary account of the above two squadron assessments on 16 September 1814. The first reprint of these letters along with Macdonough’s strength assessment of the American and British forces on the lake came less than a month after the Battle of Plattsburgh Bay. The letters were reprinted under the authority of the U.S. Congress. See U.S. Senate, Letter from the Secretary of the Navy, to The Chairman of the Naval Committee, Transmitting Sundry Documents from Captain Macdonough Relating to the Capture of the British Fleet on Lake Champlain (Washington, D.C.: Roger C. Weightman, 1814), 3-18. See also: U.S. Senate, Report of the Naval Committee, Expressive of the Gallant Conduct of Captain Macdonough, The Officers, Seamen, Marines, &c In The Capturing of the British Squadron on Lake Champlain, on the 11th September 1814 (Washington, D.C.: Roger C. Weightman, 1814). Naval historians have interpreted these sources differently over the years, providing dramatically different estimates. It is important to note, however, that many of these assessments are outdated and heavily biased. See William James, A Full and Correct Account of the Chief Naval Occurrences of the late war Between Great Britain and the United States of America, 2 vols. (London: T.

5. Captain George Downie had replaced Captain Peter Fisher as the commanding officer of the British Royal Navy squadron on Lake Champlain by 3 September 1814.


7. Daniel Pring to James Yeo, 12 September 1814, Macdonough, *Life of Commodore Macdonough*, 288. A visual representation of the Anglo-American engagement inside Plattsburgh Bay (11 September 1814) has also been captured in a series of four battle maps. These maps were included with the court martial held for the Royal Navy officers that survived the fighting and they show the positions and directions of fire for the different warships of the American and British squadrons at different stages in the action. See “No. 1, A Plan of the Situation of the British and United States Squadrons at the time the Confiance & Linnet Anchored,” “No. 2, A Plan of the Situation of the British and United States Squadrons half an hour after the Confiance Anchored,” “No. 3, A Plan of the Situation of the British and United States Squadrons about the Middle of the Action,” and “No. 4, A Plan of the Situation of the British and United States Squadrons at the time the Confiance Struck,” Public Record Office, London, England (hereafter cited as PRO), Admiralty Records, 1/5450. In the transcript of the court martial proceedings, several of Downie’s surviving officers were queried about the accuracy of the maps and each man affirmed that they were correct. These maps are probably among the most reliable reconstructions of the action. Kevin J. Crisman, personal communication, 18 December 2001.


Captures on Lake Champlain, September 11, 1814,” Bauer, Naval Affairs, 4: 572-582; and Vermont Centinel, 16 September 1814. Again, historians have used these sources to come up with different crew number estimates for the actual day of the battle. See Roosevelt, Naval War, 2: 111-112; and Lossing, Pictorial Fieldbook, 866-870. William James and James F. Cooper also provide crew estimates, but these numbers are suspect, as they hardly appeared objective. See James, A Full and Correct Account; and Cooper, History of the Navy.

13. Again, this may have given the illusion that the American galleys and gunboats were organized into two divisions rather than three. At least one of the central galleys would have been positioned off the port stern of Saratoga. Perhaps Captain Pring mistook this galley as a part of Division No. 3, giving the impression of “a division of 5 gunboats on each flank.” See Daniel Pring to James Yeo, 12 September 1814, Macdonough, Life of Commodore Macdonough, 288.

14. Roosevelt, Naval War, 2: 111; “Report of the State and Condition of the Naval Force Employed in the Defense of the Harbors & Waters of the United States Under the Command of Thomas Macdonough, on the 31st Day of August, 1814,” LCMM. Fort Izard on Cumberland Head, although largely ignored during the engagement, was also in range to pound away at any warship attempting to round the head of the American line.

15. Stellwagen Signal Book, LOC, 3-27. The American sloops President and Montgomery are not included in the formations as they were performing supply and communication duties at this time in support of the three oared warship divisions.


18. Stellwagen, “Order of Battle,” 1. This document is undated, but Dennis Lewis has noted in his transcription (9 February 1981) that it must have been created sometime between 27 August 1814 and 11 September 1814, as Eagle and Saratoga reversed positions prior to the battle and the squadron did not anchor at Plattsburgh Bay until the first week in September. Lewis suspected that this document was written in the first part of September, and that it represented the original order in which the American galleys and gunboats anchored at the Battle of Plattsburgh Bay.


20. A short-gun broadside weight of “0 pounds” simply refers to the fact that Division No 3 of American galleys had no short guns—only long guns.

21. “Report of the State and Condition of the Naval Force Employed in the Defense of the Harbors & Waters of the United States Under the Command of Thomas Macdonough, on the 31st Day of August, 1814,” LCMM. This document lists the “first class” American galleys’ armament as “1 long 24 pounder; 1 18 pounder Columbiad; both sliding and traversing on the 1/8th of a circle.” The document also lists the smaller gunboats’ armament: “No. 1 Gunboat, 1 long 18 pr. on a slide; No. 2 Gunboat, 1 long 18 pr. on a slide; No. 3 Gunboat, 1 long 12 pr. on a slide; No. 4 Gunboat, 1 long 12 pr. on a slide.”

22. Lieutenant Francis Mitchell, Commanding 1st Division of U.S. Galleys to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45,M125, Reel 39, No. 55, NARA; Sailing Master William M. Robins, Commanding 2nd Division of U.S. Galleys to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 55, NARA; and Sailing Master Daniel S.
Stellwagen, Commanding 3rd Division of U.S. Galleys to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 55, NARA.

23. Spreading a light covering of sand on the fighting deck was a common practice aboard wooden warships of the eighteenth and nineteenth centuries. Naval historians often point out that this sand improved footing for the gun crews once the decks became awash with their blood.

24. David Skaggs and Gerard Altoff provide a detailed reconstruction of the kinds of activities undertaken aboard wooden warships of the eighteenth and nineteenth centuries in the minutes prior to a naval battle. See Skaggs and Altoff, *A Signal Victory*, 123-128.


27. James F. Cooper, *Ned Myers, or A Life Before the Mast* (New York: G. P. Putnam’s Sons, 1899), 47. Myers admitted to his readers that “it is no fun to pull in under a sharp fire, with one’s back to his enemy, and nothing but an oar to amuse himself with.”


29. John R. E. Bliese has provided a similar corrective dating back as far as Medieval Europe. Bliese concluded that the knights and other warriors of this period, as human beings, must have had all of the normal human fears associated with combat despite their traditional portrayal as fearless fighting machines in victory toasts, literature, poetry, and legend. See John R. E. Bliese, “When Knightly Courage May Fail: Battle Orations in Medieval Europe,” *The Historian*, 53, no. 3 (1991): 489-504. Desertion has always played a significant role in the history of naval and land warfare. In fact, a number of Macdonough’s sailors and soldiers either took ill or ran away in the weeks leading up to the Battle of Plattsburgh Bay. See “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, T829, 147, NARA. This would hardly be remembered in the literature of the period, however. See Kenneth Scott, ed., “A Naval Ballad for the War of 1812,” *American Neptune*, 7 (Spring 1947): 167-168; and “Siege of Plattsburgh” a song set to “Boyne Waters,” BixL. This song is flush with patriotic spirit, but unfortunately the author could not be identified and noted. For a full account of the many celebrations and toasts that punctuated the battle, see “Naval Dinner of the Citizens of Plattsburgh for Commodore Thomas Macdonough and General Alexander Macomb, 1814,” Manuscripts and Special Collections, New York State Library, Albany, N.Y., Entry 12794, 1-9.


32. Edsall recounted a brutal story of his service as a marine sentry aboard Saratoga, complaining that “it occupied all of my leisure to keep back a Negro who had come to the hold, or lower gun deck, where I was stationed...When he first came down, he was so frightened he could hardly speak...I found some pewter plates and these I scaled at him, until he went on deck. He very soon returned, and said that he wanted to cool himself! This was a pretty story to tell me. The hold was the hottest place in the ship, and seizing a broomstick, I paid away over his back and shoulders until he retreated up the ladder. As he was climbing, I continued to beat him, and by the time he reached the upper deck, his stern was covered with ridges, similar to the front of an organ.” See Edsall, *Incidents in the Life*, 121.

33. Francis Mitchell to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 55, NARA.


35. Major time discrepancies appear in all American and British accounts surrounding the Battle of Plattsburgh Bay. For the purposes of this dissertation, I have stayed with Macdonough’s version as it is
generally supported by other eyewitness accounts. Standardization of recorded time was not a major concern in the early nineteenth century. In general, Macdonough's account of the battle is approximately one hour behind that of Pring. Roosevelt best summarized the problem: "The letters of the two commanders conflict a little as to time, both absolutely and relatively. Pring says the action began at 0800 and lasted two hours and three quarters; Macdonough and the supporting American accounts say that the action began around 0900 and lasted two hours and twenty minutes." See Roosevelt, *Naval War*, 2: 124.

36. Daniel Pring to James Yeo, 12 September 1814, Macdonough, *Life of Commodore Macdonough*, 288. Distances have been estimated from the battle maps described in Endnote #7 of this chapter.


38. Thomas Macdonough to William Jones, 13 September 1814, Macdonough, *Life of Commodore Macdonough*, 268. Daniel Pring estimated the distance to be "two cables length." Typically a "cable" represented a nautical unit of measure equaling 720 feet (219 m) in the United States and 608 feet (185 m) in the United Kingdom. See Daniel Pring to James Yeo, 12 September 1814, Macdonough, *Life of Commodore Macdonough*, 288.


44. "No. 1, A Plan of the Situation of the British and United States Squadrons at the time the Confiante & Linnet Anchored"; and "No. 2, A Plan of the Situation of the British and United States Squadrons half an hour after the Confiante Anchored," PRO, Admiralty Records 1/5450.

45. Daniel Pring to James Yeo, 12 September 1814, Macdonough, *Life of Commodore Macdonough*, 287-291; "No. 1, A Plan of the Situation of the British and United States Squadrons at the time the Confiante & Linnet Anchored"; "No. 2, A Plan of the Situation of the British and United States Squadrons half an hour after the Confiante Anchored"; "No. 3, A Plan of the Situation of the British and United States Squadrons about the Middle of the Action"; and "No. 4, A Plan of the Situation of the British and United States Squadrons at the time the Confiante Struck," PRO, Admiralty Records 1/5450.

46. "No. 1, A Plan of the Situation of the British and United States Squadrons at the time the Confiante & Linnet Anchored"; "No. 2, A Plan of the Situation of the British and United States Squadrons half an hour after the Confiante Anchored," PRO, Admiralty Records 1/5450.

47. Stellwagen Signal Book, LOC, 23.

48. Francis Mitchell to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains' Letters, RG-45, M125 Reel 39 No. 55, NARA.

49. William M. Robins to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains' Letters, RG-45, M125 Reel 39 No. 55, NARA.

50. Daniel S. Stellwagen to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains' Letters, RG-45, M125 Reel 39 No. 55, NARA.

51. Crisman, *The Eagle*, 73; and "No. 2, A Plan of the Situation of the British and United States
Squadrons half an hour after the Confiance Anchored,” PRO, Admiralty Records 1/5450.

52. Wood, Select British Documents, 3: Pt. 1: 412, 421, 472; and Captain Daniel Pring to Sir James Lucas Yeo, 12 September 1814, Macdonough, Life of Commodore Macdonough, 287-288. See also Lieutenant Charles A. Budd to Thomas Macdonough, 13 September 1814, Macdonough, Life of Commodore Macdonough, 282-284. Budd claimed in his after-action report that he slipped Preble's cable in part to avoid having the sloop boarded by the British squadron's gunboat flotilla.

53. Wood, Select British Documents, 3: 432; and Crisman, Ticonderoga, 19.


55. Wood, Select British Documents, 3: 430; and Crisman, Ticonderoga, 21.

56. Charles A. Budd to Thomas Macdonough, 13 September 1814, Macdonough, Life of Commodore Macdonough, 282-284; and Crisman, Ticonderoga, 21. Budd recounted: “I could now perceive confusion on board the Finch, when wishing to avoid the incessant and well-directed fire of the Preble she endeavored to go about but failed, which gave me a chance, and I did not miss it, of raking her. At this instant 4 galleys were coming down on my weather bow within grape distance with a visible intention of boarding me and which the officers commanding those galleys have since assured me...was actually their intention and that 'in five minutes they would have been along side of me.' which is the fact, to prevent which, as each [British] galley had more men than my whole crew, I thought it best, with the concurrence of all my officers, to get under way...I accordingly cut my cable and wore round under my jib toward the Finch, who at the same time wore from me and stood out of the bay. In the act of wearing, I manned my larboard broadside and gave the [British] galleys its contents of grape, which, from their short distance from me, must have had good effect.”

57. “No. 3, A Plan of the Situation of the British and United States Squadrons about the Middle of the Action,” PRO, Admiralty Records 1/5450. A group of invalid U.S. Army soldiers from the American field hospital on Crab Island manned a 6-pounder field piece and fired on the immobilized Finch until the end of the battle, when the British sloop ignominiously surrendered. See Daniel Pring to James Yeo, 12 September 1814, Macdonough, Life of Commodore Macdonough, 289; Crisman, The Eagle, 73; Bellico, Sails and Steam, 227; and Lewis, British Naval Activity, 37.


60. Lieutenant James Robertson had assumed command of Confiance immediately after Captain Downie’s death.

61. Daniel Pring to James Yeo, 12 September 1814, Macdonough, Life of Commodore Macdonough, 288.

62. Stellwagen described the following procedure in his signal book for executing a signal within the American line of battle: “When a particular vessel is wished to execute a signal her or their number with red pendant will be hoisted. Then the signal for to execute. When the Cornet is hoisted the preceding signal will be annulled. The imperative pendant is to prepare to sail or execute a signal. The American Jack at the mast head to speak to Gallies No. 1. American Jack on the topping lift to speak No. 2 Galley.” See Stellwagen Signal Book, LOC, 18. The numerical signal code for “Close Action” was No. 48.

63. Thomas Macdonough to U.S. Army Brigadier General Alexander Macomb, 13 September 1814, Macdonough, Life of Commodore Macdonough, 284. Macdonough recommended Captain White Youngs of the Marines to General Macomb for “his personal valor and example of coolness and intrepidity to his own men as well as to the sailors” while aboard Saratoga. “He volunteered in a sinking boat,” continued Macdonough, “to carry my order to the galleys for close action in the hottest part of it and supplied the
guns with his men as fast as the sailors were disabled."

64. Daniel Pring to James Yeo, 12 September 1814, Macdonough, *Life of Commodore Macdonough*, 287-291; "No. 1, A Plan of the Situation of the British and United States Squadrons at the time the Confiance & Linnet Anchored"; "No. 2, A Plan of the Situation of the British and United States Squadrons half an hour after the Confiance Anchored"; "No. 3, A Plan of the Situation of the British and United States Squadrons about the Middle of the Action"; "No. 4, A Plan of the Situation of the British and United States Squadrons at the time the Confiance Struck," PRO, Admiralty Records 1/5450.

65. "No. 4, A Plan of the Situation of the British and United States Squadrons at the time the Confiance Struck," PRO, Admiralty Records 1/5450. In the legend provided on this particular map, the following notation has been made concerning the American oared warships: "The Lee Division having joined the Weather; and both advanced under the stern of the Saratoga and firing on the Confiance." Distances have been provided on the map as well.

66. According to the reports of Pring and Macdonough, *Linnet* remained in the action for fifteen minutes after the surrender of *Confiance*. Henley recorded it as eight minutes and Daniel Records (*Eagle*’s logbook keeper) recorded the interval as four minutes. See Crisman, *The Eagle*, 77, 259.


69. Thomas Macdonough to Alexander Macomb, 11 September 1814, James Madison Papers, Manuscript Division, Library of Congress, Washington, D.C. Macdonough wrote: "Sir, Will you if possible send us surgeons, as we are much in want of them. The Almighty has been pleased to grant us victory." This letter has also been reprinted in full in Crisman, *The Eagle*, 77.


71. Today, military historians estimate that the U.S. Navy lost a total of 265 killed in action (KIA) and another 493 wounded in action (WIA) during the War of 1812. The Battle of Plattsburgh Bay alone accounted for at least 52 killed and 58 wounded, or in other words 20% of the total killed and 12% of the total wounded. See "Casualties: U.S. Navy and Marine Corps Personnel Killed and Wounded in Wars, Conflicts, and Hostile Incidents," Naval Historical Center, Washington Navy Yard, Washington, D.C. Under the action entry entitled *War of 1812*, there are 265 total KIA and 439 WIA listed for the U.S. Navy between the years 1812 and 1815. For the number of American casualties suffered at the Battle of Plattsburgh Bay, see George Beale to Thomas Macdonough, 13 September 1814, Macdonough, *Life of Commodore Macdonough*, 270-276.


73. U.S. Senate, *Report of the Naval Committee, Expressive of the Gallant Conduct of Captain Macdonough, The Officers, Seamen, Marines, &c. in the Capturing of the British Squadron on Lake Champlain, on the 11th September, 1814*. A copy of this report can also be found in the Macdonough Collection, MS #41.108, SMV. For a list of the killed and wounded on the gunboats, see Byron N. Clark, "Accounts of the Battle of Plattsburgh, September 11, 1814: From Contemporaneous Sources," *Vermont Antiquarian*, 1, no. 3 (1903), 91. See also George Beale to Thomas Macdonough, 13 September 1814, Macdonough, *Life of Commodore Macdonough*, 274-275.

74. Lieutenant Francis Mitchell, Commanding 1st Division of U.S. Galleys to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 55, NARA; Sailing Master William M. Robins, Commanding 2nd Division of U.S.
Galleys to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 55, NARA; and Sailing Master Daniel S. Stellwagen, Commanding 3rd Division of U.S. Galleys to Thomas Macdonough, 13 September 1814, in Thomas Macdonough to William Jones, 14 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 55, NARA.

75. Thomas Macdonough to Daniel Stellwagen, 14 September 1814, Miscellaneous Letters Received, RG-45, M124, Reel 65, Pt. 1, No. 86, NARA.

76. Thomas Macdonough to William Jones, 6 November 1814, Captains’ Letters, RG-45, M125, Reel 40, No. 105, NARA.

77. “List of Paroled Wounded Men Sent to Isle aux Noix, US Galley Allen, 16 September 1814,” Subject Files, Class R, Subclass RB, Prisoners of War Rolls and Lists (Hostile or Foreign Nationalities), Box 575, Folder 2, RG-45, NARA; and Thomas Macdonough to William Jones, 17 September 1814, Captains’ Letters, RG-45, M125, Reel 39, No. 62, NARA.

78. Thomas Macdonough to William Jones, 12 November 1814, Captains’ Letters, RG-45, M125, Reel 40, No. 126, NARA. Macdonough turned the squadron over to Charles A. Budd at Plattsburgh Bay just before transferring to New York City where he assumed command of the U.S. Navy’s first steam-powered warship, Fulton First. However, Navy Secretary Benjamin Homans ordered him back to Whitehall, N.Y., on 27 December 1814 with instructions to take the appropriate measures “to repel an expected attempt of the enemy to destroy the fleet.” The raid never occurred and the Navy Department instructed Macdonough to place the American squadron “in ordinary.” See Benjamin Homans to Thomas Macdonough, 27 December 1814, Letters Sent to Officers, RG-45, M149, Reel 11, No. 492, NARA.

79. Alfred T. Mahan claimed that “the battle of Lake Champlain, more nearly than any other incident in the War of 1812 merits the epithet ‘decisive’.” Theodore Roosevelt credited the victory to Macdonough’s foresight and resourcefulness as he forced “the British to engage at a disadvantage by his excellent choice of position...His skill, seamanship, quick eye, readiness of resource, and indomitable pluck, are beyond all praise.” See Mahan, Sea Power, 2: 381; and Roosevelt, Naval War, 2: 134-135.

80. The Treaty of Ghent is dated 24 December 1814. Anglo-American hostilities continued, however, until the American ratification on 17 February 1815. President Madison ratified the terms of the peace agreement on 18 February 1815. Andrew Jackson’s defense of New Orleans against an amphibious British Royal Navy and Army attack occurred several weeks after the signing of the treaty as slow communications prevented the combatants from knowing of the settlement.

81. Benjamin Crowninshield to Thomas Macdonough, 28 February 1814, Letters Sent to Officers, RG-45, M149, Reel 12, No. 42, NARA.

82. “Rules and Regulations to be Observed for the Better Preservation of Vessels of the United States In Ordinary,” Subject Files, Class A, Subclass AL, Laid-Up Ships, Miscellaneous Material Relating to Vessels In Ordinary at Different Navy Yards, Box 68, RG-45, NARA.

83. Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815. Subject Files, Class N, Subclass NI, Promotion and Privileges, Box 224, RG-45, NARA; and “Roll of Commissioned & Warrant Officers Under Capt. Macdonough,” Subject Files, Class N, Subclass NA, Persons Serving With Vessels or Stations, Box 224, RG-45, NARA.

84. “Rules and Regulations to be Observed for the Better Preservation of Vessels of the United States In Ordinary,” Subject Files, Class A, Subclass AL, Laid-Up Ships, Miscellaneous Material Relating to Vessels In Ordinary at Different Navy Yards, Box 68, RG-45, NARA.

85. Thomas Macdonough to Benjamin Crowninshield, 12 March 1814, Captains’ Letters, RG-45, M125, Reel 43, No. 38, NARA.

87. Service Record Abstracts, RG-24, M330, NARA; and Edward Callahan, ed., List of Officers of the Navy of the United States and of the Marine Corps from 1775 to 1900 (1901; reprint, New York: Haskell House, 1969), 465. According to Callahan’s research, Lieutenant William M. Robins was commissioned on 27 April 1816. Unfortunately, he has Robins name misspelled as “Robbins.” The date of the warrant and the early service record are identical, however, to the entries for William M. Robins in the Service Record Abstracts of the U.S. Navy cited above. Such a typographical error was not uncommon, as Robins’ name appears interchangeably as “Robins” and “Robbins” throughout the historical documents and correspondence relating to the War of 1812. However, Robins himself always signed his name as “William M. Robins” in all official navy correspondence.

88. Christopher McKee’s research on the Officer Corps of the U.S. Navy shows that a sailing master’s chances of gaining the promotion ladder and attaining the rank of lieutenant were greatly diminished if he was older than thirty-one or thirty-two years at the time of his warrant. Furthermore, those who joined in their mid- to late-twenties had the best chance of all. See McKee, A Gentlemanly and Honorable Profession, 322-323. For Robins’ claimed age while serving on Lake Champlain see Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815, Subject Files. Class N, Subclass NI, Promotion and Privileges, Box 224, RG-45, NARA; and “Roll of Commissioned & Warrant Officers Under Capt. Macdonough,” Subject Files, Class N, Subclass NA, Lists of Persons Serving With Vessels or Stations, Box 224, RG-45, NARA.


90. Ibid.

91. For a brief description of the Fajardo Affair, see Symonds, Atlas, 62.
CHAPTER VII
"AS LONG AS WORMS AND ROT ALLOW": ALLEN'S ABANDONMENT AND FINAL DISPOSITION, 1815-1825

News of the Treaty of Ghent reached the Whitehall Naval Station on Lake Champlain in February 1815. Although the peace agreement made no mention of free trade or sailors' rights, its announcement set off a fireburst of revitalized nationalism, economic prosperity, and territorial expansion within the United States—a period often identified as the "Era of Good Feelings." Popular opinion in all corners of the nation willingly nourished the myth that the war had been a sweeping American victory against a behemoth enemy, largely based upon the defensive actions fought at Plattsburgh Bay, Baltimore, and New Orleans in the closing months of the conflict. The fumbling ineptitude that marred the opening military campaigns against Canada slipped conveniently into historical obscurity amid jubilant exhibitions of patriotic spirit (Figure 30).1

Figure 30. "We Owe Allegiance To No Crown." Artist Unknown. Original in Collections of Davenport West, Jr. Adapted from a copy in George Tindall and David Shi, America: A Narrative History (5th Edition), 405. Inking by E.B. Emery.
President Madison embraced this intense outpouring of propaganda to promote postwar stability and growth. Approaching the end of a chaotic tenure, Madison began to dilute the pastoral ideals of the Jeffersonian-Republican Party with a dash of pragmatism, thus consigning to oblivion his predecessors' vision of a small, decentralized, agrarian nation defended largely by local militia. In March 1815, Madison stood before Congress professing a revised plan for the nation—one that attempted to rectify inadequacies revealed by the late war. Constituents of the old party line grumbled suspiciously, complaining that the plan laid the groundwork for an establishment that smacked of Federalism.

Indeed the President appeared to be recommending measures intended to strengthen, rather than weaken, the U.S. Federal Government. He called for a permanent army and navy, coastal fortifications, a national bank, a protective tariff, and internal improvements that included a network of roads and canals for military and commercial purposes. The maturation of America—after forty years of independence—increasingly hinged on the ability of its leadership to assert national interests amid the diplomatic, economic, and most importantly, martial challenges of the western hemisphere and beyond. "A certain degree of preparation for war," Madison reasoned, "is not only indispensable to avert disasters in the onset, but affords also the best security for the continuation of peace."

Initially, the "Federalization" of select Jeffersonian-Republican principles—namely those involving military policy—continued to elevate the prestige of the U.S. War and Navy Departments. Congress responded favorably authorizing a dramatic expansion of the two respective service branches. The Navy, in particular, appeared poised in the aftermath of the war to embark on a shipbuilding program that would transform its fleet into a power of the first rank capable of protecting the nation's foreign trade interests and conducting diplomatic and commercial missions throughout the world. An "Act for the Gradual Increase of the Navy," passed in April 1816, earmarked $8,000,000 for the construction of long-range, seagoing ships-of-the-line (74-120 guns) and heavy frigates (44-80 guns). An additional $800,000 was also passed for the installation of coastal defensive works. Thus the fleet served as the nation's arm and sword while steam batteries and harbor fortifications provided its vital armor. Although this legislation constituted the single largest naval appropriation in American history up to that time, it soon proved to be transitory.
Throughout James Monroe’s administration, fading memories of the war coupled with the diplomatic successes of the Rush-Bagot Agreement (1817), the Convention of 1818, and the Adams-Onis Treaty (1819), placed greater emphasis on securing the influence and prestige of the U.S. Federal Government throughout the hinterland of North America—particularly by defining the precise limits of British, Spanish, and American territory on the continent between the Atlantic and Pacific Ocean. These important compacts effectively diverted support away from the inland waterway and coastal forces of the U.S. Navy. At no place in the nation did this push toward naval retrenchment prove more evident than on the Great Lakes and Lake Champlain. The Rush-Bagot Agreement and the Convention of 1818 helped improve Anglo-American relations by fostering a spirit of disarmament along these waterways; in addition, they formally settled on the forty-ninth parallel from Lake of the Woods to the Rocky Mountains as the northern extent of the Louisiana Purchase and acknowledged joint fishing rights off the coasts of Newfoundland and Labrador.7

American expansionism under President Monroe achieved an equally bold stroke with the signing of the Adams-Onis Treaty in February 1819. Often referred to as the “Transcontinental Treaty,” this agreement eventually removed Florida from Spanish control and defined the southwestern border of the Louisiana Purchase as far as the Pacific Ocean.8 Secretary of State John Quincy Adams spearheaded the negotiations, projecting a controversial, yet unmistakable agenda: “the remainder of the continent shall ultimately be ours.”9 In the end, however, the U.S. Army would carry out the bulk of this vision at home, not the sailors and warships of the navy, as government interests grew increasingly fixated on pushing overland into the West at the expense of Spain.

Finally, the financial turmoil of the Panic of 1819 spurred a further reduction in military spending originally slated for the U.S. Navy. The trade restrictions and hostilities of the early nineteenth century—ostensibly intended to assert neutral rights—had given impulse to a more diverse national economy comprised of farming, industrial manufacturing, and maritime commerce. Americans enjoyed an unprecedented economic surge as export goods swelled in value from $7,000,000 in 1814 to $93,000,000 in 1818 fueled largely by postwar demands for agricultural products in Europe.10 The Panic of 1819 signaled an end to this speculative bubble. The occasion for this economic collapse was an abrupt drop in cotton prices, one of the nation’s key exports. The decline that followed revealed that the U.S. Federal Government as well as
Federal and State banks had recklessly extended lines of credit during the postwar fervor that reached well beyond their means of redemption in specie. After a few years of unprecedented support, the U.S. Navy found its shipbuilding and maintenance funds halved by 1821.

The U.S. Navy stood at the vanguard of American economic growth, as such progress depended largely on its ability to protect the nation’s flow of waterborne trade, transportation, and communications. Consequently, the seagoing fleet survived the cutbacks intact, eventually being divided into six squadrons each responsible for patrolling a different geographic station deemed vital to the nation’s commercial interests—namely the Mediterranean Sea, West Indies, East Indies, Africa, Brazil, and Pacific Ocean. Inland waterway squadrons on the Great Lakes and Lake Champlain did not fare as well as their bluewater counterparts. The ‘Northern Lakes’ stations quickly returned to the status of naval backwaters, similar to their position at the opening of the War of 1812.

Congressional goodwill toward the U.S. Navy on Lake Champlain all but evaporated in the Rush-Bagot Agreement and the Panic of 1819. Guarding the American-Canadian borderlands was considered a wasteful expenditure in light of the growing postwar rapprochement with Great Britain. The Whitehall Naval Station, in particular, remained poorly financed and undermanned throughout this period of “Good Feelings.” Macdonough’s diverse squadron of ships, brigs, schooners, sloops, gunboats, and row galleys quickly fell into a state of inactivity and neglect in the years following the Treaty of Ghent. In many ways, however, the fate of the Whitehall Naval Station and Macdonough’s old squadron personified the true spirit of the Anglo-American peace in North America—a return to the status quo ante bellum.

"In Ordinary" at the Whitehall Naval Station

Whitehall continued to host the U.S. Navy in the years following the War of 1812. On 22 May 1815, Secretary Crowninshield assigned Captain James T. Leonard and a small contingent of officers and men to maintain the warships and storage facilities of its squadron on Lake Champlain. Leonard (Figure 31) had begun his career in the U.S. Navy with vigor and promise. Unfortunately, his professional reputation suffered a permanent stain early on in the war while commanding the 24-gun corvette Madison on Lake Ontario under Captain Isaac Chauncey. Leonard left his ship anchored unprotected in the path of shifting ice in order to spend the night with a mistress who lived ashore at Sackets Harbor, New York. By the next morning a strong wind had pulled Madison free of her moorings and sent the vessel adrift
dangerously close to land. Chauncey reached the scene first and spent nearly four hours before finally securing *Madison*. Eventually found guilty of "disobedience" and "neglect of duty" for this serious lapse in judgment, Leonard never recovered the confidence of his superiors and subsequently returned to active duty in professional exile on Lake Champlain.\(^{14}\)

![Figure 31. Captain James T. Leonard, U.S. Navy. Portrait by Samuel L. Waldo. U. S. Naval Academy Museum, Annapolis, Maryland.](image)

Leonard inherited a great deal of work at the Whitehall Station. The American squadron required constant attention, naval stores had to be protected from weather, decay, and thieves, and extra materiel had to be sold on site or shipped back to the Naval Agent in New York City. One of the most pressing tasks, however, involved auctioning off the sloops *Preble*, *Montgomery*, *President*, *Chubb*, and *Finch* along with "the ten barges or row galleys."\(^{15}\) In July 1815, the Navy Department sold the five sloops and four oldest gunboats (*Ludlow*, *Wilmer*, *Alwyn*, and *Ballard*) for a total of $7,984.50.\(^{16}\) The sloops constituted the bulk of this return as they could easily be converted back into commercial vessels and used by local merchants operating on the lake. The gunboats, on the other hand, fetched miserable sums suggesting that they were only salvageable as work barges or as a source of raw materials—*Alwyn*, for example,
barely cleared $40. Bidding proved equally low for the recently-built galleys *Allen, Borer, Burrows, Centipede, Nettle, and Viper*, prompting Leonard to cancel their sale and remove them from the auctioneer's list.

Lieutenant Charles A. Budd and Sailing Master Joseph Lindsay—both veterans of the Battle of Plattsburgh Bay—assisted Leonard in the running of the Whitehall Naval Station in the postwar years. They supervised the bulk of the daily work activities, thus freeing their superior to focus on the overwhelming amount of handwritten correspondence that accompanied his new position. In addition, Gunner John Baker, Quarter Gunner Steven Nicolson, and Purser's Stewards George Beale and Israel Howe represented the core of warrant officers assigned to the station throughout this period. Finally, Surgeon William Turk replaced Dr. William Caton, formerly of the U.S. flagship *Saratoga*, and Israel Stoddard, formerly of the U.S. brig *Eagle*, in September 1816. Turk single-handedly attended to the medical needs of the sailors recruited to guard and maintain the vessels, stores, and facilities of the station. Approximately 644 men were at the station by the time of Macdonough's discharge on 29 November 1814. Within five years (1819) the number had dropped to 43, and by 1823 less than 10 men were present on the roll.

Organizational changes within the U.S. Navy Department accounted for the majority of Leonard's paperwork headaches. On 7 February 1815 the newly-created Board of Navy Commissioners had taken over the management of the building, equipping, and maintenance of naval vessels and shipyards. This administrative body, consisting of three captains, relieved the Secretary of the Navy of certain duties in order to provide more time for directing squadron movements and dealing with the growing numbers of personnel appointments and assignments. Thus the Board provided technical advice while leaving issues of naval policy firmly under civilian control. The system functioned with mixed success well beyond the closing of the Whitehall Naval Station in 1825. Consequently, Leonard was required to send copies of his weekly squadron maintenance reports, expenditure accounts, and other general correspondence to both offices throughout his time on Lake Champlain. In addition, a complete list detailing the condition of the warships and associated naval gear had to be included in the Navy Department's "Annual Register of Ships."

Junior and warrant officers assigned to the Whitehall Station came from a number of different service backgrounds, but seniority dictated their advancement. To eliminate any
possible confusion, Leonard laid out these expectations in writing and made them accessible to all personnel under his command. His “Orders for the Regulation of the Navy at Whitehall” identified each individual at the station by name and outlined their specific responsibilities in detail. This may have also served as an incentive for those eager to move up the promotion ladder, or simply out of their present situation.\textsuperscript{23} Leonard also required daily reports from his subordinates and retained strict control over the keys for the station’s facilities.

Lieutenant Budd directed “the employment & work in the various departments” of the station. He answered to Leonard as the second-in-command and carried out all “instructions for the performance of such other jobs and employments as may be necessary.”\textsuperscript{24} Budd’s day typically started with a full inspection of the warships in storage. Accompanied by Sailing Master Lindsay, he visited each hull to affirm that they were “secured in their moorings” and “well aired.”\textsuperscript{25} All of the rigging and cordage deposited in the holds of the warships had to be checked for dampness and rot. If the external planking seams remained watertight and the hold appeared dry, these important elements continued to survive undamaged. In addition, the roofs housing the warships had to be “kept tight and in good order.”\textsuperscript{26}

Budd reported all signs of deterioration and decay to Leonard. At least once a week, upon completing his tour of the warships, Budd also checked up on Gunner John Baker. He examined the contents of the arsenal to ensure that the gun, shot, powder, and equipment had been “properly arranged and secured from injury by wet, rats, or otherwise.”\textsuperscript{27} He also confirmed that the building itself was being sufficiently aired in periods of good weather. Budd then concluded his official activities with a written report to Leonard, referred to as “A General Attendance to the Fleet & Duty.”\textsuperscript{28}

Sailing Master Lindsay carried out the regular maintenance of the warships and ensured that the enlisted men had adequate living quarters and provisions. All construction, equipment, and repair concerns identified by Leonard and Budd fell to his management. He directed “caulking and other repairs that may be done to the ships & vessels” including the rather difficult process of replacing external planking, seeing to it “that all of the old bolts are backed out and new bolts put in the same hole.” Lindsay remained on site throughout such projects to apply his personal guarantee that “the work is properly executed.”\textsuperscript{29}

Carpentry and boatswain stores used for the squadron also had to be inventoried, organized, and housed “in a proper state of preservation” so as “to be able to furnish any article
when wanted by the proper requisition." These items included tools, iron fasteners, and wood supplies, along with a myriad of ship’s equipment, fittings, and other accoutrements. Preservatives in the form of paints, whitewash, lacquer, tar, pitch, and turpentine fell into the same category as they also contributed to the upkeep of the squadron. Lindsay submitted quarterly returns tallying all of the stores under his charge. Budd conducted periodic inspections of the station’s naval storehouse to confirm his subordinate’s numbers.

The sailors and landsmen residing in temporary barracks within Confiance and Saratoga worked closely with Lindsay. In many ways, he acted as the liaison between these men and the station’s upper tier of command. Lindsay monitored the quality of their provisions, distributed firewood, and conducted surprise inspections of their uniforms, lockers, bedding, and quarters. When the purser’s steward received a new shipment of victuals, Lindsay carefully screened the salt meat to verify that it was “not in want of pickle.” He also secured the flour to prevent “depredations by the rats” and checked the barrels of whiskey for leaks. Despite the notoriously poor quality of naval provisions at this time, the purser steward’s records still had to be examined on a regular basis to discourage the men from selling or embezzeled food served to the messes. Lindsay simply made this part of his weekly regimen, along with touring Confiance and Saratoga to see “that the rooms with beds and bed clothing are kept clean” and “that no clothes are left lying about the decks.” At night, he accounted for warrant and enlisted personnel during the call for “lights out” and reported “all disorderly or absent men."

Dr. William Turk attended to the sick and injured, as well as any recurring problems linked to poor diet, hygiene, or sanitation practices. Turk had a temporary hospital, or “sickbay,” set up at the station for surgical operations and the storage of his instruments, drugs, and papers. The medical day included at least one visit through the squadron to examine and treat patients, identify signs of dietary deficiencies, and provide recommendations on the proper fumigation and ventilation of living quarters. Individuals who became injured or fell seriously ill later in the day could report themselves at any time.

The daily tasks awaiting Turk back at the hospital were also demanding. Wounds had to be dressed with new bandages, painkillers and other drugs had to be administered, and bedridden individuals had to be fed, washed, and shaved. Naval stations usually had a cadre of assistants to help the surgeon run the hospital, clean and maintain instruments, keep accurate treatment records for each patient, track the expenditure of medicines, monitor the station’s
water source, lay out latrines, and inspect the cooking facilities. Finally, Turk concluded his day with a report to Leonard recounting the health condition of the officers and men along with a return of drug expenditures.  

Gunner John Baker maintained the ordnance, small arms, powder, munitions, and other equipment “appertaining to his department” situated on Taft’s Island near Whitehall. The Navy Department wanted only a tiny supply of these items to remain at the station, largely for ceremonial use on national holidays such as the Fourth of July. Consequently, Baker conducted the majority of his duties at the station’s primary magazine some 12 miles away at Fort Ann, New York. He visited this facility every three months (on the first day of December, March, June, and September) in order to “turn the barrels with powder & see that the ammunition, match rope, &c are safe and in a good state of preservation.” He also presented and filled requisition orders for Leonard. The gunnery supplies kept on hand at the station consisted of twenty-five cartridges with powder stored in Linnet’s magazine “to be ready for a salute &c if required.” Leonard personally kept track of the key to this locker, thus preventing any unwanted accidents or mischief. On a quarterly basis, Baker drew up an exact inventory and account of the station’s powder and shot expenditures for his commander’s records. His other responsibilities included the safe delivery of muskets, pistols, and cutlasses to the local armourer for cleaning and repairs, the regular lacquering of ordnance to prevent rust and corrosion, and the proper storage of all weapons and related equipment. When Baker died of pneumonia in December 1819, Gunner Stephen Nicolson assumed responsibility for this department.

Purser Stewards Beale and Howe kept accounts of all the provisions, slops, and other naval stores at the station. They also rationed out the daily meals, issued clothing and bedding to the men, and made periodic inventories in order to identify any “waste or embezzlement of those articles he has under his charge.” The stewards worked closely with Captain’s Clerk Jasper Powlis to report any transgressions directly to Leonard. The Navy Department authorized a small allotment of slops expected to last the men from the 15th of January through the 31st of December each year. These included one pea jacket, two blue cloth jackets and matching trousers, two white flannel shirts and drawers, two pair of yarn stockings, two black silk handkerchiefs, two frocks and trousers of canvas duck, four pairs of shoes, one red cloth vest, and two hats. Each man also received two woolen sleeping blankets and a hammock as a
bedding allowance. Under no circumstances were the stewards allowed to grant additional slops without direct orders from Leonard. Those individuals that could afford the added expense, however, often augmented the standard quantities as needed.

On 2 August 1815, the Board of Navy Commissioners injected a burst of activity into the daily routine at Whitehall. Leonard received instructions to take further measures for the long-term preservation of *Confiance, Saratoga, Eagle, Linnet, Ticonderoga*, and the six row galleys. Sails, rigging components, and cordage stored in the larger warship hulls were removed to the naval storehouse on shore where they could be properly aired, inspected for mildew, and overhauled on a regular basis. At this time the squadron remained moored in a single line along the western edge of the lake channel near the “Elbow” just below Whitehall (Figure 32).

The Board showed no immediate interest in keeping the galleys afloat, however, perhaps due to the excessive investment of money, materials, and labor required for such a minimal return in firepower. *Confiance* alone shipped 37 guns when prepared for action, more than three times the strength of all six galleys combined. Instead the Board directed that *Allen, Borer, Burrows, Centipede, Nettle*, and *Viper* be sunk beneath the cold, fresh water of the lake in order to retard the spread of dry rot in the galleys’ timbers. With the exception of *Allen*, the entire squadron remained in this position for the next five years.

As Leonard’s first year at his new post concluded, little remained to break up the monotony of life ‘in ordinary.’ The weekly reports forwarded to the Navy Department offered a telling glimpse into the future of the Whitehall Station—a rapid descent into an endless cycle of muster, inventory, inspection, and maintenance. Indeed, once the last of the galleys had been properly laid up, the strict code of rules and regulations governing behavior at the station became the centerpiece of attention. The “Articles of War” were read aloud each month and upon the arrival of new recruits. Work continued on a diminished scale, as physical activity helped curb the health and disciplinary problems often tied to idleness. Leonard set watches on the warships day and night for the purposes of pumping standing water out of the bilges, safeguarding anchor cables, and protecting against fire, theft, looting, and vandalism. No lights were permitted aboard the squadron except for one tended by Sailing Master Lindsay through the evenings inside the cabin of *Confiance*. Other prohibitions addressed the common infractions encountered amongst the personnel at the station, including disobedience of orders,
public drunkenness, fighting and disorderly conduct, capperbar (the stealing of provisions and slops for resale), neglect of uniform and slovenly appearance while on duty, harboring strangers, gambling, and taking leave without a pass.  

Despite the U.S. Navy’s inactive state on Lake Champlain, the officers and sailors of the Whitehall Station observed firsthand three of the nation’s most significant historic changes in the postwar era between 1816 and 1825. First, the technological advances of the industrial revolution rapidly transformed the local waterways into bustling conduits for canal boats and steamships. Second, the Rush-Bagot Agreement of 1817 marked a diplomatic milestone improving relations with Great Britain and eventually leading to a policy of total military disarmament along the American-Canadian border. And lastly, the financial turmoil of the Panic of 1819 that encouraged a restructuring of the U.S. Navy and subsequently its departure from the Great Lakes and Lake Champlain.
Canals, Steam, and The Rush-Bagot Agreement

Commercial shipping on Lake Champlain experienced a dramatic recovery in the years following the Treaty of Ghent. The war had interrupted the free movement of goods, communications, and people between New York, Vermont, and Lower Canada. Lake carriers quickly began to reconnect these markets in peace, thus playing a vital role in the burgeoning national economy through the first half of the nineteenth century. Trade continued to drain in the traditional northward direction toward the St. Lawrence River Valley. Advocates of domestic industry disliked this arrangement, as it only hampered the growth of such important trade and manufacturing centers as New York City, Philadelphia, Baltimore, and Boston. Unfortunately, the added expense of an overland passage at Whitehall from Lake Champlain to the Hudson River discouraged any major shift in local shipping patterns—a situation that would not begin to change until the mobilization of public and private capital, increasingly sophisticated engineering techniques, and an expanding immigrant labor force made the building of canals a practical undertaking in the United States. 45

Perhaps the most important lesson taught by the recent military campaigns along the American-Canadian border was the desperate need for internal improvements, namely passable roads and a system of canals to link the republic’s inland waterways with its expanding seaports along the Atlantic coast. Canals, in particular, promised to facilitate the easy transport of bulk cargos and passengers, as well as provide the federal government with a swift, effective means of bringing the full weight of its armed forces to bear throughout the American hinterland. Ironically, the financial backing for such improvements largely depended on state and private enterprise. 46 Prior to the introduction of railroads, a strange mixture of land speculators, commercial promoters, shipping operators, and nationalists began to embrace the idea of using canals to link the newly acquired Northwestern Territories (Ohio, Michigan, Indiana, and Illinois) with the Mid-Atlantic and Northeastern States. The logical routes employed the Great Lakes, Lake Champlain, and the Ohio, Delaware, Susquehanna, and Hudson River systems.

Plans for building an Erie and Champlain Canal to connect the Great Lakes and Lake Champlain with the Hudson River Valley had been in the offing since 1761. 47 Initial experiments undertaken by the Western Inland Lock Navigation Company and the Northern Inland Lock Navigation Company in New York State met with only limited gains over the next thirty years. It took intense political lobbying on the part of one man to finally convert these
false starts into a resounding success. New Yorker DeWitt Clinton headed a commission for
Governor Tompkins tasked with investigating possible canal routes and conducting a feasibility
study that highlighted the economic benefits and cost estimates of such projects.  Clinton
collected reams of persuasive survey data, including topographic maps and nautical charts
between 1815 and 1817. The majority of his information came from the recent efforts of U.S.
Army topographical engineers who were attempting to better delineate the American-Canadian
borderline through the Great Lakes and Lake Champlain in the immediate postwar years.  49

Surveyors Isaac Roberdeau and John Anderson arrived on Lake Champlain to prepare
maps of the valley and take depth soundings through the summer of 1816. Leonard afforded his
two visitors the full cooperation of the Whitehall Station. On 31 July 1816 he had one of the
submerged row galleys—possibly Allen—raised, caulked, and equipped for temporary service. 50
"I have had a galley bailed out & the sails bent for the purpose of going down the lake &
surveying the different parts," wrote Leonard to the Board of Navy Commissioners, "I shall
return in a few days & have the galley again sunk at her station." 51 Sailing Master Lindsay spent
the beginning of August cruising the galley throughout the southern portions of the lake while
his passengers conducted their operations. Roberdeau’s map, published later that year, showed
the position of the squadron and other potential navigation hazards around the area of Whitehall.
Such details foretold the possibility of future difficulties between canal traffic on the lake and
the mothballed warships. 52

On 15 April 1817, the New York State Legislature approved a plan for building the Erie
(Western) and Champlain (Northern) Canals. Construction began almost immediately at Rome
and Waterford, New York. Irish-American and French-Canadian immigrants provided the bulk
of the labor force for the project. The growing controversy over the issue of slavery at home
and within the international community—described by an aging Thomas Jefferson as "a firebell
in the night"—effectively discouraged the hiring of African-Americans, free or otherwise, for
federal, state, and local service. The Navy Department went as far as warning its station
commanders against the hiring of "slaves or negros" without its express authority. 53 Leonard
felt compelled to relay his fast adherence to this recommendation on at least two different
occasions. "I have much pleasure in stating that since I have been at this station, there has not
been employed in any capacity whatever, either slave, negro, or apprentice," observed the
captain, "our muster roll exhibits none but regular recruited men, and all healthy white men." 54
This atmosphere proved especially pervasive during the congressional debates that surrounded the Missouri Compromise in 1820.\textsuperscript{55}

In spite of self-imposed restrictions on available labor, the canal channel spanning the Whitehall-Fort Edward link was completed and open for use within two years of breaking ground. Financial patronage came largely from the lumber, iron mining, and marble cutting interests situated along the shores of Vermont and New York. The canal measured 40 feet (12.19 m) wide at the top, 28 feet (8.53 m) wide at the bottom, and 4 feet (1.22 m) deep with locks 90 feet (27.43 m) in length and 15 feet (4.57 m) wide. Towed and sailing versions of cargo barges, fashioned to fit these dimensions, rapidly began to clutter the waterfront at Whitehall.\textsuperscript{56}

In 1823, the Champlain Canal officially opened end-to-end, just one year before the Navy Department decided to abandon its Whitehall Station, and the Erie Canal opened two years later. The economic impact of the new links was instantaneous. Freight rates dropped from $100 per ton to $10 per ton and in five years tolls exceeded $1,000,000 annually.\textsuperscript{57} Most significantly, however, the canals encouraged the movement of agricultural products and raw materials from the Northwest and West to the Northeast where they could be used for domestic consumption in factories and for export to Europe. Old alliances with the South via the Mississippi River lifeline to New Orleans gradually realigned toward New York, Pennsylvania, New Jersey, and Massachusetts—arguably the single most significant political shift of the first half of the nineteenth century in the United States.\textsuperscript{58}

Whitehall shippers rapidly came to dominate the canal and freight lines on Lake Champlain from 1823 until the advent of the Delaware-Hudson Railroad in 1875. Sailing canal barges emerged along the waterfront as the choice vessel throughout the latter half of this period. These convertibles had canal barge hulls with retractable leeboards and schooner sail rigs, thus allowing them to ply the open water of the lake as well as the locks without having to transfer cargo. Conditions aboard the vessels, however, often appeared less than favorable to the wealthier passenger clientele touring between the United States and Canada via Lake Champlain. Steamboat ventures eagerly filled this vacuum eventually offering lavish staterooms and private sleeping berths for those who could afford such luxuries. Consequently, as the Champlain Canal continued to stimulate passenger traffic through the area, Whitehall naturally
assumed the added role of a steamer terminal for the popular and well-traveled route between New York City and Montreal.⁵⁹

Anglo-American diplomacy stood at the heart of this postwar boom in canal and steamboat enterprise. The Rush-Bagot Agreement of 1817 and the Convention of 1818 helped galvanize confidence in the national economy by removing several potential sources of friction with Great Britain in North America. The Rush-Bagot Agreement, resulting from a formal exchange of notes between Acting U.S. Secretary of State Richard Rush and British Foreign Minister Charles Bagot, pledged to demilitarize the Great Lakes and Lake Champlain. The two countries specified that a force no greater than one warship would be kept on Lake Champlain. This vessel could not exceed one hundred tons burthen and was only allowed to carry a single gun not larger than an 18-pounder. With the threat of naval competition vanishing amidst this conciliatory spirit, a general policy of cooperation and stability slowly emerged along the American-Canadian border.⁶⁰

Allen experienced a brief return to public service as a patrol boat under the provisions of the Rush-Bagot Agreement in the spring of 1817. The galley, reported to be “in tolerable order,” was presumably the best possible selection based on hull size and degree of preservation.⁶¹ Leonard had Allen raised, overhauled, and refit to mount a 12-pounder bow gun in the opening weeks of May.⁶² Originally built to carry two guns—one in the bow and one in the stern—the galley required certain modifications in order to meet the newly ratified arms limitation on the lake. Allen’s gun mounts had been disassembled prior to the galley’s intentional sinking in 1815.⁶³ This meant that the stern area, formerly a platform for a long, 24-pounder, had been stripped free of obstructions down to the lower hull. Shipwrights and laborers used this space to hold the hundreds of pounds of pig iron ballast needed to counterbalance the weight of the galley’s 12-pounder bow gun.

On 20 May 1817, Leonard assured Captain John Rodgers, President of the Board of Navy Commissioners, that “his instructions for arming the galley Allen” had been received, and that “she is accordingly fitting for the service intended.”⁶⁴ Leonard also submitted a request for a lieutenant to command the galley, along with thirty men “if it is considered material to maintain her with any force.” He went on to remind his superior of the fact that these larger class galleys “were usually manned with forty men in the late war.”⁶⁵
Sailing Master Lindsay bore the primary responsibility of preparing and subsequently maintaining the galley "for occasional service." Detailed evidence illustrating Lindsay's modifications to Allen has yet to be discovered. Therefore, the timeline of construction for the galley's straight sternpost remains confusing. Joseph Dulles described the first class (75-foot) row galleys of Macdonough's squadron as "sharp each end" after touring the squadron off Chazy, New York in August 1814. I have postulated in Chapter IV of this dissertation that Noah Brown opted to alter William Doughty's original double-ender, curved-post design for the less-complex straight sternpost at the time of Allen's construction at Vergennes. However, it is possible that this alteration may have been performed during the galley's postwar career.

The only contemporary depiction of Macdonough's 75-foot row galleys—aside from their original design plans—is in the form of a watercolor portrait by an unknown artist showing the American flotilla at anchor shortly after the Battle of Plattsburgh Bay (see Chapter VI, Figure 28). The painting, now at the Shelburne Museum in Shelburne, Vermont, gives few construction details beyond the general hull form of Allen. The sterns of five different galleys can be seen in the foreground, but unfortunately they are not prominently featured due to the reduced size of the hulls. It appears as though they have a straight sternpost with no transom, suggesting that the galleys were originally built in this fashion. Perhaps future historical or archaeological research can someday put this question to rest.

Although the Rush-Bagot Agreement limited the U.S. Navy's force on Lake Champlain to a single row galley, it never stipulated that its remaining warships be broken up. The Navy Department, increasingly concerned about finances, kept the remainder of the squadron in ordinary, in a secure location that would not impede the expansion of local maritime shipping. Such an arrangement observed the provisions of the compact but maintained the possibility that a squadron could be quickly rebuilt on the lake in the event of a crisis. Thus the Navy continued to remind Leonard of three main concerns: (1) the condition of the warships—did they lay aground, or had they deteriorated to the extent of being unworthy of saving; (2) position—did any of the warships interrupt navigation on the lake, or in any way interfere with local commerce; and finally, (3) the possibility of alternative storage locations in the vicinity of Whitehall.

On 27 May 1817, Leonard promptly announced that Allen was ready for service with the exception of a crew. He also took an opportunity to reiterate the protocol for maintaining the
condition and security of the American squadron. "The hulls are housed from stem to stern," wrote Leonard, "so as to keep them from sun and weather, and secured at a suitable distance, half cables length apart, free from accident by fire of any one vessel extending to the other." He favored keeping the large warships moored in a line ahead formation, but shifted them an additional four hundred yards below the harbor of Whitehall where they would be safer from high winds and the large ice flows that congested the main channel of the lake during spring thaw. The galleys—excepting Allen—remained "filled with water." Leonard kept them in single file off the aftermost end of the line. In this present state, he concluded that "the fleet is as well situated for its safety and future preservation as can possibly be devised."

Even under covered roofs the warships demanded proportionately greater attention as the next year passed. Leonard's men kept employed at recaulking jobs, but these measures could do little to halt the spread of dry rot through the frames and external planking. By 1819, the rate of decay had begun to exceed the manpower and resources allocated for keeping the warships afloat.

*The Panic of 1819, Naval Retrenchment, and Allen's Final Disposition*

Allen represented the last U.S. Navy warship ever placed in commission on Lake Champlain. Less than two years after the galley returned to duty, a financial panic swept the United States causing a severe downswing in the national economy between 1819 and 1821. The crisis had its genesis in a number of factors, including a fall in cotton prices, the failure of the Bank of the United States to regulate the production of paper money by state banks, a congressional order requiring specie payments for land purchases, and a heavy outflow of gold coin overseas to help pay off the public debt incurred in part by the Louisiana Purchase (1803) and the War of 1812. As postwar growth came to a grinding halt, unemployment mounted, banks failed, mortgages foreclosed, agricultural prices and land values plummeted, and a number of domestic manufacturers collapsed due to foreign competition.

New York State, in particular, endured a sharp drop in property values from $315 million in 1818 to $256 million in 1821. The Society for the Prevention of Pauperism estimated that 50,000 persons had become unemployed or otherwise displaced by this period of economic turmoil. Vermont suffered the loss of the Monkton Iron Works, a prominent source of employment for the residents of Vergennes. John D. Ward of Montreal eventually purchased all of the properties associated with the venture and turned them for a profit as the "Vergennes Iron
A number of local residents still based their livelihood on the trade of raw materials with Lower Canada in 1819. This emphasis on foreign markets already hindered domestic industry in the Champlain Valley. When the panic swept into this region, many of these businesses could not absorb the subsequent loss of markets for their products. It would take the completion of the Champlain Canal (1823) to finally shift the bulk of this raw materials trade into domestic hands.  

The Panic of 1819, coupled with the rise of a new overland expansionist agenda outlined in the Adams-Onis Treaty, urged the Navy Department to reassess the need for inland waterway installations, such as its Whitehall Station. Although the American squadron had come to symbolize the postwar spirit of nationalism, the cost of maintaining it could no longer be justified. Navy critics in Washington, D.C., began to push for the dismantling of all landlocked stations along the Great Lakes and Lake Champlain. Selling off obsolete property promised to reduce unwanted expenses and generate additional money for the seagoing fleet. Unbeknownst to Leonard, the Board of Navy Commissioners was drafting a proposal to Congress that would entirely dispense with the Whitehall Station.  

In September 1819, Professor Benjamin Silliman of Yale University captured one of the last glimpses of the American squadron still afloat on Lake Champlain. He witnessed this display of “spareless, black and frowning” hulls while traveling from Whitehall to St. Jean, Quebec, aboard the steamer Congress (Figure 33). Moved by the sight of these decrepit warships, Silliman penned a brief eulogy honoring them as “coffins of the brave”:

The channel through which we passed, is, for miles, so narrow, that the steam-boat could scarcely put about in it... At the very head of this natural canal, lie moored to the bank, stern and stern, the flotillas of Macdonough and Downie, now, by the catastrophe of battle, united into one. As we passed rapidly by, a few seamen shewed their heads through the grim portholes, from which, five years ago, the cannon poured fire and death, and we caught a glimpse of the decks, that were then covered with the mutilated and the slain, and deluged with their generous blood. Spareless, black, and frowning, these now dismantled ships, look like the coffins of the brave, and will remain, as long as worms and rot allow them sad monuments of the bloody conflict.

Just months after Silliman published his rather melancholy tribute, the Navy Department officially declared the squadron no longer useful for defense and subsequently unworthy of repairs. Leonard’s duties from this point onwards focused entirely on the sale and removal of all valuable property under his command.
The U.S. Navy’s presence on Lake Champlain began to dissipate rapidly in the years following Silliman’s visit. By December 1820, the decaying squadron had been moved into the Poultney River (also known as East Bay)—approximately one mile and a quarter northeast of Whitehall—to ensure that it would not impede local commercial traffic. The two largest vessels, *Confiance* and *Saratoga*, sank at their moorings shortly after being relocated. *Saratoga* became “well merged in water,” but continued to provide living quarters “without inconvenience” for the crew of *Allen* until 1823. The Navy Department ordered that *Confiance* be broken up after a spring flood washed it out into the main lake channel the following year. By July 1825, *Saratoga, Confiance, Eagle, Linnet, Ticonderoga*, and the row galley *Allen* had all been sold at auction for scrap along with a surplus of assorted tools and equipment.

On 19 October 1825, the Whitehall Naval Station closed its doors for good and the memory of Thomas Macdonough, William Doughty, Noah Brown, and the Champlain row galley flotilla faded into obscurity. Of the six heavy class galleys built by Brown on Lake
Champlain, the final disposition is only known for Allen. Situated out of the way in the Lower Poulney River, salvagers harvested the exposed portions of Allen’s hull with prybars and axes, while the submerged portions survived relatively intact, to remain as Professor Silliman had predicted: “as long as worms and rot allow.”

Endnotes: Chapter VII


2. Roger Brown has argued that the United States declared war on Great Britain in the first place in an effort to save its ‘republican experiment.’ See Brown, Republic in Peril, 67-107. However, Madison closed the war byreshaping this ideal to fit the changing times. For an overview of the shift away from the Jeffersonian idyllic in the United States after the War of 1812, see U.S. Congress, The Debates and Proceedings in the Congress of the United States, First Session, March 3, 1789-18th Session, May 27, 1824 (Washington, D.C.: Gales and Seaton, 1834-1856), 13th, 14th Congresses. See also: George Tindall and David Shi, America: A Narrative History 5th ed. (New York: W. W. Norton & Company, 1999), 371-374, 376-377, 404-406, 409-410; and Benjamin Labaree et al., America and the Sea: A Maritime History (Mystic, Conn.: Mystic Seaport, 1998), 237-246.


4. Ibid. See also Millet and Maslowski, For the Common Defense, 123-124.

5. Ibid. See also Millet and Maslowski, For the Common Defense, 124-126; and Symonds, Atlas, 57-59.

6. Ibid.


12. All six of the U.S. Navy's squadrons had been established by 1843. See Symonds, *Atlas*, 64-65.

13. Service Record Abstracts, RG-24, M330. See also James T. Leonard to Benjamin Crowninshield, 18 May 1815, Captains' Letters, RG-45, M125, Reel 44, Nos. 88, 89; Benjamin Crowninshield to James T. Leonard, 22 May 1815, Letters Sent to Officers, RG-45, M149, Reel 23, No. 120, NARA; and "Stations Lake Champlain and Whitehall," Muster and Pay Rolls, RG-45, Entry 92, T829, 147, No. 83, NARA. This document indicates an Roll Entry date of 22 May 1815 for Captain James T. Leonard as the day he assumed command of the Whitehall Naval Station.


15. On 20 May 1815 Secretary Crowninshield instructed Purser George Beale to dispose of the sloops and galleys owned by the navy on Lake Champlain as Leonard had yet to arrive and assume command of the station. See Benjamin Crowninshield to George Beale, 20 May 1815, Letters Sent to Officers, RG-45, M149, Reel 12, No. 130, NARA; and Crisman, *The Eagle*, 99.

16. This total can be calculated by adding up the cash value that each individual hull sold for at auction that year. See "A Register of Officers and Agents Civil, Military, and Naval in the Service of the United States Together with the Names, Force, and Condition of All the Ships and Vessels Belonging to the United States, and When and Where Built, 1815." Box 5200, RG-287, NARA. A preliminary draft version of the "Register" can be found as a general entry in the National Archives. Penciled research notations that never made it into the official "Register" can be found in this volume. See List of Vessels of the U.S. Navy, Situation of the U.S. Naval Force (hereafter cited as List of Vessels), RG-45, Entry 169, NARA. See also: James T. Leonard to Board of Navy Commissioners, Letters Received by the Board of Navy Commissioners from Commandants (hereafter cited as Letters Received by the Board from Commandants), RG-45, M220, Vol. 1, NARA; and Crisman, *The Eagle*, 99-100.

17. Ibid. These documents provide the sale price for each individual hull.

18. Dr. Turk assumed the position of "Surgeon" at Whitehall on 7 September 1816. See "Stations Lake Champlain and Whitehall," Muster and Pay Rolls, RG-45, Entry 92, T829, 147, No. 75, NARA; James T. Leonard to Benjamin Crowninshield, 22 May 1816, Captains' Letters, RG-45, M125, Reel 49, No. 129, NARA; and William Turk to Benjamin Thomas, Esq. Acting U.S. Navy Secretary, 3 September 1816, Officers' Letters, RG-45, M148, Reel 17, Pt. 1, No. 151, NARA.

19. Dr. Turk was the first and only person to officially be recognized by the Navy Department as a "Surgeon" during his service on Lake Champlain.

20. "Stations Lake Champlain and Whitehall," Muster and Pay Rolls, RG-45, Entry 92, T829, 147, No. 82, NARA.


23. "Orders Observed for the Regulation of the Navy at Whitehall," Subject Files, Class P, Subclass PB, Rules and Regulations Pertaining to Naval Stations, Box 498, RG-45, NARA.

24. Ibid.

25. Ibid.

26. Ibid.
27. Ibid.
28. Ibid.
29. Ibid.
30. Ibid.
31. Ibid.
32. Ibid.
33. Ibid.
34. Ibid.
35. Ibid.
36. Ibid.
37. Ibid.
38. Ibid; “Stations Lake Champlain and Whitehall, Muster and Pay Rolls, RG-45, Entry 92, T829, 147, No. 82, NARA. Gunner John Baker died on New Years Eve, 1819. Leonard marked “DD” or “Discharged Deceased” next to his name and reported the details of his passing to the newly appointed U.S. Navy Secretary Smith Thompson (1 January 1819-31 August 1823). Baker had come to the United States from Germany in the years prior to the War of 1812. “A Register of Officers and Agents Civil, Military, and Naval in the Service of the United States Together with the Names, Force, and Condition of All the Ships and Vessels Belonging to the United States, and When and Where Built,” 1819, Box 5200, RG-287, NARA. The last year that Baker is listed on the “Register” is 1819.
40. Ibid. The pea jacket was to last at least two years before replacement. The remaining clothing items had varying time spans before being replaced. Consequently, many sailors became adept with needle and thread to maintain their attire.
41. Board of Navy Commissioners to James T. Leonard, 2 August 1815, Letters Sent by the Board of Navy Commissioners to Commandants (hereafter cited as Letters Sent by Board to Commandants), RG-45, M216, Vol. 1, No. 40, NARA; James T. Leonard to Board of Navy Commissioners, 31 August 1822, Letters Received by Board from Commandants, RG-45, M220, Vol. 1, NARA; and Crisman, The Eagle, 100.
42. Ibid; and Bellico, Sails and Steam, 232.
43. “Orders Observed for the Regulation of the Navy at Whitehall,” Subject Files, Class P, Subclass PB, Rules and Regulations Pertaining to U.S. Naval Stations, Box 498, RG-45, NARA.
44. Ibid. Clearly the men of the Whitehall Naval Station needed to be kept occupied with work on a regular schedule.
46. Ibid. The U.S. Federal Government supported a handful of river and harbor improvements, along with a scattered network of post roads, but did not enter the field of internal improvements on a large scale until the passage of the Federal Highways Act of 1916. See Tindall and Shi, America, 414.
47. Philip Schuyler of Albany, N.Y., recommended the construction of a canal system in North America after witnessing similar channels in operation near Bridgewater, England in 1761. For a background on early canal development in North America, see Bellico, Sails and Steam, 237.


49. Bauer, A Maritime History, 132-150; and Labaree et al., America and the Sea, 246-249.

50. James T. Leonard to Board of Navy Commissioners, 31 July 1816, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA. Although Leonard never indicated in this letter which of the six 75-foot row galleys he planned to raise for the surveyors, it seems likely that it was Allen. We know from Leonard’s letters of the following year that he used Allen to fulfill the provisions of the Rush-Bagot Agreement of 1817. It is reasonable to suggest that the row galley originally raised, caulked, and equipped for the surveyors in 1816 would have still been in reasonable condition by 1817. Leonard hardly had the funds to waste on raising and outfitting an entirely new galley.

51. James T. Leonard to Board of Navy Commissioners, 31 July 1816, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.

52. For a reproduction of the Roberdeau-Anderson map of Lake Champlain around Whitehall, N.Y., see Crisman, The Eagle, 102.

53. Jefferson described the slavery question surrounding the Missouri Compromise of 1820 as a “momentous question” that “like a firebell in the night awakened and filled me with terror.” For a full excerpt of his prediction, see Tindall and Shi, America, 424. For specific information on the U.S. Navy prohibiting the hiring of African-Americans at the Whitehall Naval Station, see James T. Leonard to Board of Navy Commissioners, 31 March 1817, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA; “Orders Observed for the Regulation of the Navy at Whitehall,” Subject Files, Class P, Subclass PB, Rules and Regulations Pertaining to Naval Stations, Box 498, RG-45, NARA. An overview of African-Americans living and working in Vermont during the nineteenth century can be found in Elise A. Guyette, “The Working Lives of African Vermonters in Census and Literature, 1790-1870,” Vermont History 61, no. 2 (1993): 69-82.

54. James T. Leonard to Board of Navy Commissioners, 31 March 1817, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.


56. Bellico, Sails and Steam, 238; Bauer, A Maritime History, 132-150; and Labaree et al., America and the Sea, 246-249.

57. Labaree et al., America and the Sea, 248.

58. By the 1850s an estimated 83 percent of the nation’s shipment of grain went to the Northeast via canals rather than toward the Mississippi River. Passenger travel stimulated the flow of migration as well to undeveloped western lands, resulting in the mass displacement of Amerindians and the growth of urban areas such as Chicago, Ill. This feverish expansion served as one of the many factors that would ultimately propel the nation into the divisive sectional controversies that led up to U.S. Civil War. See Bauer, A Maritime History, 132-150; and Labaree et al., America and the Sea, 246-249.

59. Steamboat technology actually appeared on Lake Champlain prior to the outbreak of hostilities in 1812. John and James Winans of Poughkeepsie, N.Y., had built and launched the steamer Vermont (1809) at Burlington Harbor shortly after completing the embargo watchdogs Gunboats No. 169 and No. 170 for the U.S. Navy. Vermont operated successfully, carrying passengers and cargo on the two-day roundtrip voyage between Whitehall, N.Y., and St. Jean, Quebec, with stops along the way at Burlington.
Noteworthy contemporaries of Vermont included Phoenix (1815), Champlain (1816), and Congress (1818). For more information on Vermont, see David J. Blow, “Vermont. First Lake Champlain’s First Steamboat,” Vermont History 34 (April 1966), 115-122. For general information pertaining to steamboats operating on Lake Champlain, see Bellico, Sails and Steam, 257-288; and Ralph N. Hill, Lake Champlain: Key To Liberty (Woodstock, Vt.: The Countryman Press, 1976), 195-258.

60. The American-Canadian line remains, to date, one of the longest unfortified borders in the world. The Rush-Bagot Agreement of 1817 is reprinted in the following correspondence: Benjamin Crowninshield to James T. Leonard, 2 May 1817, Letters Sent to Officers, RG-45, M149, Reel 13, No. 4, NARA; and James T. Leonard to Benjamin Crowninshield, 15 May 1817, Captains’ Letters, RG-45, M125, Reel 53, No. 71, NARA. The full wording of the agreement is as follows: “The undersigned, His Britannic Majesty’s Envoy Extraordinary and Minister Plenipotentiary, has the honor to acquaint Mr. Rush, that having laid before His Majesty’s Government the correspondence which passed last year between the Secretary of the Department of State and the undersigned upon the subject of a proposal to reduce the Naval Force of the respective countries upon the American Lakes, he has received commands of His Royal Highness, the Prince Regent, to acquaint the Government of the United States, that His Royal Highness is willing to accede to the proposition made to the undersigned by the Secretary of the Department of State in his note of the 2nd of August last. His Royal Highness acting in the name and on the behalf of His Majesty, agrees, that the Naval force to be maintained upon the American Lakes by His Majesty and the Government of the United States shall henceforth be confined to the following vessels on each side. That is: On Lake Ontario to one vessel not exceeding one hundred Tons burthen and armed with one eighteen pound cannon. On the upper lakes to two vessels not exceeding like burthen each and armed with like force. On the waters of Lake Champlain to one vessel not exceeding like burthen and armed with like force. And His Royal Highness agrees that all other armed vessels on these Lakes shall be forthwith dismantled, and that no other vessels of war shall be there built or armed. His Royal Highness further agrees that if either Party should hereafter be desirous of annulling this stipulation and should give notice to that effect to the other Party, it shall cease to be binding after the expiration of six months from the date of such notice. The undersigned has in command from His Royal Highness, the Prince Regent, to acquaint the American Government, that His Royal Highness has issued orders to His Majesty’s officers on the lakes directing that the Naval force so to be limited shall be restricted to such services as will in no respect interfere with the proper duties of the armed vessels of the other Party. The undersigned has the honor to renew to Mr. Rush the assurances of his highest consideration.” See Charles Bagot to Richard Rush, 28 April 1817, Richard Rush to Charles Bagot, 29 April 1817, Rush Papers, WLC. The official recognition of an unguarded frontier between the United States and Canada did not formally occur until the signing of the Treaty of Washington in 1871. See Paterson et al., American Foreign Relations, 107-109.

61. “A Register of Officers and Agents Civil, Military, and Naval in the Service of the United States Together with the Names, Force, and Condition of All the Ships and Vessels Belonging to the United States, and When and Where Built,” 1816, Box 5200, RG-287, NARA. Leonard also included weekly reports in his correspondence with the Board of Navy Commissioners concerning the work being performed to maintain the condition of the American squadron at Whitehall. See “Weekly Report of Work Done at the United States Navy Yard, Whitehall” (hereafter cited as “Weekly Reports”), Subject Files, Class P, Subclass PI, Bases, Naval, Industrial Activity, Box 530, RG-45, NARA.

62. James T. Leonard to Benjamin Crowninshield, 23 November 1816, Captains’ Letters, RG-45, M125, Reel 51, No. 73, NARA; Benjamin Crowninshield to James T. Leonard, 2 May 1817, Letters Sent to Officers, RG-45, M149, Reel 4, No. 71, NARA; Benjamin Crowninshield to James T. Leonard, 2 May 1817, Letters Sent to Officers, RG-45, M149, Reel 13, No. 4, NARA; James T. Leonard to Benjamin Crowninshield, 15 May 1817, Captains’ Letters, RG-45, M125, Reel 53, No. 71, NARA; and James T. Leonard to Benjamin Crowninshield, 1 January 1818, Captains’ Letters, RG-45, M125, Reel 57, No. 1, NARA.
63. If Allen was in fact the row galley that Leonard originally had raised for survey work in 1816, there is no indication that she would have been armed at that time. According to Leonard's correspondence, the Navy Department only wanted the survey galley to be raised and outfitted for use over a few weeks before going back into underwater storage. See James T. Leonard to Board of Navy Commissioners, 31 July 1816, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.

64. James T. Leonard to Board of Navy Commissioners, 20 May 1817, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.

65. Ibid.

66. "Orders Observed for the Regulation of the Navy at Whitehall," Subject Files, Class P, Subclass PB, Rules and Regulations Pertaining to Naval Stations, Box 498, RG-45, NARA; and James T. Leonard to Benjamin Crowninshield, 1 January 1818, Captains' Letters, RG-45, M125, Reel 57, No. 1, NARA.

67. Dulles, Diary, 5.

68. The watercolor painting showing the American squadron and galley flotilla is by an unknown artist. The painting is part of the collections of the Shelburne Museum in Shelburne, Vt. For the archaeological hull data pertaining to Allen's straight sternpost, see Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex.

69. Board of Navy Commissioners to James T. Leonard, 9 April 1817, Letters Sent by the Board to Commandants, RG-45, M216, Vol. 1, No. 218, NARA; and James T. Leonard to Board of Navy Commissioners, 19 April 1817, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.

70. James T. Leonard to Board of Navy Commissioners, 27 May 1817. Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.

71. Ibid.

72. Ibid.

73. Leonard found Confiance, in particular, to be extremely hogged and leaky by 1819. See James T. Leonard to Board of Navy Commissioners, 13 November 1819, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.

74. Allen's final crew consisted of the following individuals: Sailing Master Joseph Lindsay (Commanding), Stephen Nicolson (Gunner), William Fagan (Ordinary Seaman), William Rodgers (Ordinary Seaman), John Watson (Ordinary Seaman), Cato Williams (Ordinary Seaman), James Jackson (Ordinary Seaman), George Torres (Ordinary Seaman), and Arthur Fox (Ordinary Seaman). Leonard used Allen to transport the remaining stores and other salvaged materials from the squadron to shore for storage between 1819 and 1824. These items were then shipped back to the Brooklyn Navy Yard in New York City. Presumably Allen's last cruise on Lake Champlain would have been undertaken (at least) by 21 June 1824—the date that Lindsay received his discharge from the station. For a listing of Allen's final crew see "Stations Lake Champlain and Whitehall," Muster and Pay Rolls, RG-45, entry 92, T829, 147, No. 78, NARA. For evidence of Allen being used as a transport during the dismantling of the Whitehall Naval Station, see "Weekly Reports," Subject Files, Class P, Subclass PI, Bases, Naval, Industrial Activity, Box 530, RG-45, NARA. For the correspondence surrounding the shipment of stores and equipment from Whitehall to Brooklyn, N.Y., see James T. Leonard to Board of Navy Commissioners, 10 September 1825, 15 September 1825, 11 October 1825, 22 October 1825, 25 October 1825, and 30 November 1826, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA; and Bauer, Naval Affairs, 2: 102, 129, 130.

75. For a complete discussion of the Panic of 1819 and its impact on the national economy, see North, The Economic Growth of the United States; and Hammond, Banks and Politics in America. A brief
background of the same is provided in Tindall and Shi, *America*, 420-421.

76. Ibid.

77. The Monkton Iron Works began advertising its properties for sale between 1828 and 1830. In August 1830, Mr. J.D. Ward purchased the works, but sold out shortly thereafter (in 1836) to the forming "Vergennes Iron Company" for approximately $32,000. See Adella Ingham, comp., "In the Days of the Monkton Iron Company, 1807-1830" (Vergennes, Vt.: Unpublished, 1932), 48-52. A copy of Ingham’s work can be found at the Bixby Library in Vergennes, Vt.


79. The Board of Navy Commissioners did not make this recommendation official before Congress until 20 January 1821. See Bauer, *Naval Affairs*, 1: 713-714.


81. After 20 January 1821, when the Board of Navy Commissioners formally recommended that the Whitehall Naval Station be completely abandoned, Leonard began the difficult task of assessing the different types of property at the establishment and determining what items would be sold at auction and what items would be retained and earmarked for use at other navy installations. Leonard, already under a microscope for his indiscretions on Lake Ontario, had to justify his rationale (in writing) for virtually every sale involving public property. See Bauer, *Naval Affairs*, 1: 713-714; and Crisman, *The Eagle*, 107.

82. James T. Leonard to Board of Navy Commissioners, 29 August 1821, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA.

83. The total value of the warships and equipment sold at auction on 19 July 1825 was a mere $5,296.61. See "Sale of Vessels at Sackets Harbor, Erie & Whitehall, 19 July and 10 August 1825," Subject Files, Class A, Subclass AY, Purchases, Sales and Final Disposition of Naval Vessels, Except Prizes and Merchant Ships (hereafter cited as Final Disposition of Naval Vessels), Box 122, Folder 2, RG-45, NARA; and "Statement of the Progress Made in Executing the Instructions of the Hon. Secretary of the Navy, Ordering the Several Officers Commanding the Naval Stations at Sackets Harbor, Erie & Whitehall to Inform the Board of Navy Commissioners With a List of Such Articles, Which in Their Opinion, It Would Be More Advantageous to the Public Interest to Sell and At What Prices the Vessels at the Several Stations Would Sell For, 26 February 1825," Subject Files, Class P, Subclass PV, Bases, Naval, Miscellaneous, Box 556, Folder 1, RG-45, NARA. For correspondence detailing the auction at the Whitehall Naval Station in July and August 1825, see James T. Leonard to Board of Navy Commissioners, 4 July 1825, and 21 July 1825, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA. See also: Kevin J. Crisman, "'Coffins of the Brave': A Return to Lake Champlain's War of 1812 Ship Graveyard," *INA Quarterly* 22, no. 1 (1995): 4-8. *Confiance* and *Saratoga* were put up for sale together in July 1825. *Confiance* had already been largely broken up by this time. However, references to the frigate's final disposition continue in the historical record as late as 1873. See *Daily Free Press and Times*, 11 August 1873. This article describes the further destruction of a warship hull identified as *Confiance* with explosives. Underwater surveys conducted by the Champlain Maritime Society (1982) and the Lake Champlain Maritime Museum (1995) have discovered no further remains of the vessel's hull in or around the Lower Poulton River. What happened to *Saratoga* after the warship's sale is a mystery. *Saratoga* is mentioned in each of Leonard's weekly work reports to the Board of Navy Commissioners until December 1823. The following year of reports make no mention of the warship. See "Weekly Reports," Subject Files, Class P, Subclass PI, Bases, Naval Industrial Activity, Box 530, RG-45, NARA. *Saratoga* was listed for sale with *Confiance* in July 1825. See Hoffman, Son, & Pell, James T. Leonard, and Charles A. Budd to Board of Navy Commissioners, 22 June 1825, Letters Received by the Board from Commandants, RG-45, M220, Vol. 1, NARA. The new owners of *Saratoga* may have had the warship dragged to shore.
and thoroughly broken up for iron and other raw materials, or perhaps it too washed out into the lake channel and had to be destroyed. Remote-sensing and diver surveys have yielded no clues concerning the vessel’s whereabouts to date.

84. Completing the dismantling of the Whitehall Naval Station continued through the final months of 1825. The muster roll during this period shows the following individuals: James T. Leonard (Commanding Officer), Benjamin Brooks (Ordinary Seaman), Henry Mitchell (Ordinary Seaman), Henry Millington (Ordinary Seaman), George Pratt (Ordinary Seaman), and Israel Howe (Purser’s Steward). Pratt and Howe were paid through the 14th and 15th of November 1825, respectively. The last of the enlisted sailors left the station on 11 January 1826; this is indicated by Leonard’s brief notation: “Per orders of the Secretary of the Navy, Station Closed.” Leonard himself remained “Commander on Lake Champlain” until his death in 1832—largely an honorary title. He was continued on the muster roll (technically speaking) until that time. See “Stations Lake Champlain and Whitehall,” Muster and Pay Rolls, RG-45, Entry 92, T829, 147, NARA.
CHAPTER VIII

A U.S. NAVY ROW GALLEY IN THE POULTNEY RIVER GRAVEYARD:
THE WHITEHALL PROJECT, 1995

The story of Allen had been all but forgotten until July 1995, when the galley finally broke more than 150 years of silence. That summer the Institute of Nautical Archaeology at Texas A&M University and the Lake Champlain Maritime Museum jointly sponsored an intensive archaeological investigation of the vessel’s remains in an attempt to create a permanent archival record of this unique naval relic.¹

The team found Allen lying upright in less than 8 feet (2.4 m) of water, with a pronounced list to port, on a roughly northwest-to-southeast axis adjacent to the New York shoreline of the Lower Poulteny River. Known locally as “East Bay,” this tributary constitutes the border between West Haven, Vermont, and Whitehall, New York, near the southern terminus of Lake Champlain (Figure 34). The galley’s hull appeared to be stuck fast in the soft ooze of the river bottom; its backbone assembly (comprised of keel, keelson, stem, and sternpost) was partially hidden beneath a blanket of fine sediment, coarse sand, and heavy clay, leaving only its upper reaches visible and accessible. The approximate center point of these remains lies 750 feet (228.60 m) upriver from the Poulteny’s outlet into Lake Champlain at 43° 34’ 4.55” N and 73° 23’ 56.32” W (Figures 35 and 36).

Allen’s entire preserved structure measured 72 feet, 1-1/2 inches (21.9 m) long and 12 feet (3.65 m) wide in 1995.² Although a large portion of the galley’s remains along the port side (the side facing the open river channel) had been sheared off by salvagers and exposure, its starboard side had been thoroughly incorporated into the Poulteny’s sloping riverbank and promised a high degree of preservation. The prospect of tapping into this time capsule and completing Allen’s final testimony was intriguing. Somewhere beneath the mud lay a wealth of information about Noah Brown’s design, construction, and maintenance practices on Lake Champlain. The site also held details specific to Allen, such as the division of its interior spaces; special accommodations that had to be made for its guns, equipment, and crew; and a glimpse of shipboard life in an American oared warship from the War of 1812.
Figure 35. Approximate topographic location of the *Allen* site. Marker indicates location. U.S. Department of the Interior, U.S. Geological Survey Topographic Map. Map Name: Whitehall Quadrangle; Datum: North America 1927; Scale: 1:50,000; Map Date: 1972.

Figure 36. Aerial view (north-northwest) of *Allen* site inside Lower Poultney River. Marker indicates approximate site location beneath the water along the New York State bank of the river. Photograph by Kevin J. Crisman.
The historic and archaeological significance of *Allen* extended to a number of different categories. First, it represented the only example of a War of 1812 row galleys ever found on Lake Champlain. *Allen* served the U.S. Navy during the pivotal Battle of Plattsburgh Bay on 11 September 1814. Indeed, it may be the only known example of an American row galleys from this period in the United States that is readily accessible for study. Second, *Allen* marked the only physical link to the famed New York City shipwright Noah Brown and his work on Lake Champlain during the war. New clues pertaining to the materials, methods, and modifications, if any, of Brown and his shipwrights would add a much-needed chapter to our understanding of this skilled craftsman and the ways he experimented in his trade. Third, and finally, *Allen* illustrated one of the U.S. Navy's early efforts at mass-producing vessels from a single set of plans. Brown's galleys had all been built from the same design, prepared during the war by William Doughty, Chief Naval Constructor in Washington, D.C. *Allen* thus provided an interesting parallel between the U.S. Navy's row galleys squadron on Lake Champlain and those built for the Chesapeake Bay and Lake Ontario stations.

More than fifty percent of *Allen*’s original hull had been preserved, and it appeared certain that a thorough archaeological study could answer questions about this particular type of warship that even the most exhaustive examinations of the written record could never hope to address. This is not to say, however, that documentary evidence could not be found. In fact, copies of Doughty's row galleys plans for 1813 (along with the original contracts for the building of Joshua Barney’s Chesapeake Bay squadron) had already surfaced from the National Archives in Washington, D.C. (see Chapter IV, Figure 13). Yet these valuable finds only constituted pieces to a still incomplete puzzle.

Necessity often forced shipwrights like Noah Brown to deviate from the wishes of the U.S. Navy’s chief designers. Brown, for one, favored practical experience when faced with a problem during the building process. Therefore, graphic representations and other forms of historical documentation are often incomplete pictures. They divulge little information on the actual assembly techniques employed during construction. Put simply, the designer and the shipwright worked in two entirely different worlds—one dealt with the theoretical problems of naval architecture on paper and the other translated these abstract concepts into three-dimensional reality based on the tools, labor, materials, and time available. *Allen* offered an exceptional research scenario. Combining the historical records available on nineteenth-century
row galleys with the archaeological analysis of an actual example of one of these vessels promised a more complete illustration of this nearly forgotten form of naval technology. 


The preliminary investigation of *Allen* evolved from a rather unlikely starting point behind the Skenesboro Museum in downtown Whitehall, New York. In January 1981, Kevin Crisman (a student at the University of Vermont at the time) traveled to Whitehall to complete an archaeological documentation of the U.S. schooner *Ticonderoga*. The warship had served the American effort on Lake Champlain during the War of 1812 and had participated in Macdonough’s victory at Plattsburgh Bay. *Ticonderoga*’s remains had been placed under the care of the Skenesboro Museum in 1958. During his work on the schooner, Crisman learned that at least two other abandoned hulks from Macdonough’s squadron still lay submerged in the Lower Poultnay River. Whitehall resident Carol Senecal helped direct Crisman to the site of this so-called “War of 1812 Ship Graveyard” which subsequently led to a full-scale survey of the river later that summer.

Crisman joined forces with Art Cohn, a professional diver and maritime historian, for the 1981 excursion. Their collaborative effort led to the discovery of *Allen*. On 7 August, Cohn and diver Ken Cameron located the remains of a wooden hull that they estimated to measure more than 70 feet (21.33 m) in length and 11 feet (3.35 m) in beam. The wreck’s bow pointed southeast along the New York riverbank, downstream from the remains of two other warships, the U.S. brig *Eagle* and the ex-British brig *Linnet*. Many of the galley’s hull components appeared to be intact, including the keel, keelson, portions of the stem and stern assemblies, and most of the starboard side frames and planking.

After apprising the state archaeologists of Vermont and New York of their finds, Crisman and Cohn returned to the Poultnay River and conducted an archaeological excavation of the brig *Eagle* between 1982 and 1983. All three of the hulls were complete enough to warrant study, but limitations on time and funding made it impossible. Early on in the project’s planning stages, it had quickly become apparent that the investigators needed to decide which of the three warships (*Eagle, Allen, or Linnet*) would be the first to receive in-depth analysis. Rudimentary plans and records existed for *Allen* and *Linnet*, but not for *Eagle*. The American brig also represented the largest and best preserved of the three wrecks. After some
deliberation, Crisman and Cohn decided to devote themselves to the study of *Eagle* while conducting only a preliminary recording of *Allen*.  

Archaeologists Elizabeth Jan Warren, Jay Heaton, Mike Janson, and Dave Phinney logged more than 60 hours of dive time on *Allen*’s stem, stern, keelson, and eroded portside. Their assessment, entitled “Gunboat #1,” in *A Report on the Nautical Archaeology of Lake Champlain: Results of the 1982 Field Season of the Champlain Maritime Society* (1984), was published along with a site plan and profile of the exposed portions of the galley. Copies of the report went on file with the Champlain Maritime Society, the New York State Education Department, and the Vermont Division for Historic Preservation in June 1984.7

This initial investigation proved highly successful. Divers were able to gather a number of clues suggesting that “Gunboat #1” was in fact *Allen*, one of the six row galleys Macdonough ordered built at Vergennes, Vermont, over the winter of 1813-1814. First, the hull rested in close proximity to the remainder of Macdonough’s squadron—specifically, the brig *Eagle*. Captain Leonard had the vessels *Saratoga, Confiance, Eagle, Ticonderoga*, and *Linnet* moved into the Lower Poulney River in 1820 where they would be less likely to obstruct boat traffic heading north from Whitehall. *Allen* was the last warship from the American squadron to operate on Lake Champlain after the signing of the Treaty of Ghent. No records suggested that any of the other five galleys were ever re-commissioned after being sunk for preservation at Whitehall in 1815. In the final phases of dismantling the naval station on Lake Champlain (1821-1825), *Allen* was eventually taken to the Poulney River to join the rest of the American squadron and auctioned off to local salvagers.8

Secondly, a collection of cast iron ballast found in the vessel’s stern suggested that it was being used to counterbalance a large weight in the bow. This feature appeared unusual because ballast was typically placed on either side of the keelson along most of its length, keeping the vessel trim in the water and adding stability to the hull. When *Allen* patrolled Lake Champlain under the provisions of the Rush-Bagot Agreement (1817), records showed that it mounted a 12-pounder on its bow.9 The weight of this gun would have required sufficient ballast in the galley's stern to float the vessel on an even keel.

Finally, divers discovered a silver-colored uniform button for the U.S. Army’s 13th Infantry regiment between the keel and keelson (Figure 37). Historical documents revealed that Macdonough employed American soldiers stationed at Plattsburgh and Burlington to man the
oars of his row galley flotilla in 1814. Furthermore, the 13th Infantry was well represented on Lake Champlain during the Battle of Plattsburgh Bay. An American soldier may have lost this button from his uniform while bending oars for Plattsburgh.

![Image of a button](image)

Figure 37. U.S. Army 13th Infantry Regiment button from the War of 1812. This button was discovered atop Allen's forward keel in 1983. Photograph by Kevin J. Crisman.

The Poulney River Surveys (1981-1983) provided a baseline of data for future efforts to document the remaining hulls of Allen and Linnet. The study of Eagle, in particular, demonstrated how a permanent archive of archaeological information could be obtained with minimal impact on the vessel itself. Twelve years later, in 1995, circumstances urged Crisman and Cohn to return to the “War of 1812 Ship Graveyard” and apply the same techniques to Allen. Environmental threats sparked a renewed interest in the galley and demanded the timely collection of the remaining data needed to reconstruct its story. A new type of enemy—the zebra mussel—had invaded Lake Champlain and was threatening to penetrate the Poulney River. These tiny mollusks formed colonies on wooden shipwrecks, thus obscuring the details of their design and construction. Crisman and Cohn quickly found themselves competing against the clock much as Brown and his shipwrights had done during the original building of Allen in 1814. Their investigation would share the story of the galley with nautical archaeologists and maritime historians, as well as increase public awareness of this valuable piece of Lake Champlain’s past.
The Whitehall Project, 1995: Project Organization and Partners

Completing the study of Allen required the development of a responsible long-term research strategy. Three important considerations helped guide this plan: time, funding, and the availability of conservation facilities. Nautical archaeologists in recent years have promoted the investigation of submerged cultural resources in situ in order to avoid inflating these factors and to minimize the risk of destabilizing the site. Even in light of the zebra mussel threat, this approach continued to be the best option in 1995.

The Poultney River had already witnessed two shipwreck recovery attempts in the mid-twentieth century: one an indiscriminate fiasco that nearly destroyed Linnet, and the other a more organized but still destructive endeavor that resulted in the display of Ticonderoga at the Skenesboro Museum. In 1949, souvenir-hunters hooked two steel cables around Linnet’s frames and attempted to drag the hulk to the Vermont side of the river using horses and three tractors.\(^\text{12}\) The forward section of the hull broke off in the process and has never been found. In September 1958, Ticonderoga was cut into six sections and dislodged from its muddy berth with dynamite before being shipped to its new location in Whitehall.\(^\text{13}\) Raising Allen’s hull, in light of these earlier case studies, was not considered a viable option.

The strategy devised for Allen called for a one-month program of archaeological study. The overall goal was to complete the documentation that Warren and her team began in 1982. Detailed measurements, sketches, and photographs of Allen’s key hull components and its associated artifacts promised a detailed illustration of the galley as it would have appeared on Lake Champlain in 1814. Crisman placed special emphasis on recording Allen’s framing pattern and hull curvature. This analysis provided a better understanding of the galley’s overall shape. When compiled at the drafting table, such data permitted the drawing of scale lines and construction plans highlighting Allen’s design and assembly. The artifact analysis played an integral role in understanding the crew and their duties. It had the potential to further confirm the vessel’s identity, date of construction, and the nature of its career; but most importantly, it provided a unique description of life and work aboard an early-nineteenth-century naval galley.

The excavation and documentation of submerged archaeological sites typically requires a considerable degree of cooperation between federal, state, and local institutions. Support for the 1995 Whitehall Project came from both public and private organizations. The Naval Historical Center (NHC) administered a Legacy Grant on behalf of the U.S. Navy Department.
This grant constituted the project's main funding source. The Lake Champlain Maritime Museum (LCMM) and the Institute of Nautical Archaeology (INA) at Texas A&M University also made generous contributions in the form of money, equipment, and labor. Finally, the New York State Education Department and the Vermont Division of Historic Preservation helped the team navigate through the permits and other necessary paperwork associated with this type of study.

The New York State Education Department had formal jurisdiction over Allen by virtue of the wreck's position along the New York side of the river, thus all fieldwork had to be sanctioned by this agency. Crisman informed New York State archaeologist Philip Lord of his intentions and worked out a satisfactory protocol for the excavation. The plan included the systematic removal of mud and overburden from Allen's starboard side; the excavation and preservation of a representative sample of artifacts; documentation of the galley's hull assembly; the removal, recording, and redeposition of diagnostic hull components; and a thorough reburial of the entire site upon completion.

The final component of the project—interpretation and publication—rested largely with assistant field directors Erika Washburn and Eric Emery. Detailed reports of the fieldwork season were slated for completion by January 1996. Copies of these reports were to be submitted to the New York State Education Department, as well as the Naval Historical Center, the Vermont Division for Historic Preservation, and the Lake Champlain Maritime Museum. In addition, the entire "War of 1812 Ship Graveyard" in the Lower Poultney River would be nominated as an archaeological district on the National Register of Historic Places through the U.S. Department of the Interior. 14

The Whitehall Project, 1995: Archaeological Documentation of Allen

The archaeological excavation of Allen took place in the form of a joint fieldschool between Texas A&M University and the University of Vermont from 10 July through 31 July 1995. This final phase of Allen's study was intended to gather the remaining data needed to complete the analysis of the hull (thereby permitting its graphic reconstruction) before the arrival of the zebra mussel to the Poultney River. Five main objectives were defined for the 1995 project: (1) to gather sufficient information to develop a complete site plan; (2) to complete the documentation of the keel, keelson, and stem and stern assemblies; (3) to record the construction and shape of frame sections at as many points as possible; (4) to conduct an
intensive study of the vessel's starboard side including its ceiling planking; and (5) to map and record the vessel's ballast arrangement in the stern on both sides of the keelson and remove samples for conservation.

Crisman supervised the students and volunteers working on the site, making sure that everyone observed the established national and state archaeological standards throughout the project.15 Twelve fieldschool divers attended to Allen, including the two directors Crisman and Cohn, assistant field director Emery, and assistant divemaster Pierre LaRocque. This full-time staff conducted the excavation and recording of the galley's hull using a basic system of offsets. The hull itself served as the main reference grid for recording individual timbers and artifacts. On the starboard side, a steel grid provided additional reference points during the removal of overburden. This reference system allowed for better horizontal and vertical control when excavating in areas where the hull itself could not yet be seen.16 All items removed from the site were measured, catalogued, photographed, and drawn to scale before being either redeposited or conserved.

Dr. Robert Neyland from the Naval Historical Center and local dive instructor Ron Plouff made valuable additions to the project's staff by assisting with the dredging and recording at different stages. The Lake Champlain Maritime Museum and the Institute of Nautical Archaeology provided diving and excavation equipment, documentation tools (clipboards, pencils, Mylar sheets, etc.), and two 17-foot (5.2 m) inflatable boats with outboard motors. The museum also housed a conservation lab for the treatment of the artifacts. Conservators Elizabeth Baldwin, John Bratten, and Scott McLaughlin supervised the stabilization and preservation of these resources and placed them on public display.

Arthur Cohn skillfully handled the project's many logistical concerns. Locating housing for the crew, storage facilities for the equipment, and an access-point to the lake constituted the biggest hurdles. A daily commute back and forth to the site was impractical for those fieldschool students attending the University of Vermont in Burlington and impossible for those attending Texas A&M University in College Station, Texas. Cohn found the ideal base in a large farmstead owned by Mr. Ray Richards on Best Road in Benson, Vermont. He also negotiated with Mr. Joseph Pratt (the owner of the Whitehall Marina near Lock 12) for the use of dock space for the two project boats, a storage hanger, and shower facilities. This way the
crew could store dive gear, water pumps, and other miscellaneous equipment close to the site, as well as clean up after a day of work.

Intensive historical research at the U.S. National Archives and the Library of Congress in Washington, D.C., preceded and punctuated the project fieldwork. Visits to a number of Vermont and New York State libraries, museums, and historical societies also turned up valuable collections of information. Documents relating to the design, construction, and service of American row galleys from the War of 1812 (namely shipbuilding contracts and U.S. Navy Department correspondence) helped round out the study of Allen's career. Historical context also guaranteed a more informative and effective fieldschool experience. Each student received a brief background narrative on early nineteenth-century shipbuilding prior to his/her involvement in the project. This introduction helped students better distinguish between common features and anomalies in Allen's hull.

Archaeological and educational objectives worked hand-in-hand at a comfortable pace. Although it required more preparation and time, the fieldschool environment exposed each student to as much hands-on experience in archaeological diving as they wanted. Crisman and Cohn started by delivering a number of helpful orientation lectures on Lake Champlain maritime history, the anatomy of nineteenth-century wooden warships, proper archaeological excavation and documentation techniques, and diving safety. A visit to the U.S. schooner Ticonderoga provided the ideal backdrop for many of these discussions. In addition, Crisman and Cohn assigned sketching and measuring tasks for practice and brought every participant through a series of refresher dives at Basin Harbor, Vermont.

Upon reaching the site, diver safety, professionalism, and proper archaeological procedure remained the top priorities. All three aspects were evaluated and discussed by the project directors and the students on a daily basis. Only a few tasks (such as the excavation and recording of the stem and stern assemblies and the removal of the stern ballast) had to be reserved for those team members who had more diving and documentation experience. The following is a detailed summary of Allen's excavation in 1995. It is divided by week in order to highlight the archaeological process and some of the more important finds made at different stages in the fieldwork.
The Whitehall Project, 1995: Fieldwork Week 1

The goals for the first week of fieldwork included marking and setting up the site, checking out all of the diving and excavation equipment, familiarizing divers with the site’s layout, and organizing an efficient work routine on land and underwater. Operations began on the afternoon of Monday, 10 July. The Allen site crew, consisting of Kevin Crisman, Art Cohn, Eric Emery, Pierre LaRocque, Scott Padeni, Cheryl Quinn, and Steve Bilicki, departed the Whitehall Marina around 1:00 P.M. and motored down the lake for fifteen minutes before rounding into the mouth of the Lower Poultney River (Figure 38). The landscape surrounding the site appeared rugged and somewhat inhospitable. Thick stands of deciduous trees surrounded by thorn bushes and nettles came right up to the water’s edge on both sides of the river. A section of the Vermont shoreline rose abruptly into a vertical rock ledge, while the New York side appeared to be entirely hemmed in by low-lying swamplands. Inquisitive birds, fish, and water rodents, along with swarms of insects made their presence felt throughout the project.

Week 1 saw only modest gains as considerable time was devoted to site preparation and accustoming everyone to their new work environment. However the resulting steady tempo carried through the rest of the project. LaRocque and Cohn used a chainsaw to tackle the difficult job of clearing large trees and other fallen debris blocking water access to the site. Padeni and Bilicki carved out a boat landing and work area from the dense foliage along the riverbank with machetes. Meanwhile Crisman led a separate group in assembling the two excavation grids intended for use on Allen’s starboard side (Figure 39). One grid measured 20 feet (6.09 m) in length by 5 feet (1.52 m) in width, and the other 10 feet (3.04 m) in length by 5 feet (1.52 m) in width; both were subdivided into 5-foot-square (1.52-m-square) units. By the closing hours of the day, the underwater segment of the project had officially started.

The first diving tasks involved relocating Allen, marking its bow and stern with temporary surface buoys, and positioning the two excavation grids over its starboard side. Crisman and Cohn entered the river and conducted a brief reconnaissance of the site turning up fishing line, broken soda and beer bottles, plastic containers, and other modern trash. These potential safety hazards were removed and disposed of at the Whitehall Marina. After combing the site, they fastened yellow buoys to the galley’s ends using lengths of durable nylon string. One concern was that the activity on the site might attract curious boaters and create a risk to
those working underwater. The buoys combined with dive flags helped boating traffic identify and steer clear of the site. The buoys also allowed the project’s divers to relocate their general position on the site from the surface in the event that they became disoriented underwater. This tiny detail proved to be a valuable time saver, given the Poultney River’s poor visibility.

Figure 38. The “Achilles” inflatable rounding into the Poultney River. The vessel is leaving the main channel of Lake Champlain (view southeast-by-east). Photograph by Scott Padeni.

Figure 39. The team began assembling the grid intended for Allen’s starboard hull (view southwest-by-south). Photograph by Scott Padeni.
Positioning the two excavation grids over Allen's starboard side demanded the cooperation of the entire team. Emery, Padeni, Bilicki, and Quinn carried the grids down to the river, taking special care not to step on any of Allen's starboard frames protruding up from the mud. They carefully floated each grid out onto the site between the after edge of Frame K and the forward edge of Frame 12. Crisman and Cohn received the inboard edge of each grid and secured them along the keelson; the outboard edges rested on the tops of the starboard frame ends (Figures 40 and 41). The 5-foot-square (1.52-m-square) units within the grid were numbered consecutively from 1 to 6, with Unit 1 closest to the bow and Unit 6 closest to the stern. An 11-foot, 6-inch (3.50 m) section, spanning Units 5 and 6, was left unexcavated.

Figure 40. Maneuvering the grid. Once assembled, grid sections had to be carried down to the shore adjacent to Allen's starboard hull remains (view southwest). Photograph by Steve Butler.

Allen did not have much interior hull structure left, since elements such as thwarts, gun decks, and gangways, were already removed. The U.S. Navy abandoned Allen in the Pultney River just prior to its sale and undoubtedly had already stripped it of anything considered valuable. Salvagers then had years to further pick the hull apart for wood and iron. It was unlikely that Allen would have any large artifacts—like cannon—still in place. Crisman
anticipated finding small bits and pieces of shipboard life that had slipped through planking seams and settled in the galley’s bilges, and with the exception of Allen’s stern ballast pile, this assessment proved entirely correct. Divers found most of the galley’s artifacts in the lowest part of the hull. At a minimum, provenience for these items included which side of the hull (port or starboard) they rested in and between what frames.

Dredging and recording operations began on 11 July and continued through the last day of the project on 31 July. Divers received a briefing on the fragile nature of underwater archaeological sites and were cautioned to use extreme care in order to minimize damage to Allen’s hull beyond what their investigation required. The timbers appeared solid, however, and in most cases Allen inflicted the injuries in the form of scrapes and scratches from its protruding iron nails and spikes. A plastic measuring tape was secured along the top surface of the galley’s keelson to establish a longitudinal centerline for the hull. The zero point of the tape was attached to the forwardmost extent of the keelson and stretched aft as far as the sternpost assembly. After the centerline had been tacked in place, divers tagged all of Allen’s frames (on the port and starboard sides) with plastic labels identifying their station numbers. Frame
stations forward of amidships received letter designations (starting with “A” and ending with “V”) while the frame stations aft of amidships had numbers (starting with “1” and ending with “23”).

During Week 1 each day had four diving shifts: two in the morning and two in the afternoon. At the start of each rotation the crew prepared their gear on tarps near a wooden entry/exit ramp leading down to the river (Figure 42). Pierre LaRocque lent his carpentry experience to the building of this walkway, outfitting it with a sturdy handrail and lateral battens across the floor to improve footing. The Poulney River’s steep clay banks remained extremely slippery throughout the project, and so the crew used the ramp to stage in and out of the river carrying tool bags and more than 65 lbs. (29.4 kg.) of SCUBA gear on their backs.

Figure 42. Divers gearing up on tarps prior to entering the water (view northeast-by-east). Photograph by Kevin J. Crisman.

Dredging on Allen’s port side started forward of amidships at Frame E and proceeded aft toward the galley’s sternpost. Shortly thereafter the forward portion of the hull from Frame E to the stem was completed. Minimal overburden had accumulated in the portside hull, and the
frames, futtocks, and planking strakes on this side had been largely sheered off over time. The crew practiced operating the dredge in this less challenging part of the hull to work out any problems before starting on the tons of mud covering the galley’s starboard hull.

Excavation relied on a water dredge system powered by a 2-inch (5.08 cm) Honda pump set into the riverbank on a wooden platform. The pump sent a powerful jet of water down to a dredge head constructed out of PVC pipe. The suction end of the dredge head consisted of an 8-foot-long (2.43 m) flexible hose. Divers secured the dredge head near their work area and used the more manageable hose for excavation. Materials vacuumed up in the dredge passed off the wreck site by way of a 50-foot-long (15.24-meter-long) discharge hose with a fine mesh bag attached to its terminal end. This way small artifacts that eluded the careful eye of the excavator would not be lost.

As the dredge operators exposed Allen’s port side, other divers followed close behind, sketching and measuring hull components (Figure 43). Most divers had one or more recording tasks assigned for each work rotation. These assignments included making sketches, taking measurements, and noting general observations with mechanical pencils onto sheets of plastic drafting film. These sheets were attached to white clipboards with tape and small metal clips. Measurements of Allen’s hull and its associated artifacts were taken with plastic reel tapes, metal rulers, and carpenters’ squares, all calibrated in feet and inches. Some of the crew members participated in two recording dives per day, while others spent the afternoons tending divers, sifting through dredge spoil bags, and cataloging artifacts. In the evenings, the underwater data had to be recopied onto sheets of graph paper. Emery compiled these sheets into a “Master Hull Data” binder at the end of the project and eventually incorporated the information into a computerized database and a detailed site plan.17

Allen’s basic framework, or skeleton, quickly started to take shape on the port side. Divers recorded the positions of each frame on the centerline tape along with their molded and sided (cross-sectional) dimensions. Once the overall length and breadth of Allen’s hull and its port framing pattern had been identified, specific areas of the galley were recorded in detail. Emery and Cheryl Quinn determined the positions and dimensions of futtocks, external planking, and ceiling planking associated with the portside frames. The locations of these components were tied into the centerline tape as well as other areas of the hull. They also
recorded fastener positions (such as wooden treenails and iron drift bolts, spikes, and nails) along with the general dimensions of these items.

Figure 43. Kevin Crisman sketching hull components. A diver typically followed the dredge operator along *Allen’s* hull sketching and measuring the exposed components and recording the data onto Mylar sheets (view northeast-by-east). Photograph by Nathan Power.

Scott McLaughlin conducted a thorough investigation of *Allen’s* stem assembly starting on 13 July. He sketched and measured each timber in detail, including information on the rake of the main stem and the fasteners that held it to the keel and apron. One of McLaughlin’s more interesting finds concerned the galley’s apron. At first divers mistook this timber to be a disarticulated piece of Frame U, as it had been twisted into a position perpendicular to the keel. He realized that it was not a frame, but actually the after half of the apron. A break in the timber just aft of Frame V had allowed part of it to shift to starboard off the top surface of the keel. McLaughlin discovered few clues suggesting that *Allen’s* stem had been carefully crafted and assembled. Instead, it seemed to exemplify Noah Brown’s “no extras” approach to shipbuilding during the war. A close comparison with *Allen’s* stem promised to shed some more light on the
subject. The answers had to wait, however, until the project’s second week, when the stern was uncovered.

In addition to exposing *Allen*’s hull structure, the sediment dredging revealed an interesting artifact collection. Among the more impressive items were fourteen cast iron ballast pieces piled along the port side of the keelson between Frame 13 and Frame 20. The clustering of the ballast clearly showed that it was intended to give additional weight to the galley’s stern. *Allen*’s starboard stern area held a slightly larger collection of ballast, but these pieces could not be exposed and analyzed until Week 3.

Numerous other ship-related and crew-related artifacts appeared in the dredge bags during Week 1. These items included iron spikes and nails, glass and ceramic fragments, iron grapeshot and lead musket balls, a brass uniform button bearing the crest of the British 100th Regiment of Foot, and a clay pipe with the molded effigy of a Turk’s head that read “United States of America” in raised lettering around its upper rim. Divers also found a scattering of copper tacks between Frames 3 and 5, as well as between Frames 7 and 10. Analysis of *Allen*’s artifacts and the stories they can tell about her crew will be the subject of Chapter IX.

Smooth transitions between work shifts began to improve productivity by the end of Week 1. One dive team usually finished gearing up just as another exited the river. Crewmembers assigned to “tender duty” assisted the new divers as they entered the water and swam out over the site to begin their tasks. Tenders conducted gear and air checks, inspected air hoses, and made last-minute additions to clipboards and tool bags (Figure 44). There was always the odd pencil or ruler that needed to be handed out to the divers after they had reached the site (Figure 45). Tenders also retrieved their divers at the end of each work rotation unless they themselves were slated to dive next. Teamwork, safe movement in and out of the river, and thorough gear checks would become increasingly vital as fatigue set in toward the end of the project.

On 14 July, Ron Plouff finished dredging *Allen*’s port side and moved around the stem to the starboard frames just forward of the grid. The first week had come to a close and the crew had the starboard side to look forward to starting Monday.
Figure 44. Crisman assists a diver preparing for a work shift. The diver is seated on the entry/exit ramp (view southeast). Photograph by Steve Butler.

Figure 45. Crisman tending divers. Tending duties lasted throughout each dive rotation. This assignment included the constant passing of equipment and supplies out to the divers, as well as dredge-pump and air-compressor operation (view northeast). Photograph by Cheryl Quinn.
The Whitehall Project, 1995: Fieldwork Week 2

A finely-tuned routine had developed by the second week of fieldwork. Each day began at 7:00 A.M. and finished sometime between 8:00 P.M. and 11:00 P.M. Mornings at Richards’ farmhouse consisted of a wake-up call and breakfast, followed by the organization of dive equipment, archaeological tools, and lunch supplies, and a briefing on the day’s goals. At this point Crisman, Cohn, and LaRocque drove directly to the Whitehall Marina to pick up the boats and the dredging equipment. Meanwhile the remainder of the crew brought all of the dive gear and measuring tools to a landing site on the West Haven, Vermont side of the Poultnsey River off Galick Road (Figure 46).

Crisman and Cohn rendezvoused with the crew at the landing around 9:00 A.M. and began ferrying them in shifts to the Allen site. Each workday on the row galley employed more than fourteen tanks, seven gear bags and weight belts, two crates of measuring tools, two lunch coolers, one dredge system and “hookah” compressed air unit, two tarps, one first-aid kit, and three water jugs. The transfer of gear from land to boat to land had to be an efficient process in order to ensure everyone’s safety and maintain a vigorous daily schedule.

Figure 46. Transferring dive gear and archaeological equipment. Hundreds of pounds of gear had to be moved from trucks to the inflatables at the landing area approximately one-quarter of a mile upriver from the Allen site at the end of Galick Road. Photograph by Scott Padeni.
The first group to reach the site unrolled plastic tarps over each of the two work areas and began setting up the dredge system. By 9:30 A.M. the remainder of the crew arrived at the site and Cohn divided them into dive teams. Each diver prepared a clipboard and a nylon-mesh tool bag containing the measuring implements necessary for their respective tasks. Fifty-foot plastic tapes and hand-held steel rulers remained the most commonly used items in the crew’s archaeological arsenal (Figure 47).

Morning divers staged into the river and began work no later than 10:00 A.M. The goals for Week 2 centered on reclaiming Allen’s starboard side from the riverbank with the dredge and documenting the galley’s keelson and stern assembly. Divers sketch their assigned features prior to taking any measurements, allowing them to look at their drawings out of the water, determine the dimensions needed, and spend the next dive systematically filling in the blanks. This system also gave the project directors and field assistants an opportunity to monitor the progress being made on the hull and make suggestions concerning documentation procedure.

Figure 47. Off-loading equipment at the work area (view northeast). The steep river-bank made movement extremely difficult throughout the project. Photograph by Kevin J. Crisman.
The use of two-person dive teams—a standard system on many underwater archaeological projects—appeared poorly suited for the Allen site. Visibility on the site averaged twenty-two inches (55.88 cm) throughout the project. Pairing divers together in such an environment would have severely hindered their productivity. Divers working in close proximity kicked up generous amounts of silt, thus increasing the turbidity of the water and reducing visibility to zero. Blackout periods meant diver discomfort, time delays, and inaccuracy. Divers were instructed to maintain a comfortable distance from each other when working on the site and were issued tasks accordingly. This solved the visibility problem but demanded greater attention from the crewmembers working on land as dive tenders. Their duties were expanded to include monitoring the dredge system; tagging, bagging, and cataloging artifacts; keeping track of bottom times and air consumption; and maintaining a watchful eye on diver bubbles.

Excavation of Allen's starboard side began on 18 July and continued through 28 July. The grid subdivided the wreck into manageable units, improving excavation control and documentation reference. Operations started in Unit 1 and proceeded aft as far as Unit 4 by the end of Week 2. Although dredge operators and hull recorders worked two alternating shifts in the morning and two in the afternoon, time constraints prevented the excavation of Units 5 and 6. This part of the wreck remains untouched for the work of future nautical archaeologists.

Crewmembers were instructed to remove the overburden from their respective grid squares in uniform 4-inch (10 cm) levels (Figure 48). This technique ensured the proper documentation of all loose pieces of wood, artifacts, and hull timbers uncovered in a situation where the natural stratigraphy was difficult to discern. Divers gently peeled away the soft matrix with one hand and fed it into the dredge hose, periodically stopping to measure in the position of any archaeological remains encountered. Some of the more notable discoveries included an iron round shot fragment in Unit 3 and a cluster of other weaponry-related items, including grapeshot, in Unit 4 (Figure 49). These artifacts were brought to the surface, assigned an individual catalogue number in the master artifact logbook (proceeded by the alphabetical identification GB for "Gunboat"), and sealed in plastic bags with water. 18

The Allen site had a number of beneficial characteristics that aided the galley’s excavation and documentation in 1995. One, in particular, involved the bathymetry of the Lower Poultney River in the vicinity of the galley’s remains. 19 Many of Allen’s frames and
Figure 48. Art Cohn dredging *Allen*’s stern. Crisman, Padeni, and Cohn discuss the progress of Cohn’s dredge work along *Allen*’s starboard stern area (view north-northeast). Photograph by Russell Bellico.

Figure 49. Cohn removes an iron grapeshot after the artifact had been recorded *in situ*. Photograph by Craig Williams.
planking strakes along its starboard hull protruded from the riverbank and had to be documented from shore. The steepness of the banks meant that the maximum water depth changed dramatically across the galley's beam. *Allen*’s starboard hull had been largely incorporated into this steep slope (35° ±), giving the galley a pronounced list to port toward the main channel of the river. In addition, *Allen*’s bow assembly extended on a slight downward angle along the riverbank and farther out into the channel than its stern. The depth over the site ranged from 5 to 12 feet (1.52-3.65 m) on the port side and from 1 inch to 36 inches (2.54-91.44 cm) on the starboard side (Figure 50).

![Contour Line (≈200 Centimeters) Representing Midway Point Between the Surface and the Maximum Depth on Site Has Been Denoted on Map for Reference](image)

Figure 50. Bathymetric map of *Allen* site. This is an illustrative three-dimensional view of the riverbank and channel bed in the area of *Allen*’s starboard hull remains. Depth measurements provided in centimeters every one meter (view north-northeast from the shoreline of New York State). Digital rendition by E.B. Emery.

The shallow water over the site alleviated a number of dive safety concerns, namely decompression sickness, nitrogen narcosis, and hypothermia.\textsuperscript{20} The maximum depth for each dive rotation on *Allen*, however, never exceeded 12 feet (3.65 m), far short of the depths at which decompression sickness and nitrogen narcosis can affect diver functions. The water temperature on the site hovered around 73° F (22.7° C) throughout the project. This relatively warm temperature reduced the risk of hypothermia, but increased the possibility of heat
exhaustion, especially since the air temperature often exceeded 80° F (26.6° C) with high humidity. Divers had to pace themselves from the time they suited up on shore to the moment they exited the water so as not to become overheated.

The Lower Poultney River constitutes a relatively dynamic geomorphic agent, responsible for the erosion, transport, and deposition of sediments atop Allen for more than 150 years. Rainfall, along with snow and ice melt, has had the greatest impact on the volume of this discharge and subsequently the build up of overburden. During periods of heavy runoff (e.g., spring thaw), the waters inside the river channel pass over unconsolidated sediments at a velocity that exceeds the gravitational and cohesive forces keeping these particles stationary. As daily temperatures increase and the level of the river drops, so does the water velocity. Once this flow drops below the settling velocity of the sediments being transported, the particles are deposited. Silt and clay can be transported at extremely low water velocities due to their reduced size and weight. On average, the Allen site may receive large deposits of silts and clays for up to five months per year.

The silt/sediment matrix encountered on the site consisted of four distinct stratigraphic units. Stratigraphic Unit 1 (SU1) appeared as a gray (10YR 6/1) silt that covered all undisturbed areas of the site and measured approximately 1-3 inches (2.5-7.6 cm) thick. SU2 generally emerged as a black (10YR 2/1) decaying organic mat of aquatic vegetation, fallen leaves, branches, sticks, roots, and other detritus that measured approximately 2-5 inches (5.0-12.7 cm) thick. Modern debris also appeared to be interspersed throughout this layer. SU3 comprised a very soft, dark gray (2.5YR 4/1) clay overlaying the galley’s ceiling planking and the top surfaces of its frames. This layer averaged 8-10 inches (20.3-25.4 cm) thick and contained frequent inclusions of detritus that supported clusters of live aquatic grasses. SU4 consisted of a firm, very dark gray (2.5YR 3/1) clay situated below the ceiling planking in the bilges and extending to at least the depth of the keel. In areas of the galley’s hull where the external planking was missing, this layer appeared interrupted by pockets of sand along with river pebbles (4-64 mm) and cobbles (64-256 mm). SU3 and SU4 contained the bulk of the material evidence (>90%) documented in association with Allen.

The galley’s port hull had contained minimal overburden due to its orientation toward the open channel of the river. Many of the frames and other components on this side had been heavily eroded or sheered off entirely, while the remains that survived appeared relatively
exposed, presumably the result of being swept clean during periods of high water velocity. *Allen*’s starboard hull, however, succumbed to geomorphological changes affecting the adjacent riverbank—i.e., the shoreline of New York State—brought on by sediment erosion, transport, and deposition, as well as periodic slumping. These processes helped create a largely anaerobic environment around the assortment of artifacts located deep in the galley’s starboard bilges. Mixed into the clay were iron and copper fasteners, tiny pieces of pine planking, glass and ceramic fragments, uniform buttons, and munitions. Most of these items had slipped through the seams of *Allen*’s ceiling planking and settled between the frames atop the garboard strake.

Dredge spoil bags secured to the end of the dredge discharge hose captured the smaller artifacts that went unnoticed by excavators. Dive tenders carefully sifted through the contents of each bag on shore before discarding it as “sterile,” or without archaeological material (Figure 51). Artifacts found in the discharge bags received the same treatment as those recovered *in situ*. At first, dredge operators exchanged these bags after the completion of each 4-inch (10 cm) level. However, this system became impractical due to time constraints. Divers had to grope in a winding spiral along the 50-foot (15.24 m) discharge hose in zero visibility in order to change out each bag. The team eventually dispensed with this routine and exchanged bags after cleaning out between each pair of frames. Consequently, *Allen*’s larger artifacts (found *in situ*) have detailed provenience, while the galley’s smaller finds, settled predominantly in the bilges of the hull, have been mapped by their proximity to a particular frame station.

When hull structure situated beneath a grid unit had been entirely cleaned, divers focused on recording the position and dimensions for each individual component. The starboard side appeared so well preserved that it took all of Week 2 and Week 3 to gather the necessary data. A redundant system of measurement was used throughout this process to ensure greater accuracy when plotting the information onto a site plan. The crew took measurements that tied in each individual timber to the rest of the hull, but the grid served as a means of anchoring the hull to another set of fixed points. This dual approach on the starboard side ultimately resulted in a more detailed reconstruction of *Allen* on paper (discussed in Chapter XI).

The final days of Week 2 included a full-scale investigation of *Allen*’s keelson and stern assembly. The top surface of the keelson had a number of interesting features to record, including through-bolts that secured the keelson, frames, and keel, as well as the scarf.
Figure 51. Cohn and Marjory Power sift through a dredge spoil bag from *Allen*. Photograph by Nathan Power.

Figure 52. Cohn carving a penetration trench along *Allen*’s stern assembly. Scott Padeni assists him from shore. Photograph by Russell Bellico.
connecting the two keelson pieces. A stanchion mortise and two mast steps were also located and documented. Cohn headed the excavation of Allen's stern (Figure 52). Work in this area of the hull was obstructed by the presence of external planking ends that had come free from the outer sternpost. Cohn carved a small penetration trench along the port face of the galley's stern in order to allow a diver to analyze its assembly, and McLaughlin measured the three key components of Allen's stern: the stern knee, the main sternpost, and the outer sternpost.

On 21 July the crew packed up their gear and equipment and headed off in separate directions for the weekend. Unlike the first week, however, they now had enormous amounts of drawings, excavation notes, and artifact data sheets to clean up and hand in to the fieldschool directors. This short break granted many crewmembers the catch-up period they needed before making the project's final push to completion.

The Whitehall Project, 1995: Fieldwork Week 3

The last phase of fieldwork on Allen began on 24 July. The principle objectives of the third week included the following: (1) to excavate the starboard stern area and its associated ballast collection; (2) to map, measure, and remove a sample of the starboard ballast; (3) to remove and photograph a sample of the starboard ceiling planking and transverse decking; (4) to record hull curvature at as many frame stations as possible; and (5) to take wood samples for identification purposes from key hull components. This list of tasks was ambitious and the dredging, recording, dismantling, lifting, and redepositing work kept everyone busy right up to the last day.

Removing samples of ballast, ceiling planking, and transverse decking from Allen's starboard side required a carefully thought-out plan. Diver safety and minimizing damage to the galley's hull stood as the two paramount concerns. Considerable time had to be spent setting up for this labor-intensive operation. Crisman finished documenting the transverse decking and ballast on 25 July, followed by the ceiling planking samples two days later. The transverse decking ran perpendicular to the keelson over the top of the starboard ballast collection. Each piece had to be tagged and then carefully pried loose from the keelson. McLaughlin and Quinn completed scaled drawings and photographs of these pieces once they reached shore, and then prepared them for redeposition.

The ballast situated underneath the transverse decking on the starboard side of the keelson was measured in situ before being tagged for removal. The shallow depth of water over
these artifacts (4 feet or 1.21 m) posed some problems, since lift-bags were useless for removing them out of the hull. The solution involved positioning the team’s inflatable boat over Allen’s stern area and running a stout lifting line down to each individual piece of ballast. Crisman attached them one by one and guided them up to the surface as Cohn and Rob Wilczynski lifted from the boat (Figure 53). The starboard collection was estimated to weigh well over 200 lbs. (90.6 kg).

Figure 53. Crisman, Cohn, and Rob Wilczynski recovering ballast from Allen’s stern area. Photograph by Nathan Power.

Allen’s ceiling planking samples came from opposite ends of the hull. Divers removed the first pieces on 25 July from between Frame G and Frame 4. The second sampling came from the stern area between Frame 12 and Frame 21; it started on 27 July and finished the next day. Keeping these long runs of wood continually wet throughout their visit to shore was vital. The crew worked quickly to photograph, sketch, and record tool marks and other pertinent details from their surfaces before they had a chance to dry out and warp (Figure 54). Some of
Allen's softwood ceiling planks wanted to float to the surface upon being released from their fasteners despite their semi-waterlogged state. Features associated with the starboard ceiling planking were also removed for analysis.

Figure 54. Scott McLaughlin and Cheryl Quinn recording samples of ceiling planking. McLaughlin and Quinn completed numerous drawings of ceiling planks, longitudinal and transverse battens, and transverse deck planks recovered from Allen's starboard hull. Photograph by Scott Padeni.

One hull feature of particular interest to the crew consisted of four wooden battens fastened to the top surface of the ceiling perpendicular to the keelson. It appeared that shipwrights had attached these battens in pairs to fit the bases of partition boards. Scott McLaughlin and Cheryl Quinn took special care documenting these fragile artifacts on land as they might offer new clues about Allen's internal bulkheads and compartments.
Capturing the overall shape of *Allen*’s hull marked one of the last and most important objectives slated for Week 3. Documenting frame curvature necessitated the use of a new archaeological tool, the digital goniometer. Dr. J. “Coz” Cozzi, a graduate of the Nautical Archaeology Program at Texas A&M University, designed the instrument while conducting his own research on nineteenth-century sailing canal barges in Lake Champlain. The goniometer consisted of a battery-operated inclinometer, or carpenter’s level, held in a waterproof Lucite housing (Figure 55). The device allowed divers to record *Allen*’s hull curvature as a series of angles divided into one-foot (30.48 cm) increments. In use, the goniometer’s base was placed against the keel and in line with the underside of a frame, and an inclination reading was taken. The process then continued outboard from the keel, following the lower surface of the frame to its furthest extent of preservation.

![Image of goniometer](image.png)

Figure 55. The goniometer used to record the curvature of *Allen*’s frames in 1995. Photograph by Scott Padeni.

*Allen*’s starboard hull contained the best-preserved frames, many of which extended out to or beyond the turn of the bilge. Since dredging operations had exposed all of the port frames and all but seven starboard frames, the crew had the luxury of choosing from a wide selection of possible data sources. Crisman selected eighteen different frame positions for documentation.
with the goniometer. These sections were judged to be representative of overall changes in the shape of Allen's hull. They included Frames E, C, A, and 2 from the galley's "dead flat" amidships; Frames O, M, K, I, and G where the hull began to narrow into the bow; and Frames 10, 14, 15, 16, 18, and 20 where the hull narrowed into the stern. In addition, angles were estimated for the extreme deadrise of Frames S, 22, and 23. At this point, depicting cross-sectional shape was simply a matter of plotting the individual data sets on graph paper. A selection of key frame sections (i.e., those most representative of changes in hull shape), along with the hull's overall dimensions, served as the basis for reconstructing Allen's lines (discussed in Chapter XI).

Artifacts recovered during Week 3 provided evidence of Allen's crew and the living conditions they shared on board. The after end of the starboard hull—from Frame 14 to the stern—yielded the highest density of artifacts in 1995. Tools, tableware, and personal possessions appeared in significant numbers. These included a brass straight pin, a well-worn chisel or caulking iron, a knife blade, pieces of green and clear bottle glass, ceramic fragments, copper alloy buttons and button components made of bone, a domino, and a salt-glazed stoneware jug. The tools appeared to be concentrated between Frame 17 and Frame 19, while the tableware and crew-related items turned up further forward between Frame 13 and Frame 16.

Information concerning the layout of Allen's internal compartments could also be gleaned from these artifacts. Divers discovered fragments of copper sheeting and copper tacks around the galley's bow and stern, although their significance escaped notice in the field. After the project ended, however, additional research at the U.S. National Archives uncovered a series of Chesapeake Bay row galley contracts from the War of 1812. The contracts included detailed written descriptions of this particular class of warship from the keel up to the caprail and thole pins. Their armament called for two guns, one in the bow and one in the stern, and contemporary plans show what appears to be a hull compartment just aft of the respective gun mounts for what may have been a gunpowder magazine.

Shipwrights often used lead or copper sheets to line the magazines of warships to prevent accidental metal-on-metal sparks from touching off an explosion. The presence of copper sheeting and tacks at Allen's ends may suggest that the galley had magazines at these locations to service each gun. Oarsmen sat side-by-side down the longitudinal centerline of the
vessel, thus restricting movement fore and aft to small gangways running along either side of the hull. Two magazines promised to minimize the distance that gunpowder cartridges had to travel during an action. This, in turn, would have increased the efficiency of Allen’s gun crews.

Week 3 ended in the evening of 28 July with the gathering of wood samples. The woods that shipbuilders selected for different hull components often reflected their overall expectations (i.e., in regards to strength and longevity) for the vessel. Analyzing the woods that Noah Brown deemed appropriate for Allen allowed additional insight into the circumstances that surrounded and influenced the galley’s construction. A total of 47 samples were collected by chiseling a 1-inch-square (2.54 cm) block from Allen’s key hull timbers. The pieces then underwent identification by Dr. Roy Whitmore of the University of Vermont Forestry Department (see Appendix C).

Secondary objectives for the final week of fieldwork included diver surveys of the Lower Poultney River and the area around its outlet into Lake Champlain (Figure 56). The periphery of the Allen site and upriver beyond the remains of the U.S. brig Eagle were considered likely areas for new discoveries. Originally, in the 1820s, at least four other warships from Macdonough’s squadron rested in the Lower Poultney River. The British brig Linnet was situated between Allen and Eagle, accompanied by the U.S. ship Saratoga, the U.S. schooner Ticonderoga, and the British frigate Confiance. Historical and archaeological evidence has accounted for all of these vessels except Saratoga and the forward quarter of Linnet. Their location and condition, along with Allen’s five sister galleys (Borer, Burrows, Centipede, Nettle, and Viper) was unknown in 1995.26

Saratoga may have washed out of the river into the lake, as Confiance did in 1824. The U.S. Navy Department dismantled Confiance as a navigation hazard; Saratoga would have probably suffered a similar fate if it reached the main channel. Linnet’s stem assembly disappeared during its salvage in 1949. When local residents dragged the hulk to the Vermont side of the river its bow broke off and presumably sank. Crisman and Cohn wanted to know if Linnet’s bow section, or any other traces of Macdonough’s squadron, might still be situated in the area. Unfortunately, the survey yielded nothing in the way of archaeological clues. The whereabouts of these missing pieces remains unknown.

The 1995 Whitehall Project officially ended on 31 July in a flurry of activity. All tape measures, frame tags, and staples were removed from the Allen site. At this point, divers Art
Cohn, Pierre LaRocque, and Rob Wilczynski backfilled the entire hull to help protect it from future decomposition. The rest of the crew busied themselves recopying fieldnotes and

Figure 56. Diver conducting a survey in the Lower Poultney River. This process included sweeping for potential targets, investigating the targets to exclude them as possible material evidence, and documenting the results (view northeast). Photograph by Kevin J. Crisman.

drawings, cleaning archaeological equipment for storage, and packing up artifacts. The artifacts recovered during the final week of the excavation joined those already being housed at the Lake Champlain Maritime Museum; the conservation of these items would continue over the fall of 1995. Overall impressions of the fieldschool were positive. The crew had collected an
impressive body of information, all the while maintaining sound archaeological procedure and a solid dive-safety record.\(^{27}\) Closing the fieldwork phase of Allen’s study ushered in the start of a much more time-consuming process—the reconstruction of the galley’s original appearance through scaled lines and construction plans.

**Concluding Remarks**

The crew logged over 171 hours of dive time on Allen’s hull in July 1995. The entire hulk—minus an 11-foot, 6-inch (3.5 m) section on the starboard side—was exposed, measured, and recorded, and then backfilled with mud and sand. This investigation included detailed illustrations of Allen’s more complex features, such as its hull curvatures, stem and stern assemblies, keelson scarf, and two mast steps. In addition, sections of ceiling planking and the entire stern ballast assemblage were documented *in situ*, and samples of both were removed for further analysis. The ceiling planking was sketched in more detail on land—to facilitate looking for cut and tool marks—while the ballast was sent to the Lake Champlain Maritime Museum’s conservation lab for stabilization and preservation.

**Endnotes: Chapter VIII**

1. Dr. Kevin J. Crisman of the Institute of Nautical Archaeology at Texas A&M University’s Nautical Archaeology Program and Mr. Arthur B. Cohn of the Lake Champlain Maritime Museum spearheaded the investigation and excavation of Allen in 1995.

2. Warren, “Gunboat #1,” 65-71. The 1982-1984 teams measured the length as well as breadth of Allen’s hull remains without performing an excavation; in other words, these dimensions do not represent the remains as they appeared when fully exposed from the surrounding overburden in 1995.

3. See Shomette, *Flotilla*, 1-42, 166-197; Maryland Historical Trust, “Phase One Research Yields Remarkable Data,” 1-4; Maryland Historical Trust, “About the Discovery of the Chesapeake Flotilla,” 3; and Shomette, *Tidewater Time Capsule*, 52-81. Teams from Eastern Carolina University’s Maritime History Program have continued to investigate two wrecks believed to represent Jeffersonian Gunboats No. 137 and No. 138 (also of Barney’s flotilla) under the direction of Dr. Lawrence Babits (1997-1998) and Jeffrey Enright (1998-1999).

4. The U.S. Schooner *Ticonderoga* was also completed as a warship by Noah Brown, but the majority of its hull was the work of local shipwright John Lacy. This steamboat-turned-schooner thus holds a combination of building techniques that represent the skills of both Brown and Lacy. See Crisman, *Ticonderoga*, 35-66.


6. Ibid.


9. James T. Leonard to Benjamin Crowninshield, 23 November 1816, Captains' Letters, RG-45, M125, Reel 51, No. 73, NARA; Benjamin Crowninshield to James T. Leonard, 2 May 1817, Letters Sent to Officers, RG-45, M149, Reel 4, No. 71, NARA; Benjamin Crowninshield to James T. Leonard, 2 May 1817, Letters Sent to Officers, RG-45, M149, Reel 13, No. 4, NARA; James T. Leonard to Benjamin Crowninshield, 15 May 1817, Captains' Letters, RG-45, M125, Reel 53, No. 71, NARA; James T. Leonard to Benjamin Crowninshield, 1 January 1818, Captains' Letters, RG-45, M125, Reel 57, No. 1, NARA; and Paterson et al., *American Foreign Relations*, 108.

10. See Chapter V of this dissertation. For a listing of the theaters upon which the U.S. Army’s 13th Infantry Regiment fought during the War of 1812, see Rene Chartrand, *Uniforms and Equipment of the United States Forces in the War of 1812* (Youngstown, N.Y.: Old Fort Niagara Association, 1992), 141-144.


13. Ibid.


17. A printed hard copy of this electronic database is stored with Dr. Kevin J. Crisman at Texas A&M University. Dr. Crisman served as the Principle Investigator for the Whitehall Project in 1995. The author has also retained a copy. Upon completion of this dissertation, additional copies of the database for *Allen* will be submitted to the Naval Historical Center, the Vermont Division for Historic Preservation, the New York State Education Department, and the Lake Champlain Maritime Museum.

18. *Allen*’s artifact inventory contained seven categories, with prefix numbers that indicated material type: 01 for metals, 02 for brick and stone, 03 for wood, 04 for leather, 05 for glass and ceramics, 06 for bone and antler, and 07 for textiles, rope, and other organic matter. A Mylar tag, showing a complete catalogue
number, the date of excavation, the name of the excavator, and provenience information, also accompanied each artifact into their respective storage bags. The field recovery and cataloguing process is discussed in greater detail in Chapter IX of this dissertation.

19. Bathymetry is defined as water depth relative to sea level, while topography refers to elevations above sea level. The Allen site in the Lower Poultnay River may hold the record as the shallowest “underwater” archaeological site from the War of 1812.

20. Decompression sickness, or “the bends,” results from an overabundance of nitrogen being absorbed into a diver’s blood and tissues from the breathing of compressed air beyond a safe depth for an extended period of time. Generally speaking, the risk of decompression sickness increases on deeper dives when the “no decompression” time limits are exceeded. Nitrogen narcosis is also directly related to depth. Divers breathing compressed air at depths exceeding 100 feet (30.48 m) often find it difficult to concentrate and perform tasks. In extreme cases, this state of stupor can inhibit a diver’s judgment, making him/her more susceptible to accident and injury. See James T. Joiner, ed., U.S. Department of Commerce, National Oceanic and Atmospheric Administration Diving Manual for Science and Diving Technology, 4th Edition (Flagstaff, Ariz.: Best Publishing Company, 2001), Chapter 2, 7-8.


22. Waters also points out that other factors, including the shape and specific gravity of the particles, the compaction and cohesiveness of the sediments, the viscosity of the water, and flow turbulence all affect the initiation of sediment/particle movement. See Waters, Geoarchaeology, 120.

23. Even when excavating in 4-inch (10-cm) levels, the vertical and horizontal position for tiny artifacts located within the discharge bags could only be estimated.


25. These possible copper sheeting pieces were originally mislabeled as “copper lamp” in the field project’s master artifact catalogue.


27. Ear infections, the occasional leech between the fingers, and reports of a “rabid beaver attack” in Washington County marked the only diving-related concerns throughout the project. See Elizabeth Muhlig, “Washington County Boy Attacked by Rabid Beaver,” Staff and Wire Reports—Burlington (Vermont) Free Press, 16 July 1995.
CHAPTER IX

INSIDE ALLEN’S BILGES: MATERIAL EVIDENCE OF SHIPBOARD LIFE AND CONDITIONS ON LAKE CHAMPLAIN DURING THE WAR OF 1812

Exposing Allen’s hull structure revealed a modest, yet interesting array of artifacts including wooden planks and battens of various dimensions; nails, spikes, and drift bolts; glass and ceramic tableware fragments; munitions; and an assortment of crew possessions. The collection appeared surprising in both number and diversity as the majority of historical documentation surrounding the galley’s career suggested that the U.S. Navy Department had ordered it stripped of equipment, tools, and materials prior to the closing of the Whitehall Naval Station in 1825. However, Allen’s 50-foot (15.2 m) section of starboard hull—embedded for years in a muddy riverbank—produced one of the best-preserved assemblages of archaeological material evidence discovered with the galley.

Allen’s bilges constituted a type of midden, replete with debris from the different stages in the galley’s timeline of construction, service, and abandonment. Considering that layers of organic mat and sediment had sealed off this area and created a preservative, anaerobic environment, it was vital to integrate a conservation plan into the project methodology. This way any quantity of artifacts uncovered during the excavation could be properly recovered, catalogued, and preserved, allowing the unique story of each object to be deciphered. In this instance the most cautious plan proved to be the wisest, as more than three hundred different pieces emerged in 1995. Although the bulk of these seem to have been lost accidentally, or through human carelessness, rather than intentionally discarded, they still provide an intimate and informative record of the galley’s past.

This chapter analyzes the direct and circumstantial material evidence associated with the row galley and its patchwork of crews. A copy of Allen’s “Catalogue of Artifacts” has been provided for additional reference in Appendix D. Readers may also wish to consult Appendix E and Appendix F for a visual illustration of the galley’s artifact distribution and information on the conservation of the artifacts conducted by the Lake Champlain Maritime Museum.

Recovery, Field Processing, and Cataloging

Archaeologists followed a set protocol during the recovery, processing, and cataloging of Allen’s artifacts in 1995.1 The excavation grid situated over the galley’s starboard hull
provided horizontal and vertical provenience for each scattered fragment as it became exposed. Such information ultimately helped reconstruct the context of the site.

Field processing is perhaps one of the most crucial stages in the long-term preservation of an artifact. Many artifacts are most in jeopardy when first exposed to the atmosphere after being buried or submerged for many years. They begin to dry out, shrink, and warp; react with the air and corrode; or crumble as they lose the support of the surrounding soil and water. These effects take place as the artifact attempts to reach a state of equilibrium with its new surroundings.\(^2\) The key to protecting submerged cultural materials recovered in the field is to keep them wet at all times until they can undergo conservation in a proper laboratory setting.

Once the location of an artifact inside Allen’s hull was documented in situ, the piece was removed from the river, cleaned, and catalogued. The team assumed that every artifact recovered was extremely fragile. Lifting usually involved a diver undercutting the surrounding matrix in order to determine size, shape, and apparent condition before gently bringing the object to the surface. Cleaning required the removal of adhering sediments, mud, and other organic detritus. Eclipsing materials such as films, stains, and corrosion encrustation were largely left intact at this stage. Field conservators assigned each artifact a catalogue number as it left the river before placing the object inside a polyethylene bag along with a small amount of water and a Mylar tag containing all of the appropriate provenience information. This data was also replicated in a master artifact catalogue kept on site during the excavation. Objects discovered in spoil bags underwent the same set of procedures, albeit with a less detailed provenience record. Generally speaking, the handling of artifacts was kept to a minimum in order to avoid unnecessary damage.

The cataloguing system was similar to those used in the excavation of other submerged shipwreck sites in the United States.\(^3\) The artifacts were divided into seven categories based upon material type/composition, which was designated by separate prefix numbers. Thus every artifact recovered from Allen’s hull received a prefix number followed by a sequential catalogue number. Metal artifacts were prefixed by 01; artifacts of stone or brick, 02; wood, 03; leather, 04; glass and ceramics, 05; bone and antler, 06; and textiles, rope, and other miscellaneous organics, 07. Field conservators transported the artifacts on a daily basis from the site to the team’s living quarters for temporary storage and further processing. A detailed artifact record
form was filled out for each item that had an assigned catalogue number. This form included space for a basic narrative description, provenience data, and a scaled pencil drawing.

Special provisions had to be made for the processing of oversized and extremely heavy artifacts. The pig iron ballast, for example, proved too large for storage in polythene bags and too weighty for the composite tubs available on the market. This made keeping them fully submerged in water at all times—as done with the other artifacts—virtually impossible. However, the ballast pieces appeared stable enough to be left to air dry as they had only minute levels of soluble salts present and exhibited a high degree of preservation. Moreover, they had a relatively short wait before undergoing conservation treatment. This made it easier to transport and store these large, heavy bars while imposing little, if any, adverse effects on their long-term preservation. Loose hull timbers also had to be catalogued separately from the rest of Allen’s artifact collection. A letter prefix represented the individual timber’s position on the vessel as well as the type of timber (e.g., the prefix “SC” for “Starboard Ceiling”), and a sequential catalogue number followed, as described above. Each timber was recorded on a timber record form formatted to obtain the same general information as the artifact record form. At night, the team completed forms for all material evidence recovered from the site as well as excavation record forms summarizing their daily field activities.

Only a representative sample of Allen’s artifacts could be retained for conservation at the end of the project. Duplicate fasteners, munitions, hull timbers, and a number of non-diagnostic fragments underwent reburial on the site after being documented. On 1 August 1995, the Lake Champlain Maritime Museum at Basin Harbor, Vermont, assumed responsibility for the long-term curation of Allen’s material evidence collection. Today, these artifacts are still housed at the museum and a number of them have been placed on display for public viewing and education.

General Description of the Material Evidence

Allen’s material evidence reflected the presence of both imported and domestic manufactured goods. The interruption of trade starting with the Jefferson Embargo of 1808 and culminating in the War of 1812 helped spur the growth of American industry, pushing the country toward economic independence. Ironically, Jeffersonian-Republican trade restrictions and hostilities—ostensibly intended to assert neutral rights—had given impulse to the factories that the same political entity once claimed to abhor. Through this period the idea spread that the
country needed a more balanced economy comprised of farming, commerce, and manufacturing. Thus, what had started as a collection of states with largely localized economic circles was quickly transforming into a national economy. Allen’s career on Lake Champlain between 1814 and 1825 coincided with many of these economic changes—a fact illustrated by the items that collected through this period in the galley’s bilges.

This material evidence, as a whole, showed signs of physical and chemical deterioration after having spent more than a century buried beneath layers of decaying plant matter, sediments, and thick clays in the freshwater environment of the Poulney River. Dramatic seasonal changes, including heat, heavy rains, ice, and snow also left their unique marks. Surface patination and the presence of oxidation by-products (i.e., films, amorphous powders, crystals, and crusts) suggest that the metallic items have primarily undergone moisture-related, or “aqueous” corrosion. Most of the items fashioned from wood, bone, and other organicics had adhering sediments, plant root damage, and staining (black, reddish/brown, and blue/green in color) presumably from contact with corroding iron, copper alloy, and lead. The glass, ceramics, and stone recovered from the site exhibited the highest degree of preservation.

All material evidence underwent final cleaning, stabilization, and conservation in accordance with the laboratory procedures outlined in Dr. Donny L. Hamilton’s Basic Methods of Conserving Underwater Archaeological Material Culture (1997). The figures in this chapter illustrate the more diagnostic artifacts found on Allen. Generally speaking, these artifacts can be organized into three main groups based largely on function: hull elements (i.e., timbers, fasteners, fittings, and equipment); weaponry (i.e., ordnance, small arms, and ammunition); and finally, crew items (i.e., dress, tableware and food ways, and personal possessions).

Hull-Related Artifacts

Artifacts related to Allen’s hull constituted the largest of the three functional categories of finds described above (Figure 57 and 58). Detached timbers and fasteners made up the bulk, as it would have originally required thousands of such components to build and maintain the vessel over its lifetime. Despite the best efforts of sailors and local salvagers to strip and recycle these objects into raw materials, a substantial number survived.

Timbers consisted largely of possible gangway and internal partitioning fragments, along with complete specimens of transverse deck planks and ceiling planks. Most were recovered from the starboard side of the hull. Sizes ranged from 2 inches (5 cm) in length to
over 11 feet (3.3 m). Despite almost two centuries beneath the water, some of these timbers floated to the surface upon being released from their fasteners, which is not unusual for softwood planks—namely white pine—removed from freshwater shipwrecks. As a general rule, the pieces discovered in the upper levels of the stratigraphic profile appeared more fragmented than those resting closer to the depth of the keel. Consequently, numerous fragments originally associated with the galley’s upperworks appeared in a distinct layer above the starboard ceiling, presumably the direct result of disintegration and gravity dropping these bits and pieces into the hull’s interior.

Fasteners accounted for roughly 45% of Allen’s total artifact collection—by far the single largest group of items excavated from the galley. A variety of iron spikes, nails, and tacks (123 whole and 48 broken) of different sizes and styles, along with one iron bolt and one washer or rove were recovered. Copper alloy fasteners (17 whole and 1 broken), most likely associated with deck fittings and internal joinery work, included flat, round-head and dome, round-head tacks, and square-head nails. Evidence suggests, however, that Allen’s shipwrights relied almost exclusively on iron nails, spikes, and bolts to secure its planks and other structural timbers. Nails typically held the internal softwood planks (gangway deck, transverse deck, and ceiling planks) firmly in place. Spikes, being more robust in size, were reserved for the heavier jobs, such as securing the hardwood external planking. Wooden treenails also appeared, but largely to help secure these planks in key areas.

Iron nails showed the widest variation in head styles and shank sizes. Square (01-092) and rectangular (01-025) heads represented the largest groups, with intact examples ranging in maximum preserved dimensions from 1-1/4 inches (3.1 cm) in length with a 1/4-inch-square (6.3-mm-square) head and a 1/8-inch-square (3.1-mm-square) shank to 3-1/2 inches (8.7 cm) in length with a 1/2-inch by 1/4-inch (1.3-cm by 6.3-mm) head and a 7/32-inch-square (5.4-mm-square) shank. Round-head (01-082) and “L”-head (01-060) nails along with round-head iron tacks (01-022) also appeared periodically. Another variety, the “T”-head nail (01-091), appeared to have been formed by cutting or bisecting the uppermost portion of a nail shank and folding the ends outward into a “T” shape. Of the spikes (01-004), almost all of the examples recovered had a 1/2-inch-square (1.3-cm-square) rosehead with a 3/8-inch-square (9.5-mm-square) to 1/4-inch-square (6.3-mm-square) shank manufactured in lengths greater than 5 inches.
Figure 57. A representative sample of hull-related artifacts recovered from *Allen* in 1995. Catalogue numbers are provided for reference in the text and in Appendix D. Drawings by Erick Tichonuk, Rob Wilczynski, Erich Heinold, Cheryl Quinn, Erika Washburn, Steve Bilicki, Kevin Crisman, and E. B. Emery.
Figure 58. Additional hull-related artifacts recovered from Allen in 1995. Catalogue numbers are provided for reference in the text and in Appendix D. Drawings by Erick Tichonuk, Rob Wilczynski, Scott Padeni, Erich Heinold, Scott McLaughlin, and E. B. Emery.

(12.5 cm). The 1-inch-diameter (2.5-cm-diameter) drift bolt (01-143) represented the largest of the iron fasteners recovered. It measured 1 foot, 2-5/16 inches (35.7 cm) in length. A washer, or rove (01-103), used to secure such fasteners, was also discovered in the same general vicinity.

The majority of copper alloy fasteners had square heads or round heads with either flat, or dome-shaped profiles. The nails (01-151) had a spatula appearance to their ends and they averaged 2-1/4 inches (5.6 cm) long with 1/4-inch-square (6.3-mm-square) heads and 7/32-inch-square (5.5-mm-square) shanks, while the tacks (01-010) were considerably smaller, measuring 1-1/4 inches (3.1 cm) long with 3/8-inch-diameter (9.5-mm-diameter) heads and 1/8-inch-square (3.1-mm-square) shanks. Continuing down in size, the dome-head tacks proved to be the tiniest fasteners discovered with the galley. One such tack (01-154) had a head diameter that barely exceeded 7/16 inch (1.1 cm) and it measured 5/8 inch (1.6 cm) in length with a 3/16-inch-square (4.8-mm-square) shank.

A small number of hull fittings and equipment emerged during the excavation. Generally speaking, fittings consisted of items other than timbers or fasteners permanently
attached to the vessel, or that played an integral role in its proper function.\textsuperscript{8} Artifacts found on \textit{Allen} that met this definition included: (1) sheet lead fragments; (2) sheet brass fragments; (3) a shard from a possible deck light; and (4) a substantial collection of pig iron ballast.

Fragments of sheet lead and a cluster of twenty-three flat-rolled copper alloy fragments appeared in \textit{Allen}'s hull. Sheet lead served a variety of functions aboard warships of this period. Typically shipwrights used it to line scupper drains, hawseholes, and other apertures passing through a vessel's hull in order to help protect the surrounding wood from water rot and decay. This extra surface of soft metal around the hawseholes also prevented the vessel's cables from chafing while moored or at anchor. Archaeologists located the lead fragments (01-065, 01-098, and 01-106) inside \textit{Allen}'s starboard hull between Frames G and 4, spaced almost exactly at 12-foot, 6-inch (3.6-m, 15.2-cm) intervals. This area spans the central portion of the original gangway deck. It is possible that these fragments were from scuppers located amidships along the gangways.

On the port side of the hull, between Frames 7 and 10, a 3/4-inch (1.9-cm) long, 1/4-inch (6.3-mm) wide lead lining fragment was still attached to one of its original fasteners—a 1-1/4-inch-long (3.2-cm-long) copper alloy tack (01-021) with a 3/8-inch-in-diameter (9.5-mm-in-diameter) head and a 1/8-inch-square (3.1-mm-square) shank. This also could have been part of a scupper lining held in place by brass tacks.

The cluster of copper alloy fragments (01-141), along with copper alloy fasteners, emerged from between Frames 16 and 17, just forward of the galley's original stern gun mount location. The fragments appeared extremely worn and ranged in size from 3-3/4-inches (9.5 cm) long by 2-1/2 inches (6.4 cm) wide to 1/8 inch (3.1 mm) long by 1/16 inch (1.6 mm) wide. The average thickness measured 1/64 of an inch (0.4 mm). It seems likely that thin, malleable copper alloy sheeting would have been in association with \textit{Allen}'s powder magazines. A copper or lead lining could help protect cartridges by keeping out dampness. The lining might also prevent accidental metal-on-metal sparks from causing an explosion.\textsuperscript{9}

Aft of amidships on the port side of the hull, a thick glass fragment (05-001) was identified as a possible deck light. The item consisted of a convex shard of what appeared to be an early nineteenth-century "illuminator," or "patent" deck light measuring 2-1/8 inches (5.3 cm) in length, 2 inches (5 cm) wide, and 3/4 inch (1.9 cm) thick. This lens, convex on one side and flat on the other, would have been set flush, convex side up, into the gangway deck.\textsuperscript{10} The
exact location of where these lights would have been employed could not be determined. Mostly likely, they would have been placed over the galley’s magazines to provide natural illumination and reduce the need for fired light sources. The American 20-gun brig Jefferson (built in 1814) produced two deck lights, each 5-1/4 inches (13.3 cm) in diameter, the earliest archaeological examples from a U.S. Navy warship.\(^{11}\)

Allen’s pig iron ballast collection exhibited a particularly intriguing hull placement. Excavation in the stern area turned up a total of thirty pieces, not one of which rested forward of Frame 13. The ballast was predominantly situated alongside the keelson and beneath the level of the transverse decking that was nailed atop the keelson (Figure 59). The concentration of ballast in the stern area would have prevented the galley from ever floating on an even keel without a substantial counterweight in the bow.

The provenience of the ballast pile remained a curiosity during the initial survey of Allen in 1982. Later that summer, historical records pertaining to the galley’s second career on Lake Champlain showed that it had finished out its days in the U.S. Navy as a patrol boat under the provisions of the Rush-Bagot Agreement of 1817. Allen’s armament at this time had been reduced from two guns to a single, long 12-pounder cannon secured to a refurbished mount in the bow. The weight of this gun, approximately 3,800 lbs (1,723 kg)\(^{12}\), demanded that the galley’s operators add ballast aft in order to keep the vessel on an even trim—a function that the stern gun once served.

Manufacturing pig iron ballast in the early nineteenth century required a blast furnace and a casting house. Typically the molten iron heated by the blast furnace passed through a sluiceway, or “sow,” into a network of trenches cut into the sand floor of the casting house where it hardened into multiple “pigs.” Pig iron—available in bulk at a foundry—served as the intermediary stage in the creation of many different cast and wrought iron products. Cast iron contains a high percentage of carbon and has a relatively low melting point thus allowing it to be easily molded into a variety of forms. However, this same carbon makes the iron extremely brittle. Shaping wrought iron products in a forge with a hammer required that the cast metal be first refined into a malleable state by removing the carbon. This usually required the services of a refining forge or some other secondary facility.\(^{13}\) Allen’s pig iron ballast (01-142) still resembled the crescent shape of the sand casting moulds suggesting that it never underwent additional processing. Such pieces did not have to be worked or shaped as their sole function
rested in the weight they could distribute along the galley’s keel. Cast iron in its bulk form would have been more than sufficient for the U.S. Navy’s purposes on Lake Champlain in 1814.

Figure 59. Detail of *Allen’s* port and starboard stern ballast concentration. Note that none of the ballast appeared at a level above the transverse planking. Drawing by E.B. Emery.

*Allen’s* ballast pieces ranged from 6-1/2 inches (16.5 cm) long by 3-1/2 inches (8.9 cm) wide to 2 feet, 10-3/4 inches (88.3 cm) long by 4 inches (10.2 cm) wide. At least one piece flared to a maximum width of 9-1/4 inches (23.5 cm), perhaps the result of a broken or distorted sand mold at the time of casting. Some of the pieces had a cross-sectional shape resembling an arch with a convex hollow the length of their undersides. The remaining pieces were in the form of a half-circle and weighed considerably more than their arched counterparts. The total weight of the stern ballast assemblage was 330 lbs. (149.6 kg). *Allen’s* ballast represented approximately 22% of the hull-related artifact assemblage recovered, but more than 90% of its
overall mass. Nevertheless, a typical 12-pounder cannon easily outweighed the starboard and port ballast combined, and it therefore seems likely that the ballast found inside the hull in 1995 does not represent the original quantity used during the galley’s postwar career.\(^\text{15}\) Some of the ballast might have been removed before or after its sale and abandonment in the Poultnay River.

American pig iron often bore the name of the furnace at which it was produced and/or the year of casting, but Allen’s ballast revealed no markings.\(^\text{16}\) Records show that the Monkton Iron Works of Vergennes, Vermont, supplied round shot for the U.S. Navy in 1813 and 1814.\(^\text{17}\) Macdonough very likely turned to the company during his building program the following winter. Unfortunately, it is extremely difficult to make this association without some sort of maker’s mark as physical evidence. Certainly the proximity of the Monkton Iron Works just upriver of the U.S. Navy’s temporary shipyard on the shores of the Otter Creek suggests this furnace as the source for the cast iron.\(^\text{18}\)

Allen’s equipment finds consisted of one chisel or caulking iron (01-134) recovered from the starboard side of the galley’s stern area.\(^\text{19}\) This artifact had a wrought iron blade that flared proximally into a socket containing a wooden handle fragment. The entire piece (blade and handle together) measured 6-3/4 inches (17.1 cm) in maximum length, 13/16 inch (2.0 cm) wide at the working end (terminal end), and it tapered to 5/8 inch (1.5 cm) at the waist before flaring back out to 1-1/4 inches (3.1 cm) wide at the handle socket (proximal end). Only the tip of the flattened, 3/16-inch-thick (4.7-mm-thick) blade appeared to be missing. This may be due to normal corrosion and degradation, or perhaps the result of a specific manufacturing practice.

Cutting edges of iron tools during the early nineteenth century could be case hardened, or tempered, at the forge. All-iron blades, however, had a tendency to wear rapidly. In order to slow this process, many edge-tool manufacturers combined cheaper and malleable wrought iron in the body of the tool with a hard, steel bit on the terminal end. A skilled blacksmith could “lay” this wedge onto the worn out blade edge, thus prolonging its useful lifespan.\(^\text{20}\) The long, narrow blade suggests that this tool was either a chisel for woodworking, or a caulking iron for pounding home oakum between Allen’s planking seams. Midway along its length the name “L. Maxfield” was stamped into the iron blade—presumably indicating the name of the tool’s manufacturer.

Chisels and caulking irons represented important additions to any fleet carpenter’s daily repair kit. This artifact did not have a broad arrow mark to indicate British manufacture,
suggested that it was not among the equipment and stores captured from Captain Downie’s squadron after the Battle of Plattsburgh Bay. It is more likely that the tool was of domestic manufacture. New York, Boston, Philadelphia, Baltimore, and other large American cities provided substantial iron markets supporting a variety of specialized metal craftsmen like coppersmiths, braziers, founders, anchor forgers, edge-tool makers, and cutlers. Edged-tool manufacturers proved especially important to the shipwright’s trade as they specialized in all kinds of axes, hatchets, adzes, chisels, planes, draw knives, and other robust cutting implements. Mr. Brown’s team of New York City craftsmen likely purchased fine edged-tools from local manufacturers, and brought these tools with them to the job site along the Otter Creek in 1814. Such basic tools would have also been well within the repertoire of any local blacksmith in the Champlain Valley.

Evidence of the internal partitions for equipment storage compartments was uncovered in the vicinity of Frames 15 to 17. Three pieces of hardware, possibly for use on cabinets or sliding doors included a strange wing-nut-shaped iron component, an iron eye-screw, and the proximal end of a copper alloy hook clasp. The wing-nut-shaped artifact (01-145) may represent a type of handle for a sliding door. The object consisted of a rectangular, 1-1/8-inch-long (2.9-cm-long) by 7/16-inch-wide (1.1-cm-wide) base with a single 1/4-inch-diameter (6.3-mm-diameter) loop fashioned at either end making the object easy to grasp. The overall height, from the base piece to the top of the loops, measured 5/8 inch (9.5 mm).

The eye-screw (01-157) and clasp (01-171) were situated within 1-1/2 feet (45 cm) of each other and appeared to be consistent in size and form with cabinet hardware. The majority of the eye-screw had already been severed away. The extant portion measured 5/16-inch (7.9 mm) in diameter along the outer border of the eye with a 1/8-inch-in-diameter (3.1-mm-in-diameter) center hole. The eye and its attached screw fragment had a preserved length of 7/16 inch (1.1 cm). The clasp appeared to be fashioned from solid, 1/32-inch-in-diameter (0.7-mm-in-diameter) brass wire bent to form a 1/8-inch-in-diameter (3.1-mm-in-diameter) eye-loop at one end. Presumably the opposite end once terminated in a type of hook. The overall preserved length of the artifact measured 3/4 inch (1.9 cm). Allen’s internal joinery most likely would have been small to fit within the limited interior space. Eye-screws and hooks were probably used to latch cabinet doors and sliding partitions—a necessary function on any type of watercraft.
Once built, outfitted, and armed, a row galley still required regular maintenance. Timbers, fasteners, fittings, tools, and equipment were commonplace, and it is easy to understand how small items could be misplaced, discarded, or forgotten in the spaces of the galley’s hull at different points in its career. After months of upkeep intended to prevent the galley from sinking, it is hard to imagine any crew assigning great importance to lead and copper alloy fragments, broken fasteners, a worn tool, or a collection of bulk iron upon receiving orders to abandon the hull and put it up for sale in 1825.

Crew-Related Artifacts

Artifacts illustrating the daily life of Allen’s galleymen consisted of mostly mundane items: tableware and foodways, clothing-repair accessories, and a limited number of personal possessions (Figure 60). Discovering these remnants of shipboard living helped shed light on the layout of Allen’s internal spaces. The galley’s after end yielded the highest density of such items, including a knife blade; assorted fragments of clear, light-blue, and green bottle glass; ceramic sherds; a brass straight-pin; plain buttons of copper alloy and bone backing plates from two buttons; a domino and two disk-shaped gaming pieces; and a broken but nearly complete salt-glazed stoneware jug. The pin was located between Frames 14 and 15, while the other crew-related items were predominantly from an area between Frames 15 and 17.

Tableware and foodways accounted for three-quarters of the total finds relating to Allen’s crew. This came as a surprise at first, considering that the historical documents and construction plans showed no evidence of living quarters in the heavy, first class row galleys. However, during Allen’s second career as a patrol boat, the galley’s crew did not have a transport sloop or other kind of support vessel to provide such accommodations as they did during the war. The crewmen most likely had to store and prepare basic foodstuffs on their own aboard the galley.22 However, the widespread distribution of this particular material type began to make sense upon closer inspection.

Of the 33 different pieces of glass recovered from Allen, roughly 79% could be classified as wine/rum bottle shards (05-003). All of these artifacts shared a comparable green color and the majority of them came from groupings located aft of amidships. The glass fragments ranged in maximum dimensions from 5/8 inch (1.6 cm) by 1/2 inch (1.3 cm) to 2-1/16 inches (5.2 cm) by 1 inch (2.5 cm), and they averaged 1/8-inch (3.1 mm) thick. The largest
Figure 60. A representative sample of crew-related artifacts recovered from Allen in 1995. Catalogue numbers are provided for reference in the text and in Appendix D. Drawings by Erick Tichonuk, Rob Wilezynski, Pierre LaRocque, Scott Padeni, Erich Heinold, Cheryl Quinn, Steve Butler, Kevin Crisman, and E. B. Emery.
concentrations of bottle glass shards fell between Frames 15 and 16. The U.S. Navy issued sailors alcohol to maintain the health and morale of its personnel. Alcohol dulled the misery of harsh working and living conditions faced by oared warship crews assigned to the northern lakes stations. On a particularly rainy or cold night, the watch might receive an extra ration of rum, whiskey, or beer, in addition, a quick snort from the bottle could render a meal of salted meat, peas, and dried biscuit edible. Most importantly, alcohol could bolster a sailor’s courage when faced with imminent battle. However, alcohol and the deviant behaviors associated with its abuse contributed to three times as many dismissals from naval service as desertion, fraud, embezzlement, theft, or sexual misconduct.

Officers and enlisted men sometimes kept reserves of alcohol for personal consumption. While attending a dinner aboard Macdonough’s flagship Saratoga, Joseph Heatly Dulles recalled in his diary the commodore’s selection of wine and port, including a fine bottle of “Madeira.” Typically, the general supply of alcohol for the rest of the squadron’s personnel would have been stored in barrels, but individual purchases were almost always poured off into glass bottles. Drinking continued to have a set time and place in the daily routine regardless of what supplies were being used. As a general rule, work came before play and any illicit use of alcohol while on duty could be severely punished. However, the large quantities of bottle glass removed from Allen suggest that at least some of these private reserves made their way onto the galley at one point in its career. The only certainty is that the problem of overindulgence did not plague seamen alone. Officers and warrants proved just as willing to drink to excess as sailors. Indeed, William Robins, Allen’s commanding officer in 1814, had a reputation for being “subject to intoxication occasionally.”

No examples of glass storage containers could be reconstructed from the shards found in the hull, but the bilges did yield fifty-eight pieces of a salt-glazed stoneware jug (05-018). Stoneware is a vitreous ceramic with a fine texture, usually manufactured from a combination of fire clay, flux, and silica that renders the finished product largely impervious to water and other liquids. Kilns in Philadelphia, New Jersey, and New York produced green, gray, blue and gray, and cream colored salt-glaze stoneware jugs, bottles, crocks, pitchers, bowls, and plates starting as early as the middle of the eighteenth century. Once reassembled, the pieces quickly revealed a stout, brownish-green container with only a quarter of one shoulder missing and an overall base-to-rim height of approximately 8-1/4 inches (21 cm).
The jug had an evenly spread glaze and no decoration (Figure 61). Distinct color variations at specific locations on the body and neck seemed to correspond with areas where the glaze flaked away over time. This may reflect environmental impacts and degradation, or it may simply be the result of a lack of uniform exposure to heat during firing. Again, one can only speculate as to how this artifact ended up inside Allen.

Other significant ceramic finds included fragments of whiteware representing two different styles of decoration. Whiteware is often used as a generic term for ceramic tableware. Produced in bulk with a characteristic opaque white surface color, individual platters, plates, bowls, and other items would have been readily available for purchase from local merchants in the Champlain Valley. Kilns in New England, New York, and the Mid-Atlantic States mass-produced this particular type of ceramic throughout the early nineteenth century.30

Allen’s ceramic tableware fragments can be divided into specific groupings based on function—a possible plate or serving platter, a possible bowl, and a possible pitcher, each bearing a separate decoration pattern. The plate/serving platter fragment (05-006) appeared to be from the outer margin of the rim. It had a lead-gray coloring to its glaze with a distinct painted decoration consisting of a series of flattened, dark-gray ovals contained within a larger light-gray oval. The three bowl fragments (05-007) shared a similar lead-gray-colored glaze. One had a single line of dark ovals along the outer margin of its upper rim while the rest had no visible markings. Finally, the pitcher fragment had a different decoration style altogether. The item (05-013) showed a light, pearl-colored glaze with two solid-painted lines (one thick and one thin) along its outer margin. The thickness and curvature of this piece suggested that it had broken off from a pouring spout.

The presence of ceramics in Allen’s bilges is somewhat perplexing. Common sailors usually kept a simple eating utensil, such as a spoon, and took their meals directly from a communal mess kid. Naval officers, on the other hand, might stow their own pewter or ceramic table settings for special occasions as they were expected to maintain a style and manner befitting to their station. Allen’s tiny collection of ceramic sherds appeared deep enough in the soil/sediment matrix to suggest that they were deposited before the galley was sold and abandoned in 1825. If this is true, these fragments are most likely associated with an officer rather than an enlisted sailor.
A dinner knife blade (01-144) represented the last of the tableware items recovered from *Allen*. This heavily-corroded iron artifact emerged in close vicinity to the ceramic fragments described in the above paragraphs and it had the same vertical location inside the galley’s bilges. American cutlers in the early nineteenth century produced and imported an assortment of items, including cutlery, tableware, butcher’s knives, surgeon’s implements, razors, scissors, scythes, and even swords. The blade appeared to be from a standard dinner knife variety of utensil and measured 4 inches (10.1 cm) in overall length. The handle was missing, but the hafting area of the blade remained fully intact, including a 1/16-inch-in-diameter (1.5-mm-in-diameter) rivet hole where the handle presumably once attached to the blade.
Sparse clues indicating the nature of the crew's diet came in the form of two potential zooarchaeological specimens—a possible shoulder bone from a deer (06-001) and a vertebral body from the spine of a fish (06-002). It would not be unexpected to find a small collection of skeletal elements representing cattle, pigs, sheep, deer, rodents, fowl, and local fish species aboard a typical warship from this period. One might also expect to find seed husks, nutshellis, fruit pits, and other remnants of plant species to indicate the crew's vegetable consumption. Were these items to have been consumed in any great number aboard *Allen*, these traces of different foodstuffs would have been found deep in the bilges.

Health and medicine often correlated directly to cleanliness as well as diet in the U.S. Navy. Soldiers and sailors embraced the necessity of proper sanitation with varying degrees of success in the navy. Numerous human beings working and living in close quarters offered a breeding ground for microbes. Unfortunately, the average enlisted sailor had a limited sense of the link between cleanliness and disease. Dr. James Mann, serving with the U.S. Army in Upper New York State, repeatedly advised that sanitary measures, consisting of having the men wash their hands and faces, be observed on a daily basis. In addition, shirts had to be washed for delousing purposes at least once per week. It is difficult to believe, however, that this was done with any regularity in a time of war.

The neck and rim from a tiny clear-glass bottle (05-005) recovered from *Allen* may be from a medicine bottle. Its presence may indicate that additional measures had to be taken to treat ailments on an individual basis. Dysentery and pneumonia were among the most prevalent diseases running rampant through the soldiers and sailors of the Champlain Valley between 1812 and 1814. Treatment usually involved doses from the standard medications of the day, including ipecac, tartar emetic, and opium. Macdonough did not assign a surgeon to his galleys and gunboats, and crewmen may have carried private stores of certain drugs. It is also possible that the fragment does not represent this type of container at all, for this size of bottle could also have been used for holding pepper, mustard, spices, or some other form of powder.

Uniform and apparel items consisted of two copper alloy buttons, one pewter button, two different sizes of bone backing plates (used to hold wire eyes in place on the reverse face of a button), and a copper alloy straight pin. The majority of these artifacts came from between Frames 14 and 17. The rather curious find in this category, was a copper alloy uniform button (01-020) bearing the crest of the British Army's 100th Regiment of Foot located on the port side.
of the hull between Frames 7 and 10. This button measured 5/8 inch (1.6 cm) in diameter. Members of this regiment served as crewmen on the gunboats that captured the U.S. Navy sloops Growler and Eagle inside the Richelieu River in June 1813. However, throughout most of the 1814 campaign season the 100th was involved in the intense fighting around the Niagara Peninsula. The button’s discovery on Allen raises some questions. By what combination of circumstances did this tiny artifact end up on a U.S. Navy warship on Lake Champlain in 1814? Was it perhaps brought aboard the galley as a souvenir by one of the crew, or did it fall off the uniform of a wounded prisoner-of-war during his transport back to Isle aux Noix shortly after the Battle of Plattsburgh Bay? The latter appears to be the most likely scenario.

The other copper alloy button (01-165) had been cast as a single piece with a plain, flat face, and it appeared to be the right size for use on a waistcoat. The button measured 1/2 inch (1.3 cm) in diameter and the attachment point on the reverse face was heavily degraded. Partial markings embossed along the upper outer margin of the button’s circumference on this face read: AU*PT*A. The asterisks appeared as dividers between the letter sets. Two other plain face discs, fashioned from bone and resembling buttons appeared in the same vicinity between Frames 15 and 16 and Frames 16 and 17, respectively. However, upon closer examination, these items proved to be the back plates for two different sizes of buttons. Each flattened disc (06-004 and 06-005) had a single hole through its center where it presumably would have held a brass wire eye in place on the reverse face of a uniform button. They measured 15/32 inch (1.1 cm) in diameter and 5/16 inch (0.7 cm) in diameter and 3/64 inch (1.1 mm) thick with a 1/16-inch-in-diameter (1.5-mm-in-diameter) fastener hole.

The only definitively American button recovered from Allen actually surfaced during the preliminary study of the galley in 1982 (See Chapter VIII, Figure 37). It had distinctive markings comprised of a large cursive script letter “I,” underscored by a tiny oval containing the number “13.” This “Script I” style button (01-174) appeared as an isolated find in the bow area atop the keel near Frame Q. The button was in excellent condition with only traces of staining present. Solid cast in what appears to be pewter, or some other sort of alloy, the button measured 3/4 inch (1.9 cm) in diameter and 1/16 inch (1.5 mm) thick, and had an attachment loop (now broken).

The “Script I” style had a limited period of use in the U.S. Army that lasted from 1812 to 1815. The “I” designated “Infantry” and the corresponding number indicated the soldier’s
regimental number. By 1813, however, the demands of wartime production made it impossible to continue the practice of manufacturing infantry buttons with regimental numbers. The "Script I" button was simplified in appearance to contain a star, a mullet, or simply a blank space within the oval. In 1815, a new design incorporating an eagle was introduced and worn until 1821.\textsuperscript{38} Thus the "Script I" button recovered from Allen appears to have been manufactured in 1812 and represents a uniform coat button from the U.S. Army's 13\textsuperscript{th} Infantry Regiment. The 13\textsuperscript{th} spent the majority of the war on the Niagara Frontier, but a detachment of the regiment served at Plattsburgh, New York, in September 1814.\textsuperscript{39} Perhaps the soldier associated with this artifact was a last-minute addition to Allen's crew in the days leading up to the Battle of Plattsburgh Bay.\textsuperscript{40}

In addition to the buttons, evidence of clothing repair was also documented afloat amidships. A badly twisted copper alloy straight pin (01-162) with a 1/16-inch-in-diameter (1.5-mm-in-diameter) head appeared within 2 feet (61 cm) of the two backing plates (06-004 and 06-005) discussed earlier. The pin appeared to be much too slender for the galley's sail repair tasks. Puncturing canvas duck required a heavy needle, usually made of a more robust metal construction. However, uniforms and clothing also required constant upkeep and many naval personnel learned the art of needle and thread in the service in order to pass muster. Officers rarely had a tailor available on distant stations and enlisted men hardly had the funds to hire such services even when available. Although not a sewing needle per se, this artifact was mostly likely associated with the repair of uniforms, as it could easily have been used to temporarily hold panels of cloth together during alterations.

Another interesting personal item found in the bilges on the port side of the galley's stern area was a nearly intact clay tobacco pipe (05-002) with the finely molded effigy of a turbaned, bearded head. The turban had a series of embossed stars and the rim of the pipe bowl bore the words "United States of America" in raised lettering. A number of ceramic pipe stem fragments emerged in close proximity to the bowl, and at least two of them (05-010 and 05-011) fit together and articulated with its base. Effigy pipes were a popular style among smokers in the first half of the nineteenth century, but for an American sailor, a pipe like this may also have been symbolic of the U.S. Navy's victories over Moroccan and Ottoman corsairs during the Barbary Wars of North Africa (1801-1805).\textsuperscript{41}
Although many of the U.S. Navy's shipboard rules and regulations specifically limited drinking, smoking, and gaming, the sailors aboard Allen appear to have continued to engage in these and other activities, as is reflected in the last of the personal possessions recovered. A bone domino (06-003) and two possible wooden counters or gaming pieces (03-050 and 03-052) were recovered aft of amidships between Frames 13 and 14 and Frames 16 and 17, respectively. The rectangular domino and had six dots, or "pips," on one half of its superior face and two on the opposite half.

The remaining wooden artifacts consisted of two 3/16-inch-thick (4.8 mm) hand-carved disks, one 3/4-inch-in-diameter (1.9 cm) and the other 13/16-inch-in-diameter (2.0 cm). The first piece appeared smooth, with no markings on either face, while the other was smooth on one face and bore a large block letter "X" incised into its reverse face. Both artifacts were crudely fashioned from white pine. These may represent pieces from a type of checkers or possibly backgammon. However, it is also feasible that they served another purpose altogether—one that is presently unknown. Similar pieces have been recovered from military shipwrecks elsewhere on Lake Champlain. Games of chance such as dominoes and backgammon date back to the period of British colonization in North America and many remain popular throughout the country today. Dominoes, backgammon, cards, and dice appear to have been part of everyday shipboard life during the era of the War of 1812.

Allen's starboard, after end produced the highest density of crew-related artifacts. These items not only add to our knowledge of how the galley's crew lived, they help us begin to reconstruct a physical record of the differences in social and economic status that stratified the chain of command. It appears that oared warships followed the same patterns as found elsewhere in the U.S. Navy—with one exception. Warrant and petty officers in command of galleys, barges, and other gunboats appear to have enjoyed certain benefits in status, responsibility, and pay—normally considered beyond their rank—while serving on the inland lake stations during and after the War of 1812.

*Weaponry-Related Artifacts*

Artifacts related to weaponry—the third largest assemblage recovered—consisted almost entirely of munitions, most of which were found along the galley's starboard hull at amidships and in the stern area (Figures 62 and 63). American arms manufacturing stirred to life during the War of 1812. This industry, in particular, began to showcase the country's
growing talent for mass-production. National arms factories, established at Springfield, Massachusetts, and Harpers Ferry, Virginia, as early as 1794, effectively shifted purchasing away from foreign competitors. By the onset of hostilities, the U.S. Army had a substantial reserve and could draw up to 22,000 new muskets per year. In addition, private contractors such as Eli Whitney and Simeon North further increased this output with independent operations in the Lower Connecticut River Valley. Allen’s hull, crewed largely by regular soldiers, contained a modest assortment of parts and munitions associated with shoulder weapons, pistols, and ship’s ordnance from this period. In particular, lead shot of various sizes dominated the category.

Arms parts found inside the galley included a fragmented iron ring for a musket sling and four gunflint spalls. Small-arms manufacturers typically secured an iron, teardrop-patterned “ring” at the barrel and near the trigger guard of a musket to serve as attachment points for a sling. The lower half of a ring was recovered from the stern; the U-shaped fragment (01-135) measured approximately 2-1/8 inches (5.3 cm) across, presumably the same width as the standard issue leather sling of the period. The iron used to fashion the ring was round in cross section and measured 1/8-inch (3.1-mm) in diameter.

A cluster of three gunflint spalls emerged from amidships, while a single example appeared in the same area as the belt hook fragment near Allen’s stern. Three of the spalls (02-003a-b and 02-004) corresponded in size to the firing mechanism of a musket or pistol. These stones had comparable dimensions: about 1/2 inch (1.3 cm) by 5/16 inch (7.9 mm) by 1/4 inch (6.3 mm). The remaining stone (02-005) appeared considerably larger in width—11/16 inch (1.7 cm) by 5/8 inch (1.6 cm) by 5/16 inch (7.9 mm)—suggesting that it may have been used with one of the galley’s ordnance pieces. All of the gunflints shared a yellowish-brown, almost translucent coloring. In addition, the superior and inferior surfaces of the stones appeared heavily worn and angular in shape. At least two of the flints still held their original edges.

Allen’s gunflints may represent two separate periods of deposition within the galley’s hull. Perhaps Allen’s internal stowage included an area for small arms equipment, accessories, and replacement parts. The isolated gunflint removed from the stern appeared much deeper in the hull alongside the keel above the garboard strake. This could possibly be attributed to its gradual migration over the years down through the seams of the ceiling and into the bilges.
Figure 62. Sample of weaponry-related artifacts recovered from Allen in 1995. Catalogue numbers are provided for reference in the text and in Appendix D. Drawings by Erick Tichonuk, Rob Wilczynski, Pierre LaRocque, Erika Washburn, Steve Bilicki, and E. B. Emery.

Figure 63. Detail of various sizes of munitions recovered from Allen. This photograph was taken after conservation treatment. In descending order of size: four iron grapeshot (top left); two lead musket balls (center left); four lead buckshot (center right); and twelve lead birdshot (lower right). Photograph by Scott McLaughlin.
However, it is also possible that this flint was discarded, or accidentally dropped earlier in Allen’s career when the galley still mounted a long 24-pounder in the stern—circa 1814 to 1815.

Iron grapeshot (01-063) constituted the only artillery munitions excavated from Allen. The highest concentration of these anti-personnel shot emerged between Frames D and 4. This distribution suggests that Sailing Masters Robins and Lindsay may have stored at least part of the galley’s shot at amidships, in order to maintain fore and aft trim. Moreover, the presence of grapeshot supports the idea that Allen and her five sister galleys were also outfitted for close action, offensive tactics—a point that is often ignored by historians. Grapeshot ranged with fatal effect only as far as 500 yards. They were ideal for sweeping exposed warship decks or beaches during a landing attempt.\(^{46}\)

Allen’s amidships concentration of grapeshot yielded thirteen different examples in a variety of sizes. Typically, a stool of grapeshot involved the use of a single base plate and vertical spindle to support a stack of up to nine balls. The entire stool was then wrapped in canvas and closed with a durable hemp line. The whole often weighed close to a single round shot for the gun. Upon discharge, the canvas exploded apart and the balls scattered outward in a deadly spray pattern.\(^{47}\) The most common diameters of grapeshot found on Allen measured 1-1/2-inches (38.1-mm) and 1-1/4-inches (31.7-mm). At least three of the 1-1/2-inch balls (01-063) appeared to be rusted together in a strange triangular shaped configuration. A similar grouping (01-064) was found close by in the same grid unit.

During the war, grapeshot spools began to change slightly employing up to four base plates, or “tiers,” connected by a long spindle. The balls clustered atop each plate around the centrally running spindle in groups of three. It is possible that Allen contained tier-styled grapeshot spools at sometime between 1814 and 1825.\(^{48}\) However, these heavy artifacts would have worked their way deep into the bilges and once in contact with each other would have fused together due to corrosion processes. Thus depositional changes might be responsible for these clustered finds. The remaining grapeshot removed from amidships fell into three size ranges: 7/8 inch to 1-1/16-inches (22.2 to 26.9-mm), 1-1/8-inches (28.5-mm), and 1-3/4 to 2-1/16-inches (44.4 to 52.3-mm).

Isolated finds of single grapeshot (01-084 and 01-149) turned up in the stern area between Frames 15 and 21. Anti-personnel shot would have been used in the galley’s bow and stern guns. However, no grapeshot emerged forward of Frame D. Most likely, the 1-inch (25-
mm) and 1-1/8-inch (28-mm) in diameter balls found in the stern represent accidental losses of grapeshot that occurred during the everyday activities of loading and off-loading munitions or perhaps during gunnery drills. Little evidence of canister shot was recovered from *Allen*, minus a few oddly shaped iron fragments (01-074, 01-100, 01-109, and 01-112) that might have been a form of langrange. Langrange was a container filled with a deadly assortment of lead shot, loose iron, stones, nail fragments, fence staples, bolts, and other bits of scrap.⁴⁹ Solid round shot appeared conspicuously absent minus one fragment found in Unit 3 of *Allen*’s starboard side. This shot would have been removed prior to the galley’s abandonment. One can assume, given the limited amount of space on the galley, that round shot was originally stored in close proximity to the other iron munitions on board. However, physical evidence of a shot locker could not be found, other than the unusual concentration of iron grapeshot at amidships. It is possible that *Allen*’s crew stowed ordnance munitions throughout the hold as the extra weight affected overall hull trim.

*Allen* contained three distinct size groupings of lead shot located primarily in the after end of the galley’s hull. The first clustered around the standard diameters of balls used with French Light Model 1763 (.69 caliber) and U.S. Model 1795 (.69 caliber) muskets. A total of four examples (01-115 a and b, 01-131, and 01-160) measured 5/8 inch in diameter (.62 cal./16 mm) making them ideally suited for a .69 caliber shoulder weapon.⁵⁰ Additionally, a cluster of five balls (01-031, 01-121 a, b, and c, and 01-169) measuring 1/2 inch in diameter (.50 cal./13 mm) corresponded to the standard diameters used with a number of different American pistol types, including the Model 1805 (.54 caliber), the Contract Model 1807 (.54 caliber), and the North Models 1811 and 1813 (.69 caliber). The U.S. Navy Department had contracts with Simeon North for the purchase of pistols to outfit the squadrons on Lakes Ontario, Erie, and Champlain during the war.⁵¹ Such weapons proved indispensable during boarding actions and other forms of close, hand-to-hand ship’s combat. The final cluster of shot appeared to fit in the range of sizes typically used as “bucks” inside small-arms cartridges. More than seventy examples of 5/16-inch (.31-cal./7.9-mm), 1/4-inch (.25-cal./6.3-mm), 3/16-inch (.18-cal./4.7-mm), 1/8-inch (.12-cal./3.1-mm), and 1/16-inch (.06-cal./1.5-mm) balls were found in close association with the musket and pistol munitions.⁵²

Buckshot, or “buck and ball,” became a favorite type of ammunition configuration among U.S. Army infantry regiments during the War of 1812. It consisted of packing three or
more small lead balls, or "bucks" (01-081 and 01-170), with a regulation caliber musket ball when making a cartridge. While the main ball hurled directly toward its target, the extra projectiles followed a wider discharge pattern intended to maim persons standing close by the original mark. The British described "buck and ball" as ungentlemanly, as it was not intended to bring down an opponent. Nevertheless, the practice remained popular with American soldiers throughout the war. Considering that the majority of Allen's crew had been taken from the ranks of the U.S. Army, it hardly appears surprising that this type of shot emerged in such high quantities. Buckshot was also popular among bird and small-game hunters. Soldiers campaigning on land often relied on their marksmanship to supplement their normal diet with fresh meat and fowl. Allen's crew most likely camped ashore at times in 1814 and while on patrol duty after 1817. Perhaps the tiniest "birdshot" sizes of buck represented personal stores of ammunition kept for hunting.

The overall distribution pattern of armament and ordnance artifacts illustrates two distinct areas of concentration: amidships and in the galley's stern. Horizontally, objects in this category predominantly appeared within 12 inches (30.4 cm) of the keel and keelson. With the exception of the shoulder belt hook and three of the gunflints, the vertical dimension always seemed to terminate at or near the lowest point in the hold—the bilges. A number of depositional processes can be cited as possible explanations. The careless handling of shot kegs, pouches, and other storage containers during gunnery drills or in the confusion of battle may be at least partially responsible for this pattern. Accidental losses would have also occurred during the loading and off loading of the galley. Round, weighted objects dropped in the hull would always submit to gravity if at all possible. This funneling effect toward the lowest point in the bilges surely accounts for high concentrations of shot along the keel.

Concluding Remarks

In large part, Allen's bilges remained undisturbed during the time between the galley's abandonment and excavation. The galley was initially stripped by the U.S. Navy of all valuable items, including masts, yards, sails, and rigging, deck fittings, arms, large shot, and other stores and equipment. Presumably, a second period of salvage occurred, following the hulk's abandonment and sale, and continued for an indefinite period, or at least until the upperworks disappeared beneath the water. Fortunately, the lowest areas of the bilges, where numerous objects and fragments migrated during that time, appears to have filled in quickly with river
sediments and other forms of overburden, thus sealing off these artifacts from additional disturbance processes and helping to preserve their archaeological context.

Two hundred and eighty-seven items of metal were recovered, documented, and catalogued during the excavation of Allen. This total can be subdivided into three main categories: iron, lead, and copper alloy. Iron objects were in the majority, including a variety of iron spikes and nails of different sizes and styles and a partially intact bolt. A ring fragment from a musket shoulder sling and pieces believed to be associated with cabinet hardware were also discovered. Some of the more unique items included a possible chisel or caulking iron with the markings “L. Maxfield” inscribed into the blade and a knife, perhaps of a table utensil style. Four fragments of flat, rolled sheet lead emerged from different locations in the hull. All of these, with one exception, were isolated examples. One lead piece was wrapped around a copper-alloy tack; this may have once been part of a scupper drain lining. The forty-six objects made of copper-alloy included nails, tacks, a straight pin, a cluster of rolled sheet copper fragments, and two buttons.

Divers recovered a total of sixty-three wooden items and fifty-four wooden fragments for closer inspection. Almost all of these artifacts were directly related to the galley’s hull. They consisted of three possible gangway deck plank fragments, ten transverse deck planks, four transverse battens, three separate lengths of a type of longitudinal keelson batten, nineteen ceiling strakes, remnants of charcoal, a treenail, and numerous deteriorated wood chips. All of these items were reburied on the site after documentation. Wooden objects not directly related to hull components included a possible hand line reel and two circular gaming pieces.

Stones of various sizes from the river channel appeared scattered about the hull remains. These pebbles and cobbles deserved a brief discussion in the artifact catalogue for environmental sampling purposes, but did not undergo further analysis. Four gunflint spalls, however, required full documentation. No brick appeared on the site. Considering that most galley crews ate and slept aboard other vessels in the squadron, this did not seem unusual. It is unlikely that Allen carried a cooking hearth.

Twenty-five catalogue entries represent the glass and ceramic finds recovered from Allen. Clear, light-blue, and green bottle glass—of various sizes—appeared in the soil/sediment matrix throughout the excavation. Green bottle glass constituted the majority with twenty-two fragments. The purported deck light shard was the largest, most extant fragment
recovered. Examples of ceramic tableware proved relatively scant. This was not surprising considering that Allen’s crewmen typically ate and slept either aboard one of the transport sloops, or on shore for the majority of the galley’s career. Only a handful of lead-gray-colored fragments and one pearl-colored fragment of tableware were discovered. Two of the more unique finds in the ceramics category included a kaolin pipe bowl and three pipe stems along with a salt-glazed stoneware jug collected in more than fifty-eight pieces.

No leather or textiles contemporary to the period appeared in association with the hull remains or the surrounding site area. Five examples of bone, including a fish vertebrae and a possible deer bone, constituted the last of the artifact categories to be recovered. It is possible that the faunal elements are intrusive to the site based on their location in the soil/sediment matrix inside the hull. The remaining three items appeared to be contemporary and were fashioned by hand out of bone. These included two small, single-hole backing plates and a domino with six and two pips on its superior face. Presumably these crude, handmade items came from the belongings of one of the many crews that worked aboard Allen between 1814 and 1825.

In summary, the material evidence associated with Allen—although largely circumstantial—is typical of the artifacts that would be expected on a row galley fighting on Lake Champlain during the War of 1812. Furthermore, the archaeological items recovered are consistent in temporal context with the period dating from 1814 to 1825. However, this statement cannot yet be made definitive, as the largest and most complex of the artifacts encountered has yet to be discussed—the galley’s hull remains. This will be the subject of the next chapter.

Endnotes: Chapter IX


2. Cronyn, Elements, 5.


5. The discrepancy between iron and copper alloy fasteners on Allen hardly came as a surprise considering that the galley had been thoroughly stripped in preparation for its sale and abandonment in 1825. Copper was also a more expensive material to use for fasteners compared to iron.

6. All fifteen freshwater warships from the War of 1812-era that have been archaeologically studied in North America were principally iron fastened. Allen contained both machine-cut and wrought-iron fasteners. The bulk, however, appeared to be from the former category. Typically, machine-cut fasteners—such as nails—tapered only on two sides, while wrought nails tapered on all four sides. The styles varied depending on where in the hull they were intended for use. For a complete analysis of fasteners from the eighteenth and early nineteenth centuries, see Ivor N. Hume, *A Guide to the Artifacts of Colonial America* (1969; reprint, Philadelphia, Pa.: University of Pennsylvania Press, 2001), 252-253; and Eric Sloane, *A Museum of Early American Tools* (New York: Ballantine Books, 1964), 92-93.


11. Ibid. The U.S. Navy brig Jefferson produced two examples of a type of deck light invented by London glassmaker Apsley Pellatt and patented by him as "Illuminators" in 1807. According to Crisman, these lights permitted natural light to enter the dark spaces between the brig's decks. Shipwrights would have set the light into the deck with the convex surface up, cemented it in place with glazier's putty, and finished securing it with a metal collar. The Royal Navy first used lenses on its ships in 1809. Crisman found that Captain Isaac Chauncey's use of these lights in 1814 on Lake Ontario represents the earliest known reference to their installation on a U.S. Navy vessel. Chauncey called them "skylights" or "patent lights." Jefferson's deck lights are also, to the best of Crisman's knowledge, the earliest archaeologically recovered examples of these devices.


14. The lightest individual ballast piece recovered from *Allen* weighed 7 lbs. (3.2 kg.) and the heaviest weighed 70 lbs. (31.7 kg.). These numbers indicate post-conservation weights. Chris Sabick, personal communication, 3 July 2003. Mr. Sabick works as a conservator and archaeologist for the Lake Champlain Maritime Museum in Ferrisburgh, Vt.

15. This gun weight estimate is from Tucker, *Arming the Fleet*, 125, 147.

16. Edward F. Heite, “Excavations of the Fredericksville Furnace Site,” *Quarterly Bulletin, Archaeological Society of Virginia* 25, no. 2 (1970): 94; Michael Parrington and Helen Schenck, *A Report on the Excavation of an Ancillary Area (Site 18FR320) of the Historic Ironworking Complex at Catoctin Furnace, Frederick County, Maryland* (Annapolis, Md.: Maryland Historical Trust Manuscript Series, 1982), 19; and Frye, *Antietam Iron Furnace*, 88. It appears that the Monkton Iron Works also stamped their products, although none were found on the ballast recovered from *Allen*. See Benjamin Welles to Messrs Stafford and Spencer, Merchants of Albany, 18 February 1813, Monkton Iron Works, BixL. Welles writes: I have sent on to you by Mr. Brewster, teamster, two loads of refined & bloomery bar iron of exactly two tons & thirty hundred & five pounds of bloomery...the refined iron is generally stamped in the bar with “Vergennes, M.I. Co.”

17. See Chapter IV, Endnote #45 in this dissertation.

18. Determining where the iron ore used to manufacture *Allen*'s ballast came from is impossible without conducting a trace analysis on a sample of the metal and comparing it to a sample of local ore from the vicinity of the original Monkton Iron Works beds. Historical records pinpoint the exact geographic locations of these ore beds—namely locations in Monkton, Vt., and Swanton, Vt. A comparison of a sample of the ballast iron with iron ore samples taken from the areas of these beds would help develop a physical link between Macdonough’s squadron and the Monkton Iron Works from the period of the War of 1812.

19. Located along *Allen*'s keelson near Frame 18 on the starboard hull. Three main classifications of tools are often used in military archaeology: digging tools, cutting tools or “pioneer’s tools,” and construction tools for working wood, metal, or stone. It is difficult to tell for certain if this artifact is a chisel or a caulking iron. The tool’s size, shape, and general characteristics suggest that it could have been used in either capacity.


21. Carl Bridenbaugh, *The Colonial Craftsman* (New York: Dover Publishing, 1990), 45; Mulholland, *A History of Metals*, 105; and Sloane, *Early American Tools*, vi-vii. America’s leading imports from Europe by the early nineteenth century fell into the categories of textiles and iron hardware. American manufacturers, spurred on in part by the events of the War of 1812, were starting to establish large iron works along with smaller forges and bloomeries in increasing numbers. The American market for iron tools grew to the point of being able to support numerous domestic iron industries by the mid- to late nineteenth century. The iron industry in New York State dated back to the mid-1740s with Philip Livingston’s works situated midway between the rich ore deposits at Salisbury, Conn., and the transportation route represented by the Hudson River.


23. It is important to note that *Allen* would have undergone approximately eight months of wartime service, at which time the crew would have lived primarily aboard one of the transport sloops assigned to the galleys as a tender. However, *Allen*'s second career involved four years of peacetime patrolling on the
lake, with presumably no support vessel to provide accommodations. This would suggest that during this second career, greater opportunities arose for the depositing of various tableware- and foodstuffs-related items.

24. Mann, *Medical Sketches*, 36. Dr. Mann contended that the issue of alcohol as part of a daily ration only worked to incapacitate sailors and soldiers. In addition, he believed that wine, beer, and liquor made the human body predisposed to contracting certain types of illnesses. “My opinion long has been,” wrote Mann during the war, “that ardent spirits are an unnecessary part of a ration.” He listed “the abuse of spirits” as a major problem in the military personnel serving in the Champlain Valley between 1812 and 1815. “Sutlers unrestrained, as they frequently are, destroy more lives by these liquors,” he wrote, “than are lost by other causes to which soldiers are exposed. A soldier habitually intemperate, is always industrious to procure the means of indulging his appetite. All his cunning and every artifice are put into requisition to obtain the inebriating draught. Reputation, honor, health, and even life are sacrificed to his gratification.”


27. Thomas Macdonough to John Rodgers, President of the Board of Navy Commissioners, 6 May 1815, Subject Files, Class N, Subclass NI, Promotion and Privileges, Box 224, RG-45, NARA; and “Roll of Commissioned & Warrant Officers Under Capt. Macdonough,” Subject Files, Class N, Subclass NA, Lists of Persons Serving With Vessels or Stations, Box 224, RG-45, NARA.


32. For information covering the various preventative techniques and treatments administered to the soldiers and sailors in the Champlain Valley from 1812 to 1815 see Mann, *Medical Sketches*, 12-20, 26-30, 39-46, 69-79, 127-145.


35. This particular button was located on the portside of *Allen*’s hull between Frames 7 and 10.

36. Although unconfirmed at this date, it is possible that the “AU” in the lettering AU*PT*A may stand for the elemental abbreviation for gold and the “PT” for “plated.” In fact the forward face of this copper alloy (brass) button did appear to have been originally plated with another type of metal coating.

37. Hume, *Colonial Artifacts*, 91. See the illustration of the “Type 4” button in particular.


40. See Chapter V of this dissertation. See also: Thomas Macdonough to William Jones, 7 September 1814, Commanders' Letters, RG-45, M147, Reel 5, Pt. 3, No. 41, NARA.

41. A pipe identical to the one found in *Allen* can be seen in Lee H. Hanson, Jr., “Pipes from Rome, New York,” *Historical Archaeology* 5, no. 1 (1971): 92-99. The Rome pipe is from a feature dated 1839-c. 1860, whereas the *Allen* pipe was deposited between 1814 and 1826, suggesting that this style was produced for well over a quarter century. Similar, but not identical pipes have been recovered from a mid-nineteenth-century site in Sacramento, California. See Richard V. Humphrey, “Clay Pipes from Old Sacramento,” *Historical Archaeology* 3, no. 1 (1969): 12-33. Turban-and-beard effigy pipes are still sold today in Turkey.

42. See “Orders Observed for the Regulation of the Navy at Whitehall,” Subject Files, Class P, Subclass PB, Rules and Regulations Pertaining to Naval Stations, Box 498, RG-45, NARA.


44. It is interesting to note that when one travels by sea, even today, it quickly becomes apparent that the different ports of the globe once under colonial rule by Great Britain often have the standard 28-title, 0-6 type of dominoes as a popular national pastime. Personal observations in Gibraltar, Egypt, St. Kitts and Nevis (British West Indies), Falkland Islands, and South Africa.

45. Chartrand, *Uniforms and Equipment*, 84-94. Although the purchase of foreign arms dwindled by 1812, the fact remains that many British and French weapons still remained in the country and were therefore used during the war by the U.S. Army as well as state militias and volunteers. Moreover, a number of firearms in U.S. Army’s arsenal—namely the U.S. Model 1795—largely copied a French pattern. According to Chartrand, many of the forms of ammunition also followed French specifications. The musket ball caliber weight was eighteen-to-the-pound of lead and a typical charge contained approximately 160 grains of powder. A pistol charge was around 80 grains of powder. The powder and ball configuration were encased in a paper cartridge usually pasted or tied shut.


52. See Appendix D, Catalogue of Artifacts, Entry Nos. 01-030, 01-032, 01-081, 01-087, 01-114, 01-118, 01-119, 01-130, 01-132, 01-136, 01-148, 01-152, 01-159, 01-163, 01-167, and 01-170.
53. Chartrand, *Uniforms and Equipment*, 94. Although “buck and ball” cartridges cost twice as much as single ball cartridges, some four million were manufactured between July 1813 and February 1814 alone. Buck and ball became the standard American infantry cartridge during the war, and the United States was the only nation to use such ammunition. No doubt, American soldiers must have been convinced of its effectiveness, but the British seemed to have dismissed it as ineffective and an ungentlemanly nuisance. All the same, the U.S. Army put considerable faith in “buck and ball” ammunition for the next half-century.

54. For additional information on soldier life during the War of 1812, see Donald E. Graves, ed., *Soldiers of 1814: American Enlisted Men’s Memoirs of the Niagara Campaign* (Youngstown, N.Y.: Old Fort Niagara Association, Inc., 1995), 5-15. In addition to the birdshot, one of the unidentified wooden artifacts discovered in *Allen’s* bilges between Frames 16 and 17 appeared to be a type of wooden hand reel for a fishing line. The object (03-051) had a rectangular shape with 1/4-inch-deep (6.3-mm-deep) triangular notches cut from both ends. Perhaps this represented a crude, hand-carved fishing implement used for recreational purposes or for supplementing one’s diet. The entire artifact measured 2-1/2 inches (6.3 cm) long, 7/8 inch (2.2 cm) wide, and 1/2 inch (1.3 cm) thick.

55. *Allen’s* metal artifacts are organized in Appendix D, Catalogue of Artifacts, Entry Nos. 01-001 through 01-176. Some of the individual entries contain multiple items.

56. *Allen’s* wooden artifacts are organized in Appendix D, Catalogue of Artifacts, Entry Nos. 03-001 through 03-062. Some of the individual entries contain multiple items.

57. *Allen’s* stone artifacts are organized in Appendix D, Catalogue of Artifacts, Entry Nos. 02-001 through 02-005. Some of the individual entries contain multiple items.

58. *Allen’s* glass and ceramic artifacts are organized in Appendix D, Catalogue of Artifacts, Entry Nos. 05-001 through 05-025. Some of the individual entries contain multiple items.

59. *Allen’s* bone artifacts are organized in Appendix D, Catalogue of Artifacts, Entry Nos. 06-001 through 06-005.
CHAPTER X
THE ANATOMY OF A ROW GALLEY: ALLEN'S HULL CONSTRUCTION

An intensive documentation of Allen’s hull marked one of the Whitehall Project’s primary objectives in 1995. This complex artifact demanded photographic recording, wood sampling, and hundreds of sketches, complete with detailed measurements and observations, before it could be rebuilt on paper at the drafting table. Questions concerning the galley’s design as well as the materials and techniques used to assemble its hull components helped guide the investigation at every turn. The data presented in this chapter include the dimensions of Allen’s individual timbers, the types of woods used, and a description of how its timbers were shaped, assembled, and fastened together. It constitutes a starting point from which to piece together a better understanding of Allen’s anatomy, as it would have appeared during the War of 1812 on Lake Champlain.

Noah Brown used the English system of feet and inches when building Allen at Vergennes in 1814, and therefore archaeologists used these same units of measurement in 1995. Metric equivalents have been provided in parentheses after each recorded dimension. Keeping in step with the normal sequence of construction for wooden warships of this period, this study begins with the keel and works its way up.

The Keel

Allen began its career in the U.S. Navy as a sturdy wooden backbone comprised of three structural elements: the keel, stem, and sternpost. Brown and his shipwrights laid these hull components down on the stocks first in order to define the galley’s overall length between perpendiculars and to provide a foundation upon which the rest of the vessel could be built. Each timber going into this backbone assembly had to be carefully selected, shaped, and fastened together in a manner that promised the best longitudinal strength for the circumstances at hand.

The keel extended below the bottom of Allen’s hull and served as its principal centerline timber. While traveling under oars or sail, the keel bit deepest into the water and helped keep the galley on a straight course. It also took the brunt of contact with the lake bottom in the event of a troop landing or accidental grounding. Unfortunately, the wreck’s upright position on the muddy riverbed buried the keel and made it one of the least-accessible timbers for
documentation. The presence of well-preserved runs of outer planking along both sides of the keel and the tight assemblage of keel, floor timbers, and keelson abaft of Frame Q only compounded the problem. Investigation was thus restricted to an 8-foot, 2-inch (2.5 m) section exposed in the bow, a 3-foot (0.9 m) section in the stern, and sided measurements taken at eighteen different frame positions. Probing in the mud at Frames O, M, K, I, 2, 14, and 16 also provided some estimate of changes in the keel’s height or “molded” dimension.

Divers uncovered Allen’s keel at the extreme forward and after ends of the wreck while documenting the stem and sternpost assemblies. The keel survived intact over an estimated length of 69 feet, 3-1/2 inches (21.1 m). Allen had two keel pieces joined together end-to-end by an overlap, or scarf, and fastened tight with iron bolts. The presence of a two-piece keel was confirmed by the bolt pattern used to fasten the member to Allen’s stem, sternpost, and keelson, or “inner keel.” Brown used two types of wrought-iron fastenings called “drift bolts” and “through-bolts.” Workers pre-drilled holes from above and drove these bolts into place; drift bolts held fast through friction while through-bolts protruded from the bottom of the keel and had to be secured either by forelocks or by peining their ends over washers (roves). Allen had tight groupings of three 3/4-inch-diameter (1.9 cm) through-bolts driven through the keelson and keel within a foot of each other at four separate locations: the stem, sternpost, keelson scarf, and amidships.

The initial three sets of these fasteners coincided with the keel-to-stem scarf, the keel-to-sternpost scarf, and the keelson scarf connecting the fore and aft keelson pieces. These bolts were clearly intended to provide additional rigidity to Allen’s spine at these potential weak sites. The final grouping at amidships—starting 33 feet, 2-1/2 inches (10.1 m) aft of the stem—probably defines the location of a keel scarf. If this assumption can in fact be made, the forward keel timber would have measured roughly 38 feet, 9 inches (11.8 m) in length and the second, 34 feet, 11-1/2 inches (10.7 m) with a 4-foot, 3-inch (1.3 m) overlap.

Brown fashioned the forward most keel timber from white oak (Quercus alba), a wood long known among North American shipwrights for its stiffness, strength, and ability to hold fasteners. This would have undoubtedly been the preferred wood of choice (when available) for assembling the backbone members, especially for a vessel intended to serve on Lake Champlain. Wood samples could only be obtained forward of amidships, but it is reasonable to assume that Brown would have selected the same type of oak for the aftermost keel piece as well. The
dimensions of the keel varied greatly. It measured 2-3/4 inches (7.0 cm) molded (or high) and 3 inches (7.6 cm) sided (or wide) in the bow where it seated the stem; in the stern the keel tapered to 2-1/2 inches (6.4 cm) molded and 4-1/2 inches (11.4 cm) sided. The largest dimensions for Allen's keel could be found near amidships—approximately 5-1/2 inches (14.0 cm) molded and 11-1/2 inches (29.2 cm) sided—thus giving an average of 5 inches (12.7 cm) molded and 8-1/2 inches (21.6 cm) sided over its entire length.

A horizontal V-shaped groove, the rabbet, was chiseled out of both the port and starboard sides of Allen's keel approximately 1/2 inch (1.3 cm) below its top surface. These channels helped make a watertight fit between the innermost run of hull planking, or "garboards," and the keel. Shipwrights shaped the inboard edge of the garboards at a bevel to better slot into the rabbet and then sealed the seams with caulking and pitch. The rabbet's dimensions differed slightly over the length of the keel. On average, the grooves were 1 inch (2.5 cm) deep and 3/4-inch to 1 inch (1.9-2.5 cm) wide. Allen's garboards showed a high degree of preservation, and many appeared to be still spiked in place, making it impossible to gather precise measurements in a number of locations. A short section spanning from the after edge of Frame V to the forward edge of Frame P provided the most reliable information. At the stem, the rabbet made an upward sweep following the curve of the main stem, while in the stern, it continued to the after edge of Frame 23 and followed the seam between the stern knee and the main sternpost. At Allen's bow and stern the rabbet gradually changed from a V-shape to an L-shape as the hull narrowed.

Allen's keel lacked a shoe, or "false keel," on its underside—a strange omission given the nature of its work on Lake Champlain. The absence of this protective timber suggested that the vessel was not expected to survive much longer than its service in 1814. Row galleys and other small, amphibious oared warships were designed for use on bays, inlets, shoal waters, and rivers where the risk of grounding was ever present. A British gunboat from the same period, excavated from Browns Bay (a tiny inlet on the north shore of the St. Lawrence River in southern Ontario, Canada), revealed a keel in poor condition along the length of its underside. Allen's keel undoubtedly bears similar scars, but they remain inaccessible at this time.1

The Stem and Sternpost Assemblies

The stem and stern defined the rake of Allen's ends. Two components made up the forward assembly: the main stem and the apron. The stem, of American elm (Ulmus
*L. americana*, measured 2 feet, 10 inches (0.9 m) in length and extended up from the horizontal plane of the keel at approximately a 49-degree angle (Figure 64). This timber was flat-scarfed to the keel and fastened by three 3/4-inch-diameter (1.9 cm) through-bolts, one 1/4-inch-diameter (0.6 cm) drift bolt, and two 1/2-inch-square (1.3 cm) iron spikes. At its thickest point the stem measured 6 inches (15.2 cm) molded and 4 inches (10.2 cm) sided. Its sided dimension tapered between its upper and lower surfaces when viewed in section. The stem measured only 3 inches (7.6 cm) sided at its lower surface where it seated onto the forward projection of the keel.

![Diagram of stem assembly](image)

Figure 64. Detail of *Allen*'s stem assembly as found in 1995. The rabbet has not been shown rising through the stem assembly for the purpose of overall illustration clarity. Drawing by E.B. Emery.

The after corners of the main stem (along the edges of its upper surface) appeared to be chamfered. Erosion has erased much of its detail, but this feature marked the continuation of the planking rabbet into the bow. The seam between *Allen*'s main stem and inner apron would have followed the line of the rabbet. The lower edge of the stem was considerably worn and
deteriorated, with a 4-1/2-inch-long (11.4 cm) gap between the stem and the forward most extension of the keel. This space probably never held an outer stem, or "griper," instead the main stem's original dimensions would have filled it entirely.

The 1982 survey revealed two stopwaters at the juncture of the stem's aftermost base, or "heel," and the forward most extension of the keel. These 1-inch-diameter (2.5 cm) wooden dowels had been inserted into pre-drilled holes passing across the scarf seam in order to tighten the scarf and prevent water running along the seam and entering the hull. Unfortunately, Allen's stopwaters had disappeared by the time of the 1995 excavation. The recordings from 1982 indicated that they were not wedged, suggesting that the dowels may have deteriorated and worked themselves loose. Stopwaters without wedges appeared in other War of 1812-era vessels built by the Brown brothers on Lake Champlain. The U.S. Navy brig Eagle shared this same feature.

Noah Brown used iron fish plates to secure the stem and stern assemblies in and the U.S. Navy schooner Ticonderoga. These details were conspicuously absent in Allen. The Champlain row galleys appeared lightly built compared to the larger warships of Macdonough's squadron, and fish plates at the stem-to-keel and stem-to-keel junctions may have been dismissed as unnecessary. It is also possible that Brown omitted these fasteners on Allen due to shortages in time and materials.

The apron, of white ash (Fraxinus americana), was a large internal timber used to reinforce the stem assembly and was attached to the top of the stem and the forward end of the keel with five 3/4-inch-diameter (1.9 cm) through-bolts. This timber formed the final element locking the stem in place. The overall length of the apron was 5 feet, 1-1/2 inches (1.6 m). Its dimensions in section varied from 3-1/2 to 10 inches (8.9-25.4 cm) molded by 3-1/2 to 5 inches (8.9-12.7 cm) sided. The lower edge of the apron's forward most 2 feet, 7 inches (0.7 m) was chamfered to form the upper half of the planking rabbet. The aftermost 2 feet, 10-7/8 inches (0.9 m) of the apron had broken away from the forward portion 3-1/2 inches (8.9 cm) forward of Frame U. This disarticulated half of the apron twisted to starboard, almost perpendicular to the keel, and was originally mistaken for a floor timber. The bolt fastening Frame U to the keel also held this after half of the apron in place, thus allowing it to pivot so far to starboard without being lost.
Examination of *Allen*’s stern assembly (Figure 65) required a considerable amount of digging to expose its construction features. A 1-1/2-foot-long (0.5 m) trench was cut along the lower port side edge at the junction of the sternpost and the after end of the keel. This tunnel between the disarticulated external planking ends and the port face of the stern assembly permitted access to the stern knee as well as the main and outer sternposts. The subsequent study proved extremely challenging. Despite poor visibility and tight spaces in the trench, archaeologists completed numerous measurements and sketches. They discovered that Brown had employed a rather unconventional method for building *Allen*’s stern—one that appeared in sharp contrast to William Doughty’s original first class row galley design.

Doughty recommended a double-ender design with curved posts at both ends. In this manner, the rudder would have appeared as the only feature distinguishing the stern from the bow. Brown changed the design, keeping *Allen*’s horizontal shape the same at both ends. He fitted a straight sternpost instead of a curved post, then attached an outer sternpost and drove an iron eyebolt with a 1-1/2-inch-diameter (3.8 cm) hole into this timber to serve as a makeshift gudgeon. This assembly, extending upward and aft on a 30-degree-angle, provided a fast and easy way to hang the rudder. He also chose a peculiar method of joining *Allen*’s sternpost to its keel. *Allen*’s main sternpost extended to the bottom of the hull and flat-scarfed directly to the after end of the keel, attaching the post to the keel in much the same way as the stem.

The sternpost measured 2 feet, 4 inches (71.1 cm) on its longest edge and was fashioned from white oak (*Quercus alba*). The timber joined the keel with a 2-foot, 7-inch-long (0.8 m) flat scarf, secured by two 3/4-inch-diameter (1.9 cm) iron through-bolts. This timber had a molded dimension of 15 inches (38.1 cm) at its base and it tapered upwards to 7-1/2 inches (19.1 cm) molded. The forward edge of the post measured 6 inches (15.2 cm) sided, and the aftermost edge tapered to 4-1/2 inches (11.4 cm) sided.

The outer or false post consisted of a light timber—measuring 2 feet, 2 inches (66.0 cm) on its longest edge—fashioned from red oak (*Quercus rubra*). The molded dimensions of the outer sternpost ranged from 6 inches (15.2 cm) at the base to 2-7/8 inches (7.3 cm) at the top. A sided dimension of 4-1/2 inches (11.4 cm) on the forward edge and 2-5/8 inches (6.7 cm) on the after edge remained constant over the entire length of this timber. The false post was fastened to the main sternpost with a 3/4-inch (1.9 cm) through-bolt, driven home from the upper face of the stern knee and through both the main and false posts. The distal end of the bolt was inside a
countersunk hole in the aftermost end of the outer sternpost and covered with a 1-inch-diameter (2.5 cm) wooden plug. This plugged hole was located 2-1/2 inches (6.4 cm) up from the base of the outer post.

A stern deadwood (an assembly of reinforcing timbers forward of the sternpost typically found on wooden vessels of this period) did not appear in Allen’s hull. Brown used a stern knee in place of deadwood. This naturally curved timber formed a strong join between the horizontal plane of the keel and the vertical plane of the main sternpost. The stern knee abutted the after face of Frame 22 and seated Frame 23. This portion of the timber ranged from 3-1/2 to 5-1/2 inches (8.9-14.0 cm) molded and 5 to 5-1/2 inches (12.7-14.0 cm) sided. The stern knee tapered upward to a point 8 inches (20.3 cm) below the top of the existing sternpost, where it measured 1 inch (2.5 cm) molded and 4-1/2 inches (11.4 cm) sided. The maximum preserved length of this timber measured approximately 3 feet (91.4 cm) along a gradual upward curve. Brown fashioned Allen’s stern knee from the same wood used for the main stem—American elm (Ulmus americana).

Figure 65. Detail of Allen’s stern assembly as found in 1995. The rabbet has not been shown rising through the stem assembly for the purpose of overall illustration clarity. Drawing by E.B. Emery.
The Frames

Allen’s square frames defined the breadth and shape of its sides (Figures 66, 67, 68, and 69). The typical frame assembly had five overlapping pieces: a single floor timber that crossed the top surface of the keel at a right angle, two first futtocks (one on the port, one on the starboard), and two second-futtocks (one on the port, one on the starboard). Unfortunately, none of Allen’s uppermost futtocks portions have survived. The remains of the galley’s square frames consisted of a total of forty-five floor timbers (in varying degrees of preservation), sixty-three first futtocks, and thirteen second-futtocks. Their dimensions appeared greatest near the keel and only tapered slightly to outboard, thus keeping the center of gravity low in the hull.

Archaeologists left an 11-foot, 6-inch (3.5 m) area covering the starboard frames unexcavated in 1995 (from the centerline of Frame 4 to the first futtock associated with Frame 12). Basic measurements could still be taken for the floor timbers at these positions, but their associated futtocks remained unrecorded.

Of the twenty-five floor timbers and futtocks sampled for wood type, all but three were cut from white oak (Quercus alba). The exceptions were: First Futtock 5 of American beech (Fagus grandifolia); Floor Timber 23 of red oak (Quercus rubra); and Floor Timber 20 of white ash (Fraxinus americana). The galley’s hull originally contained additional frames in the bow and stern, including cant frames, half frames, hawse pieces, but no trace of these timbers could be found in 1995.

Irregularities existed in Allen’s square frame construction and composition. The floor timbers and futtocks appeared to have been assembled in a hurry. Ideally, Brown’s shipwrights wanted to bolt the forty-five floor timbers—constituting the main body of the hull—to the top surface of the keel. In some cases, however, they drove fasteners off target, risking a split along the timber’s edge. They alternated the use of through bolts and drift bolts along the length of the keel. Starting with Floor Timber V, a through-bolt passed through the keelson, the floor timber, and the keel. This pattern continued as far aft as Floor Timber S. At this point workers used through-bolts at every other position and a combination of drift bolts and spikes in between. The keelson scarf and keel scarf locations marked two exceptions to this pattern where through-bolts again appeared necessary.

Allen’s floor timbers varied in their molded and sided dimensions from 3-1/2 inches (8.9 cm) molded by 5 inches (12.7 cm) sided, to 6 inches (15.2 cm) molded by 7-3/4 inches
Figure 66. Section views of Frames O, M, K, and I as recorded *in situ* in 1995. Frames O and M, in particular, show the gradual narrowing of the hull into the bow area. The locations of the sections are illustrated in Figure 70. Drawing by E.B. Emery.
Figure 67. Section views of Frames G, E, C, and A as recorded *in situ* in 1995. The last three frames are part of the amidships “dead flat.” Frame G begins the transition out of this area toward the bow. The locations of the sections are illustrated in Figure 70. Drawing by E.B. Emery.
Figure 68. Section views of Frames 2, 10, 14, and 15 as recorded in situ in 1995. The last three frames show the transition aft out of the amidships "dead flat" into the stern area. The locations of the sections are illustrated in Figure 70. Drawing by E.B. Emery.
Figure 69. Section views of Frames 16, 18, and 20 as recorded in situ in 1995. Frames 18 and 20, in particular, help illustrate the abrupt "fining away" of the galley's aftermost lower stern area. The locations of the sections are illustrated in Figure 70. Drawing by E.B. Emery.
(19.7 cm) sided. Their spacing varied along the length of the keel; on average their centers fell between 2 and 2-1/2 feet (0.6-0.8 m). The overall length of these timbers ranged from 5 feet, 7 inches (1.7 m) to as small as 9 inches (22.9 cm). The variations in size and spacing may be a symptom of the Champlain galley flotilla being mass-produced in such short order. On average, the starboard floors were longer than those facing the river channel; most of the port side floor heads were broken off around 3 feet, 11 inches (1.2 m) from the centerline of the keelson due to post-1825 damage.

Allen’s hull rarely showed signs of careful craftsmanship in the assembly of its square frames. Brown allowed considerable leeway for errors as long as the end result still proved functional. For example, the starboard first futtock associated with Frame K was attached to the wrong side of the floor timber (it did not follow the pattern of the other frames forward of amidships), through bolts missed floors entirely and passed through the keel and keelson, no limber holes were cut into the underside of the frames, and some frames appeared to have been produced from unseasoned wood.

Frame 20, in particular, appeared abnormally soft and deteriorated. It represented the largest frame in the entire vessel—6 inches (15.2 cm) molded by 7-3/4 inches (19.7 cm) sided—and it was fashioned from white ash (Fraxinus americana) rather than white oak (Quercus alba). Shipwrights often substituted white ash in place of oak for deck beams. This type of wood weighed considerably less per board foot while maintaining overall strength. In fact, American shipbuilders to this day still consider white ash to be one of the strongest wood types for its weight. The dramatically increased molded and sided dimensions of Frame 20, however, would have eliminated any possible weight benefit. Brown may have used an unseasoned piece of ash for this floor timber and tried to compensate for any immediate loss in strength by bolstering its size. The larger the piece of wood, the longer it would take for rot to work its way through and render it worthless. Another possibility could be related to Allen’s stern gun. Frame 20 sits atop the keel in the aftermost section of the galley’s hull, where the track for the stern gun would have been located. Brown may have been trying to provide added strength underneath this mount when he increased the size of Frame 20.

The thirteen square frame stations from Frame F to Frame 7 appeared to be of similar cross-sectional dimensions and overall length. Allen had no amidships frame per se, but rather a dead flat, a common feature in long, shallow hulls. This run of virtually identical amidships
frames represented the widest point in the vessel: the hull would have narrowed as it moved forward from Frame F to the stem and aft from Frame 7 to the stern.

The first futtocks shared roughly the same cross-sectional dimensions as the floor timbers and were fastened to them with either 3/4-inch-diameter (1.9 cm) iron bolts, 1/2-inch-square (1.3 cm) iron spikes, or 3/4-inch-diameter (1.9 cm) wooden treenails. The heels of the futtocks never met at the midline of the keel as many galley contracts stipulated, but rather started between 3 and 5 inches (7.6-12.7 cm) from the sides of the keel. The port first futtocks averaged 3 feet, 9-1/2 inches (1.2 m) in length. Some of the frame stations on the starboard side remained intact up through the initial 2 feet (0.6 m) of the second futtock. These timbers averaged 4-1/4 inches (10.8 cm) moulded and 4 inches (10.1 cm) sided. The first and second futtocks shared similar dimensions in cross section. None of the second futtock’s heads were preserved on either side of the hull. It is likely that these disappeared along with the majority of the galley’s upper works. The forward most twenty-two square frames had their first futtocks fastened to the after side of the floor timbers (except for Frame K), and the aftermost twenty-three had their first futtocks fastened to the forward side of each floor.

Brown chose an interesting method for preventing bilge water from collecting between Allen’s frames. Instead of cutting into the base of each floor timber to create small drains, or “limber holes,” he relied on the 1/2-inch (1.3 cm) gap between the top of the keel and the first rabbet line to allow the water free passage. This triangular space beneath each floor tapered to a point outboard along the garboards. No evidence of a pump could be found in 1995. Presumably some of the 7-inch-wide (17.8 cm) by 1-inch-thick (2.5 cm) ceiling strakes immediately adjacent to either side of the keelson would have served as removable “limber boards.” This way the bilge water could be collected and bailed overboard on a regular basis.

This configuration did not always prove to be the case, however, in Allen’s hull. Between Frame A and Frame 4 on the starboard side, two limber boards had been tacked in place by four wooden battens. The inboard ends of these battens were fastened to the limber boards, while the outboard ends had been attached to the second strake of ceiling planking. This meant that the limber boards could not be removed without damaging the battens. Brown may have decided to provide access to the bilge water at only a few key locations in the hull. This way only a select few planks of the limber strakes on either side of the keelson would be removable, while the others remained firmly nailed in place. Allen’s short life expectancy may
again provide a possible explanation. The battens may have also been added later when the U.S. Navy raised *Allen* from its submerged storage in 1817 to serve as a patrol boat.

*Allen*’s square frames terminated at the bow and stern with floor timbers set into notches on the top surface of the apron and stern knee. Frames V and U in the bow and Frame 23 in the stern had no associated futtocks present. These positions probably marked the starting point of the cants, which were individual frames and were fastened to the inner surfaces of the external planking. As most of *Allen*’s planking no longer remained in these areas, no evidence of the cants could be found. Hawse pieces, the forward most and aftermost pairs of frames that paralleled the apron and stern knee, were also no longer present in 1995.

**The Keelson**

Once all of *Allen*’s square frames had been bolted into place, shipwrights added an inner keel, or “keelson.” This second longitudinal timber rested atop the floors and ran parallel to the keel. The galley’s keelson consisted of two white oak (*Quercus alba*) timbers flat-scarfed together starting roughly 21 feet (6.4 m) aft of the stern and fastened with three 3/4-inch-diameter (1.9 cm) iron through-bolts. The overall length measured 67 feet, 3 inches (20.5 m) and it proved accessible for documentation at all points. The scarf joining the keelson pieces measured 3 feet, 2-1/2 inches (1.0 m). An additional nineteen bolt heads could be counted along the length of the keelson’s top surface. Two empty bolt holes at the forward end suggested that the original configuration had at least twenty-four total. These fasteners ranged from 3/4-inch-in diameter to 1-inch-in diameter (1.9-2.5 cm) and connected the keelson, frames, and keel.

*Allen*’s keelson showed considerable deterioration on its forward end. The component measured 1-1/2 inches (3.8 cm) molded by 1 inch (2.5 cm) sided in the bow and 4-1/2 inches (11.4 cm) molded by 5-7/8 inches (14.9 cm) sided in the stern, with a maximum dimension of 5-1/4 inches (13.3 cm) molded by 10-1/2 inches (26.7 cm) sided approximately 45 feet (13.7 m) aft of the stern apron. The average dimensions of the keelson over its entire length were 4 inches (10.2 cm) molded by 7 inches (17.8 cm) sided.

Goniometer readings taken along the top surface of *Allen*’s keelson suggested that the horizontal plane of the hull was distorted. The keelson showed a gradually curving hump between 21 feet (6.4 m) and 51 feet (15.5 m) along its length, a hump caused by an upward bend in the keel. Row galleys posed a difficult problem for designers and builders. Their long, narrow hulls and the weight of heavy guns at opposite ends made their keels particularly prone
to a phenomenon known as "hogging." Constant hydrostatic pressure along the bottom of the keel (the pressure of buoyancy on all vessels afloat) caused an upward bowing near amidships where this timber proved weakest due to the hull's extreme breadth. If this strain became too great over time, then the keel would eventually reach its flexing point and begin to work itself apart. More importantly, hogging caused a gradual deterioration in hull performance long before the vessel's final demise, since a concave keel could interrupt the natural flow of water along the galley's bottom. It creates a pocket or "hollow" into which water can be trapped, thus slowing the vessel while underway.

The addition of Allen's guns in 1814 would have dramatically hastened the onset of hogging. Hydrostatic pressure fluctuates in direct proportion to hull displacement, or weight. As the galley's displacement increased, so did the hogging pressure. Placement of the guns also factored into the equation. Mounting the guns at opposite ends of the keel applied immense downward pressure at these two locations, encouraging an upward bowing in the timber along its midsection. In addition, as the galley's ends deteriorated post-1825, the weight of the unsupported structure in these areas may have continued the process of hogging.

The keelson's top surface had one large stanchion mortise and two mast steps. The first, foremast mast step was located at 13 feet, 9 inches (4.2 m) from the forward end of the keelson. It was 6 inches (15.2 cm) long, 5 inches (12.7 cm) wide, and 3-3/4 inches (9.5 cm) deep. The second, mainmast step was located at 45 feet, 5 inches (13.8 m) from the forward end and was 10 inches (25.4 cm) long, 4-3/4 inches (12.1 cm) wide and 4-1/4 (10.8 cm) inches deep. Finally, the stanchion mortise was located 6 inches (15.24 cm) forward of the after end of the keelson and measured 7-3/4 inches (19.6 cm) long, 3-1/8 inches (7.9 cm) wide, and approximately 1-1/4 inches (3.1 cm) deep. 

*External, Ceiling, and Transverse Planking*

The planking that sheathed the outside of Allen's hull appeared best preserved along the starboard hull, while those on the port side were heavily eroded and largely pulled away from the frames. Exposing the starboard planks, in particular, required a considerable amount of digging, as the majority of them disappeared along with their corresponding frames into the riverbank. All four of the external planks that were sampled had been fashioned from white oak (*Quercus alba*). The inboard edge of each garboard strake was beveled to fit into the planking rabbet along the keel and allow a space for bilge water to flow under the frames.
The garboard strake on the starboard side was 11-1/2 inches (29.2 cm) wide at Frame E and narrowed forward and aft to 9 inches (22.9 cm) at Frame P and 3 inches (7.6 cm) aft of Frame 23. Erosion, however, may have also contributed to this dramatic reduction in size. The garboard measured 1 inch (2.5 cm) thick, which was probably close to the original thickness given the degree of preservation on the starboard side of the hull. At Frame E the widths of the remaining strakes—moving outboard—measured 15 inches (38.1 cm), 13 inches (33.0 cm), 10 inches (25.4 cm), and 6 inches (15.2 cm). Iron spikes, averaging 1/2-inch square (1.3 cm) at the head, and 5 inches (12.7 cm) long, held the planks in place.

The portside garboard measured 10-1/2 inches (26.7 cm) wide at Frame 5 and narrowed to 10-1/4 inches (26.0 cm) at Frame P and 9-1/2 inches (24.1 cm) at Frame 23. Planking widths outboard of the garboards were recorded between Frame R and Frame 23. These measurements showed an average strake width of 10-1/2 inches (26.7 cm), with an average thickness of 1/2-inch to 3/4-inch (1.3-1.9 cm) due to heavy erosion. Only four strakes of external planking, including the garboard, survived on the port side of the hull.

A second skin of white pine (Pinus strobus) planking, known as “ceiling,” lined the inside of Allen’s frames. The ceiling planking on the starboard side was generally well-preserved, and some planks spanned more than 14 feet (4.3 m) in length. Their widths ranged between 6-1/2 inches (16.5 cm) and 15-1/2 inches (39.4 cm), and in thickness between 3/4 inch (1.9 cm) and 1 inch (2.5 cm). The ceiling planking was attached to the vessel’s frames with either two square or two T-head nails per frame.

Notable features on Allen’s ceiling planks included four wooden battens, arranged in two pairs, extending laterally from the starboard edge of the keelson toward the turn of the bilge. These battens ranged from 15 inches to 17 inches (38.1-43.2 cm) in length and 1-1/2 inches to 2 inches (3.8-5.1 cm) in width. Allen’s shipwrights spaced the pairs about 2-1/2 inches (6.4 cm) apart and fastened them to the ceiling planking with three to four T-head nails. The distance between the first and second pair of battens measured roughly 4 feet, 10-1/2 inches (1.5 m). It is likely that these components helped hold in place bulkheads that partitioned off the hull’s storage areas. After the battens were recorded in situ, they were removed for closer inspection and documentation on shore. This process also allowed for the continued recording of the frames underneath.
Allen revealed additional evidence of internal partitioning and compartments in 1995. A separate batten ran along the starboard side of the keelson from 50 feet, 4-1/2 inches (15.4 m) to 52 feet, 4-1/2 inches (16.0 m) astern of the stem. The piece measured 1 inch square (2.5 cm) and formed a shelf for at least two large boards 1 foot, 4-1/2 inches (41.9 cm) long by 1 foot, 3 inches (38.1 cm) wide by 1 inch (2.5 cm) thick. Shipwrights fastened the batten 2 inches (5.1 cm) from the top of the keelson with iron nails. A 1- to 2-inch (2.5-5.0 cm) space could be felt between the batten and the ceiling planking below. This feature leveled the bottom of Allen's hull alongside the keelson either to provide a walking surface for the crew or to provide a level surface within a compartment in the hold.

The presence of a footboard might suggest a later modification of Allen dating to her refit as a patrol vessel in 1817. Some of the galley's rowing thwarts may have been removed or decked over at this time in order to facilitate the movement of its crew while under sail and perhaps offer a tiny below-deck berthing area. While serving under the provisions of the Rush-Bagot Agreement, Allen presumably did not have a support vessel to accommodate the needs of its crew, as was the case in 1814. Captain Leonard may have simply instructed his men to camp on shore during extended cruises, or perhaps he had the galley outfitted to provide additional space for the crew on board. If this is the case, a flat surface for walking, sleeping, or even stowing gear may have been suspended up above the level of the ballast which was situated in the stern atop the ceiling planking.

Ensuring Allen's longitudinal strength probably ranked high on Brown's list of concerns in 1814. Such a long, narrow hull would have benefited from the addition of thick reinforcement planks called "wales" and "footwales." Wales girded the hull above the waterline, parallel to the sheer line, but Allen's remains did not survive high enough beyond the turn of the bilge to provide clues concerning this type of timber. We can only make an educated guess as to the presence, composition, and overall dimensions of such a component.

Inside Allen a series of 3/4-inch-diameter (1.9-cm-diameter) holes aligned in a rough pattern along the length of the hull near the floor heads on the starboard side suggest that the galley had a type of footwale. Shipwrights usually fashioned foot wales by placing an extra-thick piece of ceiling planking near the turn of the bilge. It appears that Brown followed this convention. However, this enlarged plank may have been reinforced at some point in its career with a separate piece of planking, almost like a "sister keelson," that ran parallel to the keelson
near the area of the floor heads. This piece would have been bolted through the ceiling and the frame below with a wooden treenail or iron bolt. Unfortunately, this pattern could not be verified on the port side due to its poor state of preservation.

At 51 feet (15.5 m) abaft the stem, a series of planks extended transversely across the top of the keelson; they averaged 9 inches (22.9 cm) to 12-1/4 inches (31.1 cm) in width and their lengths varied (depending on the extent of decomposition) from 1 foot, 10 inches to 2 feet, 3 inches (55.9-68.6 cm). These planks ranged in thickness from 3/4 inch to 1 inch (1.9-2.5 cm). Allen’s stern area had a total of five “transverse decking” pieces fashioned from white pine (Pinus strobus). Some planks were still fastened to the keelson with 1-inch-square (2.5 cm) iron spikes.

Allen’s transverse decking sat at the level of the keelson, roughly 4 to 5 inches (10.2-12.7 cm) above the ceiling planking, and provided the galley’s crew with a smooth, unobstructed walking surface in the stern area. It is likely that the decking was also added during Allen’s refit in 1817, when the pig iron ballast was stacked in the stern. The transverse decking was found only in the vicinity of the ballast, and some of the ballast still remained in situ beneath these planks.

Concluding Remarks

Allen and the Champlain galley flotilla were not built with a long life expectancy but rather were intended to satisfy an immediate and pressing demand. Brown and his shipwrights also faced a tight time schedule. These characterizing features found expression throughout Allen’s hull remains (Figure 70). Generally speaking, the workmanship and materials gave evidence of a hasty assembly, but the hull was nevertheless strong and appeared fully capable of achieving its purpose.

William Doughty, Noah Brown, and Thomas Macdonough served as the principal agents involved in Allen’s design and construction. Historical documentation suggests that they dismissed all extras at every turn in the building process. Allen’s physical remains provide additional data to support this idea. The Navy Department spent considerable sums of money throughout the war rebuilding and refitting its larger warships. Yet when small oared warships, such as gunboats, barges, and row galleys deteriorated to the point of needing repairs, it was often more cost effective to simply build new ones. Allen’s remains testified to the fact that the U.S. Navy did not plan on having it in service for an extended period of time.
Figure 70. Hull remains believed to be associated with the U.S. Navy Row Galley *Allen*. Plan view as discovered in the Pou reference. Drawing by E.B. Emery.
discovered in the Poultney River in 1995. Sections corresponding to Figures 66, 67, 68, and 69 in Chapter X have been provided for
Endnotes: Chapter X

3. Crisman, The Eagle, 137.
4. A complete listing of wood types used in Allen’s hull has been provided in Appendix C of this dissertation.
5. Steward, Boatbuilding, 18.
6. In North American shipbuilding, the use of hand-forged bolts and spikes along with treenails in a hull generally points to a vessel that predates the mid-nineteenth century, while machine-made fasteners indicate a later date.
CHAPTER XI
CONCLUSION

Completing the study of Allen involved piecing together a combination of archaeological and historical data to graphically reconstruct the galley’s shape, major construction features, upper deck and interior layout, and rigging profile. Missing and fragmentary portions of the hull—namely the top of the stem and sternpost assemblies, the majority of the upperworks, and the rowing system and gun mounts—had to be worked out through a process of inference, comparison, and educated guesswork. Masts, yards, sails, and other rigging elements were also absent from the galley’s remains; thus, lateen-type rigging plans had to be consulted for illustrative purposes. Reconstruction allows us to place Allen within the overall progression of American oared warship design and construction that spanned the period of the Barbary Wars (1801-1805) and the War of 1812.

Evidence for Reconstruction

The archaeological remains of Allen provided the best direct and circumstantial evidence for the galley’s reconstruction. For example, the square frames and endposts defined the general shape of the hull; bolt patterns on the keelson indicated the presence of a two-piece keel and the location of its scarf joint; mast step and stanchion mortises indicated the location of the sailing rig and gun mounts; and light framing battens helped identify the bulkheads of the galley’s interior layout. These clues and many others provided reliable information for reassembling the fragmented puzzle of Allen.¹

Beyond the galley’s turn-of-the-bilge, however, the major components of the hull appeared heavily damaged or missing altogether, making it necessary to seek additional information from contemporary archival sources. Military correspondence, journals, and other narrative descriptions, along with hull plans and shipbuilding contracts, offered a wealth of details that assisted the reconstruction process. The majority of this documentation was conveniently stored at the United States National Archives and Library of Congress in Washington, D.C., and at the United States National Archives II-Cartographic Section in College Park, Maryland.

A copy of William Doughty’s original first class, 75-foot (22.8 m) row galley design helped fill in gaps that existed in the reconstruction of Allen’s hull shape.² The transverse profile and sheer height depicted in this drawing offered particularly helpful guidance. Moreover,
Doughty’s plan shed light on a significant last-minute design alteration employed by Noah Brown in *Allen*—i.e., the use of a straight rather than curved sternpost assembly. Additional sources included the diary of Joseph Heatly Dulles, an eyewitness who actually toured one of the American galleys while visiting Chazy, New York in August 1814, and a contemporary painting by an unknown artist that shows the entire flotilla at anchor on Lake Champlain shortly after the Battle of Plattsburgh Bay.³

Illustrating the specific architecture of *Allen*’s upperworks relied almost entirely on U.S. Navy Department plans and contracts associated with the building of its row galley flotilla on the Chesapeake Bay in 1813.⁴ These sources described at length the required dimensions and types of materials to be used for the individual hull timbers, the methods of assembly, and numerous other specifications. Brown’s “rolled packet” of draughts, provided by Secretary William Jones the following year, almost certainly had the lines, inboard profile, and rigging plan for one of these early prototypes, as he had explicit instructions to fashion the galleys on Lake Champlain in a manner similar to those already built on the Chesapeake Bay.⁵

Lastly, a set of design and construction plans for a fully-outfitted third class, 40-foot (12.1 m) row galley, also prepared by Doughty, offered useful views of the awnings and gun mounts, as well as information pertaining to the possible layout of interior partitions in the hold (Figure 71).⁶ This particular copy had been traced from the original on 7 February 1814—just one week before Brown and his shipwrights commenced work on *Allen* at Vergennes, Vermont. Although considerably reduced in scale, the plans nevertheless revealed the general deck arrangements, rowing system, and fighting platforms for one of Doughty’s double-gun row galleys. Furthermore, *Allen*’s archaeological remains suggested that at least some of the specifications contained in this later design were applicable to the first class galleys built on Chesapeake Bay and Lake Champlain.

While none of the above sources provided a direct illustration of *Allen*, they effectively indicated what the U.S. Navy Department considered the ideal row galley hull shape and construction from the period of the War of 1812. Thus by carefully selecting details from all of the available evidence—archaeological and historical—a logical and accurate reconstruction of *Allen* may be rendered.

*Hull Lines*

Reconstructing *Allen* began on paper with the creation of a set of hull lines depicting the galley’s three-dimensional shape. This drawing comprised three interrelated views on a
measured grid: the body plan, showing the galley in cross-section from afore and abaft; the
sheer plan, showing the galley in profile along its entire length; and the half-breadth, showing
the galley from directly above or beneath half of its hull. Each of the three views utilizes two
sets of straight lines marking sections and one set of curved lines to reveal shape. It should be
understood, however, that lines drawings represent a hull’s ideal shape. In reality, a number of
factors would have prevented Allen from being perfectly symmetrical at any point in its lifetime.

Figure 71. Plan of a Doughty-designed “third class” row galley, 7 February 1814. RG-45,
Subject Files, Class A, Subclass AD, “Naval Ships, Design and General Characteristics,”
NARA.

Visible distortions in Allen’s hull presumably began during the building process. Noah
Brown and his shipwrights dealt with the natural vagaries of wood (e.g., twists, knots, bumps,
hollows, etc.) while attempting to fashion timbers as close as possible to the desired contours
laid down in the mold loft. Certainly the practicability of the design, the expertise of each
individual worker, the available materials, and time constraints all left a mark on the galley’s
hull shape prior to launching. Allen’s operational career then introduced the destructive forces
of gravity and buoyancy causing further deviation from the galley’s idealized shape. Dry rot,
induced by exposure to sunlight and fresh water, also contributed to this general deterioration.
Finally, the depositional and post-depositional processes that followed the sale and abandonment
of the galley had long-term adverse effects, including the compression, warping, and severing of key structural components. This steady transformation over the years had to be taken into account while reconstructing *Allen’s* lines.\(^8\)

Primary evidence of *Allen’s* hull shape came from the archaeological data collected in 1982 and 1995. This information provided a starting point for drawing the lines. Among the most important recordings were the overall preserved dimensions (length, breadth, and depth) of *Allen’s* remains, the angle and length of her stem and sternpost, and the eighteen hull sections measured using the goniometer. Capturing the different sections required the greatest investment of time and effort. In general, the individual measurements comprising each curvature had to be documented along the buried starboard side of the hull, as it exhibited the best preservation. Frames O, A, and 20 represented the most complete sections identifying the galley’s shape at the transition into its bow and stern (where the hull began to narrow) and through its amidships dead flat.\(^9\)

Defining *Allen’s* body plan involved first leveling the recorded hull sections on a vertical axis to account for the heavy list to port. Once in an upright orientation, a mirror image of the selected curvatures could then be extended across the keel and up the opposite side of the galley’s hull, thus filling in any missing areas. The goniometer measurements collected along the frames revealed a number of distortions upon close analysis. Subsequently, many of the section drawings required a degree of correction by fairing, or the smoothing out of their acquired distortions. *Allen’s* amidships hull shape appeared best preserved at Frame A, which extended into the second futtock (through the turn of the bilge) and showed minimal structural deformation. The section representing Frame A on the starboard side of the hull went directly into the reconstructed lines without fairing and it served as a model for the remaining frames making up the dead flat. Frames O and 20 required only minor corrections as well. The shape of the Frames S and 22, however, demanded a great deal of conjecture, despite being ideally situated to define the bow and stern transitions.\(^10\) In fact, these sections could only be reconstructed from estimates of their respective deadrise angles.\(^11\)

Typically, physical remains of futtocks and top timbers helped support the reconstruction of the upper extent of body plan sections. In the case of *Allen*, it was impossible to archaeologically document the shape of the galley’s sides as none of the frame pieces comprising the maximum height of breadth had survived. Thus, the principal source of information came from the lines drawing for a first class, 75-foot (22.8 m) row galley attributed
to William Doughty (see Chapter IV, Figure 13). Using the sheer line in this design to estimate the terminal height of each frame section, Allen's sides were added by continuing a natural upward curve from the point at which the archaeological data ceased to exist.12

With the body plan virtually complete, the next step involved preparing a sheer plan depicting the overall length of the keel, the positions of the individual frame sections, and the rake and height of the stem and sternpost assemblies. Approximately one-half of Allen's stem and apron survived intact, allowing the reconstructed shape of these timbers to be determined by simply continuing a fair upward curve. The stern assembly, although slightly less represented, employed straight posts with a moderate aft rake, making it easy to recreate its original appearance by simply extending a straight line upward along this angle. At this point a sheer line tying all of these elements together (i.e., the stem, frame sections, and stern assembly) could finally be established. In profile, Allen's sheer appeared relatively flat through amidships with a slight upward curve fore and aft into its ends.13 In addition, the gradually narrowing aspect of the galley's bow and stern (shown in the body plan) combined with the moderate rake of the endposts indicated that Allen had a relatively bluff appearance as it advanced through the water ahead or astern.14

A half-breadth plan constituted the third and final view of the reconstruction. In this plan the starboard hull was depicted from a bird's eye perspective extending outboard from a centerline that bisected the galley’s backbone along its entire length. Allen’s sheer line defined the general shape of the plan's outboard margin, as it passed through the point of maximum breadth on each individual frame section in a long, sweeping curve. Despite Brown's alteration of Allen's stern design from a curved to a straight post, the galley still maintained its double-ender appearance in the half-breadth view, described by at least one eyewitness as being identical at both ends.15

Allen’s basic three-dimensional hull outline (vertical, horizontal, and transverse profiles) now appeared complete. However, a preliminary body, sheer, and half-breadth plan was not sufficient to fully illustrate the galley's hull shape. Waterlines and buttock lines had to be added in order to show the many changes within this silhouette. These lines appeared as a series of interrelated horizontal and vertical cuts, or planes, that passed through the galley's hull at different locations. Inserting Allen's waterlines and buttock lines required a careful reassessment of her excavated hull remains. Areas containing the most reliable archaeological data promised to yield information critical to design substantiation.16 Thus, Allen's lower waterlines and
inboard buttock lines were highlighted in order to capitalize on the extensive preservation that existed in the starboard hull out to the turn of the bilge.

Four parallel waterlines were drawn at evenly spaced intervals above the level of Allen's keel in the body and sheer plans. The same lines appeared as horizontal contours in the half-breadth plan. The buttock lines were also included in all three views, showing the longitudinal shape of the galley's hull as a series of vertical planes from the sides of the keel outboard to the point of maximum breadth. These three lines appeared as straight lines running fore and aft on the half-breadth plan, vertical lines on the body plan, and long, concentric curves on the sheer plan. Finally, a pair of intersecting diagonals was added to the body and half-breadth plans in order to provide a means of double-checking the accuracy of the other hull projections.¹⁷

Allen's reconstructed shape clearly indicated a hull design suited for operations in confined shoal waters (Figure 72). The galley was double-ended, with a moderate rake to its curved stem and straight sternpost assembly. She measured 75 feet, 4 inches (22.9 m) in length between perpendiculars with a maximum breadth of 15 feet, 3 inches (4.6 m), giving her a sleek length-to-beam ratio of approximately 5.02:1.¹⁸ Allen had a distinctly shallow hull, with a rabbet-to-sheer height amidships of 4 feet, 6 inches (1.3 m) and a depth of hold of only 2 feet, 7-3/4 inches (80.4 cm). This combination of narrow breadth and minimal freeboard translated into a low profile above the water from virtually every angle. However, once armed and fully loaded, Allen's bow may have ridden higher on the water, as the weight of the galley's long 24-pounder stern gun kept its aftermost section immersed at a slightly greater depth.

Below the load waterline, Allen had a relatively short entrance and run, and a lengthy, full midsection that featured a series of identical frames referred to as a "dead flat."¹⁹ These amidships frames rose up from the keel at an angle of approximately 6 degrees, a noticeably sharper frame deadrise than originally recommended by Doughty. The run aft had a brief, yet visible fining away that presumably made the galley's rudder more efficient. Initial sea trials of Doughty's first class galley design on Chesapeake Bay had revealed a number of steering problems. The galleys' bluff bow and stern coupled with a shallow hull gave them insufficient "bite" in the water and allowed them to be pressed to windward. Secretary Jones complained that the vessels "having so little hold of the water abaft" could not resist "flying to."²⁰ Thus by increasing Allen's frame deadrise and employing a finer stern run, Brown dampened her tendency to roll and increased her lateral resistance while under sail.²¹ The other alternative, employing a centerboard or leeboards, would have blocked rowing stations.²² Finally, Allen's
Figure 72. *Allen*'s reconstructed lines. Illustration based on archaeological recordings taken in 1982 and 1995. Drawing by E.B.
Length Between Perpendiculars: 75 Feet, 4 Inches

Moulded Beam: 15 Feet

frames continued upward above the waterline through a softly-rounded turn-of-the-bilge and terminated with nearly vertical sides.

*Allen’s tonnage can only be provided as a rough estimate based on the archaeological data. Unfortunately, the standard formula for determining tonnage at the time of her construction applied exclusively to deepwater vessels. This formula was subsequently deemed inappropriate for use in the study of Allen. A similar analysis conducted on a possible British Royal Navy gunboat from this period used a slightly earlier method of calculation, whereby the length of the keel was multiplied by the maximum breadth, and the result was again multiplied by the depth of hold and divided by 94.*

*Allen* had an estimated overall keel length of 69 feet, 3-1/2 inches (21.1 m), a maximum breadth of 15 feet, 3 inches (4.6 m), and a hold depth of approximately 2 feet, 7-3/4 inches (80.4 cm). Thus: $69.29 \times 15.25 \times 2.65 ÷ 94 = 29.8$ tons.

Theodore Roosevelt in his *Naval War of 1812* indicated that the actual tonnage for *Allen* and the American first class galleys was substantially greater, perhaps 70 tons. Certainly, *Allen’s* selection for patrol duty, under the provisions of the Rush Bagot Agreement (1817), indicates that she would not have exceeded 100 tons burden.

*Construction and Rig*

Construction and rigging plans offer a descriptive means of relating the assembly and configuration of *Allen’s* structural components to her three-dimensional shape (Figure 73). Archaeologically speaking, however, a complete reconstruction can only be substantiated from the keel up to a point short of the gangway deck beams. Additional historical data had to be consulted in order to fill in missing areas beyond the turn-of-the-bilge, specifically the upper bulwarks, rowing system, gangway and gun deck arrangements, and sail configuration. One documentary source, in particular, offered a wealth of useful information: a copy of the U.S. Navy Department’s wartime contract let to William Parsons for the building of a 75-foot (22.8), first class row galley at Baltimore, Maryland in July 1813 (Appendix A). *Presumably, Allen* would have shared at least some of the structural characteristics described in this agreement, as Noah Brown, like Parsons, had a formal obligation to the same client to produce a galley of identical dimensions and specifications less than a year later.

Although *Allen’s* building sequence proved elusive at first, Brown does appear to have followed many of the prescribed rules for carvel, frame-first construction typical of early nineteenth-century shipbuilding in North America. A sturdy keel, along with a curved stem and a straight sternpost, formed the backbone of the galley. The endposts had reinforcing
Figure 73. *Allen*’s construction plan. Details of inboard profile assembly based on historical documentation and archaeology;* Heatly Dulles’* eyewitness description of the flotilla off Plattsburgh Bay and the general row galley specifications provided in its entirety, so as not to obscure other important construction features. Drawing by E.B. Emery.
tion and archaeological recordings gathered in 1982 and 1995. Reconstruction of the upperworks, in particular, relied on Joseph specifications provided in William Parsons’ contract of July 1813. Note that the plan and section views do not show the awning system
timbers—a robust apron bolted to the inboard surface of the stem, and a large, curved knee fastened in a similar way along the main sternpost. Approximately 13 identical square frames—erected within an 18-foot, 4-1/2-inch (5.6-m-long) span of Allen’s keel—defined the boundaries of her amidships dead flat. Additional frames, placed fore and aft of the flat, marked the transition into the bow and stern assemblies and helped define the shape of the hull along its overall length.

At this point, the rest of the frames were rough cut and assembled, secured to the keel, and shaped accordingly. An alternating pattern of iron spikes and drift bolts held the galley’s frames to the top surface of its keel until the addition of a two-piece keelson, at which time through-bolts were added to further strengthen the spiked frames and all of the major scarf-joint locations throughout the backbone assembly. External and internal sheathing would have initially only covered this standing framework up to the level of the clamps—the structure intended to support the galley’s rowing thwarts. The planks were fastened almost exclusively with iron nails and maintained a flush, edge-to-edge alignment on the frames. Their butt ends were staggered to avoid a line of adjacent seams. The fastening pattern for the internal planking revealed an unusually sparse number of nails amidships, increasing up to four nails per frame location in the bow and stern.30 Shortly after the rowing stations and gangways had been fit together and decked, the strakes for Allen’s upper bulwarks were attached up to the height of the frame ends and topped with a caprail. With the addition of these final pieces, the basic hull structure of the galley was complete.

In general, the quality of workmanship found in Allen reflected the time constraints that Noah Brown and his shipwrights faced while building for the U.S. Navy on Lake Champlain in 1814. Much of the shaping and assembling of hull components appeared rough, with little attention to detail. The irregular dimensions, configuration, and spacing of the square frames, in particular, attested to this practice.31 The individual elements (floors, first futtocks, and second futtocks) appear to have been based loosely on patterns, but then quickly aligned and fastened by eye. Brown never professed to be interested in precise measuring and fitting; in fact, he appears to have openly discouraged it among his laborers.32

Allen’s hull contained nothing exceptional in the way of iron, timber, or other raw materials. Brown employed as much white oak as possible, albeit much of his supply appears to have been improperly seasoned.33 As a rule, however, he never skimped on building materials where strength and durability really counted. All of Allen’s key longitudinal hull components
were fashioned from this rugged wood. Even when Brown occasionally used a weaker choice of hardwood species (e.g., ash, beech, elm, and red oak), he usually attempted to compensate for these potential risk spots by inflating their moulded and sided dimensions.\textsuperscript{34} The galley also appeared sufficiently fastened throughout. Hundreds of iron bolts, spikes, and nails held the main framework and sheathing together, while copper nails and tacks were reserved for the interior joinery and other finish work.\textsuperscript{35}

The dimensions of Allen's principal scantlings appeared considerably larger than those specified for the row galley flotilla being built on Chesapeake Bay in 1813 (Table 2). The keelson, frames, and outer planking showed the greatest discrepancies. Allen's keelson, for example, measured 10-1/2 inches (26.6 cm) sided, making it nearly double the recommended width for this component in the Parsons contract.\textsuperscript{36} Such an increase would have certainly improved the overall lateral strength of the hull and reduced the tendency of the sides to buckle inwards as the backbone assembly began to succumb to hogging forces and droop at opposite ends. Brown further shored up Allen's hull laterally by increasing the size of its floor timbers and associated futtocks. In fact, Frame 20, in the galley's stern, roughly equaled the keelson dimensions of her counterparts on Chesapeake Bay.\textsuperscript{57} Finally, Allen boasted wider external and ceiling planks from the garboards to the turn of the bilge.

Although Noah Brown obviously sought to build the sturdiest galleys possible, he appeared willing to deviate from the Navy Department's hull assembly specifications provided that the alterations did not sacrifice overall structural integrity. Compared to the 'Dimensions and Description of a Row Galley' guide included with the Parsons contract, Allen's hull revealed a number of interesting shortcuts. To start, Brown kept the ironwork and connection points joining the keel, endposts, frames, and keelson extremely simple, avoiding complex or labor-intensive locking and fastening mechanisms. He even dropped the curved sternpost design shown in the plans and employed a straight post flat-scarfed—rather than mortised—to the aftermost projection of the keel.\textsuperscript{38}

Allen's square frame construction showed the greatest efforts to save time and materials, however. The Parsons contract stipulated that the first futtocks on the square frames should "run from the middle of the keel." In addition, the timbers were to be "framed together & fastened with two nails in each scarf."\textsuperscript{39} Keeping all of the components in the square frames neatly scarfed together would have given them a parallel, continuous appearance running up to the
Table 2 Comparison of William Parsons Contract (1813) "Dimensions and Description of a Row Galley" with Preserved Timber Dimensions Recorded in Allen (1995)

<table>
<thead>
<tr>
<th>Hull Component</th>
<th>Parsons Dimensions (Sided x Moulded)</th>
<th>Allen Preserved Dimensions (Sided x Moulded)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keel</td>
<td>12 x 6 in. max.</td>
<td>11.5 x 5.5 in. max.</td>
</tr>
<tr>
<td>Base Main Stem</td>
<td>--b</td>
<td>4 x 6 in. max.</td>
</tr>
<tr>
<td>Base Main Sternpost</td>
<td>--b</td>
<td>6 x 14 in. max.</td>
</tr>
<tr>
<td>Floor Timbers</td>
<td>4 x 4.5 in. max.</td>
<td>4 x 5 in. avg.; 7.75 x 6 in. max.</td>
</tr>
<tr>
<td>Futtocks</td>
<td>3.5 x 4.5 in. max.</td>
<td>4.5 x 5.25 in. avg.; 5.5 x 6 in. max.</td>
</tr>
<tr>
<td>Keelson</td>
<td>6 x 6 in. max.</td>
<td>10.5 x 5.25 in. max.</td>
</tr>
<tr>
<td>Garboard Strakes</td>
<td>6 x 1.5 in. max.</td>
<td>10.75 x 1.5 in. max.</td>
</tr>
<tr>
<td>External Planking</td>
<td>6 x 1.5 in. avg.</td>
<td>11.5 x 1 in. avg.</td>
</tr>
<tr>
<td>Limber Boards</td>
<td>7 x 1 in. max.</td>
<td>7 x 0.8 in. avg.; 7.5 x 1 in. max.</td>
</tr>
<tr>
<td>Ceiling Planking</td>
<td>8 x 1 in. max.</td>
<td>12 x 1 in. avg.; 15.25 x 1 in. max.</td>
</tr>
<tr>
<td>Wales</td>
<td>6 x 2 in. max.</td>
<td>--c</td>
</tr>
<tr>
<td>Footwales</td>
<td>6 x 1.5 in. max.</td>
<td>--c</td>
</tr>
</tbody>
</table>

Sources: Data compiled from "Articles of Agreement Entered into Upon this Twenty Fourth Day of July Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beauty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed 'Dimensions & Description of a Row Galley'," USNA, RG-45, Entry 235, Contracts of the U.S. Navy, Vol. 2, 252-257; Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Texas. All measurements provided using the English system of feet and inches.

* The Parsons contract only stipulates that that the keel should "taper as per draught at fore end to thickness of the stem which is to be four inches."
* The Parsons contract does not stipulate what the sided or moulded dimensions for the sternpost should be, as it was originally intended that this timber assembly would be an exact duplicate of the stern assembly.
* The excavation of Allen yielded no physical evidence pertaining to the sided or moulded dimensions of this particular timber type.

height of breadth. Brown opted not to extend the first futtocks from the centerline; instead, he aligned their heels an average of 3-3/4 inches (9.5 cm) outboard of the keel and secured them laterally to the floor timbers and the second futtocks. All of these junctions remained simple overlaps, rather than scarfs, and were fastened almost exclusively with iron bolts.40

The absence of limber holes in the bases of Allen's square frames constituted another important shortcut—one that threatened the long-term durability of the galley, but not its immediate strength. Typically, limber holes were cut into the bottom surfaces of the floor timbers in order to allow bilge water free passage between the individual square frame
assemblies. Brown’s laborers would have spent hours cutting out these tiny openings with a handsaw, hammer, and chisel. He probably considered it an unnecessary waste of time, as the galley was an open warship with no bilge pump system. Allen had removable limber boards at key locations fore and aft along the bilges, allowing the galleymen to bail water from the bilges by hand. 41

Finally, the Parsons contract required that the keelson be “jogged nicely down over the floors & heels of the futtocks one inch” and tied into the endposts with a type of modified hock-scarf. 42 Joggles are notches cut into the surface or edge of a hull timber to prevent it from shifting or sliding. Thus the process of “jogging” a keelson involved cutting notches into the underside of the timber for seating it snugly over each of the floor timbers of the hull. Allen’s keelson, however, laid flat over the tops of her floor timbers, showing only a slight joggle over the foremost and aftermost floor positions. Brown also appears to have reduced the footwales listed in the contract. He simply enlarged the internal ceiling planks running parallel to the keelson atop the space that existed between the floor heads and the second futtocks. 43 Although Brown’s alterations were not entirely without drawbacks, the basic framework of his galleys nevertheless appeared rugged and serviceable.

Unfortunately, the last steps in Allen’s building sequence can only be inferred from historical sources. Presumably, Brown and his shipwrights focused on stepping masts and configuring the sails and rigging; completing deck arrangements and fittings; mounting guns; defining the interior layout of space in the hold; and an assortment of other “fitting out” tasks. By this point, however, limitations imposed by the galley’s architecture would have begun to supersede all other official guidance or recommendations from the Navy Department. Thus Allen may have experienced various unknown modifications at the last minute intended to accommodate perceived strengths or weaknesses in its hull. The placement of the masts, rowing stations, guns, and even protective awnings had to be adapted to suit the requirements of the galley and its crew.

Allen’s combined sail and oar propulsion system resulted in a versatile warship, well suited for maneuvers in the contrary winds and currents typically found on Lake Champlain and the Richelieu River (Figure 74). Oarsmen sat close to the inboard margins of the rowing thwarts, or benches, situated at intervals along the galley’s centerline. 44 The supplier of the sails, lines, and other assorted rigging elements for Allen has yet to be identified, as no physical evidence of such items survived in the archaeological record. However, the galley’s keelson had rectangular
mortises cut into its top surface for stepping the heels of two masts—a foremost just abaft the
gun platform in the bow and a mainmast near the after end of the amidships dead flat.
Documentary and pictorial sources indicate that Allen's masts had a slight forward rake and that
they both carried a lateen rig with the foremost corner of the large triangular sails cut off to make
them quadrilateral.45

Historical evidence suggests that Allen shipped at least forty oars. The reconstructed
shape and dimensions of the galley certainly indicate enough room for twenty benches of no
greater than 10 inches (25.4 cm) in width. The benches nearest the two masts may have been
slightly larger in moulded dimension to help provide extra bracing for the sail rig. Allen's
oarsmen were probably spaced at intervals of less than 3 feet (91.4 cm) bench center-to-bench
center.46 The galley's range of hull speeds while under oars can only be estimated. Many
variables had the potential to affect performance, including the efficiency of its form in the
water, the direction and force of the winds and waves, and most importantly, the health and
energy level of its oarsmen. Unlike the purely sailing warships in the squadron, Allen's hull
speed was inextricably linked to muscle power. With a full compliment of healthy oarsmen in
ideal weather, the 40-oared row galleys of this period were estimated to reach 4 to 6 knots.47
Under sail, and again with ideal conditions, this speed might have exceeded 7 knots. However, it
is important to note that this would have required a virtually flawless meeting of weather, hull
form, and construction under canvas.48 Even when fettered by a larger warship in tow, the
galleys could still maintain a prolonged speed of 1.5 knots per hour.49

Allen's hull shape and construction affected the configuration of its gun mounts as well.
Commodore Macdonough used circle mounts in the first of his oared warships on Lake
Champlain—Gunboats No. 169 (Alwyn) and No. 170 (Ballard). However, Allen's low
freeboard, characteristic of Doughty's wartime barge and row galley designs, would have made
this type of mount impractical and potentially hazardous. The recoil of Allen's bow gun alone, if
pointed in a direction perpendicular to the keel, had sufficient force to capsize the galley. Thus
Brown employed a sliding mount on a reduced 1/8-of-a-circle traverse for both guns, as
recommended by Doughty's design and construction plans.50 Allen undoubtedly sat deeper in
the water after taking its guns aboard, but in rough weather, the galley's combination of a
shallow hull design with a double sailing rig and approximately 4 tons (3,629 kg) of iron cannon
above the waterline may have left her acting top-heavy and unpredictable.51
Figure 74. Possible rigging plan for *Allen*. Note that this sail plan would not have been compatible with the galley’s awning while the vessel was under oar power. Drawing by E.B. Emery.
with the galley's awning system. Presumably, the awning would have been reserved for protecting the crewmen at the rowing stations.
A lack of crew accommodations in *Allen* meant that its oarsmen and sailors enjoyed none of the basic creature comforts offered by the already severe living and working conditions of the navy. Protecting the men from the sun, winds, and rain improved health and morale—an important consideration aboard a largely manpowered warship. Moreover, reducing the accumulation of bilge water, especially during heavy downpours, added to the galley’s overall hull trim and stability. Historical sources indicate that *Allen* had a painted canvas awning that ran fore and aft covering her rowing stations. Brown probably fashioned stanchion posts and a light overhead framework that could be quickly disassembled when the galley was cleared for action. In addition, he fashioned *Allen* with coaming pieces along the inboard margins of her gangways to keep out excess water, as the galley appeared highly vulnerable to being struck broadside by waves.

A synthesis of archaeological and historical data has produced a reconstruction of *Allen* that can be summed up in one word: compact. Fully outfitted with oars, sails and rigging, guns, men, and equipage, the galley had not a cubic foot left empty. Boasting a slightly top-heavy hull with low freeboard, no watertight compartmentation, and a hold dominated by multiple powder magazines and scores of iron cannonballs, *Allen* probably seemed a risky proposition to even the heartiest of sailors. Should the end of an external plank spring loose below the waterline, or should a freak wave break over the bulwarks into its relatively open hold, the galley promised to remain afloat for only a few short minutes.

Brown’s modifications of *Allen* suggest that he was not entirely comfortable with the original design and assembly specifications provided by the Navy Department in February 1814. He appears to have identified hogging early on as the main structural concern faced by this particular type of warship. Under ideal conditions, Brown might have spent additional time jiggling key timbers together and fastening them with a systematic combination of iron bolts and wooden treenails. However, *Allen* was built amidst the austere time and budget constraints often imposed by war. Thus Brown kept his assembly techniques simple and easy to reproduce.

As a general rule, Brown compensated for any alterations or shortcuts by increasing the size of the galley’s principal scantlings. He also emphasized lateral hull strength as a means of further combating hogging and other forms of longitudinal distortion. Although *Allen* exhibited a rough, unfinished air throughout her basic architecture, she nevertheless appeared to be one of the sturdiest hulls permitted by the circumstances on Lake Champlain in 1814.
Concluding Remarks

The archaeological study of *Allen* contributes a new perspective to the existing documentary record of U.S. Navy operations on Lake Champlain during the War of 1812. Traditionally, the Anglo-American fight for this strategic waterway has been discussed in terms of Commodore Thomas Macdonough's defensive victory at Plattsburgh Bay. Yet *Allen* and the American row galley contingent attached to the squadron that day had actually been purpose-built for a radically different mission—an invasion of British Canada by way of the Richelieu River. In the flush of patriotism following the war, however, public sentiment embraced the heroic recitation of events, virtually ignoring the role of oared warships on the Great Lakes and Lake Champlain.

Theodore Roosevelt in *The Naval War of 1812* may have best summed up this postwar feeling when he described Plattsburgh Bay as "the greatest naval battle of the war" but claimed that "the various gunboats attacks," carried out largely in the final year of hostilities, "accomplished little or nothing of importance." The service career of *Allen* attests to the fact that row galleys, barges, and other types of gunboats in fact contributed much to the overall campaign success on Lake Champlain in 1814. Moreover, *Allen* constitutes the only physical record of the design and construction features that defined American row galleys from the War of 1812. This information will certainly provide a useful comparative example for future research on similar warships.

The row galley, as a class of gunboat, had proven its usefulness on Lake Champlain and the Richelieu River well before the War of 1812. British Major General Jeffery Amherst and American Brigadier General Benedict Arnold introduced some of the earliest variants of these warships during the naval campaigns of the Great War for Empire (1756-1763) and the American Revolution (1775-1783). The basic requirements of inland naval warfare had not changed dramatically on Lake Champlain by the time war broke out again in 1812. Once more, the Americans and British relied on row galleys and other types of gunboats to transport and support their troops as they faced poor roads and wilderness.

The American squadron cobbled together by Macdonough during the first year of the war included a pair of small gunboats and three sloops. Although this force appeared sufficient to assert naval supremacy on the broad lake, it was unsuited to assisting the U.S. Army in its push toward Canada along the Richelieu River. In 1813, two events brought this inadequacy to light: the capture of the American sloops *Growler* and *Eagle* in June, and the humiliating failure
of the Wilkinson-Hampton offensive between September and November. When Macdonough subsequently proposed expanding his squadron to include a flotilla of heavily-armed row galleys, the idea immediately met with the blessing of the U.S. Navy Department.

Navy Secretary William Jones contracted the project to Noah Brown, a shipwright of growing reputation who operated a yard with his brother in New York City. Brown mass-produced a total of six row galleys at Vergennes, Vermont, during the winter of 1813-1814. He worked off a set of plans for a 75-foot (22.8) first class design approved by William Doughty at the Washington Navy Yard. Launched after approximately five weeks on the stocks, the galleys took their places in the squadron as fast as their guns could be brought aboard. The construction and outfitting of Allen, in particular, appeared fast and rough, yet substantial enough to brave the rigors of battle—all characteristics that earned Brown-built warships such acclaim during the war. In addition, the galley had been fashioned to bear substantial firepower and employ a versatile combination of oars and sails allowing it to move with or against prevailing winds and currents with equal facility.

Brown based Allen on a set of plans and specifications originally used to build Joshua Barney’s row galley flotilla on Chesapeake Bay. However, the detailed workmanship emphasized in the contracts for these warships did not appear to be replicated in Allen’s hull. This inconsistency underscores the fact that the galley joined the public service under slightly different circumstances than did its southern counterparts. Allen was contracted, built, sent into battle, and temporarily sunk for preservation all within roughly one year. By contrast, advocates of the first wartime barge and row galley flotilla in Maryland and the District of Columbia spent nearly two years developing the idea, garnering support (local, state, and federal), raising money, and building and testing a prototype before finally assembling the galleys that served with Commodore Barney.55

A shift in American naval strategy on Lake Champlain ultimately deprived Allen and its five sister galleys of their intended offensive into Canada. Macdonough began to rely on them as support vessels for his larger warships, providing a tow when the winds died, transporting communications, gathering intelligence, and chasing smugglers. The hard work of rowing, the constant outdoor living, crowding, and general lack of amenities made the galleys an unpopular and unhealthy assignment. It was in the aftermath of the Battle of Plattsburgh Bay that Allen and the galley flotilla proved most useful, for the men assigned to these warships assumed the bulk
of repair and recovery efforts as they had suffered the fewest casualties and had the vessels best suited to the tasks at hand.

Shortly after the Treaty of Ghent brought an end to the War of 1812, the U.S. Navy began its demobilization on Lake Champlain. One of the first tasks involved putting all of its oared warships up for public sale. As *Allen* and the row galley flotilla showed scant promise as commercial transports, they failed to achieve minimum bids at auction. Sunk for preservation instead, the galleys disappeared from sight, both literally and figuratively, for with one exception the fate of these tiny warships has remained a mystery since the official closing of the Whitehall Naval Station in 1825. Fortunately, the Poultney River still holds one example of these largely forgotten relics. Today *Allen* survives as a reminder of a gifted craftsman, a plan that failed, and a struggle that was won.

**Endnotes: Chapter XI**


2. Copies of William Doughty’s lines plan for his 75-foot, “first class” row galley design can be found in a number of different source locations. See “Row Galley, Copied from Original, City Washington, October 11, 1813, [signed] William Doughty, Chief Naval Constructor,” Cartographic and Architectural Records, Records of the Bureau of Ships, RG-19, NARA-II; “Row Galley, Copied from Original, City Washington, October 11, 1813, [signed] William Doughty, Chief Naval Constructor,” Texas A&M University, Anthropology Department, Nautical Archaeology Program, New World Laboratory, College Station, Tex.; “Row Galley, Copied from Original, City Washington, October 11, 1813, [signed] William Doughty, Chief Naval Constructor,” in Chapelle, *American Sailing Navy*, 275. Finally, a copy has been included in Chapter IV of this dissertation as Figure 13.

3. Dulles, *Diary*, 1-6. See also Chapter VI, Figure 28, a watercolor painting showing the American galley flotilla at anchor on Lake Champlain following the Battle of Plattsburgh Bay. This painting is housed at the Shelburne Museum in Shelburne, Vt. See Chapter VII, Endnote 68 of this dissertation for a more in-depth description and citation of this particular source.

4. As mentioned earlier in this dissertation, the most useful source of information on U.S. Navy row galley construction, that complements the archaeological data from *Allen*, has been found in Commodore Joshua Barney’s Chesapeake Bay row galley contracts dating to the War of 1812. Each contract included a detailed “Dimensions and Description of a Row Galley” as a specifications guide for building a 75-foot, “first class” Doughty-designed galley. One of these contracts has been included as Appendix A of this dissertation for reference. See “Articles of Agreement Entered into Upon this Twenty-Fourth Day of July, Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed ‘Dimensions & Description of a Row Galley’,” Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA included as Appendix A. See also: “Articles of Agreement Entered into Upon this Twenty Third Day of July Eighteen Hundred and Thirteen Between Thomas Hall and Benjamin White, Both of Baltimore, Shipwrights, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy
Department," Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 232-238, NARA; and "Articles of Agreement Entered into Upon this Twenty-Fourth Day of July, Eighteen Hundred and Thirteen Between William Flanagan of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department," Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 264-270, NARA. It is important to note that U.S. Navy Secretary William Jones issued explicit orders during the building of Barney’s row galley flotilla that Black Snake, the prototype Doughty-designed row galley built and outfitted at the Washington D.C. Navy Yard be used as a model “from which all the rest can be fitted in exact conformity.” He also remarked on the pains taken to perfect Black Snake “in order to serve as an exact guide for those [galleys] built elsewhere” in the United States. One such location was Lake Champlain, slated for a row galley flotilla as early as December 1813. See William Jones to Joshua Barney, 27 August 1813, Dudley, A Documentary History, 2. 377-378. See also Shomette, “Thirteen Barges,” 158-159.

5. Jones expected Macdonough to have first class row galleys built “similar to those now constructing here [Washington, D.C.], and at Baltimore for the Flotilla of the Chesapeake.” See William Jones to Thomas Macdonough, 7 December 1813, Letters Sent to Officers, RG-45, M149, Reel 11, Pt. 2, No. 163, NARA. Jones forwarded “a rolled packet” to Macdonough and Brown “containing the draughts and sectional plans showing the inboard works of the galleys” at the end of January 1814. See William Jones to Thomas Macdonough, 28 January 1814, Bauer, Naval Affairs, 4: 330-331. A delayed response from Macdonough prompted Jones to inquire into the status of this “rolled packet” less than two weeks later, as it appeared to have been held up by John Bullus, Esq., Navy Agent at New York City. “The rolled packet, directed to Captain Macdonough,” wrote the Secretary to Mr. Bullus, “was intended to be forwarded to him without delay. It contains draughts and inboard plans for barges, or rather galleys, which he has, sometime since, been directed to prepare for building on Lake Champlain.” See William Jones to Navy Agent John Bullus, Esq., 10 February 1814, Bauer, Naval Affairs, 4: 333. Although Noah Brown had explicit instructions to fashion his galleys on Lake Champlain using the same general hull form and construction specifications as those already operating on Chesapeake Bay, evidence of his “no extras” approach to shipbuilding still appeared in the remains of Allen.

6. “Row Galley, 40 Feet, Copied from Original, City Washington, Examined by William Doughty Naval Constructor, February 7, 1814,” Subject Files, Class A, Subclass AD, Naval Ships, Design and General Characteristics, RG-45, NARA. Tracings of this plan can also be found in the following sources: Chapelle, American Sailing Navy, 277; and Shomette, Tidewater Time Capsule, 57.

7. Crisman, The Eagle, 163-164; Steffy, Wooden Ship Building, 244-248; Crisman, “An Archaeological Approach,” 312-315. See also Howard J. Chapelle, The National Watercraft Collection (Washington, D.C.: Smithsonian Institution, U.S. National Museum Bulletin 219, 1960). 6. Chapelle expressed bewilderment at the inconsistencies he discovered between the registered dimensions of wooden sailing vessels provided on contemporary lines plans and other documents with actual measurements obtained from models and working vessels. Generally speaking, historical documentation should be used as a guide rather than an expression of exact appearance when attempting to make an accurate reconstruction; the reason for this being the large degree of variation that can occur from design to reality.

8. Ibid.

9. The lines reproduced by Brown in the mold loft at the time of Allen’s construction would have defined the galley’s “moulded” hull shape. In other words, the shape derived by measuring to the inner surfaces of the planking. Consequently, the best place to record curvatures inside Allen’s hull was along the frame and external planking interface. Divers worked from the galley’s garboard-rabbit interface (along the keel) as far outboard (toward the sheer line) as the preserved remains allowed. Each curvature recording was also tied into the rest of the hull by documenting its respective position along the length of the keel. As noted in Chapter VIII of this dissertation, hull curvatures were obtained from Allen at Frames O, M, K, I, G, E, C, A, 2, 10, 14, 15, 16, 18, and 20. In addition, frame deadrise estimates were made at Frames
10. Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex. Allen's Frames 14 and 16 extended the farthest outboard among the transitional hull curvatures recorded toward the bow and stern. However, even these sections ended just as they entered the turn of the bilge.

11. The choice of Frame S instead of the better-preserved Frame M was due to the fact that Allen's hull shape did not change much between Frames M and O. Therefore, with Frame O already in place, using the curvature of Frame S (based on its estimated angle of deadrise) promised to show the rounding of the galley's bow more effectively. Unfortunately, Frame S appeared badly eroded, making it difficult to record. Frame 22 proved equally challenging to record, as it had such an abrupt change and sharp angle of deadrise that it was extremely difficult to access the top surface of the keel.

12. "Row Galley, Copied from Original, City Washington, October 11, 1813, [signed] William Doughty, Chief Naval Constructor," in Chapter IV of this dissertation as Figure 13.

13. Allen's sheer line was also represented on the body plan and half-breath plan. On the half-breath plan, this line defined the point of maximum breadth for each of the frame sections, thus revealing a basic hull outline from a bird's-eye perspective. The individual frame sections, transferred upward from the sheer plan, appeared as straight lines running perpendicular to the keel.

14. Allen's stem appeared curved with a moderate forward rake, while the stern assembly, although slightly less represented in the archaeological record, employed a straight post assembly with a moderate aft rake. This description of Allen's ends is an approximation based on the archaeological data collected in 1982 and 1995. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Texas.

15. Dulles, Diary, 2-6. As mentioned earlier in this study, Joseph Heatly Dulles referred to Allen and its five sister galleys as "sharp each end" upon seeing them at anchor off Chazy, New York in August 1814. This would certainly support the idea that at least the first class (75-ft [22.8-m]) row galleys were all double-enders, with the bow and stern sharing approximately the same horizontal shape. However, Dulles's use of the word "sharp" should not be taken in the traditional maritime sense as a description of Allen's entry—i.e., the foremost underwater part of the galley's hull. Dulles had limited experience with ships. His reason for visiting Chazy had to do with seeing the U.S. Army's encampment; his invitation for a tour of the American squadron came as an unplanned excursion made possible by his "Southern" heritage. Born in Charleston, South Carolina, to a wealthy planter, Dulles had spent the greater part of his life helping his father manage their large plantation lands. Dulles had no documented experience at sea, beyond the fact that he spent part of each year living at his family's second residence in Philadelphia. Shortly after completing a degree at Yale (Class of 1814), he decided to tour the encampments of the Champlain Valley—where it was daily rumored that the British might stage a massive counter-invasion of the United States. After reaching General Izard's forces at Chazy, Dulles became acquainted with "two Southern naval officers who invited us on board the fleet, offering to have a boat readied for us." One of these officers was Lieutenant John T. Drury of Saratoga. Dulles revealed only a cursory knowledge of naval ships and the service in his diary. In one instance, he even remarked to Commodore Macdonough on the way Saratoga's crew snapped to attention in his presence. To which the Commodore flatly replied: "they dare not do otherwise." Given his general inexperience around ships and sailors, Dulles's use of the word "sharp" probably referred to the simple fact that Allen and its sister galleys had no stern transom. He was undoubtedly trying to describe the tiny warships as having two ends that appeared virtually identical in horizontal shape.

16. Steffy, Wooden Ship Building, 244-248. Steffy advises that in an ideal archaeological ship reconstruction scenario (i.e., a virtually intact and complete hull), the researcher/analyst can space the frame stations, waterlines, and buttock lines equidistantly apart in the body, sheer, and half-breath plans of his/her lines drawing, as it helps provide balance to the overall illustration. However, he stresses that
the primary goal of every ship reconstruction must be to "explicitly describe your reconstruction of the excavated remains of your vessel." In other words, reconstructed lines drawings should always be an expression of the results of one's research and analysis. Lines should be spaced as closely as necessary to illustrate a hull's area of greatest preservation, and thus "the area of greatest design substantiation and textual discussion." See also: Crisman, "An Archaeological Approach," 312-315; and Anderson, *Guidelines for Recording Historic Ships*, 4.1-4.6, 5.1.

17. Had the diagonals shown any irregularities, this would have been an indication of some type of error in the hull lines. See Crisman, *The Eagle*, 169; and Steffy, *Wooden Ship Building*, 15-20, 244-248.

18. In contrast, a survey of U.S. Navy oared warships from the early nineteenth century indicates that most gunboats built in North America for the Jeffersonian Embargo of 1808 and the War of 1812 averaged 3.33:1 in length-to-beam ratio and that they usually had a greater depth of hold measurement—between 5 and 6-1/2 feet (1.5 and 1.9 m). These vessels were obviously better suited for coastal patrols and even trans-oceanic passages if necessary.

19. The term "dead flat" refers to the part of a hull defining its amidships. This can be a single amidships frame, or a series of frames bearing the same dimensions and shape. The long dead flat on *Allen* consisted of a series of virtually identical square frames and marked the widest section of the galley's hull separating the forward part from the after part.


21. *Allen's* hull form shows a compromise intended to improve the galley's sailing abilities without completely sacrificing the volume needed in the bow and stern to support its guns. Brown increased *Allen's* frame deadrise but kept her ends relatively full. This increased angle improved the galley's lateral resistance while under sail without dramatically altering the uppermost horizontal shape of the bow and stern. Thus *Allen's* overall hull shape indicates that Macdonough and Brown were cognizant of the fact that oars would constitute her primary means of propulsion, while sailing would be secondary, though necessary at times.

22. Archaeological evidence collected from shipwrecks in Lake Champlain suggests that centerboards were not in general use during the War of 1812. *Troy*, to date, is the earliest archaeological example (circa 1825) of a hull with a centerboard on the lake. Kevin J. Crisman, personal communication, 22 February 2003.


24. Roosevelt, *Naval War*, 2: 110. Roosevelt estimated 70 tons burden for *Allen* and Macdonough's other first class galleys, and 40 tons burden for *Alvyn, Ballard, Ludlow*, and *Wilmer*. However, it is difficult to trace what, if any, primary source documentation Roosevelt used to reach this assessment, as none is cited. There is a brief discussion of tonnage estimation provided in the appendices of his work, but no specific reference concerning the application of such formulae to Macdonough's row galley and gunboat flotilla on Lake Champlain.

25. Hull displacement calculations based on *Allen's* reconstructed lines indicate that the galley was under 100 tons.

27. "Articles of Agreement Entered into Upon this Twenty Fourth Day of July Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed ‘Dimensions & Description of a Row Galley’." Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA.

28. Simply from a business perspective, Noah Brown had a responsibility to the U.S. Navy Department and a reputation to maintain. Secretary William Jones had become one of his more regular clients. Jones admitted candidly that he had complete confidence that Noah and his brother Adam were capable of finishing the galley-building project on Lake Champlain "in less time than any other builders." See William Jones to Thomas Macdonough, 28 January 1814, Bauer, Naval Affairs, 4: 330-331. The Secretary also sent word directly to Noah, prior to his departure for Vergennes, that his "service, on this occasion, is all important, and that I calculate upon [his] patriotism, as well as upon [his] superior skill, judgment, and ability." See William Jones to John Bullus, Esq., 10 February 1814, Bauer, Naval Affairs, 4: 333.


30. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex.

31. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex. Some specific examples include: the galley's floor timber spacing, which ranged from 2 to 2-1/2 feet (60.9 to 76.2 cm); a wide variation in floor timber and futtock dimensions; and the fact that the first futtock associated with Frame K was laterally fastened to the wrong side of its corresponding floor timber.

32. Oliver H. Perry to Isaac Chauncey, 18 April 1813, Oliver Hazard Perry Papers, WLC; Skaggs and Allof, A Signal Victory, 72; and Dobbins, History of the Battle of Lake Erie, 31-32.

33. Macdonough admitted upon the launching of Saratoga in April 1814 that "all her timber [was] taken from the stump." See Thomas Macdonough to William Jones, 11 April 1814," Commanders' Letters, RG-45, M147, Reel 5, Pt. 2, No. 103, NARA. The row galleys, being constructed at the same time as Saratoga, presumably would have had much of their hulls fashioned out of unseasoned wood as well.

34. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex. The gross dimensions for the floor timber associated with Frame 20 in Allen's stern were 7-3/4 inches (19.7 cm) sized by 6 inches (15.2 cm) moulded, and the timber was fashioned from white ash rather than white oak—the most common species used throughout the rest of the galley's frames.

35. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex.

36. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex; and "Articles of Agreement Entered into Upon this Twenty Fourth Day of July Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed ‘Dimensions & Description of a Row Galley’," Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA. A comparison of each principal scantling has also been provided in Table 2 of this
dissertation.

37. Ibid. The largest recorded dimensions for floor timbers in Allen came from the galley’s stern area—specifically in association with Frames 18, 19, and 20. This is not necessarily surprising when one considers that Allen’s largest (i.e., heaviest) gun was mounted in its stern.

38. As noted in Chapters IV and X of this dissertation, this allowed the easiest means of hanging Allen’s rudder. The straight rather than curved post assembly also offered more overall strength.

39. “Articles of Agreement Entered into Upon this Twenty Fourth Day of July Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed ‘Dimensions & Description of a Row Galley’,” Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA.

40. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex; and “Articles of Agreement Entered into Upon this Twenty Fourth Day of July Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed ‘Dimensions & Description of a Row Galley’,” Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA. Brown used iron fasteners almost exclusively, rather than the more labor-intensive process of drilling holes and pounding in wooden dowels, or “treenails,” in order to secure Allen’s floor timbers and futtocks together.

41. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex.

42. “Articles of Agreement Entered into Upon this Twenty Fourth Day of July Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed ‘Dimensions & Description of a Row Galley’,” Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA. For an illustration of the modified “hook scarf” at the ends of the galley, see “Row Galley, 40 Feet, Copied from Original, City Washington, Examined by William Doughty Naval Constructor, February 7, 1814,” Subject Files, Class A, Subclass AD, Naval Ships, Design and General Characteristics, RG-45, NARA; Chapelle, American Sailing Navy, 277; and Shomette, Tidewater Time Capsule, 57. This design feature can also be seen in Figure 71 of this chapter.

43. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical Archaeology Program, College Station, Tex.

44. Based upon the ratio of inboard vs. outboard oar length for a 21-foot (6.4 m) oar on a galley with roughly 7-1/2 feet (2.2 m) between the outboard end of each thwart and the centerline, the oarsmen aboard Allen must have been seated relatively close to the galley’s centerline.

45. See Chapter VI, Figure 28 for a contemporary painting showing furled latten rigs on the first class American row galleys on Lake Champlain. This painting is housed at the Shelburne Museum in Shelburne, Vermont and it has been extensively cited in Chapter VII, Endnote 68 of this dissertation. For reference to the use of a quadrilateral sail see Dulles, Diary, 5.

46. This estimate has been made by comparing the recommended layout and dimensions of a first class row galley in the Parsons contract of 1813 and the archaeological data recovered from Allen in 1982 and 1995. See Whitehall Project 1995, Allen Hull Excavation Database, Texas A&M University Nautical
Archaeology Program, College Station, Tex; and “Articles of Agreement Entered into Upon this Twenty Fourth Day of July Eighteen Hundred & Thirteen Between William Parsons of Baltimore, Shipwright, and James Beatty Navy Agent of the United States of America at Baltimore One Row Galley Conformable to a Draught to be Furnished by the Proper Offices of the Navy Department and Of the Materials, Dimensions, Description, Manner, and Style of Workmanship Mentioned and Set Forth in the Annexed Writing Headed ‘Dimensions & Description of a Row Galley’,” Contracts of the U.S. Navy, RG-45, Entry 235, Vol. 2, 252-257, NARA.

47. Macdonough reported this speed estimate while briefing Secretary Jones on the performance of the British row galleys stationed at Isle aux Noix inside the Richelieu River in 1814. See Thomas Macdonough to William Jones, 30 April 1814, Commanders’ Letters, RG-45, M147, Reel 5, Pt. 2, No. 115, NARA.

48. The formula for calculating maximum hull speed is generally written as the following: Max Hull Speed = SqRt (LWL) x 1.34. LWL stands for “Length of Waterline,” which is not a fixed number. The actual wetted line—i.e., the surface that is truly skimming the water—can change depending on the point of sail, wave conditions, the weight of the hull, and the distribution of this weight. Based on the load waterline of Allen, the maximum hull speed for a galley of her length—under perfect sailing conditions—would be approximately 11 knots. It is important to stress, however, that Allen was not designed or rigged to ever be capable of such speeds in reality. However, taking the average based on Macdonough’s lowest speed estimate (4 knots) for a 40-oared row galley and the Maximum Hull Speed calculated for Allen’s estimated wetted surface once outfitted and underway (11 knots), gives an approximation of 7.5 knots.

49. The entry of 1 September 1814 in Daniel Records’ “Logbook” for the brig Eagle reported that the American galleys left the “S.W. end of the Isle of Motte… at 15 minutes after 1 P.M.” and proceeded up the lake, towing Eagle. They arrived at the mouth of the Saranac River inside Plattsburgh Bay around 9 P.M. that night. The entire passage covered 12 nautical miles in approximately 7.75 hours—giving an average speed per hour of 1.5 knots. It is possible that the galleys even reached higher speeds that day, as at least one hour was spent attending to “James Willis Seaman” who “fell from the main top sail yard on deck and expired 20 minutes before 4 P.M.” For the complete logbook entry see Crisman, The Eagle, 223.


51. The events surrounding Allen’s participation in the Dead Creek Road bombardment (6 September 1814) suggest that the galley did not perform well in rough weather conditions. This may be attributed to a slightly top-heavy rig and armament. See Chapter V of this dissertation for a full discussion of this incident. Brown certainly would have understood the potential dangers that awaited top-heavy warships. The disastrous loss of the U.S. Navy’s Hamilton and Scourge on Lake Ontario in 1813 provided a gruesome example of what could happen to top-heavy warships in poor weather conditions.

52. Dulles, Diary, 6. See also Chapter IV, Footnote 40 in this dissertation for a full description of these removable tent-like coverings.


54. For a contemporary description of a row galley used on Lake Champlain during the Great War for Empire see Samuel Merriman, “Journal of Samuel Merriman,” in A History of Deerfield, comp. George Sheldon (Somersworth, N.H.: New Hampshire Publishing Company, 1972), 666. A newspaper account also noted “4 Row Gallies, which mount 18 pounders, each of them one; the gun is placed fore and aft, and fires out at the head, they row with 14 oars on each side, carry 30 men each.” See Boston Gazette and Country Journal, 8 October 1759 cited in Bellico, Sails and Steam, 334-335. For a contemporary description and plans for a row galley design employed on Lake Champlain during the American


56. Additional clues detailing the final disposition of *Allen’s* first class sister galleys (*Borer, Burrows, Centipede, Nettle, and Viper*) on Lake Champlain may be gleaned from future research into the weekly reports of work performed at the Whitehall Naval Station between 1819 and 1824. One interesting reference (believed to be dated after the point at which the bulk of the American squadron had been moved to the Poulteney River) shows that Captain Leonard had “people employed at hauling the gallies up on the bank out of deep water.” The “gallies” undoubtedly referred to *Allen’s* five sister galleys, presumably still located near Whitehall where they had been sunk for preservation in 1815. See “Weekly Reports,” 22 March to 29 March 1823, Subject Files, Class P, Subclass PI, Bases, Naval, Industrial Activity, Box 530, RG-45, NARA. Determining the whereabouts of these five unaccounted-for row galleys would be extremely useful, as they could provide vital comparative data. *Allen* probably underwent a minor refit in 1817 to reclassify her as a single-gun row galley. However, *Borer, Burrows, Centipede, Nettle, and Viper* kept their original two-gun designation throughout their service career. See James T. Leonard to Board of Navy Commissioners “Exhibit Showing the Names, Force & Present State & Condition of the Vessels of War of Every Description at Whitehall Under My Command this 1st Day of October 1819,” Subject Files, Class A, Subclass AL, Laid-Up Ships, Miscellaneous Material Relating to Vessels In Ordinary at Different Navy Yards, Box 68, RG-45, NARA; and “A Register of Officers and Agents Civil, Military, and Naval in the Service of the United States Together with the Names, Force, and Condition of All the Ships and Vessels Belonging to the United States, and When and Where Built,” 1814-1825, Box 5200, RG-287, NARA.
REFERENCES

*Primary Sources Cited—Archival*

Alderman Library, University of Virginia, Charlottesville, Va.
  John Hartwell Cocke Papers.

Bailey Howe Library Special Collections, University of Vermont, Burlington, Vt.
  Horace B. Sawyer Papers.
  Isaac Clark Papers.

Bixby Library, Vergennes, Vt.
  Monkton Ironworks Papers.
  "Siege of Plattsburgh." A Song Set to "Boyne Waters." Unknown Author.

Feinberg Library Special Collections, State University of New York, Plattsburgh, N.Y.
  Moore Collection.

Lake Champlain Maritime Museum, Ferrisburgh, Vt.
  "Report of the State and Condition of the Naval Force Employed in the Defense of the
  Harbors & Waters of the United States Under the Command of Thomas
  Macdonough, on the 31st Day of August, 1814."

Library of Congress, Manuscript Division, Washington, D.C.
  James Madison Papers.
  "Daniel S. Stellwagen, Commander 3rd Division of Galleys, Lake Champlain, June 1814."
  This is the signal book of Sailing Master Daniel S. Stellwagen, the commanding officer
  of Division No. 3 of the American oared warships on Lake Champlain during the Battle
  of Plattsburgh Bay.

National Archives of Canada, Ottawa, Ontario.
  Record Group 8, 1, "C" Series, British Military and Naval Records.
    Letters Sent by the Governor-General of Canada. No volumes noted.
    Microcopy Reel C1218.
    Royal Navy and Provincial Marine, 1779-1845. 20 vols.
    Microcopy Reels C3242-C3246.
    United States, War of 1812, 1806-1834. 3 vols.
    Microcopy Reels C3171-C3174; C3231-C3236.

National Archives and Records Administration, Washington, D.C.
  Record Group 24, Records of the Bureau of Naval Personnel.
    Abstracts of Service Records of Naval Officers, 1798-1883. 6 vols.
    Microcopy 330.
  Record Group 45, Naval Records Collection of the Office of Naval Records and Library.
    Area Files of the Naval Records Collection, 1709-1909. Areas 7 and 11. 125 boxes.
    Microcopy 625.
    Contracts of the U.S. Navy, 1794-1842. 15 vols.
      Entry 235.
    Directives, Circulars, and General Orders Issued by the Secretary of the Navy,
    1776-1863. 1 vol.
      Entry 41.
Inventories of Stores in Navy Yards, 1814-1816. 1 vol.
   Entry 236.
Letters Received by the Board of Navy Commissioners from Commandants, 1814-1842. 101 vols.
   Entry 220.
Letters Received by the Secretary of the Navy from Captains, 1805-1885. 413 vols.
   Microcopy 125.
Letters Received by the Secretary of the Navy from Commanders, 1804-1886. 217 vols.
   Microcopy 147.
Letters Received by the Secretary of the Navy from Commissioned Officers Below the Rank of Commander and from Warrant Officers, 1802-1884. 845 vols.
   Microcopy 148.
Letters Sent by the Board of Navy Commissioners to Commandants, 1815-1842. 14 vols.
   Entry 216.
Letters Sent by the Board of Navy Commissioners to the Secretary of the Navy, 1815-1842. 7 vols.
   Entry 213.
Letters Sent by the Secretary of the Navy to the Board of Navy Commissioners, 1815-1829. 2 vols.
   Entry 222.
Letters Sent by the Secretary of the Navy to Commandants and Navy Agents, 1808-1865. 10 vols.
   Microcopy 441.
Letters Sent by the Secretary of the Navy to Officers, 1798-1886. 93 vols.
   Microcopy 149.
Letters Sent by the Secretary of the Navy Relating to Gunboats, 1803-1808. 1 vol.
   Entry 173.
List of Vessels of the U.S. Navy, Situation of the U.S. Naval Force, 1797-1816. 1 vol.
   Entry 169.
Miscellaneous Letters Received by the Secretary of the Navy, 1801-1884. 811 vols.
   Microcopy 124.
Miscellaneous Letters Sent by the Secretary of the Navy, 1798-1886. 107 vols.
   Microcopy 209.
   Entry 92, T829, 141, "Roll of Seamen of the Squadron on Lake Champlain in the Action of 11 September 1814 Entitled Three Months Pay by Act of Congress, Passed 20 October 1814," or "Muster Roll, Battle of Lake Champlain, September 11, 1814."
   Entry 92, T829, 147, "Stations Lake Champlain and Whitehall, 1813-1825."
   Microcopy 273.
Register of Officers of the Navy, 1815-1821. 1 vol.
   Entry 237.
Subject Files of the Naval Records Collection, 1775-1910. 814 boxes.
   Entry 464, Classes A, N, P, and R.
   Subclass AD. "Naval Ships, Design and General Characteristics."
Subclass AL. "Laid-Up Ships, Miscellaneous Material Relating to Vessels In Ordinary at Different Navy Yards, 1819-1849."
Subclass AY. "Purchases, Sales, and Final Disposition of Naval Vessels, Except Prizes and Merchant Ships.
Subclass NA. "Complements, Rolls, and Lists of Persons Serving in or with Vessels or Stations."
Subclass NI. "Promotion and Privileges, Rank, Retirement, and Reinstatement."
Subclass PB. "Administration of Stations, Rules and Regulations Pertaining to United States Naval Stations."
Subclass PI. "Bases, Naval, Industrial Activity."
Subclass PV. "Bases, Naval, Miscellaneous."
Subclass RB. "Prisoners of War Rolls and Lists (Hostile or Foreign Nationalities)."

Record Group 287, Publications of the U.S. Government.
"A Register of Officers and Agents Civil, Military, and Naval in the Service of the United States Together with the Names, Force, and Condition of All the Ships and Vessels Belonging to the United States, and When and Where Built."
Box 5200, 1814-1825.

National Archives and Records Administration II, College Park, Md.
Record Group 19, Records of the Bureau of Ships, Cartographic and Architectural Records.
"Row Galley, Copied from Original, City Washington, October 11, 1813 [Signed] William Doughty, Chief Naval Constructor."
Record Group 77, Civil Works Map Files.

New York State Library, Manuscripts and Special Collections, Albany, N.Y.

Usselma C. Smith Collection, Papers of William Jones.

Admiralty Records.
"No. 1, A Plan of the Situation of the British and United States Squadrons at the time the Confiante & Linnet Anchored."
Entry 1/5450.
"No 2, A Plan of the Situation of the British and United States Squadrons half an hour after the Confiante Anchored."
Entry 1/5450.
"No. 3, A Plan of the Situation of the British and United States Squadrons about the middle of the Action."
Entry 1/5450.
"No. 4, A Plan of the Situation of the British and American Squadrons at the time the Confiante Struck."
Entry 1/5450.

Shelburne Museum, Shelburne, Vt.
Macdonough Manuscript Collection.
Texas A&M University Anthropology Department, College Station, Tex.
Whitehall Project 1995, Allen Hull Excavation Database.

United States Naval Academy Museum, Annapolis, Md.
"Order of Battle." Document attributed to Sailing Master Daniel S. Stellwagen,
Commander of Division No. 3 of American galleys on Lake Champlain during the Battle
of Plattsburgh Bay (11 September 1814).

William L. Clements Library, University of Michigan, Ann Arbor, Mich.
Oliver Hazard Perry Papers.
Richard Rush Papers.

Primary Sources Cited—Published


Clark, Byron N. "Accounts of the Battle of Plattsburgh, September 11, 1814: From Contemporaneous Sources," Vermont Antiquarian 1, no. 3 (1903): 75-93.


U.S. Constitution.

U.S. Senate. *Letter from the Secretary of the Navy, to The Chairman of the Naval Committee, Transmitting Sundry Documents from Captain Macdonough Relating to the Capture of the British Fleet on Lake Champlain*. Washington, D.C.: Roger C. Weightman, 1814.


**Newspapers Cited**


*Plattsburgh (New York) Republican*, 20 November 1813.


*(Burlington) Vermont Centinel*, 15 October 1813-16 September 1814.

*(Burlington) Northern Centinel*, 4 August 1814.

**Secondary Sources Cited—Books and Monographs**


Lewis, Dennis M. British Naval Activity on Lake Champlain during the War of 1812. Plattsburgh, N.Y.: Clinton County Historical Association, 1994.


Parrington, Michael and Helen Schenck. *A Report on the Excavation of an Ancillary Area (Site 18FR320) of the Historic Ironworking Complex at Catoctin Furnace, Frederick County, Maryland.* Annapolis, Md.: Maryland Historical Trust Manuscript Series, 1982.


Secondary Sources Cited—Articles


Secondary Sources Cited—Theses, Dissertations, and Similar Unpublished Materials


Supplemental Sources Consulted


Boston Gazette and Country Journal, 1 January 1758-1 January 1759.


Bowen, Abel, ed. The Naval Monument, Containing Official and Other Accounts of All the Battles Fought Between the Navies of the United States and Great Britain. 1816. Reprint, Boston: George Clark, 1830.


Documents Relative to the Negotiations for Peace Between the United States and Great Britain. Philadelphia: George Palmer, n.d.


Haswell, Nathan B. *Papers.* Bailey Howe Library Special Collections, University of Vermont, Burlington, Vt.


*Journals of the General Assembly of the State of Vermont.* Rutland, Vt.: Fay & Davison, 1813.


Lever, Darcy. *The Young Sea Officer's Sheet Anchor, or A Key to the Leading of Rigging and to Practical Seamanship.* London: John Richardson, 1819.


_Quebec Gazette* (Montreal), 1 January 1812-1 January 1814.


_Swift’s Vermont Register and Almanac, 1812_. Middlebury, Vt.: Samuel Swift, 1812.


APPENDIX A

U.S. NAVY ROW GALLEY CONTRACT LET TO WILLIAM PARSONS,

24 JULY 1813

“Articles of Agreement—Entered into made & concluded upon this Twenty-Fourth Day of July, Eighteen Hundred & Thirteen between William Parsons of Baltimore, Shipwright of the one part, and James Beatty Navy Agent of the United States of America at Baltimore acting for & on behalf of the said United States of the other part.”

Witness, that the said William Parsons hath agreed & doth hereby covenant promise & agree to & with the said James Beatty that he the said William Parsons or his legal representatives, shall & will find and provide materials & well & sufficiently build & complete or cause & procure to be so built and completed for the said United States in a perfect manner and with good and perfect materials one vessel, or Row Galley conformable to a draught to be furnished by the proper officer of the Navy Department & of the materials, dimensions, & description, manner, and style of workmanship mentioned & set forth in the annexed writing headed: “Dimensions & Description of Row Galley” also find & fit gun carriage, oars, masts, spars, paint work, iron work, nails, spikes, & everything attached to the hull except canvas, rigging, & blocks—The bends of next strake below—the bends and the garboard strake to be of best seasoned white oak plank; the rest of the bottom of the best seasoned heart of yellow pine plank & to launch & deliver the same at Baltimore to the said James Beatty or his successor in office for the use of the said United States by and at the expense of the said William Parsons, his executors, administrators, & assigns in complete order & condition within one month from this date or sooner if possible when said Galley & appurtenances are to be subject to the inspection & approbation of a person to be appointed by the Secretary of the Navy and the said James Beatty, Navy Agent, as foresaid acting for & on behalf of the said United States, doth covenant, promise, & agree to & with the said William Parsons well & truly to pay for the said vessel or Row Galley and appurtenances two thousand dollars lawful money of the United States in manner following, that is to say as the work progresses, payment proportional thereto are to be made but not more than one half the amount is to be paid until the vessel is finished, launched, approved of, and delivered, when the amount remaining due is to be paid. It is understood that no member of Congress is concerned or shall be admitted to any share or part of this contract or agreement or to any benefit to arise there from—and to the fulfillment of the foregoing stipulation the said William Parsons doth hereby bind himself, his heirs, executors, administrators, and assigns to the Navy Department aforesaid in the final sum of two thousand dollars to be recovered in default thereof in any court of law in the United States.

In testimony whereof the parties aforesaid have hereunto interchangeably set their hands & seals the day and year first herein written.

Signed, sealed, & delivered
in presence of
John Gill, Notary Public [Signature]  William Parsons [Signature and Seal]
George W. Ellis [Signature]  James Beatty, N. Agent [Signature and Seal]

“Dimensions & Description of Row Galley”

Length between perpendiculars 75 feet; breadth moulded 15; depth 4 feet—Keel, white oak, six inches thick one foot wide amidships and to taper as per draught at fore end to thickness of the stem which is to be four inches, the scarf of the keel (if any) must be six feet long—Keelson to be six inches square &
jogged nicely down over the floors & heels of futtocks one inch, each floor timber amidships for 50 feet must be fastened to the keel with 2 spikes made in a six inch tool & long enough to go through & be clenched, on the underside the keelson must be fastened through, every other floor with iron bolts after a five-eighth auger to go through the keel & be riveted upon rings on the underside.

Floor timber to be sided four inches and the futtocks three and a half inches, to be moulded two and a half at the height of breadth, four inches at floor heads & four and a half at the throats, the floor heads to be determined by the draught; the first futtock to run from the middle of the keel to head as per draught; the second futtock from floor head up to the gunwale to be framed together & fastened with two nails in each scarf made in a five inch tool & long enough to go through and clenched; timber & room 15 inches, to have two wales of oak two inches thick by six inches wide & beginning at six feet from forward to taper to four inches width at stem, the strake below to be of same width & one & three quarters thick to be dubbed off flush with the bottom plank which must be one & a half inches thick, the upper wale from three inches down must be rounded off with an easy round to one and a half inches at the gunnels—nails of the bottom 4 inches long, blunt heads braddled.

Footings on each side at floor heads six inches wide and one & a half inches thick full to be primed out just above the floor heads & from thence down to within seven inches of the keelson, she must be ceiled with inch boards not more than eight inches wide of either heart yellow or white pine, in the opening of seven inches along side the keelson, there must be timber boards fitted not longer than eight feet each all fore & aft there must be a priming out at height of breadth & a gunnels inside of one & a half inch thick, six inches wide of oak to be capped with an inch & a half inch plank sheer, the wale & gunwale must be secured through each timber with rivets well riveted upon rings or burrs—there must be twenty one thwarts for the purpose of rowing twenty one oars on each side, the foreside of the forward thwart at the end where the long gun is to be placed will be twelve feet two inches from the perpendicular line, that at the other end of the boat, ten feet three inches which will give the thwarts ten inches width & two feet seven inches apart from center to center—there must be iron pins from which to suspend the oars by means of grommets, the pins will go through either a piece of copper or leather fixed upon a rounded furring & extend over & nail into each side of the gunnels, for the purpose of facilitating the motion of the oars, the copper or leather & grommets to be furnished by the Navy Agent, but the builder to fix them. There must be a gangway deck on each site leaving all fore & aft in the center of the boat six feet clear from gangway to gangway which deck will be formed by nailing upon each thwart a small beam of three inches thick, two inches deep at the inner end & running to a point at the side of the boat, the plank to be inch & quarter pine all heart (yellow) & not more than seven inches wide.

There will be a skirpetting reaching from the deck up to the gunnels making a seam to be caulked as well as all the other seams of the deck—at the inner edge of the deck there must be stanchions fixed perpendicular under each thwart for the purpose of nailing the side to which must be of inch white pine not more than eight inches wide, tongued & grooved—there must be four sliding doors in each side of 14 inches width & two feet seven inches long—those next the ends to be six feet from each end & the other two divided equally between them—there must be 42 oars for rowing and two for steering—all of white ash, and twenty one feet long, the form to be approved by the Agent—every other thwart must be kneed the body running along at 18 inches & be deep enough to rise above the deck which will fit closely round it & be caulked—there must be four leaden scuppers on each side of one and a quarter inch diameter in the clear, to let the water from the deck, there must be a middle board of one foot width along the thwarts all fore & aft as far as the end of the gun skids, which board as well as the thwart will be one & a half inch thick, each thwart will be supported by a stanchion, from the keelson there must be a shifting bow port two feet six inches each way from the center & four inches deep from top of gunnels down to the cill—a breast hook at the height of port cill and sided five inches running well along each bow & bolted through each timber, the bolts to be well riveted, another breast hook at sufficient height for the end of the skid of the long gun to rest upon of good length & well bolted.

The boat is to carry a long eighteen pounder at one end & a thirty-two pound carronade at the other, to be fixed as follows—the skids of the eighteen pounder to be fixed permanently so high as that the muzzle of the gun when run out horizontally shall clear the cill of the port four inches, the skid will be about sixteen feet long, three feet wide & six & a half inches thick, in two pieces kept about four & a half inches apart with a groove for the traversing bolt of the carriage to work in, the under side of the skids on each
side of the groove is rabbeted on & up about two & a half inches for the shoulders of the traverse bolt & there is let into the skid at upper side of the rabbet all round an iron plate three-eights-of-an-inch-thick well riveted to prevent the wood from fretting in the recoil of the gun, the carriage is made similar to a common one only that instead of axles and trucks there is a shoe of four inches thick & two base transoms of about five inches thick, the front one through which the traverse bolt runs is twenty inches wide and the after one twelve inches into which there is a mortise of two and a half inches, by six inches deep for the monkeytail to work in secured with an iron strap—there must be a chock fitted across the bows resting upon the top of the skids for about four inches & extending forward secured at each end by a good knee sided five inches and bolted through the side of the boat at each timber—the chock must be nine inches thick & twelve inches wide into the top of which there will be two eye bolts driven for the block of breech tackle to hook into and a hole bored through it fore & aft ways at about two inches from the top at the aft side coming out about the middle on the fore side for the breeching of the gun to run through & be secured by a knot—The carronade to be fixed as usual the skid to be about eight or nine feet long & traverse upon a sweep from side to side of the boat.

She will have one mast & six or eight yards or battens to extend the sail with which will be described hereafter—to be planed all over & painted with three good coats of black paint—the thwart for the partner of mast must be three inches thick & the mast be secured as hereafter described or directed—the two thwarts that come before the skids of the long gun must extend no farther across from each side than to the side of the skids & be supported at the ends by stanchions. The foregoing are referred to in an agreement made between us this 24th July 1813.

Witness
John Gill, Notary Public [Signature]    William Parsons [Signature]
George W. Ellis [Signature]    James Beatty, N. Agent [Signature]

APPENDIX B

PRINCIPAL DIMENSIONS AND SCANTLINGS OF ALLEN

Length Between Perpendiculars ......................................................... 75 Feet, 4 Inches
Length on Keel ........................................................................ 69 Feet, 3-1/2 Inches
Breadth
   Moulded ........................................................................ 15 Feet, 0 Inches
   Extreme ........................................................................ 15 Feet, 3 Inches
Height Rabbet to Sheer at Amidships .............................................. 4 Feet, 6 Inches
Depth of Hold ............................................................................... 2 Feet, 7-3/4 Inches
Draft
   Afore ........................................................................... 1 Foot, 6 Inches
   Abaft .......................................................................... 2 Feet, 6 Inches
Tonnage .......................................................................................... 30-40 Tons
Length-to-Beam Ratio ...................................................................... 5.02:1
Keel (Maximum) ........................................................................ 6 Inches Moulded, 11-1/2 Inches Sided
Main Stem (Maximum) ............................................................... 9 Inches Moulded, 6 Inches Sided
Main Sternpost (Maximum) .......................................................... 15 Inches Moulded, 7 Inches Sided
Floor Timbers
   At Keel ........................................................................ 6 Inches Moulded, 5 Inches Sided
   At Height of Breadth ......................................................... 3-1/2 to 4 Inches Moulded, 5 Inches Sided
Futtocks
   At Heel ........................................................................ 6 Inches Moulded, 5 Inches Sided
   At Height of Breadth ......................................................... 3-1/2 to 4 Inches Moulded, 5 Inches Sided
Keelson (Maximum) .................................................................... 5-1/2 Inches Moulded, 10-1/2 Inches Sided
Rowing Thwarts/Deck Beams ....................................................... 3-1/2 Inches Moulded, 10 Inches Sided
Hull Planking
   Maximum Plank Width ....................................................... 11-1/2 Inches
   Minimum Plank Width ........................................................ 6 Inches
   Average Plank Thickness .................................................... 1 Inch
Ceiling Planking
   Maximum Plank Width ....................................................... 15-1/2 Inches
   Minimum Plank Width ........................................................ 7 Inches
   Average Plank Thickness .................................................... 1 Inch

Source: Reconstructed dimensions based primarily on a combination of historical evidence and hull data gathered during the 1995 Whitehall Project.
APPENDIX C

WOOD SPECIES IDENTIFIED IN THE HULL OF ALLEN

Keel, Forward of Amidships: White Oak.
Keel, Aft of Amidships: White Oak.
Main Stem: American Elm.
Stem Apron: White Ash.
Main Sternpost: White Oak.
Inner Sternpost (Stern Knee): American Elm.
Outer Sternpost: Red Oak.
Frame S, Floor Timber: White Oak.
Frame O, Floor Timber: White Oak.
Frame J, Floor Timber: White Oak.
Frame E, Floor Timber: White Oak.
Frame A, Floor Timber: White Oak.
Frame 1, Floor Timber: White Oak.
Frame 5, Floor Timber: White Oak.
Frame 10, Floor Timber: White Oak.
Frame 15, Floor Timber: White Oak.
Frame 20, Floor Timber: White Ash.
Frame 23, Floor Timber: Red Oak.
Frame O, Starboard First Futtock: White Oak.
Frame J, Starboard First Futtock: White Oak.
Frame E, Starboard First Futtock: White Oak.
Frame E, Port First Futtock: White Oak.
Frame A, Starboard First Futtock: White Oak.
Frame A, Port First Futtock: White Oak.
Frame 1, Starboard First Futtock: White Oak.
Frame 1, Port First Futtock: White Oak.
Frame 5, Port First Futtock: American Beech.
Frame 10, Port First Futtock: White Oak.
Frame 15, Starboard First Futtock: White Oak.
Frame 15, Port First Futtock: White Oak.
Frame 20, Starboard First Futtock: White Oak.
Frame 20, Port First Futtock: White Oak.
Keelson, Forward of Amidships: White Oak.
Keelson, Aft of Amidships: White Oak.
External Plank, Starboard Garboard Forward of Amidships: White Oak.
External Plank, Port Garboard Forward of Amidships: White Oak.
External Plank, Port Plank Forward of Frame J, Strake #3 from Keel: White Oak.
External Plank, Port Plank Forward of Frame 10, Strake #2 from Keel: White Oak.
External Plank, Starboard Plank Forward Frame 15, Strake #2 from Keel: White Oak.
External Plank, Starboard Plank, Forward Frame J, Strake #3 from Keel: White Oak.

Source: Wood species data gathered during the 1995 Whitehall Project. Analysis provided by Dr. Roy Whitmore of the University of Vermont Forestry Department, Burlington, Vt.
APPENDIX D

CATALOGUE OF ARTIFACTS

Metal

01-001. Iron spike. SU3, discovered on the portside hull between Frames 5 and 6. This spike has a maximum preserved length of 4-3/8 inches (11.1 cm), the shank is 3/8 inch (9.5 mm) square at the neck tapering to 1/4 inch (6.3 mm) at its terminal end, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/11/95. Retained at the Lake Champlain Maritime Museum.

01-002. Iron spike fragment. SU3, discovered on the portside hull between Frames 4 and 5. This spike fragment has a maximum preserved length of 2-1/2 inches (6.4 cm), the shank is 3/8 inch (9.5 mm) square at the neck tapering to 1/4 inch (6.3 mm) at its terminal end, and the head is missing. Date of excavation: 7/11/95. Redeposited on the site.

01-003. Iron spike. SU3, discovered on the portside hull between Frames 2 and 3. This spike has a maximum preserved length of 9-1/4 inches (23.5 cm), the shank is 3/8 inch (9.5 mm) square at the neck tapering to 1/4 inch (6.3 mm) at its terminal end, and the head is fashioned in a rosehead style and is 7/8 inch (2.2 cm) square. Date of excavation: 7/11/95. Redeposited on the site.

01-004. Iron spike. SU4, discovered on the portside hull between Frames 3 and 4. This spike has a maximum preserved length of 9-1/4 inches (23.5 cm), the shank is 1/2 inch (1.3 cm) square tapering to 1/4 inch (6.3 mm) at its terminal end, and the head is fashioned in a rosehead style and is 7/8 inch (2.2 cm) square. Date of excavation: 7/11/95. Retained at the Lake Champlain Maritime Museum.

01-005. Iron nail. SU4, discovered on the portside hull between Frames 3 and 4. This nail has a maximum preserved length of 2-1/2 inches (6.3 cm), the shank has a maximum preserved width of 1/4 inch (6.3 mm) at the neck and tapers at its terminal end, and the rectangular head is 3/8 inch (9.5 mm) long by 1/4 inch (6.3 mm) wide. Date of excavation: 7/12/95. Redeposited on the site.

01-006. Iron nail. SU4, discovered on the portside hull at Frame 4. This nail has a maximum preserved length of 1-3/4 inches (4.4 cm), the shank has a maximum preserved width of 1/4 inch (6.3 mm) at the neck and tapers at its terminal end, and the rectangular head is 1/2 inch (1.3 cm) long by 1/4 inch (6.3 mm) wide. Date of excavation: 7/12/95. Redeposited on the site.

01-007. Iron spike. SU4, discovered on the portside hull between Frames 5 and 6. This spike is bent at its terminal end and has a maximum preserved length of 5 inches (13 cm), the shank is 3/8 inch (9.5 mm) square at the neck and tapers into a point at its terminal end, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/12/95. Redeposited on the site.

01-008. Iron nail fragment. SU4, discovered on the portside hull between Frames 3 and 7. This nail fragment is heavily corroded and has a maximum preserved length of 1-1/8 inches (2.9 cm), the shank has a maximum preserved width of 1/4 inch (6.3 mm) and thickness of 3/16 inch (4.8 mm) and tapers at its terminal end. The nail's head is 3/8 inch (9.5 mm) long by 1/4 inch (6.3 mm) wide. Date of excavation: 7/12/95. Redeposited on the site.

01-009. Copper alloy tack. SU4, discovered on the portside hull between Frames 3 and 7. This tack has a flat, round head, a square shank, and a pointed tip. The tack has a maximum preserved length of 1-3/8 inches (3.5 cm), the shank is 1/8 inch (3.1 mm) square, and the head is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

01-010. Copper alloy tack. SU4, discovered on the portside hull between Frames 3 and 7. This tack has a flat, round head, a square shank, and a pointed tip. The tack has a maximum preserved length of
1-5/16 inches (3.3 cm), the shank is 1/8 inch (3.1 mm) square, and the head is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

01-011. Copper alloy tack. SU4, discovered on the portside hull between Frames 3 and 7. This tack has a flat, round head, a square shank, and a pointed tip. The tack has a maximum preserved length of 1-3/8 inches (3.5 cm), the shank is 1/8 inch (3.1 mm) square, and the head is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

01-012. Iron nail fragment. SU4, discovered on the portside hull between Frames 3 and 7. This nail fragment is heavily corroded and has a maximum preserved length of 1-1/16 inches (2.7 cm), the shank has a maximum preserved width of 3/16 inch (4.8 mm) and tapers at its terminal end, and the head is 5/16 inch (7.9 mm) square. Date of excavation: 7/12/95. Redeposited on the site.

01-013. Iron T-head nail. SU4, discovered on the portside hull between Frames 3 and 7. This nail has a rectangular, T-shaped head, a rectangular shank, and a pointed tip. The nail has a maximum preserved length of 2-5/8 inches (6.7 cm), the shank is 1/4 inch (6.3 mm) by 3/16 inch (4.8 mm) and tapers at its terminal end, and the T-head is 1/2 inch (1.3 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

01-014. Iron nail fragment. SU4, discovered on the portside hull between Frames 3 and 7. This nail fragment is heavily corroded and has a maximum preserved length of 1-1/4 inches (3.2 cm) and the shank has a maximum preserved width of 3/8 inch (9.5 mm) and a thickness of 1/4 inch (6.3 mm) and tapers at its terminal end. The head is missing. Date of excavation: 7/12/95. Redeposited on the site.

01-015. Iron spike fragment. SU4, discovered on the portside hull between Frames 3 and 7. This spike fragment is heavily corroded and the majority of the shank's terminal end is missing. It has a maximum preserved length of 1-1/2 inches (3.8 cm), the shank is 3/8 inch (9.5 mm) square at the neck, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/12/95. Redeposited on the site.

01-016. Iron spike. SU4, discovered on the portside hull between Frames 5 and 6. This spike is heavily corroded and bent at its terminal end. The spike has a maximum preserved length of 4-1/2 inches (11.4 cm), the shank is 3/8 inch (9.5 mm) square at the neck and tapers at its terminal end, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/12/95. Redeposited on the site.

01-017. Iron nail. SU4, discovered on the portside hull between Frames 3 and 4. This nail is heavily corroded with only a fraction of the original metal preserved. The nail has a maximum preserved length of 1-3/4 inches (4.5 cm) and the shank has a maximum preserved width of 1/8 inch (3.1 mm) and a thickness of 1/16 inch (1.5 mm) and tapers at its terminal end. The rectangular head is 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm). Date of excavation: 7/12/95. Redeposited on the site.

01-018. Iron spike. SU4, discovered on the portside hull between Frames 5 and 6 resting on the external hull planking. This spike has only a light corrosion layer and it is bent midway down the shank length. The spike has a maximum preserved length of 5-5/16 inches (13.5 cm), the shank is 3/8 inch (9.5 mm) square at the neck and tapers at its terminal end, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/12/95. Redeposited on the site.

01-019. Iron nail. SU4, discovered on the portside hull between Frames 3 and 4. This nail is corroded primarily throughout the head and upper quarter of the shank. The nail has a maximum preserved length of 2-1/4 inches (5.7 cm) and the shank has a maximum preserved width of 3/16 inch (4.8 mm) and tapers at its terminal end. The rectangular head is 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm). Date of excavation: 7/12/95. Redeposited on the site.

01-020. Copper alloy button—British 100th Regiment of Foot. SU4, discovered on the portside hull between Frames 7 and 10. This button is in excellent condition with only traces of corrosion byproduct and staining present on the anterior and posterior surfaces. The button appears to be cast in two main parts—the crown (convex front face) and the back (flat reverse face). The button's attachment loop, or "eye," appears heavily degraded. The crown of the button is 5/8 inch (1.6 cm) in diameter and contains the crest of the Prince Regent's County of Dublin Regiment known as the British 100th Regiment of Foot during the War of 1812. The button's
crest is comprised of three plumes overlain by a ribbon containing the motto “ICH DIEN” and underscored by the number “100.” The reverse face also contains the following markings along the upper and lower outer margin of the button’s circumference: “1 NU[TT]ING SON” can be seen on the upper margin and “COVENT GARDEN NO 5” can be seen on the lower margin. In addition, the markings “NO 5” underscore the button’s attachment eye. Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

01-021. Copper alloy tack piercing through a lead fragment. SU4, discovered on the portside hull between Frames 7 and 10. The tack has a flat, round head, a square shank, and a pointed tip. The tack has a maximum preserved length of 1-1/4 inches (3.2 cm), the shank is 1/8 inch (3.1 mm) square, and the head is 3/8 inch (9.5 mm) in diameter. The lead fragment is amorphous in shape with a maximum preserved length of 3/4 inch (1.9 cm) and a maximum width of 1/4 inch (6.3 mm). Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

01-022. Iron tack. SU4, discovered on the portside hull between Frames 7 and 10. The tack has a flat, round head, a rectangular shank moderately corroded along its entire length, and it is broken off at the terminal end. The head is askew with a portion rounded over and touching the shank. The tack has a maximum preserved length of 7/8 inch (2.2 cm), the shank is 3/4 inch (1.9 cm) by 1/8 inch (3.1 mm), and the head is 1/2 inch (1.3 cm) in diameter. Date of excavation: 7/12/95. Redeposited on the site.

01-023. Copper alloy tack. SU4, discovered on the portside hull between Frames 7 and 10. The tack has a flat, round head and a square shaft with minimal corrosion byproduct present. The tack has a maximum preserved length of 1-1/4 inches (3.2 cm) and the shank is 1/8-inch (3.1 mm) square and tapers to a point. The head is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

01-024. Iron nail fragment. SU4, discovered on the portside hull between Frames 7 and 10. This nail fragment is heavily corroded and has a maximum preserved length of 1-1/8 inches (2.9 cm). The rectangular shank is 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm) and is bent midway along its length. The head is missing along with the terminal end. Date of excavation: 7/12/95. Redeposited on the site.

01-025. Iron T-head nail. SU4, discovered on the portside hull between Frames 11 and 12. This nail has a rectangular, T-shaped head, a rectangular shank, and a flattened terminal end that is broken off prior to tapering into a point. The nail has a maximum preserved length of 1-3/4 inches (4.5 cm), the shank is 1/4 inch (6.3 mm) by 3/16 inch (4.8 mm), and the T-head is 1/2 inch (1.3 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/13/95. Retained at the Lake Champlain Maritime Museum.

01-026. Iron nail. SU4, discovered on the portside hull between Frames 12 and 13. This nail is heavily corroded and has no head, a rectangular shank, and a terminal end that is broken off prior to tapering into a point. The nail has a maximum preserved length of 9/16 inch (1.4 cm), the shank is 3/16 inch (4.8 mm) wide, and the head is missing. Date of excavation: 7/13/95. Redeposited on the site.

01-027. Iron nail. SU4, discovered on the portside hull between Frames 12 and 13. This nail is heavily corroded and has part of its original head, a rectangular shank, and a terminal end that tapers to a point. The nail has a maximum preserved length of 2-5/8 inches (6.7 cm), the shank is 1/4 inch (6.3 mm) wide and tapers toward the terminal end, and the head is 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm). Date of excavation: 7/13/95. Redeposited on the site.

01-028. Iron nail. SU4, discovered on the portside hull between Frames 12 and 13. This nail is heavily corroded and has part of its original head, a rectangular shank, and a terminal end that tapers to a point. The nail has a maximum preserved length of 3-3/8 inches (8.6 cm), the shank is 5/16 inch (7.9 mm) wide and tapers at its terminal end, and the head is 5/16 inch (7.9 mm) by 1/4 inch (6.3 mm). Date of excavation: 7/13/95. Redeposited on the site.

01-029. Iron spike fragment. SU4, discovered on the portside hull between Frames 12 and 13. This spike fragment is heavily corroded and is missing its head and terminal end. The spike fragment has a maximum preserved length of 2-7/8 inches (7.3 cm) and the shank is 3/8 inch (9.5 mm) square. Date of excavation: 7/13/95. Redeposited on the site.
01-030. Lead shot. Total of 3 shot. SU4, discovered on the portside hull between Frames 13 and 14. These gray-colored round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off each shot presumably during manufacture. Each shot measures approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/13/95. Retained at the Lake Champlain Maritime Museum.

01-031. Lead shot. Total of 1 shot. SU4, discovered on the portside hull between Frames 14 and 15. This gray-colored round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture. This shot measures approximately 1/2 inch (1.3 cm) in diameter. Date of excavation: 7/13/95. Retained at the Lake Champlain Maritime Museum.

01-032. Lead shot. Total of 1 shot. SU4, discovered on the portside hull between Frames 14 and 15. This gray-colored round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture. A small hole, or chip out of the lead can be seen below the casting line near the sprue. This shot measures approximately 1/4 inch (6.3 mm) in diameter. Date of excavation: 7/13/95. Retained at the Lake Champlain Maritime Museum.

01-033. Iron spike fragment. SU4, discovered on the portside hull between Frames 15 and 16. This spike fragment is moderately corroded and is missing its terminal end. The spike fragment has a maximum preserved length of 1-5/8 inches (4.1 cm) and the shank is 3/8 inch (9.5 mm) square at the neck. The head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/13/95. Redeposited on the site.

01-034. Iron spike fragment. SU4, discovered on the portside hull between Frames 16 and 17. This spike fragment is heavily corroded and is missing its head, terminal end, and the majority of its shank length. The spike fragment has a maximum preserved length of 1 inch (2.5 cm) and the shank is 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm) as it appears to have been bisected down its length. Date of excavation: 7/13/95. Redeposited on the site.

01-035. Iron nail. SU4, discovered on the portside hull between Frames 16 and 17. This nail has a large percentage of its original metal preserved and has a rectangular head and shank with a terminal end that tapers to a point. The nail has a maximum preserved length of 1 inch (2.5 cm), the shank is 5/16 inch (7.9 mm) wide, and the head is 5/16 inch (7.9 mm) by 1/4 inch (6.3 mm). Date of excavation: 7/13/95. Redeposited on the site.

01-036. Iron nail. SU4, discovered on the portside hull between Frames 16 and 17. This nail is moderately corroded and has a rectangular head and shank, and a terminal end that is broken off prior to tapering into a point. The nail has a maximum preserved length of 1-3/4 inches (4.5 cm), the shank is 1/4 inch (6.3 mm) wide, and the head is 3/8 inch (9.5 mm) by 3/16 inch (4.8 mm). Date of excavation: 7/13/95. Redeposited on the site.

01-037. Unidentified iron fastener fragment. SU4, discovered on the portside hull between Frames 16 and 17. This appears to be a nail fragment, but it is so heavily corroded and amorphous in shape that it is difficult to say for certain. The fragment has a maximum preserved length of 1-5/8 inches (4.1 cm) and a maximum preserved width of 1/2 inch (1.3 cm). Date of excavation: 7/13/95. Redeposited on the site.

01-038. Iron nail fragment. SU4, discovered on the portside hull between Frames 17 and 18. This nail fragment is moderately corroded and has a maximum preserved length of 1-1/8 inches (2.9 cm). The rectangular shank is 1/8 inch (3.1 mm) by 1/4 inch (6.3 mm) and is missing the tip of its terminal end. The head has approximately the same dimensions as the shank. Date of excavation: 7/13/95. Redeposited on the site.

01-039. Iron nail. SU4, discovered on the portside hull between Frames 19 and 20. This nail is moderately corroded and has a rectangular head and shank and a terminal end that tapers to a point. The nail has a maximum preserved length of 1-5/8 inches (4.1 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is 1/4 inch (6.3 mm) square. Date of excavation: 7/13/95. Redeposited on the site.
01-040. Iron nail fragment. SU4, discovered on the portside hull between Frames 19 and 20. This nail fragment is heavily corroded. Only a minor portion of the original metal still remains intact. The maximum preserved length is 1-7/8 inches (4.8 cm), the shank is 1/4 inch (6.3 mm) by 1/16 inch (1.5 mm), and the head is missing. Date of excavation: 7/13/95. Redeposited on the site.

01-041. Iron nail fragment. SU4, discovered on the portside hull between Frames 19 and 20. This nail fragment is heavily corroded and has a square head, a slightly rectangular shank, and a flattened terminal end that is broken off prior to tapering into a point. The maximum preserved length is 1-5/16 inches (3.3 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is 1/4 inch (6.3 mm) square. Date of excavation: 7/13/95. Redeposited on the site.

01-042. Iron nail. SU4, discovered on the portside hull between Frames 19 and 20. This nail is heavily corroded and has a square head, a slightly rectangular shank, and a terminal end that tapers to a flattened point. The nail has a maximum preserved length of 2-5/8 (6.7 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is 1/4 inch (6.3 mm) square. Date of excavation: 7/13/95. Redeposited at the Lake Champlain Maritime Museum.

01-043. Iron nail. SU4, discovered on the portside hull between Frames 19 and 20. This nail is heavily corroded and has a square head, a slightly rectangular shank, and a flattened terminal end that is broken off prior to tapering into a point. The maximum preserved length is 1 inch (2.5 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is 1/4 inch (6.3 mm) square. Date of excavation: 7/13/95. Redeposited on the site.

01-044. Iron nail. SU4, discovered on the portside hull between Frames 20 and 21. This nail is heavily corroded with approximately half of its original head missing. The shank is rectangular and tapers to a flattened point at its terminal end. The maximum preserved length is 3 inches (7.6 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head has approximately 1/8 inch (3.1 mm) of its original thickness and 3/8 inch (9.5 mm) of its original width still present. Date of excavation: 7/13/95. Redeposited on the site.

01-045. Iron nail fragment. SU4, discovered on the portside hull between Frames 20 and 21. This nail fragment is heavily corroded and has a square head, a slightly rectangular shank, and a flattened terminal end that is broken off prior to tapering into a point. The maximum preserved length is 1-1/2 inches (3.8 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is 1/4 inch (6.3 mm) square. Date of excavation: 7/13/95. Redeposited on the site.

01-046. Iron nail fragment. SU4, discovered on the portside hull between Frames 20 and 21. This nail fragment is heavily corroded and has a square head, a slightly rectangular shank that is bent midway down its length, and a flattened terminal end that is broken off prior to tapering into a point. The maximum preserved length is 1-3/4 inches (4.5 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is 1/4 inch (6.3 mm) square. Date of excavation: 7/13/95. Redeposited on the site.

01-047. Iron spike. SU4, discovered on the portside stern area directly outboard of the external hull planking. This spike has only a light corrosion layer present. The spike has a maximum preserved length of 5-1/8 inches (13 cm) and the shank is 3/8 inch (9.5 mm) square at the neck and tapers along the lower quarter of its terminal end to 1/4 inch (6.3 mm) in thickness. The head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/18/95. Redeposited on the site.

01-048. Iron nail. SU3, discovered on the starboard hull between Frames N and O. This nail is heavily corroded with approximately half of its original head missing. The shank is rectangular and tapers to a flattened point at its terminal end. The maximum preserved length is 2-5/16 inches (5.9 cm) and the shank is 3/16 inch (4.8 mm) by 1/4 inch (6.3 mm) at the neck and 1/4 inch (6.3 mm) by 1/4 inch (6.3 mm) at its terminal end. The head has approximately 1/2 inch (1.3 cm) of its original width and 1/4 inch (6.3 mm) of its original thickness still present. Date of excavation: 7/18/95. Redeposited on the site.

01-049. Iron nail. SU3, discovered on the starboard hull between Frames L and K. The nail is heavily corroded. The maximum preserved length is 1-3/4 inches (4.5 cm) and the shank has a maximum preserved width of 1/4 inch (6.3 mm) and a maximum preserved thickness of 3/16 inch (4.8 mm).
The head has a preserved dimension of 1/2 inch (1.3 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/19/95. Redeposed on the site.

01-050. Iron nail. SU3, discovered on the starboard hull between Frames L and K. This spike is heavily corroded and has only a fraction of its original metal still intact. The spike has a maximum preserved length of 2-1/2 inches (6.4 cm) and the shank is 3/16 inch (4.8 mm) by 1/8 inch (3.1 mm) and tapers in thickness toward its terminal end from 3/16 inch (4.8 mm) to a point. Date of excavation: 7/19/95. Retained at the Lake Champlain Maritime Museum.

01-051. Iron nail fragment. Unit 1, SU3, discovered on the starboard hull between Frames L and K. This nail fragment is extremely corroded. The maximum preserved length is 2 inches (5.0 cm) and the maximum preserved width is 1/4 inch (6.3 mm). Date of excavation: 7/19/95. Redeposed on the site.

01-052. Iron nail fragment. Unit 1, SU3, discovered on the starboard hull between Frames K and J. This nail fragment is moderately corroded. The maximum preserved length is 1-3/4 inches (4.5 cm) and the maximum preserved width is 3/16 inch (4.8 mm). The head has a maximum preserved width of 1/4 inch (6.3 mm). Date of excavation: 7/19/95. Redeposed on the site.

01-053. Iron spike. Unit 1, SU3, discovered on the starboard hull between Frames H and I. This spike has a moderate to heavy corrosion layer present. The spike has a maximum preserved length of 2-3/4 inches (7.0 cm) and the shank is 3/8 inch (9.5 mm) square at the neck and tapers along its terminal end to 5/16 inch (7.9 mm) in thickness. The head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/19/95. Redeposed on the site.

01-054. Iron spike fragment. Unit 1, SU3, discovered on the starboard hull between Frames I and J. This spike fragment is extremely corroded. The maximum preserved length is 2-1/4 inches (5.7 cm) and the shank is varied in its maximum width—1/2 inch (1.3 cm), 3/8 inch (9.5 mm), and 5/8 inch (1.6 cm)—depending on the amount of corrosion byproduct present. The head is completely encased in concretion and is approximately 3/4 inch (1.9 cm) square. Date of excavation: 7/19/95. Redeposed on the site.

01-055. Iron nail fragment. Unit 1, SU3, discovered on the starboard hull between Frames I and J. This nail fragment is extremely corroded. Only a fraction of its original metal remains intact. The maximum preserved length is 1 inch (2.5 cm), the maximum preserved width is 3/16 inch (4.8 mm), and the maximum preserved thickness is 1/8 inch (3.1 mm). Date of excavation: 7/19/95. Redeposed on the site.

01-056. Iron nail. Unit 1, SU3, discovered on the starboard hull between Frames I and J. This nail is extremely corroded. The maximum preserved length is 1-1/4 inches (3.2 cm) and the shank has a maximum preserved width of 1/8 inch (3.1 mm) and tapers to 1/16 inch (1.5 mm) at its terminal end. The head is missing. Date of excavation: 7/19/95. Redeposed on the site.

01-057. Iron nail. Unit 1, SU3, discovered on the starboard hull between Frames I and J. This nail is extremely corroded and approximately half of its head and shank have been sheared away along its length. The maximum preserved length is 2-1/4 inches (5.7 cm), the maximum preserved width is 3/16 inch (4.8 mm) tapering to 1/8 inch (3.1 mm) at its terminal end, and the maximum preserved thickness is 1/8 inch (3.1 mm). Date of excavation: 7/19/95. Redeposed on the site.

01-058. Iron spike. Unit 1, SU3, discovered on the starboard hull between Frames I and J. This spike is extremely corroded along its length with huge pits where the original metal has eroded away over time and is missing its head. The maximum preserved length is 2-3/4 inches (7.0 cm), the maximum preserved width is 1/4 inch (6.3 mm), and the maximum preserved thickness is 1/4 inch (6.3 mm). Date of excavation: 7/19/95. Redeposed on the site.

01-059. Iron tack fragment. Unit 2, SU3, discovered on the starboard hull between Frames G and H. This tack fragment is heavily corroded. The maximum preserved length is 1-1/4 inches (3.2 cm) and the shank is 1/4-inch (6.3 mm) square and tapers into a point at the terminal end. The rectangular head measures 1/2 inch (1.3 cm) by 3/8 inch (9.5 mm). Date of excavation: 7/20/95. Redeposed on the site.

01-060. Iron spike. Unit 2, SU3, discovered on the starboard hull between Frames G and H. This spike is extremely corroded and is missing over half of its original surface along its length. The maximum preserved length is 1-3/4 inches (4.5 cm) and the shank is 1/4 inch (6.3 mm) by 1/8
inch (3.1 mm). Half of the head is also missing. Date of excavation: 7/20/95. Redeposited on the site.

01-061. Iron spike. Unit 2, SU3, discovered on the starboard hull between Frames G and H. This spike is moderately corroded. The maximum preserved length is 2-3/4 inches (7.0 cm), the shank is 1/4 inch (6.3 mm) square and tapers to 1/8 inch (3.1 mm) at its terminal end, and the head is 3/8 inch (9.5 mm) square at the neck. Date of excavation: 7/20/95. Retained at the Lake Champlain Maritime Museum.

01-062. Iron tack fragment. Unit 2, SU3, discovered on the starboard hull between Frames F and G. This tack fragment is heavily corroded. The maximum preserved length is 1-1/8 inches (2.9 cm) and the shank is 1/4-inch (6.3 mm) square and tapers toward its terminal end. The rectangular head measures 1/2 inch (1.3 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/20/95. Redeposited on the site.

01-063. Iron grapeshot. Total of 4 shot. Unit 4, SU3, discovered on the starboard hull. Three of the grapeshot are concreted together, while the remaining single shot is freestanding. All of the grapeshot appear to have been fashioned from a two-piece cast and have a heavy layer of corrosion byproduct (a red-brown rust) present. The shot measure approximately 1-1/2 inches (3.9 cm) in diameter. Date of excavation: 7/21/95. Redeposited on the site.

01-064. Iron grapeshot. Total of 6 shot. Unit 4, SU3, discovered on the starboard hull. Three of the grapeshot are concreted together, while the remaining three are freestanding. All of the grapeshot appear to have been fashioned from a two-piece cast and have a heavy layer of corrosion byproduct (a red-brown rust) present. The shot measure 1 inch (2.5 cm), 1-3/16 inches (3.0 cm), 1-1/8 inches (2.9 cm), 1-1/2 inches (3.8 cm), 2-1/16 inches (5.2 cm), and 1-5/16 inches (3.3 cm) in diameter, respectively. Date of excavation: 7/21/95. Redeposited on the site.

01-065. Lead fragment. Unit 4, SU3, discovered on the starboard hull. A fine layer of corrosion byproduct (white, powdery layer and dark staining) is present. This fragment appears to be from a rolled sheet of lead, perhaps a piece of lining from a hawsehole or a scupper drain. The maximum preserved length is 3/4 inch (1.9 cm) and the maximum preserved width is 5/8 inch (1.6 cm). Date of excavation: 7/21/95. Redeposited on the site.

01-066. Copper alloy tack. Unit 4, SU3, discovered on the starboard hull. This tack has a flat, round head, a square shank, and a pointed tip. The tack has a maximum preserved length of 1-5/8 inches (4.1 cm), the shank is 1/8 inch (3.1 mm) square, and the head is 5/8 inch (1.6 cm) in diameter. Date of excavation: 7/21/95. Redeposited on the site.

01-067. Iron spike. Unit 4, SU3, discovered on the starboard hull. This spike has a maximum preserved length of 5-3/4 inches (14.6 cm), the shank is 1/2 inch (1.3 cm) square tapering to a point at its terminal end, and the head is fashioned in a rosehead style and is 3/4 inch (1.9 cm) square. Date of excavation: 7/21/95. Redeposited on the site.

01-068. Lead fragment. Unit 4, SU3, discovered on the starboard hull. A fine layer of corrosion byproduct (white, powdery layer and dark staining) is present. This fragment appears to be from a rolled sheet of lead, perhaps a piece of lining from a hawsehole or a scupper drain. The maximum preserved length is 1/2 inch (1.3 cm) and the maximum preserved width is 1/4 inch (6.3 mm). Date of excavation: 7/21/95. Retained at the Lake Champlain Maritime Museum.

01-069. Iron grapeshot. Unit 4, SU3, discovered on the starboard hull. Total of 1 shot. This grapeshot appears to have been fashioned from a two-piece cast and has a heavy layer of corrosion byproduct (a red-brown rust) present. The shot measures 1-3/8 inches (3.5 cm) in diameter. Date of excavation: 7/21/95. Retained at the Lake Champlain Maritime Museum.

01-070. Iron tack. Unit 4, SU3, discovered on the starboard hull. This tack is heavily corroded. The maximum preserved length is 1-1/8 inches (2.9 cm) and the rectangular shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm) and tapers toward its terminal end. The head measures 3/16 inch (4.8 mm) square. Date of excavation: 7/21/95. Redeposited on the site.

01-071. Iron nail. Unit 4, SU3, discovered on the starboard hull. This nail is extremely corroded and is missing its head and terminal end. The maximum preserved length is 1-11/16 (4.3 cm) and the maximum preserved width is 5/16 inch (7.9 mm). Date of excavation: 7/21/95. Redeposited on the site.
01-072. Iron ballast fragment. Unit 3, SU3, discovered on the starboard hull. This fragment is extremely corroded and amorphous in shape. The maximum preserved dimensions are 1-1/2 inches (3.8 cm) by 1-1/8 inches (2.9 cm). Date of excavation: 7/21/95. Redeposited on the site.

01-073. Iron nail. Unit 3, SU3, discovered on the starboard hull. This nail is heavily corroded but still retains its head and most of its shank length. The maximum preserved length is 2-3/4 inches (7.0 cm), the rectangular shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm). Date of excavation: 7/21/95. Redeposited on the site.

01-074. Iron mortar bomb fragment. Unit 3, SU3, discovered on the starboard hull. This mortar bomb fragment is heavily corroded, but still retains a slightly convex shape as if it came from a hollow, round object. The maximum preserved length is 1-3/8 inches (3.5 cm), the maximum preserved width is 1/2 inch (1.3 cm), and the maximum preserved thickness is 3/8 inch (9.5 mm). Date of excavation: 7/21/95. Retained at the Lake Champlain Maritime Museum.

01-075. Iron grapeshot. Total of 1 shot. Unit 3, SU3, discovered on the starboard hull. This grapeshot is moderately corroded and slightly amorphous in shape due to the layers of rust present. The shot is 1-5/16 inches (3.3 cm) in diameter. Date of excavation: 7/21/95. Retained at the Lake Champlain Maritime Museum.

01-076. Iron ballast fragment. Unit 3, SU3, discovered on the starboard hull. This ballast fragment is moderately corroded and amorphous in shape. The maximum preserved length is 1-1/4 inches (3.2 cm), the maximum preserved width is 1-1/8 inches (2.9 cm), and the maximum preserved thickness is 3/4 inch (1.9 cm). Date of excavation: 7/21/95. Redeposited on the site.

01-077. Iron spike. Unit 3, SU3, discovered on the starboard hull. This spike has a maximum preserved length of 5 inches (12.7 cm), the shank is 3/8 inch (9.5 mm) square at the neck tapering to 1/4 inch (6.3 mm) at its terminal end, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/21/95. Retained at the Lake Champlain Maritime Museum.

01-078. Lead bullet. Total of 1 bullet. SU2, discovered in the stern area of the starboard hull. This appears to be a modern .22 projectile head. Date of excavation: 7/21/95. Redeposited on the site.

01-079. Iron ballast fragment. SU3, discovered in the stern area of the starboard hull. This ballast fragment is moderately corroded. The maximum preserved length along one side is 5-7/8 inches (14.9 cm) and the maximum length along the other side is 3-1/4 inches (8.3 cm). The maximum preserved width is 4 inches (10.2 cm) and the maximum preserved thickness is 1 inch (2.5 cm). Date of excavation: 7/21/95. Redeposited on the site.

01-080. Iron spike. SU3, discovered in the stern area of the starboard hull between Frames 21 and 22. This spike has a maximum preserved length of 4-1/2 inches (11.4 cm), the shank is 3/8 inch (9.5 mm) square at the neck tapering to 1/4 inch (6.3 mm) at its terminal end, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/21/95. Redeposited on the site.

01-081. Lead shot. Total of 1 shot. SU3, discovered on the starboard hull between Frames 22 and 23. This gray-colored round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture and a distinct casting seam can be seen. This shot measures approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/21/95. Retained at the Lake Champlain Maritime Museum.

01-082. Round head iron nail. SU3, discovered on the starboard hull between Frames 21 and 22. This nail is heavily corroded. The maximum preserved length is 2-1/4 inches (5.7 cm), the shank is 3/16 inch (4.8 mm) by 1/8 inch (3.1 mm), and the head is 1/4 inch (6.3 mm) in diameter. Date of excavation: 7/21/95. Redeposited on the site.

01-083. Iron nail. SU3, discovered on the starboard hull between Frames 21 and 22. This nail is heavily corroded. The maximum preserved length is 2-1/2 inches (6.3 cm), the shank is 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm), and the head is partially missing and measures 3/8 inch (9.5 mm) by 1/8 inch (3.1 mm). Date of excavation: 7/21/95. Redeposited on the site.
01-084. Iron grapeshot. Total of 1 shot. SU3, discovered on the starboard hull between Frames 20 and 21. This grapeshot is moderately corroded and measures 1-1/8 inches (2.9 cm) in diameter. Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

01-085. Round head iron nail. SU3, discovered on the starboard hull between Frames 20 and 21. This spike is moderately corroded and slightly bent midway along its length. The maximum preserved length is 2-7/8 inches (7.3 cm), the shank is 3/8 inch (9.5 mm) square at the neck tapering to 1/16 inch (1.5 mm) at its terminal end, and the head is fashioned in a roundhead style and is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/24/95. Redeposited on the site.

01-086. Iron nail. SU3, discovered on the starboard hull between Frames 20 and 21. This nail is heavily corroded and slightly bent midway along its length. The maximum preserved length is 2-3/4 inches (7.0 cm) and the shank is 1/4 inch (6.3 mm) by 3/16 inch (4.8 mm) at the neck and tapers to a point. The head measures 1/2 inch (1.3 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/24/95. Redeposited on the site.

01-087. Lead shot. Total of 4 shot. SU3, discovered on the starboard hull between Frames 19 and 20. These gray-colored round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off from each shot presumably during manufacture and a distinct casting seam can be seen. These shot all measure approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

01-088. Iron nails. Total of 3. SU3, discovered on the starboard hull between Frames 19 and 20. These nails are heavily corroded and two are fragmented. The maximum preserved dimensions are as follows: 2-5/8 inches (6.7 cm) long by 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm); 2-1/8 inches (5.4 cm) long by 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm); and 1-7/8 inches (4.8 cm) long by 1/8 inch (3.1 mm) by 1/16 inch (1.5 mm). Date of excavation: 7/24/95. Redeposited on the site.

01-089. Iron nail. SU3, discovered on the starboard hull between Frames 18 and 19. The nail is heavily corroded and broken off at its terminal end. The maximum preserved length is 2-7/8 inches (7.3 cm) and the shank is 5/16 inch (7.9 mm) by 3/16 inch (4.8 mm) at the neck and tapers toward its terminal end. The head is 7/16 inch (1.1 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/24/95. Redeposited on the site.

01-090. Iron nails. Total of 2. SU3, discovered on the starboard hull between Frames 15 and 16. These nails are extremely corroded. The maximum preserved dimensions are as follows: 2-1/4 inches (5.7 cm) long by 1/4 inch (6.3 mm) wide with a nail head measuring 3/8 inch (9.5 mm) square and 1-1/2 inches (3.8 cm) long by 1/2 inch (1.3 cm) wide with the head missing. Date of excavation: 7/24/95. Redeposited on the site.

01-091. Iron nail. SU3, discovered on the starboard hull between Frames 14 and 15. The nail is moderately corroded and has a maximum preserved length of 3-3/8 inches (8.6 cm). The shank is 7/32 inch (5.5 mm) by 1/8 inch (3.1 mm) at the neck and tapers slightly toward its terminal end. The head is 3/16 inch (4.8 mm) by 1/8 inch (3.1 mm). Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

01-092. Iron nails. Total of 2. SU3, discovered on the starboard hull between Frames 14 and 15. The nails are moderately corroded. The maximum preserved dimensions are as follows: 2-7/8 inches (7.3 cm) long by 1/4 inch (6.3 mm) wide by 3/16 inch (4.8 mm) thick and 2-13/16 inches (7.1 cm) long by 1/4 inch (6.3 mm) wide by 5/32 inch (3.9 mm) thick. Date of excavation: 7/24/95. Redeposited on the site.

01-093. Iron nail. SU3, discovered on the starboard hull between Frames 14 and 15. This nail is lightly corroded. The maximum preserved length is 1-1/4 inches (3.2 cm) and the shank is 3/16 inch (4.8 mm) square at the neck and tapers to 1/16 inch (1.5 mm) at the terminal end. The head is 1/4 inch (6.3 mm) square. Date of excavation: 7/24/95. Redeposited on the site.

01-094. Iron nails. Total of 2. SU3, discovered on the starboard hull between Frames 14 and 15. These nails are extremely corroded and only a portion of the original metal is still intact. The maximum preserved dimensions are as follows: 2-1/16 inches (5.2 cm) long by 3/16 inch (4.8 mm) wide by 1/8 inch (3.1 mm) thick with a head that is 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm) and 1-1/2
inches (3.8 cm) long by 3/16 inch (4.8 mm) wide tapering to 1/8 inch (3.1 mm) wide at its terminal end with the head missing. Date of excavation: 7/24/95. Redeposited on the site.

01-095. Iron nails. Total of 4. SU3, discovered on the starboard hull between Frames 13 and 14. These nails are heavily corroded and they all have rectangular heads and shanks. The maximum preserved dimensions are as follows: 2-3/4 inches (7.0 cm) long by 3/16 inch (4.8 mm) wide by 1/8 inch (3.1 mm) thick at the neck tapering to 1/16 inch (1.5 mm) thick with a head that is 1/2 inch (1.3 cm) by 3/8 inch (9.5 mm); 1-3/4 inches (4.5 cm) by 1/4 inch (6.3 mm) wide by 1/8 inch (3.1 mm) thick at the neck with a head that is 3/16 inch (4.8 mm) by 1/4 inch (6.3 mm); 2-3/4 inches (7.0 cm) long by 3/16 inch (4.8 mm) wide by 1/8 inch (3.1 mm) thick at the neck tapering to a point with the head missing; and 1-3/8 inches (3.5 cm) long by 3/16 inch (4.8 mm) wide by 1/8 inch (3.1 mm) thick with a head that measures 5/16 inch (4.8 mm) by 1/8 inch (3.1 mm). Date of excavation: 7/24/95. Redeposited on the site.

01-096. Iron T-head nail. SU3, discovered on the starboard hull between Frames 13 and 14. This nail is extremely corroded. It originally had a T-shaped head and rectangular shaft. However, the layers of corrosion byproduct present have rendered it almost amorphous in shape. The maximum preserved length is 1-3/8 inches (3.5 cm), the shank is 1/2 inch (1.3 cm) by 3/8 inch (9.5 mm), and the head is 1/2 inch (1.3 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/24/95. Redeposited on the site.

01-097. Iron nails fragments. Total of 2. SU3, discovered on the starboard hull between Frames 12 and 13. These nail fragments are extremely corroded. The maximum preserved dimensions are as follows: 1 inch (2.5 cm) by 1/4 inch (6.3 mm) wide and 1-1/2 inches (3.8 cm) long by 1/4 inch (6.3 mm) wide. Date of excavation: 7/24/95. Redeposited on the site.

01-098. Lead fragment. SU3, discovered on the starboard hull between Frames F and G. A fine layer of corrosion byproduct (white, powdery layer and dark staining) is present. This fragment appears to be from a rolled sheet of lead, perhaps a piece of lining from a hawsehole or a scupper drain. The maximum preserved length is 1-1/4 inches (3.2 cm) and the maximum preserved width is 1/4 inch (6.3 mm). Date of excavation: 7/25/95. Retained at the Lake Champlain Maritime Museum.

01-099. Iron nails. Total of 3. SU3, discovered on the starboard hull between Frames F and E. These nails are extremely corroded. The maximum preserved dimensions are as follows: 2-3/4 inches (7.0 cm) long by 3/16 inch (4.8 mm) wide at the neck and tapering to a point with a head that is 1/4 inch (6.3 mm) square; 1-5/16 inches (3.3 cm) long by 1/8 inch (3.1 mm) wide at the neck and tapering to a point with a head that is 3/16 inch (4.8 mm) square; and 1-5/8 inches (4.1 cm) long by 1/4 inch (6.3 mm) wide at the neck and tapering to a point with a head that is 5/16 inch (7.9 mm) square. Date of excavation: 7/25/95. Redeposited on the site.

01-100. Iron staple. SU2/SU3, discovered on the starboard hull between Frames F and E. This horseshoe-shaped item appears to be a type of fencing post staple—perhaps modern. The maximum preserved length of the space between the two bent-over ends is 1-1/16 inches (2.7 cm). In its original position of use, the staple stands 1-3/8 inches high. The metal used to make the staple is 1/4 inch (6.3 mm) in diameter. Date of excavation: 7/25/95. Redeposited on the site.

01-101. Iron nails. Total of 4. SU3, discovered on the starboard hull between Frames D and E. These nails are all moderately corroded. The maximum preserved dimensions are as follows: 2-1/4 inches (5.7 cm) long with a head that is 1/2 inch (1.3 cm) wide; 1-3/8 inches (3.5 cm) long with a head that is 1/4 inch (6.3 mm) wide; 1-1/8 inches (2.9 cm) long with a head that is 1/8 inch (3.1 mm) wide; and 1-1/8 inches (2.9 cm) long with a head that is 1/4 inch (6.3 mm) wide. Date of excavation: 7/25/95. Redeposited on the site.

01-102. Iron mortar fragment. SU3, discovered on the starboard hull between Frames D and E. This fragment is heavily corroded and appears to have a slightly convex inside surface similar to a piece of a hollow ball. The maximum preserved length is 5-1/2 inches (14.0 cm) and the maximum preserved width is 1 inch (2.5 cm). Date of excavation: 7/25/95. Retained by the Lake Champlain Maritime Museum.

01-103. Iron washer. SU3, discovered on the starboard hull between Frames C and D. This washer is heavily corroded. The maximum diameter is 1 inch (2.5 cm) and the diameter of the inner circle
is 13/16 inch (2.0 cm). The washer is 3/16 inch (4.8 mm) thick. Date of excavation: 7/25/95.
Retained by the Lake Champlain Maritime Museum.

01-104. Iron grapeshot. Total of 1 shot. SU3, discovered on the starboard hull between Frames C and D.
The shot is heavily corroded and measures 1 1/16 inches (2.6 cm) in diameter. Date of
evacuation: 7/25/95. Retained by the Lake Champlain Maritime Museum.

01-105. Iron fastener fragments. Total of 7 fragments. SU3, discovered on the starboard hull between
Frames B and C. These fragments are heavily corroded. The maximum preserved dimensions
are as follows: 2 7/8 inches (7.3 cm) long with a head that is 1/4 inch (6.3 mm) wide; 9/16 inch
(1.4 cm) long with a head that is 1/4 inch (6.3 mm) wide; 2 inches (5 cm) long with a head that is
1/4 inch (6.3 mm) wide; 2-1/16 inches (5.2 cm) long with a head that is 5/16 inch (7.9 mm) wide;
1-7/8 inches (4.8 cm) long with a head that is 6/16 inch (9.5 mm) wide; 2 inches (5 cm) long with
a head that is 1/4 inch (6.3 mm) wide; and 2-5/8 inches (6.7 cm) long with a head that is 1/4 inch
(6.3 mm) wide. Date of excavation: 7/25/95. Redeposited on the site.

01-106. Lead fragment. SU3, discovered on the starboard hull between Frames A and B. A fine layer of
corrosion byproduct (white, powdery layer and dark staining) is present. This fragment appears
to be from a rolled sheet of lead, perhaps a piece of lining from a hawsehole or a scupper drain. It
also appears as though it once had been wrapped around a fastener. The maximum preserved
length is 1-5/8 inches (4.1 cm), the maximum preserved width is 3/4 inch (1.9 cm), and the
terminal width is 1/4 inch (6.3 mm). Date of excavation 7/25/95. Retained by the Lake
Champlain Maritime Museum.

01-107. Iron nail fragment. SU3, discovered on the portside hull between Frames 20 and 21. This
fragment is heavily corroded. The maximum preserved length is 1-1/2 inches (3.8 cm) and the
shank is 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm) at the neck and tapers toward the terminal end.
The head is missing. Date of excavation: 7/13/95. Redeposited on the site.

01-108. Iron nail fragment. SU3, discovered on the portside hull between Frames 21 and 22. This
fragment is extremely corroded. The maximum preserved length is 1-7/8 inches (4.8 cm), the
shank is 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm) at the neck, and the head is 1/4 inch (6.3 mm)
Square. Date of excavation: 7/13/95. Redeposited on the site.

01-109. Iron slag. SU4, discovered on the portside hull between Frames 14 and 15. This appears to be
iron slag from the manufacturing process. Perhaps it was used as ballast, or as anti-personnel
shot. The maximum preserved length is 7/8 inch (2.2 cm). Date of excavation: 7/13/95.
Redeposited on the site.

01-110. Iron nail. SU4, discovered on the starboard hull between Frames A and 1. This nail has a
rectangular head and shank and is heavily corroded. The maximum preserved length is 1-3/4
inches (4.5 cm), the shank is 7/32 inch (5.5 mm) by 3/16 inch (4.8 mm), and the head is 1/4 inch
(6.3 mm) by 3/16 inch (4.8 mm). Date of evacuation: 7/27/95. Redeposited on the site.

01-111. Iron nail. SU4, discovered on the starboard hull between Frames A and 1. This nail has a
rectangular head and shank and it is heavily corroded. The maximum preserved length is 1-7/16
inches (3.7 cm), the shank is 3/16 inch (4.8 mm) by 1/8 inch (3.1 mm), and the head is 1/4 inch
(6.3 mm) by 5/16 inch (7.9 mm). Date of evacuation: 7/27/95. Redeposited on the site.

01-112. Iron fragment. SU4, discovered on the starboard hull between Frames A and 1. This fragment is
extremely corroded and amorphous in shape. The maximum preserved length is 1-1/2 inches (3.8
cm) long and the maximum preserved width is 3/4 inch (1.9 cm). Date of evacuation: 7/27/95.
Redeposited on the site.

01-113. Iron nail. SU4, discovered on the starboard hull between Frames A and 1. This nail is heavily
corroded. The maximum preserved length is 1-1/2 inches (3.8 cm) long, the shank is 3/16 inch
(4.8 mm) wide, and the head is 1/4 inch (6.3 mm) square. Date of evacuation: 7/27/95.
Redeposited on the site.

01-114. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull between Frames 1 and 2. This
grey-colored round shot appears to be from a two-piece cast and has some corrosion byproduct (a
white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been
clipped off presumably during manufacture. The casting seam is visible. The shot measures 5/16
inch (7.9 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-115. Lead shot. Total of 2 shot. SU4, discovered on the starboard hull between Frames 2 and 3. These gray-colored, round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off each shot. The casting seam is visible on both. These shot each measure 5/8 inch (1.6 cm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-116. Iron nail. SU4, discovered on the starboard hull between Frames 1 and 2. This nail is heavily corroded. The maximum preserved length is 1-7/16 inches (3.7 cm), the shank is 3/8 inch (9.5 mm) wide at the neck and tapers toward the terminal end, and the head is 3/8 inch (9.5 mm) wide. Date of excavation: 7/27/95. Redeposited on the site.

01-117. Iron T-head nail. SU4, discovered on the starboard hull between Frames 1 and 2. This nail is moderately corroded. The maximum preserved length is 2-3/4 inches (7.0 cm), the shank is 3/16 inch (4.8 mm) by 1/8 inch (3.1 mm), and the head is 1/2 inch (1.3 cm) by 1/8 inch (3.1 mm). Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-118. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull between Frames 2 and 3. This gray-colored, round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures 1/4 inch (6.3 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-119. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull between Frames 2 and 3. This gray-colored shot appears to be from a two-piece cast, but has lost much of its original round shape. It has a number of flattened surfaces and some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures approximately 1/4 inch (6.3 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-120. Iron nail fragments. Total of 3. SU4, discovered on the starboard hull between Frames 2 and 3. These fragments are extremely corroded. The maximum preserved dimensions are as follows: 1-1/4 inches (3.2 cm) long by 3/8 inch (9.5 mm) wide by 1/8 inch (3.1 mm) thick; 1 inch (2.5 cm) long by 3/4 inch (1.9 cm) wide by 3/8 inch (9.5 mm) thick; and 1-3/8 inches (3.5 cm) long by 3/8 inch (9.5 mm) wide by 3/16 inch (4.8 mm) thick. Date of excavation: 7/27/95. Redeposited on the site.

01-121. Lead shot. Total of 3 shot. SU4, discovered on the starboard hull between Frames 2 and 3. These gray-colored, round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped from each shot presumably during manufacture, and their individual casting seams are visible. These shot each measure 1/2 inch (1.3 cm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-122. Copper alloy tacks. Total of 2 tacks. SU4, discovered on the starboard hull between Frames 2 and 3. These tacks have round heads, square shanks, and minimal corrosion. The maximum preserved dimensions for the first tack are: 1-1/4 inches (3.2 cm) long by 1/8 inch (3.1 mm) square tapering along its terminal end to a point, with a round head measuring 3/8 inch (9.5 mm) in diameter. The maximum preserved dimensions for the second tack are: 15/16 inch (2.3 cm) long by 1/8 inch (3.1 mm) square tapering along its terminal end to a point, with a round head measuring 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-123. Copper alloy tacks. Total of 3 tacks. SU4, discovered on the starboard hull between Frames 3 and 4. These tacks have round heads, square shanks, and show minimal corrosion. The maximum preserved dimensions are as follows: 1-1/4 inches (3.2 cm) long by 1/8 inch (3.1 mm) square tapering to a point, with a head that measures 3/8 inch (9.5 mm) in diameter; 7/16 inch
(1.1 cm) long by 1/8 inch (3.1 mm) square tapering to a point, with a head that measures 3/8 inch (9.5 mm) in diameter; 9/16 inch (1.4 cm) long by 1/8 inch (3.1 mm) square tapering to a point, with a head that measures 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-124. Iron nails. Total of 4 nails. SU4, discovered on the starboard hull between Frames 3 and 4. These nails are all heavily corroded and two appear to have had their terminal ends clenched over. The maximum preserved dimensions are as follows: 1-5/8 inches (4.1 cm) long by 7/16 inch (1.1 cm) wide, with the distal 13/16 inch (2.0 cm) of its length clenched/bent; 1-1/16 inches (2.7 cm) long by 1/8 inch (3.1 mm) wide, with the distal 1/4 inch (6.3 mm) of its length clenched/bent; 3/4 inch (1.9 cm) long by 3/8 inch (9.5 mm) wide; and 1-7/16 inches (3.7 cm) long by 1/4 inch (6.3 mm) wide tapering to 1/8 inch (3.1 mm) at its terminal end. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-125. Iron spike. SU4, discovered on the starboard hull between Frames 3 and 4. This spike has a maximum preserved length of 5-1/16 inches (12.9 cm), the shank is 5/16 (7.9 mm) square at the neck tapering to 3/16 inch (4.8 mm) at its terminal end, and the head is fashioned in a rosehead style and is 1/4 inch (6.3 mm) square. Date of excavation: 7/27/95. Redeposited on the site.

01-126. Iron nail. SU3, discovered on the starboard hull associated with the stern ballast. This nail is moderately corroded. The maximum preserved length is 3 inches (7.6 cm), the shank is 3/16 inch (4.8 mm) wide tapering to 1/8 inch (3.1 mm) wide, and the maximum thickness is 1/8 inch (3.1 mm). The head is 1/4 inch (6.3 mm) by 3/16 inch (4.8 mm). Date of excavation: 7/27/95. Redeposited on the site.

01-127. Iron spike. SU4, discovered on the starboard hull associated with ballast pile. This spike is extremely corroded and has a maximum preserved length of 4-3/4 inches (12.1 cm), the shank is 3/8 inch (9.5 mm) square at the neck tapering to a point at its terminal end, and the head is fashioned in a rosehead style and is 1/2 inch (1.3 cm) square. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-128. Iron nails. Total of 4 nails. SU4, discovered on the starboard hull associated with Transverse Decking (T3-T4B). These nails are heavily corroded. The maximum preserved dimensions are as follows: 1-3/4 inches (4.4 cm) long by 1/8 inch (3.1 mm) wide tapering to 1/16 inch (1.5 mm) by 1/8 inch (3.1 mm) thick, with a rectangular head measuring 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm); 2-1/4 inches (5.7 cm) long by 1/4 inch (6.3 mm) wide tapering to 1/8 inch (3.1 mm) by 1/8 inch (3.1 mm) thick tapering to 1/16 inch (1.5 mm), with a rectangular head measuring 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm); 1-1/8 inches (2.9 cm) long by 1/4 inch (6.3 mm) wide by 1/16 inch (1.5 mm) thick, with a rectangular head measuring 3/8 inch (9.5 mm) by 1/8 inch (3.1 mm); and 1-3/4 inches (4.4 cm) long by 1/4 inch (6.3 mm) wide by 1/8 inch (3.1 mm) thick. Date of excavation: 7/27/95. Redeposited on the site.

01-129. Iron nail fragments. Total of 4 nail fragments. SU4, discovered on the starboard hull between Frames 13 and 14. These fragments are extremely corroded. The maximum preserved dimensions are as follows: 1-3/8 inches (3.5 cm) long by 3/16 inch (4.8 mm) wide at the neck by 3/16 inch (4.8 mm) thick tapering to 1/8 inch (3.1 mm), with a head measuring 1/4 inch (6.3 mm) by 3/16 inch (4.8 mm); 1-5/8 inches long (4.1 cm) by 3/16 inch (4.8 mm) wide tapering to 1/8 inch (3.1 mm); 1-1/8 inches (2.9 cm) long by 1/8 inch (3.1 mm) wide tapering to a point; and 1-1/4 inches (3.2 cm) long by 3/16 inch (4.8 mm) wide and 1/4 inch (6.3 mm) wide at the head. Date of excavation: 7/27/95. Redeposited on the site.

01-130. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull between Frames 19 and 20. This gray-colored, round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures 1/4 inch (6.3 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-131. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull beneath the keelson aft of Frame 18. This gray-colored, round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the
molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures 5/8 inch (1.6 cm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-132. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull beneath the keelson aft of Frame 18. This gray-colored, round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures 1/4 inch (6.3 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-133. Iron nail fragments. Total of 5 fragments. SU4, discovered on the starboard hull between Frames 18 and 19. These fragments are extremely corroded and damaged. The maximum preserved dimensions are as follows: 1-1/4 inches (3.2 cm) long by 3/16 inch (4.8 mm) with a head measuring 1/4 inch (6.3 mm) wide; 1 inch (2.5 cm) long by 1/4 inch (6.3 mm) wide; 1-1/16 inches (5.0 cm) long by 1/8 inch (3.1 mm) wide tapering to 1/16 inch (1.5 mm) at its terminal end; 2 inches (5 cm) long by 1/8 inch (3.1 mm) wide with the head missing; and 2-1/4 inches (5.7 cm) long by 3/8 inch (9.5 mm) wide. Date of excavation: 7/27/95. Redeposited on the site.

01-134. Iron chisel/possible caulking tool. SU3, discovered on the starboard hull next to the keelson at Frame 18. This tool appears heavily corroded and has part of a wooden handle in place. The maximum preserved length is 6-3/4 inches (9.5 cm), the terminal end of the tool blade is 13/16 (2.0 cm) wide and 3/16 inch (4.8 mm) thick, and the proximal end flares to a width of 1-1/4 inches (3.2 cm) in diameter to receive the 1-1/16-inch-in-diameter (2.7-cm-in-diameter) wooden handle. Midway along the tool's overall length it pinches inward to 5/8 inch (1.6 cm) in width. A fragment of the original wooden handle is still in place and is approximately 7/16 inch (1.1 cm) in height. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-135. Musket barrel strap ring. SU4, discovered on the starboard hull along Frame 17. This teardrop-shaped iron strap fastener would have been attached to the barrel of a musket and one end of the leather shoulder sling/strap for the weapon would have secured to its lower half. The maximum preserved width of the entire artifact is 2-1/8 inches (5.4 cm). The iron is fashioned in the form of a solid wire approximately 1/8 inch (3.1 mm) thick. The solid wire has been bent into a U-shape leaving 1/2 inch (1.3 cm) of space between the two ends. This fragment appears to be the lower half of the ring. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-136. Lead shot. SU4, discovered on the starboard hull between Frames 17 and 18 near the keel rabbet. This gray-colored, round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-137. Iron T-head nails. Total of 4 nails. SU4, discovered on the starboard hull between Frames 17 and 18. These nails have T-shaped heads, rectangular shanks, and are heavily corroded. The maximum preserved dimensions are as follows: 2-3/4 inches (7.0 cm) long by 3/16 inch (4.8 mm) wide at the neck tapering to a point with a head that measures 3/8 inch (9.5 mm) by 3/16 inch (4.8 mm); 1-1/2 inches (3.8 cm) long by 1/4 inch (6.3 mm) wide at the neck tapering toward the terminal end with a head that measures 5/16 inch (7.9 mm) by 1/4 inch (6.3 mm); 2-1/4 inches (5.7 cm) long by 1/8 inch (3.1 mm) wide at the neck tapering toward the terminal end with a head that measures 5/16 inch (7.9 mm) by 1/4 inch (6.3 mm); and 1-1/8 inches (2.9 cm) long by 3/16 inch (4.8 mm) wide at the neck tapering toward the terminal end with a head that measures 3/8 inch (9.5 mm) by 5/16 inch (7.9 mm). Date of excavation: 7/27/95. Redeposited on the site.

01-138. Copper alloy nail fragment. SU4, discovered on the starboard hull between Frames 17 and 18. This nail fragment has a square head and square shank. The maximum preserved length is 9/10 inch (0.9 cm) long and the shank is 3/16 inch (4.8 mm) tapering to 1/8 inch (3.1 mm). The head is 1/4 inch (6.3 mm) square. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.
01-139. Iron spike and nails. Total of 1 spike and 3 nails. SU4, discovered on the starboard hull between Frames 17 and 18. The spike and nails are moderately corroded. The spike is 7-1/8 inches (18.1 cm) long, its shank is 3/8 inch (9.5 mm) square, and the head is in a rosehead style and measures 1/2 inch (1.3 cm) by 9/16 inch (1.4 cm). The maximum dimensions of the nails are as follows: 2-13/16 inches (7.1 cm) long with a head that measures 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm); 2-3/8 inches (6.0 cm) with a head that measures 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm); and 1-5/16 inches (3.3 cm) with a head that measures 3/16 inch (4.8 mm) square. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

01-140. Iron nail. SU4, discovered on the starboard hull at Frame 13. This nail is heavily corroded with concretions covering its terminal end. The maximum preserved length is 2-5/16 inches (5.9 cm), the shank is 5/16 inch (7.9 mm) at the neck, and the head is 7/16 inch (1.1 cm) square. Date of excavation: 7/27/95. Redeposited on the site.

01-141. Rolled copper alloy sheet fragments. Total of 23 fragments. SU4, discovered on the starboard hull between Frames 16 and 17 resting on the garboard strake. These appear to be fragments from a flat sheet of copper alloy, perhaps used as a type of lining for the galley’s magazine. Divers discovered a heavy concentration of these fragments ranging in dimensions from the largest being 3-3/4 inches (9.5 cm) wide by 2-1/2 inches (6.3 cm) long to the smallest being 1/8 inch (3.1 mm) long by 1/16 inch (1.5 mm) wide. All of the fragments average 1/64 inch (0.3 mm) in thickness. The fragments exhibit varying degrees of preservation. The thickness measurement appears to be smaller than the original would have been in 1814. Similar fragments appeared forward of amidships as well, but not in nearly the same concentration. They were all grouped under one catalog number in the field. Date of excavation: 7/28/95. Redeposited on the site. (Note: These fragments were temporarily mislabeled in the field as “lamp parts.” This has since been corrected in the documents pertaining to the excavation in 1995).

01-142. Pig iron ballast. Total of 3 pieces. Surface collection, recovered by the 1982 Survey from the port stern area of the galley. Two of the pieces are half-circle-shaped bars (in cross section view), while the remaining one is a rectangular bar. The maximum preserved dimensions of the ballast pieces are as follows: the largest half-circle-shaped bar measures 12-1/2 inches (31.7 cm) long, 4-1/8 inches (10.5 cm) wide, and 2-3/8 inches (6.0 cm) thick; the smaller half-circle-shaped bar measures 6 inches (15.2 cm) long, 3-1/4 inches (8.3 cm) and 3-1/2 inches (8.9 cm) wide at opposite ends, and 1-5/8 inches (4.1 cm) thick; and the rectangular shaped bar measures 6-1/2 inches (16.5 cm) long, 2-3/4 inches (7.0 cm) wide, and 1-3/4 inches (3.2 cm) thick. Date of recovery: Summer, 1982. Redeposited on the site in 1995.

01-143. Iron drift bolt. Surface collection, recovered by the 1982 Survey from the stern area of the galley. This drift bolt is only lightly corroded. The maximum preserved length of the bolt is 1 foot, 2-5/16 inches (36.4 cm) long and the maximum head diameter is 1-1/8 inches (2.9 cm). Date of recovery: Summer, 1982. Retained by the Lake Champlain Maritime Museum and added to the Allen artifact collection in 1995.

01-144. Iron knife blade. SU4, discovered on the starboard hull between Frames 16 and 17. This knife blade is heavily corroded, but the cutting edge can still be discerned upon close inspection. Its handle is entirely missing. However, the hafting point on the blade is still visible. It appears that a 3/8-inch (9.5 mm)-by-3/8-inch (9.5 mm) extension of the proximal end of the knife originally slotted into a handle and fastened in place with a 1/16 inch-in-diameter (1.5-mm-in-diameter) pin or rivet. The knife blade has a maximum preserved length of 4 inches (10.2 cm) with a cutting area of 3-5/8 inches (9.2 cm). The blade is 1/2 inch (1.3 cm) wide at its terminal end and 5/8 inch (1.6 cm) wide at its proximal end. Date of excavation: 7/28/95. Retained by the Lake Champlain Maritime Museum.

01-145. Unidentified iron object/possible cabinet hardware. SU4, discovered on the starboard hull between Frames 16 and 17. This iron object appears to be a type of hardware for a storage cabinet or sliding door. It could also be related to weaponry. The object consists of a flat base with an ovoid fastening hole and two looped ends fashioned by turning up the ends and bending them over into circles giving the piece a wing-nut-like appearance. The object is moderately corroded. The maximum preserved dimensions are as follows: 1-1/8 inches (2.9 cm) long and
5/8 inch (9.5 mm) in height (standing upright measured from base to the top of the loops). The base of the object is 1-1/8 inches (2.9 cm) long to the point at which the two ends curve upward into the loops and 7/16 inch (1.1 cm) wide with an ovoid fastening hole that is 1/4 inch (6.3 mm) across. The two loops are approximately 1/4 inch (6.3 mm) and 3/16 inch (4.8 mm) in diameter. The metal used to fashion the loops is 3/16 inch (4.8 mm) in diameter. The gap between the two loops is 1/8 inch (3.1 mm). Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-146. Iron spikes. Total of 2 spikes. SU4, discovered on the starboard hull between Frames 16 and 17. These spikes are heavily corroded. The maximum preserved dimensions are as follows: 4-3/4 inches (12.1 cm) long, with a head that measures 3/4 inch (1.9 cm) square and 2-1/8 inches (5.4 cm) long, with a head that measures 3/8 inch (9.5 mm) square. Date of excavation: 7/28/95. Redeposited on the site.

01-147. Iron nails. Total of 7 nails. SU4, discovered on the starboard hull between Frames 16 and 17. These nails are heavily corroded. The maximum preserved dimensions are as follows: 1-1/4 inches (3.2 cm) long and 3/16 inch (4.8 mm) wide at the neck tapering to 1/8 inch (3.1 mm); 1-1/2 inches (3.8 cm) long and 5/16 inch (7.9 mm) wide; 2-15/16 inches (7.5 cm) long and 3/16 inch (4.8 mm) wide at the neck tapering to 1/8 inch (3.1 mm) with a head that measures 5/16 inch (7.9 mm) square; 2-3/4 inches (7.0 cm) long and 1/4 inch (6.3 mm) wide at the neck tapering to 1/16 inch (1.5 mm) with a head that measures 1/2 inch (1.3 cm) square; 3-3/8 inches (8.6 cm) long and 5/16 inch (7.9 mm) wide tapering to 1/16 inch (1.5 mm) with a head that measures 7/16 inch (1.1 cm) square; 1-1/4 inches (3.2 cm) long and 3/16 inch (4.8 mm) wide tapering to 1/8 inch (3.1 mm); and 1-3/4 inches (4.5 cm) long and 1/8 inch (3.1 mm) wide tapering to 1/16 inch (1.5 mm) with a head that measures 1/4 inch (6.3 mm) square.

01-148. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull between Frames 16 and 17. This gray-colored, round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture. A casting seam is visible. The shot measures approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-149. Iron grapeshot. Total of 1 shot. SU3, discovered on the starboard hull between Frames 15 and 16. This grapeshot is moderately corroded and measures 1 inch (2.5 cm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-150. Iron nail. Total of 4 nails and 4 nail fragments. SU4, discovered on the starboard hull between Frames 15 and 16. These nails and fragments are heavily corroded. The maximum preserved dimensions of the nails are as follows: 2-5/16 inches (5.9 cm) long with a head that measures 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm); 2-7/16 inches (6.2 cm) long with a head that measures 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm); 2-13/16 inches (7.2 cm) long with a partially broken head that measures 1/4 inch (6.3 mm) square; and 3/4 inch (1.9 cm) long with a head that measures 3/16 inch (4.8 mm) square. The maximum preserved dimensions of the nail fragments are as follows: 7/16 inch (1.1 cm) long with a head that measures 3/16 inch (4.8 mm) square; 1 inch (2.5 cm) long by 5/32 inch (3.9 mm) wide; 1 inch (2.5 cm) long by 1/8 inch (3.1 mm) wide; and 1 inch (2.5 cm) long by 1/4 inch (6.3 mm) wide. Date of excavation: 7/28/95. Redeposited on the site.

01-151. Copper alloy nail. SU4, discovered on the starboard hull between Frames 15 and 16. This nail has a square head and shank. The maximum preserved length is 2-1/4 inches (5.7 cm), the shank is 7/32 inch (5.5 mm) square at the neck and tapers to 1/8 inch (3.1 mm) at the terminal end, and the head is 1/4 inch (6.3 mm) square and 1/16 inch (1.5 mm) thick. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-152. Lead shot. Total of 8 shot. SU4, discovered on the starboard hull between Frames 15 and 16. These gray-colored, round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off each shot presumably during manufacture, and the casting seams are
visible. Each shot measures approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-153. Iron nail. Total of 9 nails. SU4, discovered on the starboard hull between Frames 16 and 17. These nails are heavily corroded. The maximum preserved dimensions are as follows: 2 inches (5 cm) long with a head that measures 1/4 inch (6.3 mm) square; 1-15/16 inches (4.9 cm) long with concretion making it difficult to make a reliable width measurement; 1 inch (2.5 cm) long and 1/8 inch (3.1 mm) wide; 1-1/8 inches (2.9 cm) long by 1/8 inch (3.1 mm) at the neck with a head that measures 1/4 inch (6.3 mm) by 3/16 inch (4.8 mm); 1-1/2 inches (3.8 cm) long by 1/8 inch (3.1 mm) wide by 1/16 inch (1.5 mm) thick, with a head that measures 1/4 inch (6.3 mm) by 1/8 inch (3.1 mm); 1-1/4 inches (3.1 cm) long by 1/8 inch (3.1 mm) wide at the neck with a head that measures 1/4 inch (6.3 mm) square; 2-7/16 inches (6.2 cm) long by 1/4 inch (6.3 mm) wide at the neck tapering to 1/8 inch (3.1 mm) with a head that measures 3/8 inch (9.5 mm) square; 2-5/8 inches (6.7 cm) long by 3/16 inch (4.8 mm) wide at the neck tapering to 1/8 inch (3.1 mm) at the terminal end with a head that measures 5/16 inch (7.9 mm) square; and 2-5/8 inches (6.7 cm) long by 3/16 inch (4.8 mm) by 1/4 inch (6.3 mm) at the neck and tapering to a point at the terminal end with a head that measures 7/16 inch (1.1 cm) by 3/8 inch (9.5 mm). Date of excavation: 7/28/95. Redeposited on the site.

01-154. Copper alloy tack. SU4, discovered on the starboard hull between Frames 15 and 16. This tack has a dome-shaped, round head and a square shank that tapers to a point at the terminal end. The maximum preserved length is 5/8 inch (1.6 cm), the shank is 3/16 inch (4.8 mm) square, and the head measures 7/16 inch (1.1 cm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-155. Copper alloy tack. SU4, discovered on the starboard hull between Frames 15 and 16. This tack has a flat, round head, a square shank, and it is lightly corroded. The maximum preserved length is 1-1/4 inches (3.2 cm) long, the shank is 1/8 inch (3.1 mm) square, and the head is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-156. Iron nail. Total of 5 nails. SU4, discovered on the starboard hull between Frames 15 and 16. These nails are heavily corroded. The maximum preserved dimensions are as follows: 2-1/2 inches (6.3 cm) long with a head that measures 1/4 inch (6.3 mm) square; 2-1/4 inches (5.7 cm) long with a head that measures 1/4 inch (6.3 mm) square; 1-1/4 inches (3.2 cm) long with a head that measures 1/4 inch (6.3 mm) square; 3-1/2 inches (8.9 cm) long with a head that measures 1/2 inch (1.3 cm) square; and 2 inches (5 cm) long with a head that measures 1/2 inch (1.3 cm) square. Date of excavation: 7/28/95. Redeposited on the site.

01-157. Iron eye screw. SU4, discovered on the starboard hull between Frames 15 and 16. This eye screw is broken off and appears moderately corroded. The “eye” section is 5/16 inch (7.9 mm) in diameter with a center hole that is 1/8 inch (3.1 mm) in diameter. The shank (round in cross section) of the “eye” is 1/8 inch (3.1 mm) in diameter. The overall length of the eye screw is 7/16 inch (1.1 cm) as the majority of its shank length appears to be missing. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-158. Copper alloy tack. SU4, discovered on the starboard hull between Frames 15 and 16. This tack has a dome-shaped, round head, a square shank, and it is lightly corroded. The maximum preserved length is 3/16 inch (4.8 mm), the shank is broken off at the head, and the head is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-159. Lead shot. Total of 9 shot. SU4, discovered on starboard hull between Frames 14 and 15. These gray-colored, round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off each shot presumably during manufacture, and each shot has a visible casting line. Each shot measures approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-160. Lead shot. Total of 1 shot. SU4, discovered on starboard hull between Frames 14 and 15. This gray-colored, round shot appears to be from a two-piece cast and has some corrosion byproduct
(a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures approximately 5/8 inch (1.6 cm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-161. Copper alloy tack. SU4, discovered on starboard hull between Frames 14 and 15. This tack has a dome-shaped, round head, a square shank, and it is lightly corroded. The maximum preserved length is 11/16 inch (1.7 cm), the shank is 1/8 inch (3.1 mm) square at the neck and tapers to a point, and the head is 3/8 inch (9.5 mm) in diameter and 1/8 inch (3.1 mm) thick. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-162. Copper alloy straight pin. SU4, discovered on starboard hull between Frames 14 and 15. This straight pin has a circular head that is 1/16 inch (1.5 mm) in diameter attached to a pin body that is 1-1/16 inches (2.7 cm) long and 1/32 inch (0.7 mm) in diameter tapering to a point at the terminal end. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-163. Lead shot. Total of 2 shot. SU4, discovered on starboard hull between Frames 14 and 15. These gray-colored, round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off each shot presumably during manufacture, and the casting lines are visible. The first shot measures approximately 1/4 inch (6.3 mm) in diameter and the remaining shot measures approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-164. Iron T-head and roundhead nails. Total of 2 nails. SU4, discovered on starboard hull between Frames 14 and 15. These nails are heavily corroded. The maximum preserved dimensions are as follows: the T-head nails is 2-1/16 inches (5.2 cm) long, the shank is 1/4 inch (6.3 mm) square, and the T-shaped head measures 9/16 inch (1.4 cm) by 1/4 inch (6.3 mm); the roundhead nail is 1-1/2 inches (3.8 cm) long, the shank is 1/8 inch (3.1 mm) square, and the round, flat head measures 3/16 inch (4.8 mm) in diameter. Date of excavation: 7/28/95. Redeposited on the site.

01-165. Copper alloy button. SU4, discovered on the starboard hull between Frames 14 and 15. This button is in excellent condition with only traces of corrosion byproduct and staining present on the anterior and posterior surfaces. The button appears to be cast with the crown and back as a single piece. The button's attachment point on the posterior face appears heavily degraded. The button is 1/2 inch (1.3 cm) in diameter. The anterior face is plain, with no markings, while the reverse (posterior) face has the partial markings AU*PT*A (the asterisks are actually on the button between the lettering) embossed along the upper outer margin of the button's circumference in block letters. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-166. Number not used.

01-167. Lead shot. Total of 11 shot. SU4, discovered on the starboard hull between Frames 13 and 14. These gray-colored, round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off each shot presumably during manufacture, and the casting seams are visible. These shot each measure approximately 5/16 inch (7.9 mm) in diameter. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

01-168. Iron nail. SU4, discovered on the starboard hull between Frames 13 and 14. This nail is moderately corroded. The maximum preserved length is 2-3/8 inches (6.0 cm) long, the rectangular shank is 1/4 inch (6.3 mm) wide at the neck tapering to 3/32 inch (2.3 mm), and the head is 3/8 inch (9.5 mm) by 1/4 inch (6.3 mm). Date of excavation: 7/28/95. Redeposited on the site.

01-169. Lead shot. Total of 1 shot. SU4, discovered on the starboard hull between Frames 16 and 17 along the keel rabbet. This gray-colored round shot appears to be from a two-piece cast and has some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off presumably during manufacture, and the casting seam is visible. This shot measures approximately 1/2 inch (1.3 cm) in diameter. Date of excavation: 7/31/95. Retained at the Lake Champlain Maritime Museum.
01-170. Lead shot. Total of 24 shot. SU4, discovered on the starboard hull between Frames 16 and 17 along the keel rabbet. These gray-colored round shot appear to be from a two-piece cast and have some corrosion byproduct (a white, powdery layer and dark staining) present. The sprue, from the molten lead pour, has been clipped off each shot presumably during manufacture, and the casting seams are visible. These shot vary in diameter from 1/4 inch (6.3 mm) to 1/16 inch (1.5 mm). Date of excavation: 7/31/95. Retained at the Lake Champlain Maritime Museum.

01-171. Copper alloy hook clasp. SU4, discovered on the starboard hull between Frames 16 and 17 along the keel rabbet. This appears to be the proximal end of a hook clasp. The remains of the clasp consist of a solid, copper alloy wire bent to form an eye-loop at one end. The maximum preserved length of the object is 3/4 inch (1.9 cm) and the eye-loop is 1/8 inch (3.1 mm) in diameter. The wire is 1/32 inch (0.7 mm) in diameter. Date of excavation: 7/31/95. Retained at the Lake Champlain Maritime Museum.

01-172. Copper alloy tack. SU3, discovered on the portside hull between Frames E and I. This tack has a flat, round head and a square shank, and it is lightly corroded. The maximum preserved length is 1-1/8 inches (2.9 cm), the shank is 1/8 inch (3.1 mm) square, and the head is 3/8 inch (9.5 mm) in diameter. Date of excavation: 7/11/95. Retained at the Lake Champlain Maritime Museum.

01-173. Iron nail fragment. SU3, discovered on the portside hull between Frames E and I. This nail fragment is heavily corroded. The maximum preserved length is 1-1/2 inches (3.8 cm) long and the maximum width is 1/4 inch (6.3 mm). Date of excavation: 7/11/95. Redeposited on the site.

01-174. Possible lead or pewter button—U.S. 13th Infantry “Script I” style. Surface collection, recovered from bow area atop the keel near Frame Q. This button is in excellent condition with only traces of corrosion byproduct (dark staining) present on its anterior and posterior surfaces. The button appears to be cast as a single piece—the crown and the back as one solid piece. The button’s attachment loop, or “eye,” appears heavily degraded. The button measures 3/4 inch (1.9 cm) in diameter, 1/16 inch (1.5 mm) thick, and contains the “Script I” style insignia of the U.S. Army’s 13th Infantry Regiment from the period of the War of 1812. The button has a large script letter “I” on the front face underscored by a raised oval area containing the number “13.” The “I” stands for “Infantry” and the “13” for the regiment number—a button style that was discontinued after the year 1812. The new infantry buttons simply had the script “I” with a star, or a mullet, or simply a blank space within the oval. The reverse (posterior) face of this button contains no markings. Date of excavation: Summer, 1982. Retained by the Lake Champlain Maritime Museum and added to the Allen artifact collection in 1995.

01-175. Starboard ballast (Pig-Iron Collection “A-P”). SU3, discovered on the starboard hull from Frame 13 aft toward the stern area. A total of 16 pieces have been documented in situ. See Chapters VIII and IX of this dissertation for a full description.

01-176. Port ballast (Pig-Iron Collection “A-N”). SU3, discovered on the portside hull in stern area. A total of 14 pieces have been documented in situ. See Chapters VIII and IX of this dissertation for a full description.

Brick and Stone

02-001. SU3-Angular river stone. Taken for sampling purposes only. Maximum preserved axis measures approximately 5/8 inch (1.6 cm), placing it in the size range of a river pebble—4 to 64 mm. Date of sampling: 7/27/95. Redeposited on the site.

02-002. Number Not Used.

02-003. Gunflint. Total of 2 stones. SU3, discovered on the starboard hull between Frames 2 and 3. These gunflints are a yellow-brown, translucent color and are angular in shape. Virtually no corrosion has occurred on their surfaces. The first stone is 1/2 inch (1.3 cm) long by 5/16 inch (7.9 mm) wide by 1/4 inch (6.3 mm) thick. The second is 1/2 inch (1.3 cm) long by 3/8 inch (9.5 mm) wide by 1/4 inch (6.3 mm) thick. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

02-004. Gunflint. Total of 1 stone. SU3, discovered on the starboard hull between Frames 3 and 4. This gunflint stone is a yellow-brown, translucent color and is angular in shape. Virtually no
corrosion has occurred on any of its surfaces. The stone is 5/8 inch (1.6 cm) long by 1/4 inch (6.3 mm) wide by 5/32 inch (3.9 mm) thick. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

02-005. Gunflint. Total of 1 stone. SU4, discovered on the starboard hull between Frames 16 and 17. This gunflint stone is a yellow-brown, translucent color and is angular in shape. Virtually no corrosion has occurred on any of its surfaces. The stone is 11/16 inch (1.7 cm) by 5/8 inch (1.6 cm) by 5/16 (7.9 mm). Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

Wood

03-001. Charcoal fragment. SU3, discovered on the starboard hull between Frames 1 and 2. This appears to be a burned wooden fragment—charcoal. The maximum dimensions are 1/2 inch (1.3 cm) by 5/8 inch (1.6 cm) by 1/2 inch (1.3 cm). Date of excavation: 7/11/95. Redeposited on the site.

03-002. Possible gangway deck plank fragment. SU3, discovered on the starboard hull between Frames 3 and 4 and not secured. This fragment appears badly deteriorated. The maximum dimensions are 8-1/4 inches (21.0 cm) long by 3-1/8 inches (8.0 cm) wide by 1-1/4 inches (3.2 cm) thick. Date of excavation: 7/11/95. Redeposited on the site.

03-003. Unidentified wood fragment. SU3, discovered on the starboard hull between Frames 14 and 15. This fragment appears badly deteriorated. There are two chiseled areas on the inferior surface of the fragment. The maximum dimensions are 2-1/2 inches (6.4 cm) long by 1-1/8 inches (2.9 cm) wide. Date of excavation: 7/13/95. Redeposited on the site.

03-004. Cork fragment. SU3, discovered on the starboard hull between Frames 14 and 15. This appears to be a bottle cork fragment. The maximum dimensions are 1-1/2 inches (3.8 cm) long by 3/4 inch (1.9 cm) wide tapering to 5/8 inch (1.6 cm) wide, and 3/4 inch (1.9 cm) thick. Date of excavation: 7/13/95. Redeposited on the site.

03-005. Wood chips. Total of 30 chips. SU3, discovered on the starboard hull between Frames L and M. These wood chips vary in size and are presumably associated with the deterioration of the galley. Date of excavation: 7/19/95. Redeposited on the site.

03-006. Unidentified wood fragment. SU3, discovered on the starboard hull between Frames L and K. This appears to be a worked piece of wood. The maximum dimensions are 10-3/4 inches (27.3 cm) long, 3 inches (7.6 cm) wide, and 1 inch (2.5 cm) thick. Date of excavation: 7/19/95. Redeposited on the site.

03-007. Wood chips. Total of 24 chips. SU3, discovered on the starboard hull between Frames L and K. These wood chips vary in size from 2-1/4 inches (5.7 cm) long by 1-1/16 inches (2.7 cm) wide to 1/2 inch (1.3 cm) by 1/2 inch (1.3 cm). They are presumably associated with the deterioration of the galley. Date of excavation: 7/19/95. Redeposited on the site.

03-008. Possible gangway deck plank fragment. SU3, discovered on the starboard hull between Frames A and 3. This appears to be a loose plank that fell down onto the ceiling planking near the keelson from the galley's upper works. The fragment is moderately deteriorated along its perimeter. Vertical saw marks are evident along the edges of the plank regularly spaced 1/2-inch (1.3-cm) apart. The maximum preserved dimensions are 5 feet, 1/2 inch (1.53 m) long, 4 inches (10.2 cm) wide, and 1-1/4 inches (3.2 cm) thick. Date of excavation: 7/21/95. Redeposited on the site.

03-009. Ceiling plank fragment. SU3, discovered on the starboard hull between Frames F and C. This fragment appears heavily deteriorated and is no longer fastened in place. The maximum preserved dimensions are 3 feet, 11 inches (1.19 m) long by 12 inches (30.5 cm) wide by 1-1/4 inches (3.2 cm) thick. Date of excavation: 7/21/95. Redeposited on the site.

03-010. Charred wood fragment. SU3, discovered on the starboard hull between Frames G and D. This fragment is burned on all surfaces and badly deteriorated. The maximum preserved dimensions are 5-1/2 inches (14.0 cm) long by 1-7/8 inches (4.7 cm) wide by 1-1/8 inches (2.9 cm) thick. It has sufficient dimensions to be a deck beam of sorts from the galley's upper works. Date of excavation: 7/21/95. Redeposited on the site.
03-011. Ceiling plank fragment. SU3, discovered on the starboard hull between Frames C and I. This fragment is heavily deteriorated and no longer fastened in place. Evidence of fastener holes and contact with floor timbers can be seen on its inferior face. The maximum preserved dimensions are 6-1/2 inches (16.5 cm) long by 2 inches (5 cm) wide on one end and 1-1/2 inches (3.8 cm) wide on the opposite end, and 1 inch (2.5 cm) thick. Date of excavation: 7/21/95. Redeposited on the site.

03-012. Modern cigarette/cigar holder. SU2, discovered on the starboard hull between Frames C and I. This is intrusive to the site—not contemporary. The maximum preserved dimensions are 1-1/2 inches (3.8 cm) long by 1/2 inch (1.3 cm) wide, with a bore diameter of 1/8 inch (3.1 mm). Date of excavation: 7/21/95. Discarded.

03-013. Transverse deck plank. SU3, discovered on the starboard hull at Frame 19. This plank fragment appeared nailed in place and badly deteriorated along its distal end. The maximum preserved dimensions are 10-1/2 inches (26.6 cm) long by 7-3/4 inches (19.7 cm) wide by 1 inch (2.5 cm) thick. Date of excavation: 7/24/95. Redeposited on the site.

03-014. Transverse deck plank fragment. SU3, discovered on the starboard hull at Frame 19. This plank fragment is extremely deteriorated and no longer fastened in place. The maximum preserved dimensions are 8 inches (20.3 cm) long by 2 inches (5 cm) wide by 1 inch (2.5 cm) thick. Date of excavation: 7/24/95. Redeposited on the site.

03-015. Unidentified wood fragment. SU3, discovered on the starboard hull at Frame 14. This fragment is extremely deteriorated and it is impossible to determine its place of origin. The maximum preserved dimensions are 4-1/2 inches (11.4 cm) long by 5/8 inch (1.6 cm) wide by 1/4 inch (6.3 mm) thick. Date of excavation: 7/24/95. Redeposited on the site.

03-016. Unidentified wood fragments. Total of 2 fragments. SU3, discovered on the starboard hull between Frames 13 and 14. These fragments are extremely deteriorated. The maximum preserved dimensions are as follows: 2 inches (5 cm) long by 3/4 inch (1.9 cm) wide tapering to 3/8 inch (9.5 mm) by 1/2 inch (1.3 cm) thick and 1-3/4 inches (4.5 cm) long by 1 inch (2.5 cm) wide tapering to 1/4 inch (6.3 mm) wide by 1/2 inch (1.3 cm) thick. Date of excavation: 7/24/95. Redeposited on the site.

03-017. Keelson batten/shelf piece fragment. Total of 2 fragments. SU3, discovered on the starboard hull between Frames 1 and 2. This appears to be part of a batten/shelf strip of wood that ran along the side of the keelson—3/4 inch (1.9 cm) down from the top of the keelson—to support either a wide footboard running fore and aft above the ceiling, or perhaps a type of furring piece designed to provide the galley’s compartments with a level bottom surface despite the curvature of the lower hull. These batten/shelf pieces were typically 1 inch (2.5 cm) square in cross section. The maximum dimensions of these fragments are 3 inches (7.6 cm) long by 1 inch (2.5 cm) wide by 1/4 inch (6.3 mm) thick and 3-3/8 inches (8.6 cm) long by 1 inch (2.5 cm) wide by 1/4 inch (6.3 mm) thick. Date of excavation: 7/24/95. Redeposited on the site.

03-018. Unidentified wood fragment. SU3, discovered on the starboard hull between Frames H and I. This fragment is badly deteriorated. Vertical saw marks are evident along the edges of the fragment regularly spaced 1/2-inch (1.3-cm) apart. The fragment has a maximum length of 14 inches (35.6 cm), a maximum width of 7/8 inch (2.2 cm), and a maximum thickness of 7/8 inch (2.2 cm). Date of excavation: 7/24/95. Redeposited on the site.

03-019. Unidentified wood fragments. Total of 2 fragments. SU3, discovered on the starboard hull between Frames G and H. These fragments abut one another with a hand-carved, "L"-shaped scarf, reinforced by iron square nails. These fragments may be from the keelson batten/shelf piece described in 03-017. No woodworking marks are evident. The maximum dimensions of the fragments are as follows: 6-7/8 inches (17.5 cm) long by 1-3/8 inches (3.5 cm) wide by 3/4 inch (1.9 cm) thick and 3 inches (7.6 cm) long by 1-3/8 inches (3.5 cm) wide by 3/4 inch (1.9 cm) thick. Date of excavation: 7/24/95. Redeposited on the site.

03-020. Possible gangway deck plank. SU3, discovered on the starboard hull atop the ceiling planking along the keelson between Frames B and 3. This appears to be another possible deck plank that fell down into the hull when the upper works collapsed. It is also possible that this is a ceiling plank from a position farther outboard of the keelson. No woodworking marks are evident. The
plank has a maximum length of 5 feet, 1/2 inch (1.53 m), a maximum width of 5-1/2 inches (14.0 cm), and a maximum thickness of 7/8 inch (2.2 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-021. Wood batten #1. SU3, discovered on the starboard hull running perpendicular to the keelson at Frame A and fastened to the first and second ceiling planks out from the keelson with three T-head iron nails. This batten is one of four that appear to be associated with the original internal partitioning bulkheads that defined the galley’s storage areas. They appear in pairs with a 2-1/2 inch (6.3 cm) to 2-3/4 inch (7.0 cm) gap between them, perhaps to facilitate the stabilizing of a vertical bulkhead. This batten has a maximum length of 15 inches (38.1 cm), a maximum width of 1-3/8 inches, and a maximum thickness of 1 inch (2.5 cm). One edge of the batten appears beveled. Date of excavation: 7/25/95. Redeposited on the site.

03-022. Wood batten #2. SU3, discovered on the starboard hull running perpendicular to the keelson between Frames A and 1 and fastened to the first and second ceiling strakes out from the keelson with three T-head iron nails. This batten is the partner to the 03-021. It has a maximum length of 17 inches (43.1 cm), a maximum width of 1-3/4 inches (4.5 cm), and a thickness of 7/8 inch (2.2 cm). One edge of the batten appears beveled. Date of excavation: 7/25/95. Redeposited on the site.

03-023. Wood batten #3. SU3, discovered on the starboard hull running perpendicular to the keelson between Frames 3 and 4 and fastened to the first and second ceiling strakes out from the keelson with three T-head iron nails. This is the first of the second pair of battens aft of 03-021 and 03-022. It has a maximum length of 17-1/2 inches, a maximum width of 2 inches (5 cm), and a maximum thickness of 1 inch (2.5 cm). One edge of the batten appears beveled. Date of excavation: 7/25/95. Redeposited on the site.

03-024. Wood batten #4. SU3, discovered on the starboard hull running perpendicular to the keelson between Frames 3 and 4 and fastened to the first and second ceiling strakes out from the keelson with three T-head iron nails. This is the partner to 03-023. It has a maximum length of 17-3/4 inches (45.1 cm), a maximum width of 1-7/8 inches (4.7 cm), and a maximum thickness of 7/8 inch (2.2 cm). One edge of the batten appears beveled. Date of excavation: 7/25/95. Redeposited on the site.

03-025. Keelson batten/shelf piece fragment. SU3, discovered on the starboard hull between Frames C and 4. This object is similar in size, shape, and function to that described in 03-017 and 03-019. No woodworking marks are evident. It has a maximum length of 4 feet, 5-1/2 inches, a maximum width of 1/4 inch (6.3 mm), and a maximum thickness of 1/8 inch (3.1 mm). Date of excavation: 7/25/95. Redeposited on the site.

03-026. Ceiling plank fragment. SU3, discovered on the starboard hull between Frames 1 and 4. This fragment emerged from a position atop the starboard limb board (03-028), not in its original place. The fragment appears heavily deteriorated on its inferior face where it once contacted the tops of the frames. No woodworking marks are evident. It has a maximum length of 20-1/8 inches (51.1 cm), a maximum width of 5 inches (12.7 cm), and a maximum thickness of 7/8 inch (2.2 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-027. Ceiling plank (Strake #1) in limber board position. SU3, discovered on the starboard hull between Frames 3 and 4. This plank is in the limber board position—the first strake outboard of the keelson—but is secured firmly in place with nails. In addition, Battens #3 and #4 (03-023 and 03-024) are fastened to this plank with three T-head nails. This plank would not have been removable in such a situation. Limber boards needed to be removable in order to provide access to the bilge water collecting in the bottom of the hull. It appears that throughout the hull some of the planks in the Strake #1 position could be removed (i.e. they served as limber boards) and others appeared to be fastened permanently in place (i.e. they served as ceiling planks). This plank fragment appears heavily deteriorated on its inferior face where it once contacted the tops of the frames. Vertical saw marks are evident along the edges of the plank regularly spaced between 3/16 inch (4.8 mm) and 1/4 inch (6.3 mm) apart. This plank was permanently fastened in place and had to be removed to permit the study of the frames. It has a maximum length of 14-
1/2 inches (36.8 cm), a maximum width of 7 inches (17.8 cm), and a maximum thickness of 1 inch (2.5 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-028. Ceiling plank (Strake #1) in limber board position. SU3, discovered on the starboard hull between Frames A and 3. This plank is similar to that described in 03-027. Battens #1 and #2 (03-021 and 03-022) are fastened to its forward most end at Frame A. Vertical saw marks are evident along the edges of the plank regularly spaced 1/2-inch (1.3-cm) apart. This plank was permanently fastened in place and had to be removed to permit the study of the frames. It appears heavily deteriorated on its inferior face and has a maximum length of 4 feet, 8-3/4 inches (1.44 m), a maximum width of 7-3/4 inches (19.7 cm), and a maximum thickness of 7/8 inch (2.2 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-029. Ceiling plank (Strake #2). SU3, discovered on the starboard hull between Frames E and 4. This plank was permanently fastened in place and had to be removed to permit the study of the frames. Vertical saw marks are evident along the edges of the plank regularly spaced 5/16 inch (7.9 mm) apart. The plank appears moderately deteriorated on its inferior face and has a maximum length of 11 feet, 6-1/4 inches (3.51 m), a maximum width of 15-1/8 inches (38.4 cm), and a maximum thickness of 7/8 inch (2.2 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-030. Ceiling plank (Strake #3). SU3, discovered on the starboard hull between Frames E and 4. This plank was permanently fastened in place and had to be removed to permit the study of the frames. Vertical saw marks are evident along the edges of the plank regularly spaced 1/2 inch (1.3 cm) apart. The plank appears moderately deteriorated on its inferior face and has a maximum length of 11 feet, 9-1/2 inches (3.59 m), a maximum width of 11-3/4 inches (30.0 cm), and a maximum thickness of 7/8 inch (2.2 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-031. Ceiling plank (Strake #4). SU3, discovered on the starboard hull between Frames F and 4. This plank emerged permanently fastened in place—largely by T-head nails—and it had to be removed to permit the study of the frames. Vertical saw marks are evident along the edges of the plank regularly spaced 5/16 inch (7.9 mm) apart. The plank appears moderately deteriorated on its inferior face and has a maximum length of 11 feet, 10-1/2 inches (3.61 m), a maximum width of 11-3/4 inches (29.9 cm), and a maximum thickness of 3/4 inch (1.9 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-032. Ceiling plank (Strake #5). SU3, discovered on the starboard hull between Frames C and 4. This plank emerged permanently fastened in place and had to be removed to permit the study of the frames. Vertical saw marks are evident along the edges of the plank regularly spaced 1/2 inch (1.3 cm) apart. The plank appears moderately deteriorated on its inferior face and has a maximum length of 7 feet, 4-1/2 inches (2.24 m), a maximum width of 12 inches (30.5 cm), and a maximum thickness of 1 inch (2.5 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-033. Ceiling plank (Strake #5). SU3, discovered on the starboard hull between Frames G and C. This plank section is a continuation forward of 03-032. This plank emerged permanently fastened in place and had to be removed to permit the study of the frames. Vertical saw marks are evident along the edges of the plank regularly spaced 1/4-inch (6.3-mm) to 3/8-inch (9.5-mm) apart. The plank appears moderately deteriorated on its inferior face and has a maximum length of 6 feet, 5-3/4 inch (1.97 m), a maximum width of 5-1/2 inches (14.0 cm), and a maximum thickness of 7/8 inch (2.2 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-034. Unidentified wood fragment. SU3, discovered on the starboard hull between Frames F and E. This fragment appears heavily deteriorated. It has a maximum length of 3-1/2 inches (8.9 cm) and a maximum width of 3/4 inch (1.9 cm). Date of excavation: 7/25/95. Redeposited on the site.

03-035. Transverse decking (T1). SU3, discovered on the starboard hull between Frames 18 and 19. This plank no longer held its original position extending perpendicular outboard of the keelson. Instead it appeared to be loose atop Strakes #2 (03-029) and #3 (03-030). Normally, a transverse plank would have extended over the top of the keelson and outboard as far as the upward sweep of the turn of the bilge. This plank appears heavily deteriorated and has a maximum length of 27-1/2 inches (69.9 cm), a maximum width of 3-1/2 inches (8.9 cm), and a maximum thickness of 1 inch (2.5 cm). One end of the plank (terminal end outboard) is beveled, presumably to seat flush
over the keelson or to abut the upward sweep of the turn of the bilge. Date of excavation: 7/27/95. Redeposited on the site.

03-036. Transverse decking (T2). SU3, discovered on the starboard hull between Frames 18 and 19. This plank no longer held its original position extending perpendicular outboard of the keelson. Instead it appeared to be loose atop Strakes #1 (03-028) and #2 (03-029). Normally, a transverse plank would have extended over the top of the keelson and outboard as far as the upward sweep of the turn of the bilge. This plank appears heavily deteriorated and has a maximum length of 17-3/4 inches (45.1 cm), a maximum width of 3-1/2 inches (8.9 cm), and a maximum thickness of 1 inch (2.5 cm). One end of the plank (terminal end outboard) is beveled, presumably to seat flush over the keelson or to abut the upward sweep of the turn of the bilge. Date of excavation: 7/27/95. Redeposited on the site.

03-037. Transverse decking (T3). SU3, discovered on the starboard hull extending perpendicular from atop the keelson outboard toward the turn of the bilge near Frame 18. This plank was fastened in place and had to be pried loose and removed to permit the study of the keelson, ballast, and ceiling planking in the stern area. It appears moderately deteriorated and has a maximum length of 27 inches (68.6 cm), a maximum width of 7 inches (17.8 cm), and a maximum thickness of 1 inch (2.5 cm). One end of the plank (terminal end outboard) is beveled, presumably to seat flush over the keelson or to abut the upward sweep of the turn of the bilge. Date of excavation: 7/27/95. Redeposited on the site.

03-038. Transverse decking (T4A and T4B). SU3, discovered on the starboard hull extending perpendicular from atop the keelson outboard toward the turn of the bilge between Frames 17 and 18. These two plank fragments were fastened in place and presumably at one time part of the same timber. They had to be pried loose and removed to permit the study of the keelson, ballast, and ceiling planking in the stern area. The first piece is a full-sized plank with moderate deterioration. It has a maximum length of 22-1/2 inches (57.1 cm), a maximum width of 12-1/4 inches (31.1 cm) and a maximum thickness of 1 inch (2.5 cm). The plank has a beveled outboard/terminal end. The second piece is a tiny fragment of the larger counterpart. It was fastened to the keelson with two nails and rather amorphous in shape due to extreme deterioration. It has a maximum length of 6-5/8 inches (16.8 cm), a maximum width of 6-1/8 inches (15.6 cm), and a maximum thickness of 11/16 inches (1.7 cm). Date of excavation: 7/27/95. Redeposited on the site.

03-039. Transverse decking (T5). SU3, discovered on the starboard hull extending perpendicular from atop the keelson outboard toward the turn of the bilge between Frames 16 and 17. This plank appeared fastened in place and had to be pried loose and removed to permit the study of the keelson, ballast, and ceiling planking in the stern area. It was fastened to the keelson. The plank has a maximum length of 19 inches (48.3 cm), a maximum width of 8-3/4 inches (22.2 cm), and 1 inch (2.5 cm) thick. One end of the plank (terminal end outboard) is beveled, presumably to seat flush over the keelson or to abut the upward sweep of the turn of the bilge. Date of excavation: 7/27/95. Redeposited on the site.

03-040. Transverse decking (T6). SU3, discovered on the starboard hull situated perpendicular to the keelson between Frames 15 and 16. This plank was no longer fastened in place and it appeared extremely deteriorated. It had to be removed to permit the study of the ballast and ceiling planking in the stern area. The plank has a maximum length of 7-1/2 inches (19.0 cm), a maximum width of 3 inches (7.6 cm), and a maximum thickness of 5/8 inch (1.6 cm). No woodworking marks are evident. Date of excavation: 7/27/95. Redeposited on the site.

03-041. Unidentified plank fragment (T7). SU3, discovered on the starboard hull situated on a 45-degree angle to the keelson between Frames 14 and 16. This plank was no longer fastened in place and it appeared extremely deteriorated. The characteristic bevel at one end was also not present. The plank appeared to have one large piece of iron ballast (designated "ballast R") over its aftermost end. The plank has a maximum length of 15-3/8 inches (39.0 cm), a maximum width of 3-1/8 inches (7.9 cm), and a maximum thickness of 1 inch (2.5 cm). No woodworking marks are evident. If this is in fact a transverse decking plank, it is difficult to explain why a piece of ballast would be resting atop its superior face. The ballast normally would have been beneath
these planks. This fragment may represent part of the gangway decking, internal partitioning, or a fore-and-aft running footboard. It does not appear to be ceiling or external planking. Date of excavation: 7/27/95. Redeposited on the site.

03-042. Unidentified plank fragment (T8). SU3, discovered on the starboard hull situated on a 45-degree-angle to the keelson between Frames 14 and 16. This plank was no longer fastened in place and it appeared extremely deteriorated. The characteristic bevel at one end was also not present. A large gouge traversed the superior face of the plank and one large piece of iron ballast (designated “ballast R”) appeared to be situated over its after end. The plank has a maximum length of 25-1/4 inches (64.1 cm), a maximum width of 5-1/2 inches (13.9 cm), and a maximum thickness of 1 inch (2.5 cm). No woodworking marks are evident. If this is in fact a transverse decking plank, it is difficult to explain why a piece of ballast would be resting atop its superior face. The ballast normally would have been beneath these planks. This fragment may represent part of the gangway decking, internal partitioning, or a fore-and-aft running footboard. Date of excavation: 7/27/95. Redeposited on the site.

03-043. Unidentified plank fragment (T9). SU3, discovered on the starboard hull situated on a 45-degree-angle to the keelson between Frames 14 and 16. This plank was no longer fastened in place and it appeared extremely deteriorated. The characteristic bevel at one end was also not present. One large piece of iron ballast (designated “ballast R”) appeared to be situated over the fragment’s after end. The plank has a maximum length of 25 inches (63.5 cm), a maximum width of 6 inches (15.2 cm), and a maximum thickness of 1 inch (2.5 cm). No woodworking marks are evident. If this is in fact a transverse decking plank, it is difficult to explain why a piece of ballast would be resting atop its superior face. The ballast normally would have been beneath these planks. This fragment may represent part of the gangway decking, internal partitioning, or a fore-and-aft running footboard. Date of excavation: 7/27/95. Redeposited on the site.

03-044. Transverse decking (T10). SU3, discovered on the starboard hull extending perpendicular from the keelson outboard toward the turn of the bilge between Frames 15 and 16. This plank appeared to be no longer fastened in place, but still in its original orientation and had to be removed to permit the study of the ballast and ceiling planking in the stern area. It has a maximum length of 26 inches (66.0 cm), a maximum width of 9-1/8 inches (23.2 cm), and a maximum thickness of 7/8 inch (2.2 cm). One end of the plank (terminal end outboard) is beveled, presumably to seat flush over the keelson or to abut the upward sweep of the turn of the bilge. Date of excavation: 7/27/95. Redeposited on the site.

03-045. Transverse decking (T11). SU3, discovered on the starboard hull extending perpendicular from the keelson outboard toward the turn of the bilge between Frames 15 and 16. This plank appeared to be no longer fastened in place, but still in its original orientation and had to be removed to permit the study of the ballast and ceiling planking in the stern area. The fragment may be an extremely deteriorated forward extension of 03-044. It has a maximum length of 21 inches (53.3 cm), a maximum width of 5-1/4 inches (13.3 cm), and a maximum thickness of 1/2 inch (1.3 cm). Date of excavation: 7/27/95. Redeposited on the site.

03-046. Triangular batten fragment (T12). SU3, discovered on the starboard hull between Frames 13 and 15. This appears to be a type of batten or support strip. Based on its location, it may be associated with the plank fragment designated 03-043. The batten is moderately deteriorated and is situated parallel to the keelson with its aftermost end running beneath the forward end of 03-043. In cross section, the fragment has two squared off 1-1/2-inch (3.8-cm) sides and one 1-3/4-inch (4.5-cm) side (hypotenuse) cut at a 45-degree bevel. The maximum dimensions of this fragment are 20-3/4 inches (53.0 cm) long by 1-1/2 inches (3.8 cm) wide by 1-1/2 inches (3.8 cm) thick. Date of excavation: 7/27/95. Redeposited on the site.

03-047. Unidentified wooden fragment (T13). SU3, discovered on the starboard hull perpendicular to the keelson just outboard of the ballast piece designated “S” between Frames 14 and 15. This tiny fragment is extremely deteriorated and almost entirely covered by 03-043. It has a maximum length of 7-1/2 inches (19.0 cm), a maximum width of 7/8 inch (2.2 cm), and a maximum thickness of 3/4 inch (1.9 cm). Date of excavation: 7/27/95. Redeposited on the site.
03-048. Unidentified batten fragment (T14). SU3, discovered on the starboard hull parallel to and beneath the inboard edge of 03-043 between Frames 15 and 16. This batten fragment appeared moderately deteriorated and may have been associated with 03-043 as a type of shelving support strip. It has a maximum length of 25-1/8 inches (63.8 cm), a maximum width of 1-1/4 inches (3.2 cm), and a maximum thickness of 7/8 inch (2.2 cm). No woodworking marks are evident. At least three nails—2-3/8-inches (6.0-cm) long with a 1/8-inch-square (3.1-mm-square) shank—could be seen along the fragment’s length. Date of excavation: 7/27/95. Redeposited on the site.

03-049. Charcoal fragment. SU4, discovered on the starboard hull atop the keel between Frames 16 and 17. This charcoal fragment is triangular in cross section and has a maximum length of 3-1/8 (7.9 cm) inches, a maximum width of 1-1/8 inches (2.9 cm), and a maximum thickness of 5/8 inch (1.6 cm). It is difficult to tell if this piece is intrusive to the site, or contemporary. Date of excavation: 7/28/95. Redeposited on the site.

03-050. Wood gaming piece (#1). SU4, discovered on the starboard hull between Frames 16 and 17. This hand-carved, circular piece has a smooth, flat obverse and reverse face. It appears to be some type of gaming piece, perhaps for checkers or backgammon. The piece has a maximum diameter of 3/4 inch (1.9 cm) and a maximum thickness of 3/16 inch (4.8 mm). Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

03-051. Possible wooden fishing line hand reel. SU4, discovered on the starboard hull between Frames 16 and 17. This hand-carved, rectangular block has a notch at both ends. It appears only lightly deteriorated and has a maximum length of 2-1/2 inches (6.3 cm), a maximum width of 7/8 inch (2.2 cm) tapering on the opposite side to 1/2 inch (1.3 cm) wide, and a maximum thickness of 1/2 inch (1.3 cm). The triangular notches cut from each end are 1/4-inch-deep (6.3-mm-deep) and are located approximately 3/8 inch (9.5 mm) from the object’s upper edge. This may be a hand reel for winding up fishing line, or a tiny cleat for an awning, or simply an unidentifiable fragment. No fishing type implements were found in association with the piece. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

03-052. Wood gaming piece (#2). SU4, discovered on the starboard hull between Frames 16 and 17. This hand-carved, circular piece has a smooth, flat surface on one face and a large “X” incised into the reverse face. It appears to be some type of gaming piece, perhaps a counterpart to 03-050. The piece has a maximum diameter of 13/16 inches (2.0 cm) and a maximum thickness of 3/16 inch (4.8 mm). Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

03-053. Tree-nail fragment. SU4, discovered on the starboard hull between Frames 16 and 17. This hardwood fastener appears heavily deteriorated and has a maximum length of 2 inches (5 cm) and a maximum diameter of 7/8 inch (2.2 cm). Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

03-054. Stern ceiling (Strake #1). SU3, discovered on the starboard hull in the stern area between Frames 17 and 19. This plank emerged in the limber board position, but was permanently nailed in place and had to be removed to permit the study of the sediment matrix between the frames. This plank is similar to the limber boards described in 03-027 and 03-028. The maximum dimensions are 3 feet, 1/2 inches (92.7 cm) long, 7-5/8 inches (19.3 cm) wide, and 1 inch (2.5 cm) thick. Vertical saw marks are evident along the edges of the plank regularly spaced 1/2 inch (1.3 cm) apart. Date of excavation: 7/27/95. Redeposited on the site.

03-055. Stern ceiling (Strake #2). SU3, discovered on the starboard hull in the stern area between Frames 17 and 21. This plank emerged permanently fastened in place and had to be pried loose and removed to permit the study of the sediment matrix between the frames. Vertical saw marks are evident along the edges of the plank regularly spaced 5/16 inch (7.9 mm) apart. It appears moderately deteriorated on its inferior face and has a maximum length of 6 feet, 2 inches (1.87 m), a maximum width of 15-1/4 inches (38.7 cm), and a maximum thickness of 1 inch (2.5 cm). Date of excavation: 7/27/95. Redeposited on the site.

03-056. Stern ceiling (Strake #3). SU3, discovered on the starboard hull in the stern area between Frames 15 and 20. This plank emerged permanently fastened in place and had to be pried loose and removed to permit the study of the sediment matrix between Frames 15 and 20. Vertical saw marks are evident along the edges of the plank regularly spaced 5/16 inch (7.9 mm) apart. It
appears moderately deteriorated on its inferior face and has a maximum length of 8 feet, 2-1/2 inches (2.50 m), a maximum width of 12 inches (30.5 cm), and a maximum thickness of 1 inch (2.5 cm). Date of excavation: 7/27/95. Redeposited on the site.

03-057. Stern ceiling (Strake #1). SU3, discovered on the starboard hull in the stern area between Frames 13 and 15. This plank is in the limber board position and is in fact a removable plank with a 1-inch-in-diameter (2.5-cm-in-diameter) finger hole. This plank had to be removed to permit the study of the sediment matrix between the frames. Vertical saw marks are evident along the edges of the plank regularly spaced 1/2 inch (1.3 cm) apart. It appears lightly deteriorated on its inferior face and has a maximum length of 4 feet, 6-1/2 inches (1.38 m), a maximum width of 7-3/4 inches (19.6 cm), and a maximum thickness of 7/8 inch (2.22 cm). Date of excavation: 7/27/95. Redeposited on the site.

03-058. Stern ceiling (Strake #2). SU3, discovered on the starboard hull in the stern area abutting 03-055 and running forward beyond Frame 12. This plank continues forward from 03-055. It had to be removed to permit the study of the sediment matrix between Frames 12 and 17. Vertical saw marks are evident along the edges of the plank regularly spaced 5/16 inch (7.9 mm) apart. A 1-inch-in-diameter (2.5-cm-in-diameter) hole has been drilled through the upper, aftermost corner of the plank continuing through the top surface of Frame 17. This is presumably a trenail hole. The plank has rust stains in at least four different places outlining the positions of the ballast that once rested on its superior face. It has a maximum length of 5 feet, 9 inches (1.75 m), a maximum width of 15-3/8 inches (39.0 cm), and a maximum thickness of 1 inch (2.5 cm). Fastening nails are regularly spaced along the outboard and inboard margins approximately 3/4 inch (1.9 cm) in from the edges of the plank. Date of excavation: 7/27/95. Redeposited on the site.

03-059. Stern ceiling (Strake #3). SU3, discovered on the starboard hull in the stern area butting 03-056 and running forward beyond Frame 12. This plank continues forward from 03-056. It had to be removed to permit the study of the sediment matrix between Frames 12 and 15. The plank has a maximum length of 2 feet, 5-1/4 inches (74.3 m), a maximum width of 5-1/2 inches (14.0 cm), and a maximum thickness of 1 inch (2.5 cm). No woodworking marks are evident. Date of excavation: 7/27/95. Redeposited on the site.

03-060. Stern ceiling (Strake #4). SU3, discovered on the starboard hull in the stern area butting 03-056 and running forward beyond Frame 12 adjacent (outboard) to 03-059. This plank continues forward from 03-056. It had to be removed to permit the study of the sediment matrix between Frames 12 and 15. The plank has a maximum length of 2 feet, 6 inches (76.2 m), a maximum width of 6 inches (15.2 cm), and a maximum thickness of 1 inch (2.5 cm). No woodworking marks are evident. This plank has an alternating diagonal fastening pattern along its length. Date of excavation: 7/27/95. Redeposited on the site.

03-061. Stern ceiling (Strake #5). SU3, discovered on the starboard hull in the stern area running forward from Frame 17 beyond Frame 12. This plank is heavily deteriorated and has a large split down its length giving it the appearance of two separate planks. No woodworking marks are evident. It has a maximum length of 5 feet, 8 inches (1.72 m) before disappearing into the unexcavated area of the galley's starboard hull around Frame 12. The maximum width of the plank appears to be 12 inches (30.5 cm). However, with the space created by the long split, it has a total width of 17 inches (43.2 cm). The maximum thickness is 7/8 inch (2.2 cm). Date of excavation: 7/27/95. Redeposited on the site.

03-062. Stern ceiling (Strake #6). SU3, discovered on the starboard hull in the stern area running forward of Frame 16 beyond Frame 12. This plank is heavily deteriorated and has two large splits down its length giving it the appearance of three separate planks. No woodworking marks are evident. The maximum length is 3 feet, 11-1/2 inches (1.20 m) before disappearing into the unexcavated area of the galley's starboard hull around Frame 12. The maximum width of the plank appears to be 12 inches (30.5 cm). However, with the spaces created by the two long splits, it has a total width of 14 inches (35.6 cm). The maximum thickness is 7/8 inch (2.2 cm). Date of excavation: 7/27/95. Redeposited on the site.
Leather

No Artifacts of this Material Type Recovered.

Glass and Ceramics

05-001. Clear glass fragment. SU4, discovered on the portside hull between Frames 5 and 6. This is a convex fragment of clear glass that appears to be transparent on one face and ground, or “frosted,” on the opposite face. It is possibly associated with a type of deck light. Dr. Crisman and Mr. Cohn identified this piece as a possible “Patent” deck light fragment from the 19th century. They had both seen similar “Illuminators,” the common term of the period, used aboard the War of 1812 warship Jefferson excavated at Sackets Harbor, New York on Lake Ontario. There are no signs of devitrification. The dimensions along each axis are 2-1/8 inches (5.4 cm) by 2 inches (5 cm). The fragment is 3/4 inch (1.9 cm) thick. Date of excavation: 7/12/95. Retained at the Lake Champlain Maritime Museum.

05-002. Clay pipe bowl—Turk’s head style. SU4, discovered on the portside hull between Frames 21 and 22. This clay tobacco pipe bowl had been shaped into a finely molded effigy of a bearded, turbaned head with embossed stars and the words “United States of America” in raised letters around its rim. Effigy pipes were a popular style among smokers in the first half of the 19th century, but for American sailors a pipe like this may also have been symbolic of the U.S. Navy’s victories over the Barbary corsairs of North Africa. The inside of the pipe bowl is 5/8 inch (1.6 cm) in diameter, the outside is 3/4 inch (1.9 cm) in diameter, and the total height (measured in an upright position) is 1-1/4 inches (3.2 cm). The base where the bowl articulated with the pipe stem is approximately 1/2 inch (1.3 cm) wide tapering to 3/8 inch (9.5 mm) wide. The diameter of the inside of the pipe stem where it articulates with the bowl is 1/16 inch (1.5 mm). The bowl rim is 1/16 inch (1.5 mm) thick. Date of excavation: 7/13/95. Retained at the Lake Champlain Maritime Museum.

05-003. Green bottle glass fragment. SU4, discovered on the portside hull between Frames 21 and 22. There are no signs of devitrification. The dimensions along each axis measured 2 inches (5 cm) and 1-5/8 inches (4.1 cm). The fragment is 1/8 inch (3.1 mm) thick. Date of excavation: 7/13/95. Retained at the Lake Champlain Maritime Museum.

05-004. Green bottle glass fragment. SU4, discovered on the portside hull between Frames N and O. There are no signs of devitrification. The dimensions along each axis measured 2-1/16 inches (5.2 cm) and 1 inch (2.5 cm). The fragment is 1/16 inch (1.5 mm) thick. Date of excavation: 7/14/95. Retained at the Lake Champlain Maritime Museum.

05-005. Clear glass bottle top. SU3, discovered on the starboard hull between Frames 22 and 23. This appears to be the neck and rim of a clear glass bottle. Perhaps a medicine bottle. There are no signs of devitrification. The rim diameter measures 9/16 inch (1.4 cm), the rim is 5/32 inch (3.9 mm) high, and the bottle’s neck is 3/16 inch (4.8 mm) high. The overall height of the fragment is 7/16 inch (1.1 cm). Below the neck, the shoulders of the bottle flare outward for a total distance of 1/2 inch (1.3 cm) before breaking off. Date of excavation: 7/21/95. Retained at the Lake Champlain Maritime Museum.

05-006. Ceramic tableware fragment. SU3, discovered on the starboard hull between Frames 19 and 20. This ceramic sherd has a lead-gray-colored glaze and appears to be a type of stoneware. Small, ovoid shapes adorn the outer margin for decoration. This fragment appears to be from a plate. The maximum preserved dimensions are 15/16 inch (2.3 cm) long, 1-1/8 inches (2.9 cm) wide, and 1/8 inch (3.1 mm) thick. Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

05-007. Ceramic tableware fragment. Total of 4 fragments. SU3, discovered on the starboard hull between Frames 19 and 20. These ceramic sherds have a lead-gray-colored glaze and appear to be a type of stoneware. They have the same ovoid design as the sherd described in 05-006. These fragments also appear to be from a plate. The maximum preserved dimensions for the different fragments are as follows: 11/16 inch (1.7 cm) by 11/16 inch (1.7 cm) by 1/8 inch (3.1
mm); 3/8 inch (9.5 mm) by 9/16 inch (1.4 cm) by 1/8 inch (3.1 mm); 1/2 inch (1.3 cm) by 3/4 inch (1.9 cm) by 1/8 inch (3.1 mm); and 5/16 inch (7.9 mm) by 7/16 inch (1.1 cm) by 1/8 inch (3.1 mm). Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

05-008. Light blue/clear and green bottle glass fragments. Total of 2 fragments. SU3, discovered on the starboard hull between Frames 19 and 20. The two glass fragments show no signs of devitrification. The maximum preserved dimensions are as follows: the light blue/clear fragment is 15/16 inch (2.3 cm) long and 1/16 inch (1.5 mm) thick and the green fragment is 1-7/8 inches (4.8 cm) long and 3/16 inch (4.8 mm) thick. Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

05-009. Ceramic pipe stem fragment. SU3, discovered on the starboard hull between Frames 17 and 18. This stem fragment may be associated with the pipe bowl described in 05-002. The stem is 2-1/8 inches (2.1 cm) long, 1/8 inch (6.3 mm) in diameter tapering to 3/16 inch (4.8 mm) in diameter, and has a bore diameter of 1/8 inch (3.1 mm). Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

05-010. Ceramic pipe stem fragment. SU3, discovered on the starboard hull between Frames 15 and 16. This stem fragment may be associated with the pipe bowl described in 05-002. The stem is 2-3/4 inches (7.0 cm) long, 1/4 inch (6.3 mm) in diameter tapering to 3/16 inch (4.8 mm) in diameter, and has a bore diameter of 3/32 inch (2.3 mm). Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

05-011. Ceramic pipe stem fragment. SU3, discovered on the starboard hull between Frames 15 and 16. This stem fragment appears to articulate directly with the pipe bowl described in 05-002. In fact, the proximal end of the stem has the same clothing motif seen on the base of the pipe bowl. The stem fragment is 2-5/8 inches (6.7 cm) long, 3/8 inch (9.5 mm) in diameter tapering to 3/16 inch (4.8 mm) in diameter, and has a bore diameter of 1/8 inch (3.1 mm). Date of excavation: 7/24/95. Retained at the Lake Champlain Maritime Museum.

05-012. Clear glass fragment. SU3, discovered on the starboard hull between Frames D and E. There are no signs of devitrification. The maximum dimensions of the fragment are 3/4 inch (1.9 cm) by 1/4 inch (6.3 mm). Date of excavation: 7/25/95. Retained at the Lake Champlain Maritime Museum.

05-013. Ceramic tableware fragment. SU3, discovered on the starboard hull between Frames A and B. This fragment has a light, pearl-colored glaze and appears to be from the pouring spout of a type of pitcher. A decorative motif consisting of two dark-brown bands along the fragment's outer margin is visible. The glaze on the sherd appears badly crazed. The maximum dimensions of the fragment are 7/8 inch (2.2 cm) by 3/8 inch (9.5 mm). Date of excavation: 7/25/95. Retained at the Lake Champlain Maritime Museum.

05-014. Number Not Used.

05-015. Clear glass fragment. SU4, discovered on the starboard hull between Frames 3 and 4. There are no signs of devitrification. The maximum dimensions are 13/16 inch (2.0 cm) long by 1/2 inch (1.3 cm) wide. Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

05-016. Green bottle glass fragment. SU4, discovered on the starboard hull between Frames 17 and 18. The maximum dimensions are 1-1/4 inches (3.2 cm) by 15/16 inch (2.3 cm). Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

05-017. Green bottle glass fragment. Total of 2 fragments. SU4, discovered on the starboard hull between Frames 17 and 18 resting on the keel. There are no signs of devitrification. The maximum dimensions are as follows: 1/16 inch (1.7 cm) by 7/16 inch (1.1 cm) and 1-1/16 inches (2.7 cm) by 5/16 inch (7.9 mm). Date of excavation: 7/27/95. Retained at the Lake Champlain Maritime Museum.

05-018. Salt-glazed stoneware jug fragments. SU4, discovered on the starboard hull between Frames 15 and 17. The original jug has been broken into numerous fragments and scattered between three frames. The fragments are greenish-yellow in color. Divers recovered 58 pieces including the fully intact neck and rim, base, and one shoulder. The maximum preserved dimensions are as follows: the rim and neck piece—2-1/2 inches (6.3 cm) high, 2-1/2 inches (6.3 cm) wide where it
flares into the shoulders of the jug, 1-3/8-inches-in-diameter (3.5-cm-in-diameter) at the neck, 5/16 inch (7.9 mm) thick at the rim with a jug opening diameter of 1-3/16 inches (3.0 cm); the shoulder piece is 3-1/4 inches (8.3 cm) by 2-3/4 inches (7.0 cm); and the base is 5-3/4 inches high, 3-7/8 inches-in-diameter (9.8-cm-in-diameter) at the base, and the wall is 5/16 inch (7.9 mm) thick. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

05-019. Green bottle glass fragment. SU4, discovered on the starboard hull between Frames 16 and 17. There are no signs of devitrification. The maximum dimensions are 3/4 inch (1.9 cm) by 5/8 inch (1.6 cm). Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

05-020. Clear and green bottle glass fragments. Total of 1 clear, 2 dark-green, and 4 light-green fragments. SU4, discovered on the starboard hull between Frames 16 and 17. There are no signs of devitrification. The maximum dimensions of the clear fragment are 9/16 inch (1.4 cm) long and 1/32 inch (0.7 mm) thick. The maximum dimensions of the dark-green fragments are 5/8 inch (1.6 cm) long by 1/2 inch (1.3 cm) wide by 1/8 inch (3.1 mm) thick and 13/16 inch (2.0 cm) long by 1/2 inch (1.3 cm) wide by 1/8 inch (3.1 mm) thick. The maximum dimensions of the light-green fragments are 11/16 inch (1.7 cm) long by 5/8 inch (1.6 cm) wide by 1/16 inch (1.5 mm) thick; 1-1/8 inches (2.9 cm) long by 5/8 inch (1.6 cm) wide by 1/16 inch (1.5 mm) thick; 5/16 inch (7.9 mm) long by 9/16 inch (1.4 cm) wide by 1/16 inch (1.5 mm) thick; and 7/16 inch (1.1 cm) long by 5/16 inch (7.9 mm) wide by 1/16 inch (1.5 mm) thick. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

05-021. Light-blue/clear and green bottle glass fragments. Total of 1 light-blue/clear and 1 green fragment. SU4, discovered on the starboard hull between Frames 15 and 16. There are no signs of devitrification present. The maximum dimensions of the light-blue/clear fragment are 7/8 inch (2.2 cm) long by 7/8 inch (2.2 cm) wide. The maximum dimensions of the green fragment are 7/8 inch (2.2 cm) long by 1/2 inch (1.3 cm) wide. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

05-022. Light blue/clear and green bottle glass fragments. Total of 1 light-blue/clear and 1 green fragment. SU4, discovered on the starboard hull between Frames 15 and 16. There are no signs of devitrification present. The maximum dimensions of the light-blue/clear fragment are 9/16 inch (1.4 cm) long by 9/16 inch (1.4 cm) wide by 1/32 inch (0.7 mm) thick. The maximum dimensions of the green fragment are 1-1/8 inches (2.9 cm) long and 1/16 inch (1.5 mm) thick. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

05-023. Green bottle glass fragments. Total of 2 fragments. SU4, discovered on the starboard hull between Frames 15 and 16. Tiny bubbles can be seen, suggesting that it is blown glass. There are no signs of devitrification present. The maximum dimensions are as follows: 1-1/8 inches (2.9 cm) long by 1 inch (2.5 cm) wide and 1-3/8 inches (3.5 cm) long by 1-1/8 inches (2.9 cm) wide. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

05-024. Green bottle glass fragment. SU4, discovered on the starboard hull between Frames 14 and 15. Tiny bubbles can be seen, suggesting that it is blown glass. There are no signs of devitrification present. The maximum dimensions are 1-3/8 inches (3.5 cm) long by 3/4 inch (1.9 cm) wide by 1/16 inch (1.5 mm) thick. A number of scratches are present on the posterior surface of the fragment. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

05-025. Green bottle glass fragments. Total of 4 fragments. SU4, discovered on the starboard hull between Frames 13 and 14. There are no signs of devitrification present. The maximum dimensions are as follows: 1/2 inch (1.3 cm) long by 1/2 inch (1.3 cm) wide; 1 inch (2.5 cm) long by 1/2 inch (1.3 cm) wide; 1-5/8 inches (4.1 cm) long by 3/4 inch (1.9 cm) wide; 1 inch (2.5 cm) long by 3/4 inch (1.9 cm) wide; and 7/8 inch (2.2 cm) long by 3/4 inch (1.9 cm) wide. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

**Bone and Antler**

06-001. Possible deer scapula bone fragment. SU3, discovered on the starboard hull between Frames 14 and 15. The fragment is dark-brown in color. It is difficult to tell if this bone fragment is intrusive to the site or contemporary. The maximum preserved dimensions are 2-5/16 inches (5.9
cm) long by 1-1/4 inches (3.2 cm) wide by 7/8 inch (2.2 cm) thick. Date of excavation: 7/24/95. Redeposited on the site.

06-002. Possible fish vertebrae. SU3, discovered on the portside hull between Frames 16 and 17. The fragment is blackish-gray in color. It is difficult to tell if this bone fragment is intrusive to the site or contemporary. The maximum preserved dimensions are 3/4 inch (1.9 cm) by 1/2 inch (1.3 cm). Date of excavation: 7/13/95. Redeposited on the site.

06-003. 6/2 domino. SU4, discovered on the starboard hull between Frames 13 and 14. This domino gaming piece is in excellent condition. It has 6 pips on one half of its superior face and 2 pips on the other half. There are no markings on the reverse face. The dimensions of the domino are 7/8 inch (2.2 cm) long by 7/16 inch (1.1 cm) wide by 1/8 inch (3.1 mm) high. Date of excavation: 7/27/95. Retained by the Lake Champlain Maritime Museum.

06-004. Single-hole button back plate. SU4, discovered on the starboard hull between Frames 16 and 17. This is a back plate from a button. It has no markings on either face. The button measures 15/32 inch (1.1 cm) in diameter and has a small hole through its center that measures 1/16 inch (1.5 mm) in diameter. The button is 3/64 inch (1.1 mm) thick. Date of excavation: 7/27/95. Retained by the Lake Champlain Maritime Museum.

06-005. Single-hole button back plate. SU4, discovered on the starboard hull between Frames 15 and 16. This is a back plate from a button. It has no markings on either face. The button measures 5/16 inch (8.0 mm) in diameter and has a small hole through its center that measures 1/16 inch (1.5 mm) in diameter. The button is 3/64 inch (1.1 mm) thick. Date of excavation: 7/28/95. Retained at the Lake Champlain Maritime Museum.

Textiles, Rope, and Other Miscellaneous Organics

07-001. Modern synthetic fabric. Total of 5 pieces. SU2, discovered on the starboard hull between Frames 17 and 18. Appears to be machine woven fabric in multiple pieces. The pieces range in size from 5 inches (12.7 cm) long to 3 inches long. Date of excavation: 7/24/95. Redeposited on the site.

Source: Artifact catalogue compiled during the 1995 Whitehall Project.
APPENDIX E

GENERAL DISTRIBUTION OF ARTIFACTS IN ALLEN'S HULL

The following three illustrations have been included to provide a general sense of the horizontal distribution of artifacts within Allen, as seen in 1995.

Figure 75. Distribution of hull-related artifacts found among the remains of Allen. Shaded areas indicate the heaviest concentrations of artifacts discovered in 1995.

Figure 76. Distribution of crew-related artifacts found among the remains of Allen. Shaded areas indicate the heaviest concentrations of artifacts discovered in 1995.

Figure 77. Distribution of weaponry-related artifacts found among the remains of Allen. Shaded areas indicate the heaviest concentrations of artifacts discovered in 1995.
APPENDIX F

CONSERVATION PROCEDURES EMPLOYED FOR THE STABILIZATION AND
PRESERVATION OF ALLEN’S ARTIFACT COLLECTION

Scott McLaughlin, John Bratten, and Elizabeth Baldwin spearheaded the conservation of Allen’s artifacts at the Lake Champlain Maritime Museum in 1995. At the project planning level, Crisman and Cohn thoroughly addressed possible conservation requirements (adequate facilities, personnel, and funding) in the event that excavation activities recovered archaeological material evidence from the site. Such requirements depended heavily on the type and age of the site, the environmental conditions present, the research questions being answered, and the long-term curation plan for the collection. Before the field school commenced operations, however, a conservation plan had been incorporated into the project methodology, thus reducing the possibility of the team being caught without the necessary tools and advisors if/when unexpected materials or conditions emerged. ¹ The LCMM also provided an active learning space for exposing the public to the conservation process at each step of the way. Consequently, as the objects finished treatment they immediately went on display with the appropriate textual and graphic labels.

Upon arrival at the museum, the artifacts had to be compared to the Master Artifact Catalogue and the individual Artifact Record Forms. Photographers shot each item using negative-based film. Conservators then sorted the artifacts by material type and recommended treatments—understanding that the conservation of any two objects may not necessarily be alike, even though they might share a common material composition or location within the site matrix. ² Lastly, a detailed account of each artifact’s conservation process was recorded onto a separate Artifact Conservation Record Form. ³ Allen’s artifacts all underwent a structural examination in order to better determine their individual conservation needs. Consolidants were applied in cases where the object appeared so physically unstable that it would not otherwise have survived treatment intact. Once structural stabilization had been achieved, the objects underwent conservation.

Upon completing their individual treatment plans, many objects received a sealant such as Krylon Clear Acrylic 1301 or Great Day Enamel Clear Plastic to protect them from fluctuations in relative humidity before being labeled, bagged, and placed in storage. Labeling involved the application of a base coat of clear fingernail polish to a small, inconspicuous area on the artifact, upon which either black or white ink could be used to write out the appropriate catalogue number. These markings became permanent with the addition of a top coat of polish that prevented the numbers from being rubbed off or otherwise obscured. At this point, each artifact went into a new polyethylene bag with a mylar tag containing its respective catalogue number along with the site name. The museum’s curator packaged the artifacts and placed them into storage in acid-free boxes at a stable temperature. Those artifacts placed on public display then entered glass viewing cases.

Allen produced three bone objects that underwent conservation—two single-hole buttons (06-004 and 06-005) and one domino (06-003). The buttons were rinsed in a series of deionized water baths, then immersed for approximately one month in a 25% solution of deionized water and polyethylene glycol (PEG) 400. Upon removal, the excess solution had to be cleaned off with a lint-free rag before the items could be freeze-dried and sealed. The domino followed a similar pre-treatment in a series of deionized water baths. After it appeared clean, the object was immersed in a solution of ethanol and Elmer’s Glue All, a polyvinyl acetate emulsion. This consolidant was chosen largely because it can be reversed by immersion in tap water. After removing the domino from the Glue All, the excess glue had to be removed with a cloth dampened in ethanol. The domino then received a label and storage bag as well.

The ceramic objects in Allen’s collection consisted of a kaolin pipe, three pipe stem fragments, a salt-glazed stoneware jug, and some whiteware fragments. The whiteware fragments (05-006, 05-007, and
05-013) fared the best over time and required little in the way of treatment. These artifacts were simply rinsed in deionized water, allowed to air dry, labeled, and bagged. They required no sealant applied to their surfaces.

The pipe bowl (05-002) had considerable iron staining on its outside surfaces. To remove these stains it was cleaned in a 3% solution of hydrogen peroxide for 48 hours, then in a 5% solution of Ethylenediaminetetraacetic Acid (EDTA) for 72 hours. At this point the excess chemical was rinsed from the pipe bowl and it was allowed to air dry. The three kaolin pipe stem pieces (05-009, 05-010 and 05-011) followed the same treatment as the whiteware fragments. They appeared to be well preserved and only required a rinse in deionized water and air-drying.

At least two of the pipe stems (05-010 and 05-011) fit neatly together and the distal end of this assembly articulated with the pipe bowl. Once all three pieces (the pipe bowl and two stem fragments) had dried, they were reassembled, glued together with Super Glue (a cyanoacrylate adhesive), and sealed with Krylon spray. The remaining stem fragment (05-009) appeared consistent in size, shape, and composition with the others, but it failed to articulate with the reconstructed pipe assembly. It most likely represents a part of the original stem that is fragmental out of sequence. All three artifacts were labeled and placed on public display.

The stoneware jug (05-018) and its associated fragments also exhibited considerable organic staining on their outside surfaces. The artifact remained in a 3% solution of hydrogen peroxide for 24 hours. After the pieces were removed from the hydrogen peroxide solution, they had to be rinsed in deionized water and allowed to air dry before being reassembled. Conservators used Duco Cement, a cellulose nitrate adhesive, to glue the pieces together. This glue has proven effective for use on ceramic surfaces and it is reversible in alcohol. Once the jug had been reassembled, the surface was sealed with Acrlyloid B-63. The jug was then labeled and temporarily placed on display before being placed in an acid free box for storage.

Allen’s copper alloy artifacts consisted primarily of nails and tacks. In addition to these fasteners, the collection included one eye-screw (01-157), a straight pin (01-162), and two buttons (01-020 and 01-165). These objects carried minimal corrosion by-products on their surfaces. Conservators scrubbed them with a wet paste of deionized water and sodium bicarbonate (baking soda) in order to remove any tarnish present. Once cleaned, the artifacts went into a bath of denatured alcohol to remove any residues before being removed and allowed to air dry. The artifacts were then sealed with a coat of Krylon, labeled, and bagged.

Clear, light-blue, and green bottle glass dominated this particular material category of finds. These artifacts proved to be stable with no organic or metallic staining present and no signs of devitrification. Similar to the ceramics discussed earlier, the glass was simply rinsed in deionized water and allowed to air dry. Some of the glass fragments were sealed with a coat of Great Day Enamel, but this step in the conservation process had to be discontinued. The sealant gave the glass a flat appearance. This was considered an unsatisfactory result, as it did not reproduce the original appearance of the material. Conservators determined that the glass was stable enough to go without a sealant until a better alternative could be researched. In addition, the team recovered a possible deck light fragment (05-001) that underwent the same series of treatments minus the sealant. All of Allen’s glass was labeled and placed in bags for storage.

The majority of Allen’s artifacts recovered from the site had been fashioned from cast and wrought iron. Many conservators find iron from submerged archaeological sites to be one of the most difficult metals to treat. When iron is removed from the water it continues to corrode sometimes at an accelerated rate unless precautions are taken to prevent this decay. Iron artifacts from Allen were temporarily stabilized by immersion in a container of freshwater. Probably the most serious problem when treating iron artifacts has to be the presence of chlorides or “soluble salts” inside the metal. This hardly applied in the case of Allen’s artifacts, as the Poultnye River contained extremely low chloride levels. Therefore it was not necessary to monitor the artifacts’ chloride levels throughout the conservation process. Electrolytic reduction, or “electrolysis,” appeared to be the best treatment option suited for Allen’s iron. The process can be adjusted to the speed and intensity to which the conservator wants the corrosion products and chlorides to be removed; it also can be used for most metal objects, as long as they
still have a sound metallic core. Finally, this conservation process fit within the museum's space, personnel, and funding parameters.

Electrolysis took an average of two to three days to complete depending on the size of the artifact and the density of its metallic core. Sodium carbonate served as the electrolyte throughout the process. When all loose corrosion byproducts had been successfully removed from the artifacts, conservators scrubbed each object in a tub of clean tap water and boiled them in three alternating baths of hot and cold deionized water. Once the corrosion layers and other adherents had been removed, it became critical to provide the artifacts with a protective coating, as they still might suffer from the effects of long-term exposure to moisture, chemically active vapors, and gases.

Conservators at the museum preferred the use of three separate applications of tannic acid followed by total immersion in microcrystalline wax to build the iron's coating. They based this decision on three main considerations: (1) the treatment is reversible, an important concern in the conservation of any artifact; (2) the resulting ferric tannate coating—formed by the application of a tannic acid solution over iron—creates a uniform, bluish-black finish on the metal that is similar to its original appearance; and most importantly (3) the combination of a pacifying ferric tannate film with a wax sealant promised to keep the artifacts stable in both a climate-controlled and non-climate-controlled environment.

When the final application of tannic acid solution had dried, each artifact had to be placed inside boiling microcrystalline wax at a temperature of approximately 285°F (141°C) to evaporate any moisture still trapped inside the metal and to seal it off from outside temperature and humidity changes. A reduction in temperature allowed the wax to begin cooling, thus giving it a thicker, more viscous quality. At this point, the artifacts were removed from the vat and wiped clean of any excess wax with a clean rag. To ensure that the wax stayed intact on the surface of the metal, the artifacts received an additional spray coat of Krylon. All of Allen's iron artifacts had labels assigned and separate bags for storage.

The larger pieces of iron ballast removed from the site proved too bulky for the available electrolytic reduction vat. These metal artifacts had to undergo a modified conservation treatment. The pieces were mechanically cleaned of all corrosion layers through the careful use of a hammer, chisel, and wire brush. The main concern involved accidentally scratching or otherwise marring the surface of the metal. Once clean, the pig iron had to be rinsed in a series of deionized water baths and dried before being sealed with three separate coats of polyurethane.

The "Script I" lead alloy button (01-174) required only a few minutes in electrolysis to remove its light corrosion layer. The button then passed through multiple deionized water rinses. Once dry, it was sealed with Krylon. The remainder of the lead alloy artifacts—mostly rolled sheet lead fragments and small arms ammunition—underwent a series of conservation treatments similar to those used for copper and brass. All of these objects had minimal corrosion present and only required a brief scrubbing with a wet paste of deionized water and sodium bicarbonate (baking soda) in order to effectively remove any adhering tarnish layers. When the artifacts appeared clean, they were immersed in denatured alcohol to remove the residues left over from the scrubbing process, allowed to air dry, and sealed with Krylon. The "Script I" button, along with the other lead alloy artifacts were then labeled and bagged for storage.

Allen's wooden artifacts consisted largely of hull components, such as gangway deckling fragments, transverse deck planks, and ceiling planks. In most cases, these items were removed, documented, and redeposited on the site. Only three artifacts of this material type underwent conservation: the two gaming pieces (03-050 and 03-052) and the purported hand line reel (03-051). All of these objects went through a series of deionized water rinses before being placed in a mixture of polyethylene glycol (PEG) 400 and 540. Conservators increased the concentration of this bulking agent on a weekly basis over a period of five months. Upon removal from this solution, the artifacts had to be quickly wiped clean of any excess PEG with a rag dampened in acetone. The objects then had to be thoroughly air dried before receiving their labels and bags.

The gunflint stones (02-003, 02-004, and 02-005), presumably associated with Allen's weaponry or that of its crew, exhibited the highest degree of preservation found within the galley's artifact collection. The stones required a minimal amount of treatment. Most of the fragmented stones had iron stains on their surfaces. Removing these stains involved a 24-hour soak in a solution of EDTA. The stones then underwent rinsing in multiple deionized water baths. At this point, they were air dried, labeled, and bagged for storage.
Allen's remains yielded all single material artifacts with the exception of the caulking iron/chisel. This cast-metal tool represented the only composite discovery as it still had a fragment of its original wooden handle set firmly in place. Initially, the handle could not be removed. Without question, the most diagnostic part of this artifact was fashioned from iron. Conservation had to proceed in order to preserve the metal even if it meant possible damage to the wooden handle fragment. Consequently, the entire artifact went into electrolysis. The wood survived this process and eventually was removed and treated in a solution of PEG 400 and 540. The iron portion of the artifact continued through its tannic acid coats and microcrystalline wax treatment. Some contact between the iron tool and the chemical bulking agent used on the wood occurred during conservation. This is typically avoided, as it can have an adverse effect on the metal surface over long periods of exposure. Once the two different materials had been stabilized, the handle fragment was placed back into the tool socket and the entire artifact was labeled and bagged.

Allen's artifacts undoubtedly would have been destroyed had they never received proper conservation treatment. The transition from a wet to dry environment went smoothly with minimal negative impact. Today, the site archive—including the artifacts, completed documentation forms, and photographs—can be found at the Lake Champlain Maritime Museum. Allen's material evidence presents an intact collection that can be used by researchers to answer questions about row galleys and their crewmen from the War of 1812. Its preservation has ensured that future generations will be able to continue asking questions and seeking new perspectives on these unique naval relics. Finally, these tangible relics of the past are being used to provide visitors with a hands-on approach to learning about the naval history and archaeology of the Champlain Valley.

Endnotes: Appendix F


2. A number of references were consulted in order to choose the most appropriate conservation treatment for each of Allen's artifacts. These sources included: Cronyn, Elements; Baldwin and Robinson, comps., Manual for the Field Conservation; Fairbanks ed., "The Conservation of Archaeological Materials"; Hamilton, Conservation of Metal Objects; Sease, A Conservation Manual; and Singley, Conservation of Artifacts from Freshwater.


4. Hamilton, Conservation of Metal Objects; Hamilton, Basic Methods of Conserving Underwater Archaeological Material Culture, 73-74. Ferric tannate films do not serve as true vapor barriers. They help delay corrosion, but the film will not last without the addition of a proper sealant, such as immersion in microcrystalline wax. The wax is impervious to water vapor and gases, natural looking, reversible, and translucent so that future corrosion of the artifact's surface might be easily detected and treated.
VITA

Eric Brandon Emery was born in Mt. Pleasant, Michigan (United States) on November 18, 1970 and moved to Vermont in 1973. He attended public schools in Berkshire, Enosburg Falls, and Milton, Vermont, and graduated from Milton High School. In August 1988, he entered the University of Vermont and earned a Bachelor of Arts (Phi Beta Kappa Honor Society, Cum Laude) in history in May 1992. After accepting a teaching assistantship at the University of Vermont in 1992, his work in the History Department increasingly gained recognition. In 1993, he earned the University of Vermont Graduate Teaching Award and induction into the Phi Alpha Theta History Honor Society. After graduating with a Master of Arts in history (May 1995), he accepted a position as Assistant Archaeological Field Director under Dr. Kevin J. Crisman of Texas A&M University and the Institute of Nautical Archaeology. During this tenure, he co-authored and won a U.S. Navy Legacy Grant to complete a full-scale excavation of the American row galleon Allen from the War of 1812, which subsequently became the subject of his Ph.D. dissertation in Anthropology at Texas A&M University between 1995 and 2003.

Mr. Emery's area of specialization is anthropology with an emphasis on underwater archaeology. He has been actively involved in terrestrial and underwater archaeological fieldwork since 1993. He has worked extensively in North and South America with such institutions as the U.S. Naval Historical Center, Florida State University, Michigan Technological University, the University of Vermont, the Organization of American States, the Institute of Nautical Archaeology, and the Institute of Maritime History, along with government agencies in Canada, the British West Indies, and Ecuador. Since joining the U.S. Army Central Identification Laboratory, Hawaii as a participant in the Oak Ridge Institute for Science and Education fellowship program (July 2001), he has conducted search and recovery operations for missing U.S. service members in Papua New Guinea, Vietnam, Laos, and at the site of the USS Monitor, a prototype ironclad from the U.S. Civil War that sank off Cape Hatteras, North Carolina. He has presented multiple papers at regional and national professional meetings and has published articles in various journals. Most recently he has contributed a chapter in an edited volume dealing with submerged archaeological sites from the War of 1812. His permanent address is 36 Wright's Bay Road, Milton, Vermont 05468.