

Program in Maritime History and Nautical Archaeology Volume 9, Fall 1993



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Program graduate student, Lex Turner, records the dimensions of an eighteenth-century English wreck in Bermuda. (Photo: Gordon P. Watts, Jr.)

Stem to Stern

Newsletter of
East Carolina University's
Program in Maritime History
and Nautical Archaeology

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Published annually by the Department of History, Program in Maritime History and Nautical Archaeology, East Carolina University. Alumni are encouraged to send current information regarding achievements or employment news to the Editor. Any suggestions or comments should also be directed to the Editor. We look forward to hearing from you.

If you would like to receive a free subscription of *Stem to Stern*, please call 919-757-6097 or write:

Stem to Stern

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FROM THE EDITOR

East Carolina University's Program in Maritime History and Nautical Archaeology experienced an unprecedented expansion in 1993. A record twenty-six new graduate students were accepted into the Program in Fall 1993, and now over half of all the Master degree students in the Department of History are in the Maritime Program. Of the forty matriculating students in the Program, over sixty percent have university assistantships.

Although the Program began in 1981, *Stem to Stern* is in the ninth year of its publication. A look at this year's edition of the newsletter will illustrate the scope of research in the fields of maritime and naval history, museum studies, and nautical archaeology.

Faculty and students continue to increase the reputation of the Program. A number of graduate students plan to give papers at the upcoming conference of the Society for Historical Archaeology in Vancouver, BC, in January 1994. This year, faculty and students have also attended a number of conferences, including the Conference on Underwater Archaeology in Kansas City, MO, in early January and the Eleventh Naval Symposium in Annapolis, MD, in October.

The Program has also received both national and international recognition. Magazines, such as *WoodenBoat*, have noted the diverse research interests pursued by Program faculty and students. Through the efforts and the active support of the university, faculty, staff, and students, the Program in Maritime History and Nautical Archaeology will continue its successful expansion and projects in 1994.

IN BRIEF

Dr. William N. Still, Jr., served as President of the North American Society for Oceanic History (NASOH). In March 1993, he organized the successful joint meeting of NASOH and the Council of American Maritime Museums (CAMM) in Bermuda. Dr. Still will be retiring from his position as Director of the Program in Maritime History and Nautical Archaeology effective June 1994.

After two years of service as Graduate Coordinator of the Department of History, **Dr. Carl E. Swanson** will step down from his position effective January 1994. He plans to continue work on his forthcoming book on Charleston, SC.

Dr. Lawrence E. Babits continues to coach ECU's rugby team. In May 1994, he will direct the *Maple Leaf* summer field school.

PAPERS

The following papers have been presented by staff, students, and alumni in 1993:

Babits, Lawrence E. "Of No Significance? The Continental Army Camps of

North Carolina." Southeastern Archaeological Conference, Raleigh, NC, November 1993.

Browning, Robert. "Union Blockade Tactics at the Port of Wilmington, North Carolina." NASOH/CAMM Conference, Bermuda, March 1993.

Delgado, James P. "SS *Beaver*: The Archaeology of the First Steamship on the Pacific Coast of North America." NASOH/CAMM Conference, Bermuda, March 1993.

Foster, Kevin. "Blockade Runner Havens: Civil War Entrepôts in American Waters." NASOH/CAMM Conference, Bermuda, March 1993.

Morris, John William. "Initial Hull Analysis of the Vessel Remains at Site IMHA3." NASOH/CAMM Conference, Bermuda, March 1993.

Rodgers, Bradley A. "The *Maple Leaf* Project." Fifth Annual Symposium on Marine Archaeology and Maritime History of the Pacific, Honolulu, HI, March 1993.

Still, William N., Jr. "Confederate Shipbuilding." Paper presented to a Seminar on the Civil War, Newport News, VA, February 1993.

_____. "CSS *Alabama*." Fifth Annual Symposium on Marine Archaeology and Maritime History of the Pacific, Honolulu, HI, March 1993.

_____. "National Sea Grant and Underwater Archaeology in Hawaii." Paper presented to the National Sea Grant Directors, Honolulu, HI, July 1993.

_____. "Anglo-American Naval Logistic Cooperation in World War I." Paper presented to the WWI Symposium sponsored by the U.S. Naval Academy, Annapolis, MD, August 1993.

Watts, Gordon P., Jr. "A Decade of Shipwreck Research in Bermuda." NASOH/CAMM Conference, Bermuda, March 1993.

MARITIME STUDENTS RECEIVE UNIVERSITY AND NATIONAL RECOGNITION

In addition to a number of research and teaching assistantships, ECU's Department of History ECU offers scholarship awards to graduate students. These awards are provided by private benefactors in an effort to support research in the field of history and are presented to students based upon their academic records and proven writing ability. In keeping with the Maritime Program's tradition of excellence, the history department has once again awarded a number of fellowships to students in the Maritime Program. **Paul Fontenoy** was named a recipient of the Lawrence F. Brewster Fellowship. The Paul Murray Graduate Scholarship in History has been awarded to **Phil McGuinn**, and the Admiral Ernest M. Eller Graduate Fellowship in Modern Naval History has been awarded to **Tim Hastings**.

Recent graduates of the Program in Maritime History and Nautical Archaeology have also received a number of internationally prestigious awards. **I. Roderick Mather**, currently a doctoral student at Oxford University, was named the recipient of the Caird Research Fellowship from the National Maritime Museum. One of the most well-known awards in Great Britain, the Caird Fellowship is offered to students of British maritime history.

Edward F. Prados was selected as a recipient of a Fulbright Scholarship, Full-Grant Country Award to the Republic of Yemen. Only 2,000 American students annually are awarded Fulbright Scholarships. Edward has also been named a recipient of both the 1993 American Institute for Yemeni Studies Fellowship and the

Leigh Douglas Memorial Fund Scholarship for his proposed research into Yemeni maritime history and indigenous boatbuilding techniques. In addition, in March 1993, Edward was awarded the Mary F. Howard Maritime Studies Scholarship by the Institute for Coastal and Marine Sciences.

Also, **Daniel Warren** was selected as one of ten recipients of this year's Thomas W. Rivers Scholarship for his proposed research into Australian maritime history. Awarded to ECU students engaged in study abroad opportunities, the Rivers endowment fund promotes foreign exchanges and cultural understanding.

The faculty, staff, and students of the Program in Maritime History and Nautical Archaeology offer hearty congratulations and wish the above-named students all the best in their research endeavors.

PUBLICATIONS

The following is a list of publications by faculty and alumni completed within the last year:

Babits, Lawrence E. *Battlefield Guide to Cowpens*. Johnson City, TN: Overmountain Press, 1993.

_____. Book Review: R. Bruce Council, Nicholas Honerkamp, and M. Elizabeth Will, *Industry and Technology in Antebellum Tennessee: The Archaeology of Bluff Furnace* in *American Anthropologist* 95 (June 1993): 480.

_____. Book Review: George C. Neuman and Frank J. Kravic, *Collector's Illustrated Encyclopedia of the American Revolution* in *Historical Archaeology* 27: 129-130.

_____. Book Review: Albert Casteel, *Decision in the West: The Atlanta Campaign of 1864* in *Choice*, February 1993.

_____. Book Review: John J. Hennessy, *Return to Bull Run: The Campaign and Battle of Second Manassas* in *Choice*, March 1993.

_____. Book Review: Joseph Whitehorne, *While Washington Burned: The Battle for Fort Erie, 1814* in *Choice*, May 1993.

_____. Book Review: William B. Skelton, *An American Profession of Arms: The Army Officer Corps, 1784-1861* in *Choice*. June 1993.

_____. Book Review: James S. Leamon, *Revolution Downeast in Choice*, October 1993.

Browning, Robert M., Jr. *From Cape Charles to Cape Fear: The North Atlantic Blockading Squadron During the Civil War*. Tuscaloosa, AL: University of Alabama Press, 1993.

Delgado, James P. Book Review: James R. Gibson, *Otter Skins, Boston Ships, and China Goods: The Maritime Fur Trade of the Northwest Coast, 1785-1841* in *Mariner's Mirror* 79 (February 1993): 110-111.

Herron, Richard D. "Balinese Jukung: Vestiges of an Ancient Past." *Nautical Research Journal* 38 (September 1993): 152-162.

Palmer, Michael A. *The War That Never Was*. Arlington, VA: Vandamere Press, January 1994.

_____. "The Navy" in *Encyclopedia of the American Military*, edited by John E. Jessup (New York: Charles Scribner's Sons, January 1994).

_____. "US Must Maintain MidEast Leadership Role," *Armed Forces Journal International* (February 1993): 21-32.

_____. "The Storm in the Air: One Plan, Two Air Wars?" *Air Power History* 39 (Winter 1992): 24-31.

_____. Book Review: A.B.C. Whipple, *To the Shores of Tripoli: The Birth of the U.S. Navy and Marines in Naval War College Review* 46 (Summer 1993): 148-149.

_____. Book Review: Deborah Amos, *Lines in the Sand: Desert Storm and the Remaking of the Arab World* in *Armed Forces and Society* 19 (Summer 1993) 632-633.

_____. Book Review: Edward J. Sheehy, *The U.S. Navy, the Mediterranean, and the Cold War, 1945-1947* in *Naval War College Review* 46 (Autumn 1993): 153-154.

_____. Book Review: William J. Fowler, Jr., *Under Two Flags: The American Navy in the Civil War* in *Mariner's Mirror* 79 (May 1993): 230-231.

Robie, Bill. *For The Greatest Achievement: A History of the Aero Club of America* (continued on page 4)

and the National Aeronautic Association. Washington, DC: Smithsonian Institution Press, 1993.

Still, William N., Jr., Bradley A. Rodgers, and Gordon P. Watts, Jr., "Steam Navigation and the United States," chapter in *The Advent of Steam: The Merchant Steamship before 1900*, edited by Robert Gardiner, 1993.

Swanson, Carl E. Book Review: William S. Dudley, ed., *The Naval War of 1812: A Documentary History in Mariner's Mirror* 79 (August 1993): 369-370.

Watts, Gordon P., Jr. "The Western Ledge Reef Wreck: A Preliminary Report on Investigation of the Remains of a 16th-Century Shipwreck in Bermuda." *IJNA* 22 (May 1993): 103-124.

GRADUATE THESES IN MARITIME HISTORY

The following theses were completed in 1993 by students in the Program in Maritime History:

Brina J. Agranat. "Thorough and Efficient Repair: Rebuilding in the American Sailing Navy."

A. Robert Holcombe. "The Evolution of Confederate Ironclad Design."

Richard Mannesto. "Submerged Cultural Research Survey of Whitefish Point, Michigan."

Edward F. Prados. "The Development of Arabian Commerce and Shipping in Classical Antiquity."

Bill Robie. "For the Greatest Achievement: A History of the Aero Club of America and the National Aeronautic Association."

James Spirek. "The USS *Southfield*: An Archaeological and Historical Investigation of a Civil War Gunboat."

William Thiesen. "Policy, Technology, and Change: The ABCD Warship Program and the Transformation of American Naval Policy in the 1880s."

A complete and up-to-date list of all ECU maritime and naval theses and site reports is available upon request from the Program in Maritime History. Copies of ECU theses and reports may be ordered through inter-library loan services at your local university or public library from J.Y. Joyner Library, East Carolina University, Greenville, NC 27858.

RECENT UNIVERSITY EQUIPMENT PURCHASES

The Program in Maritime History has acquired additional equipment to facilitate both university and student research. Along with three more computer work stations, a Hewlett Packard scanner and color printer are the most recent additions to the newly-formed student computer lab.

In June of this year, the Program added a third boat, a new Privateer with trailer, to its fleet. Other equipment purchases include a differential global positioning system (DGPS), three replacement pumps, a new set of underwater 35-mm cameras and lenses, and a Sharps Positioning System.

As of press time, the university is also in the process of acquiring a much-needed Klein sidescan sonar and a pontoon boat. Before the end of the year, the university also hopes to obtain a compressor that will be operated out of the Dive Safety Office. These acquisitions will provide ECU nautical archaeology students with a competitive edge in today's job market.

MARITIME STUDIES ASSOCIATION

The Maritime Studies Association (MSA) is a non-profit organization that was established by graduate students at ECU in Spring 1992. MSA's goals include assisting graduate students in the conduct of research, promoting interest in our maritime history, and providing information about our maritime cultural resources to the community at large.

Lectures to local communities provide opportunities to reach the public. For example, **Lex Turner** recently spoke to the Sons of the Confederacy in Roanoke Rapids, NC, on the *Maple Leaf* wreck site. Professional conferences also serve as an avenue for the dissemination of information. **Adriane Askins, Tim Hastings, Matthew Russell, Vicki Schneider, Ray Tubby,** and Lex Turner will be giving papers at the annual conference of the Society for Historical Archaeology in Vancouver, BC, in January 1994.

Another example of MSA's outreach programs to the community includes a Coast Guard licensing preparation course offered this Fall. Taught by the current MSA President, Captain **Rick Jones**, the course

will be offered again in Spring 1994. Also, MSA's newly-formed Speaker Committee is in the process of making arrangements for noted historians and archaeologists to visit ECU to talk about their research interests and current work. These lectures will be open to the public and are free of charge.

Currently, MSA is in an excellent position to expand its influence and participation in a variety of projects due to an increase in the number of new students and to the work accomplished by past MSA members. With a variety of academic backgrounds, students come from Greece, England, and from all over the United States. Geographic diversity is also reflected in the research interests of MSA students. For example, members have on-going archaeological projects in Bermuda, Canada, England, and Yemen. Historical research includes a wide range of topics--such as Colonial maritime law, Civil War navies, and the Manila galleon fleets.

This year, students in the Maritime program worked on projects at sites in Alabama, Florida, North Carolina, and Bermuda. Their research has yielded valuable information, artifacts, and experience, but these benefits come at a high cost. Technology and travel are expensive, and the increasing number of students in the program has strained financial resources. More equipment is needed to cover future projects and to give students a strong learning platform. Additionally, the financial costs of traveling to, and living on, sites prevents many students from participating fully in field schools and academic conferences.

In 1992, MSA set up the Maritime Studies Association Trust Fund Account to address these financial concerns. Over the past two years, a number of local and national businesses and students have contributed to the fund, both by providing specialized equipment and by defraying the costs of research.

If you would like to contribute to the MSA Trust Fund, please make your checks payable to ECU Foundation for Maritime Studies Association Trust Fund (Acct. #0-94601). Anyone donating \$25 or more will receive a Maritime History and Nautical Archaeology T-shirt in appreciation. In addition, anyone interested in becoming Associate or Alumni members of MSA may write to: MSA (attn: Rick Jones), c/o ECU Program in Maritime History and Nautical Archaeology, Admiral Ernest M. Eller Building, Greenville, NC 27858-4353.

*Rick Jones &
Phil McGuinn*

DIRECTOR ANNOUNCES RETIREMENT



Dr. William N. Still, Jr. (Photo: Mary Miller.)

Dr. William N. Still, Jr., began teaching in the Department of History at East Carolina University in 1968. As an expert on the Confederate Navy and shipbuilding in the American Civil War, Dr. Still met with Professor Gordon Watts, a former graduate of ECU's History department and then North Carolina's state underwater archaeologist, in the late 1970s. Both Dr. Still and Watts discussed the possibility of developing a field school to train future underwater archaeologists. In 1979, the first field school was held in Bath, NC, under the joint sponsorship of ECU and the State of North Carolina.

After attending a conference on underwater archaeology in 1980, Dr. Still realized that few members of this new field of archaeology were trained to examine the historical significance of the underwater sites that they had uncovered. Realizing that there was a need to train future archaeologists to work with historical documents, Dr. Still approached ECU's administrators to begin a program where both archaeological and historical research techniques could be taught. The Program in Maritime History and Underwater Research was subsequently formed and approved in 1981, and, in the Fall of that year, classes opened with one full-time and one part-time staff member and five graduate students. In 1992, the program name was officially changed to the Program in Maritime History and Nautical Archaeology.

On 1 November 1993, the Program in Maritime History encountered another milestone in its long history: After twenty-five years of teaching history at ECU and twelve years as Director of the Program, Dr. Still officially announced his retirement, effective June 1994. Due to the poor health of his

wife, Mildred, Dr. Still has decided to retire early. They plan to move to the State of Hawaii next year.

In an interview granted to the editor of *Stem to Stern*, Dr. Still indicated that with his departure, the Program will enter a transitional phase. He hopes that within the next few years Program graduates that have become established in the fields of maritime history and underwater archaeology will enter the Program as faculty. Dr. Still also hopes that his successor will continue to build the naval history program, the museum program, and underwater work. Still is convinced that "the sky is the limit," as far as how much the Program can grow and how successfully it can place its graduates.

For the future, Dr. Still believes that the university will continue its traditional program with core courses in history and more flexible courses in museum studies, archaeological theory, and underwater techniques, to provide a well-rounded program. More maritime related activities are already centered at ECU than at any other university in the U.S., and this growth should and can continue.

*"I HOPE TO SERVE IN SOME
CAPACITY IN THE FUTURE GROWTH
OF THE PROGRAM, WHETHER ON
AN OFFICIAL OR UNOFFICIAL
BASIS."*

--DR. WILLIAM N. STILL, JR.

Still hopes that his tradition of sponsoring "memoranda of agreements" will continue. He would like to see agreements with other universities, foundations, museums, and semi-official organizations. Dr. Still points out that few people have seen how beneficial mutual agreements are. Because these memos are not contracts, the university is not committed, but there are a number of resources that ECU simply cannot provide. For instance, ECU lacks both engineering and oceanographic schools, and, therefore, does not have related deep-water facilities. Some examples of recent agreements include one with the University of Hawaii which will give interested ECU graduate students access to deep-water equipment and to research opportunities in the little-studied Pacific Ocean. In return, ECU will provide technical staff.

Another successful and important ongoing agreement is with the Bermuda Mari-

time Museum. Field schools sponsored in part by the Museum have provided students with experience in underwater archaeological techniques. In turn, the Museum has benefited from valuable information on Bermuda's maritime heritage.

Also, a recent memorandum was signed between ECU and the United States Naval Memorial Foundation in Washington, DC; this agreement will provide students with internship possibilities and will allow students to reach over one million naval veterans, thereby enhancing public awareness of the rich naval history of the U.S. Dr. Still hopes that naval studies will continue its growth because, unlike Great Britain, the U.S. lacks an educational institution that offers a naval history program. He would also like to see the enhancement of a maritime museum program. There are over two hundred maritime museums in the U.S., but American universities do not offer museology courses designed for maritime studies. Contacts with museums could also be used to develop underwater work, but, currently, maritime museums are "untapped markets."

Dr. Still has written extensively on topics in maritime history and the American Civil War. Among his books are the following: *Iron Afloat: The Story of the Confederate Armorclads; Why the South Lost the Civil War;* and *American Sea Power in the Old World: The United States Navy in European and Near Eastern Waters, 1865-1917*. The latter is part of a three volume study of the U.S. Navy in European waters from 1865 to 1940. His awards include: the President Harry S. Truman award for contributions in Civil War history; the Jefferson Davis best book in Civil War history award; and the Christopher Crittenden Memorial Award for significant contributions in North Carolina history.

Dr. Still will be deeply missed by the Program faculty, staff, students, and alumni.

ANNOUNCEMENT

The Program in Maritime History and Nautical Archaeology extends best wishes to Dr. Still and his wife, Mildred. A retirement party will be given in Dr. Still's honor on 16 April 1994. All interested parties (yes, that means alumni, staff, and students) should contact the Program in Maritime History for more information.

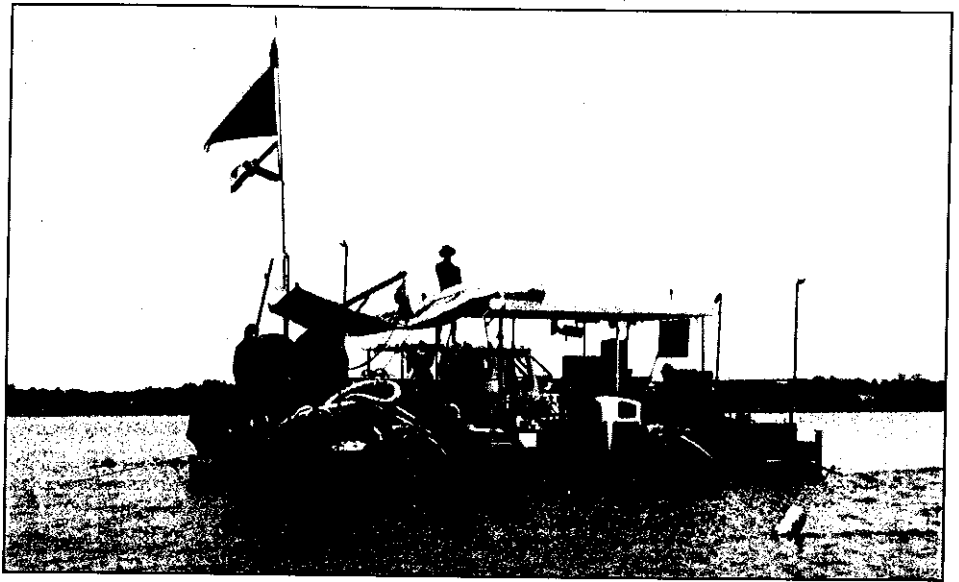
SUMMER FIELD SCHOOL ENCOUNTERS THE *MAPLE LEAF*

In 1864, a Union transport, the *Maple Leaf* sank in the St. Johns River near Jacksonville, FL. The ship carried the baggage of a Union brigade when it struck a Confederate torpedo (mine) in the early hours of 1 April. Due to a strong Confederate presence on the river, the wreck and cargo were never salvaged. In the 1880s, the Army Corps of Engineers cleared away the superstructure, paddle wheels, and walking beam assembly because of the threat it posed to navigation. The *Maple Leaf* then lay forgotten until its rediscovery in 1984 by the Saint Johns Archaeological Expeditions, Inc. (SJA EI).

In 1992, the Maritime History Program, in conjunction with SJA EI, undertook a research project to document the history and archaeology of the *Maple Leaf* site. Systematic recording began when students in the 1992 Summer field school uncovered the forward deck and mapped the remaining vessel features. Work continued in July 1993, when field school staff and students under the direction of **Dr. Bradley A. Rodgers** documented the engineering spaces.

The *Maple Leaf* was built as a sidewheel paddle steamer powered by a walking beam engine. The beam and support frame rose out of the river and for many years marked the wreck site. Late nineteenth-century channel clearing efforts removed the beam and other obstructions. Recording the condition and the extent of the remaining machinery was the goal of this year's field school. Like last year, work continued in conditions of near-zero visibility.

To prepare for the field season, the team of twelve graduate students and five staff members, undertook an intensive two-week training period in June. The training program reviewed basic SCUBA skills and underwater mapping techniques and offered CPR certification and zero-visibility experience. Because broken timbers and bent connecting rods posed entanglement problems for the divers, participants also learned the use of wireless underwater communication gear and redundant emergency air supply. ECU graduate students participating in the 1993 *Maple Leaf* field season were **Stan Duncan, Tim Hastings, Annalies Corbin Kjørness, Jeff Morris, Christopher Olson, Paul Steinberg, Shawn Tanner, and Hans Van Tilburg**. Additional staff members included **Frank Cantelas, Steve Sellers, Dr. Richard**



Mud Puppy at the Maple Leaf wreck site. (Photo: Frank Cantelas.)

Stephenson, and Dr. Lawrence Babits.

The team concentrated on the starboard side of the vessel and found the machinery spaces to be a mass of disarticulated rods, pipes, and timbers. Divers discovered that the main deck was largely intact forward and aft of the machinery space. The starboard boiler was in place, but the steam chest apparently exploded when cool water entered the engine room while the vessel was sinking. Divers also located the rod that connected the paddle wheel shaft and the missing walking beam. The steam cylinder was no longer present.

After removing several layers of mud, the team laid out a mapping grid to document the boiler, paddle wheel shaft, sponson, and deck. The accumulated information was plotted daily on a site map that allowed members to monitor their mapping progress and to correct potential mistakes. The low visibility and the disarticulated jumble in the engine room made mapping slow and tedious. By the close of the field season in August, over sixty feet of the amidships area of the vessel had been mapped.

Field school participants also documented artifacts recovered by SJA EI since 1984. The *Maple Leaf* sank with a cargo of personal effects belonging to three Union regiments transferred to Florida a month before the sinking. Preservation conditions on the site are excellent for organic artifacts, with such items as sewing kits, hats, desks, storage crates, canteens, swords, rubber ponchos, tent poles, sardine cans, and shoes, emerging intact from the anaerobic mud. Documentation of these finds entailed making detailed drawings of each artifact.

The Program in Maritime History will hold a third field school on the *Maple Leaf* in 1994 under a cooperative agreement

with SJA EI. The site has extensive research potential for students of ship construction, artifact conservation, and material culture studies for years to come.

*Christopher Olson &
Frank Cantelas*

THE S.S. *KAUAI* AND SUBMERGED CULTURAL RESOURCES IN HAWAII

For the past five years, the Marine Operation Program (MOP) at the University of Hawaii has held an annual symposium on Pacific marine archaeology and maritime history. Three-day session training classes at various sites off Oahu's coast followed the conferences during the university's Spring Break. After this year's symposium, MOP decided to offer an extended field school in June 1993. In cooperation with ECU's Program in Maritime History, MOP offered a two-week field school entitled Marine Archaeological Surveying Techniques (MAST). Directed by **Dr. Bradley A. Rodgers**, the field school investigated the S.S. *Kauai*, an inter-island, nineteenth-century steamship that sank on 24 December 1913 off Big Island (Hawaii) near Mahukona (an old harbor in the Kohala District). The *Kauai* carried cargo and passengers and supplied the sugar plantations of the islands. It sank when strong surf broke her mooring pins.

The field school was based at Hapuna Beach State Park, and living conditions during the field work were somewhat spartan. Work on the wreck, nevertheless, proved to be an invaluable experience. Fif-

teen students including undergraduates, graduates, and contract terrestrial archaeologists, primarily from Hawaii but also from Texas A&M, Fairleigh Dickinson, and Colorado State Universities, were exposed to non-invasive and non-destructive underwater survey techniques and methodology.

Divers examined the *Kauai* *in situ* and located the main steam engine, the ship's propeller, propeller shaft, donkey boiler, and huge mooring chains. The participants carefully mapped and photographed the exposed vessel remains. Other techniques learned by students were remote sensing and video documentation of the vessel remains.

In July 1993, Dr. William N. Still, Jr., visited Hawaii, and with the directors of MOP, spoke to the National Sea Grant Foundation on the need for a maritime history and archaeology program in Hawaii. Dr. Still has been involved almost from the beginning in the development of a certificate program in maritime history and marine archaeology at the University of Hawaii. The focus of the certificate program is ocean recreation and tourism. Currently, the State of Hawaii does not have laws that would protect or manage submerged cultural resources; hence the purpose of MAST is to generate interest in Hawaii for such laws.

In a recent interview, Dr. Sherwood D. Maynard, Director of MOP, has pointed out that the Pacific holds a wealth of information about the past and that submerged cultural resources are waiting to be discovered. The Pacific Ocean is the roadway for commercial shipping between Asia and the Americas and was the battleground for a number of military operations. Dr. Maynard has met with the Chair of the Anthropology department at Hawaii, and a course description for next summer's field school has been drafted. The History department will also form an upper-division history course worth three credits that will, along with the six-credit field school, be required for the certificate program.

Next summer's field school will be a full six-week program worth six graduate, anthropology credits towards the certificate. The new Graduate Maritime Archaeology and History Certificate Program will be based at the University of Hawaii main campus at Manoa. Site selection for the 1994 field school, under Dr. Bradley A. Rodgers, is still in progress. The upcoming field school in Hawaii will be open to a limited number of students. For more information, please contact: MOP, University of Hawaii, 1000 Pope Road, #209, Honolulu, HI 96822.

BERMUDA FIELD SCHOOL EXCAVATES 18TH CENTURY WRECK

The 1993 Fall Field School in Bermuda marked the tenth anniversary of shipwreck research jointly sponsored by the Bermuda Maritime Museum and the Program in Maritime History and Nautical Archaeology. Early projects focused on the remains of the *Mary Celestia* and the *Nola*, shipwrecks associated with Bermuda's role in the American Civil War. Subsequent projects included investigations of the remains of the seventeenth-century Dutch wreck identified as the New Old Spaniard, and the sixteenth-century Spanish-vessel known as the Western Ledge Reef Wreck. The 1993 field school was designed to document the remains of an eighteenth-century British vessel located during a survey of the western reefs in 1992.

Like many of the shipwreck sites identified during our surveys of the reefs surrounding Bermuda, remains of the eighteenth-century British wreck had already been discovered. There was unmistakable evidence that salvagers had removed material from the site on a sporadic basis. While much of the ballast protecting the surviving hull remained intact, salvage activity had exposed the extremities of the hull. A brief examination of the exposed structure carried out in 1992 confirmed that the vessel dated to the second or the third quarter of the eighteenth century, and artifacts discarded by the salvagers reinforced the con-

clusion that the wreck was British. In spite of the damage, the site clearly represented a valuable source of information.

In order to record the data preserved by the exposed hull, the Bermuda Maritime Museum applied for and received a license for the site. Under the government permit, the Program in Maritime History staff and eight ECU students—Stuart Derrow, Stan Duncan, Ted Dunlap, Steve Gibbons, Tim Hastings, Jeff Morris, Christopher Olson, and Lex Turner—cleaned and documented the site during September. Data from the investigation is currently being analyzed by Michael Krivor, who has selected the wreck to be the subject of his thesis. In addition to analyzing data from the wreck, he will be responsible for the historical background research.

Investigation of the wreck confirmed that much of the lower hull survived below the turn of the bilge. At both the northern and southern extremities, the exposed structure consisted of the keel, keelson, exterior planking, floors, futtocks, and fillet pieces. Using a metal grid system, all of the exposed hull was mapped *in situ* and several representative sectional profiles were recorded. The exposed remains were also photographed with the reference grid in position to permit subsequent production of a photomosaic. Near the undisturbed edges of the ballast mound along the centerline of the vessel, bilge ceiling was also exposed. On the north end of the undisturbed ballast pile, the lower portions of a non-structural bulkhead remained intact, and on the south end, several casks were also found. The bulkhead and the casks were recorded and photographically documented. Artifacts, including bottle

(continued on page 8)



Propeller from the S.S. *Kauai* in Hawaii. (Photo: Steve Russell.)

Bermuda 1993 (continued)

glass, ceramics, musket and pistol balls, and a few hull fasteners, were also recovered to facilitate dating the wreck. Wood samples will be analyzed to identify construction materials. Also, a collection material from the bilge was preserved to identify organic remains associated with the ship.

A preliminary assessment of the wreck suggests that the vessel was a British collier, a flat-bottomed boat used primarily for transport. The hull structure is very similar to the British collier *Betsey* excavated in Yorktown, VA, under the direction of John Broadwater. The framing patterns of both vessels are virtually identical, although the Bermuda wreck appears to have been a larger ship. The wreck has not been identified, but preliminary historical research has confirmed the loss of a number of British colliers on the Bermuda reefs during the mid to late-eighteenth century. Future investigations of the hull remains may contribute to a better understanding of the design and the construction of the Brit-

ish-built colliers. These vessels not only supported the coal trade but also played an important role in British military campaigns and voyages of exploration in the eighteenth and the nineteenth centuries.

Although no additional research at the site is planned for the 1994 field season, participants in next Fall's field school will revisit the site to check on material deposited on the wreck for protection and to check for any additional disturbance by divers. The 1994 Bermuda Field School will also resume systematic shipwreck survey activities along the reef complex. The survey will include both magnetic remote sensing and towed diver searches. A differential global positioning system (DGPS) will be used to control the survey and to identify and date the remains. All data will be included in a data base site file inventory maintained for the Bermuda Maritime Museum. During the project, time will also be allocated to relocating the remains of a vessel called the "Stonewall Wreck" that was documented by a team from Franklin Pierce College. In the event that sufficient structural remains survive at the site, an effort will also be made to document them during the 1994 or 1995

field season. As in the past, the cooperative shipwreck research program will continue to provide excellent field research experience for East Carolina University students and important shipwreck information for Bermuda.

Gordon P. Watts, Jr.

FALL FIELD SEASON AT MOBILE BAY

On 5 August 1864, a Union fleet commanded by Admiral David G. Farragut attempted to force passage into Mobile Bay, AL, and past the guns of Fort Morgan and a Confederate naval flotilla of four warships. The U.S. Navy had a mission to capture the city of Mobile and its surrounding waters that had been a center for blockade-running activities on the Gulf Coast for three years. Leading a column of ironclads into the bay, the federal ironclad *Tecumseh* hit a mine and sank in less than a minute with virtually its entire crew



Steve "Skippy" Gibbons excavates an eighteenth-century English wreck. (Photo: Tanya Morris.)

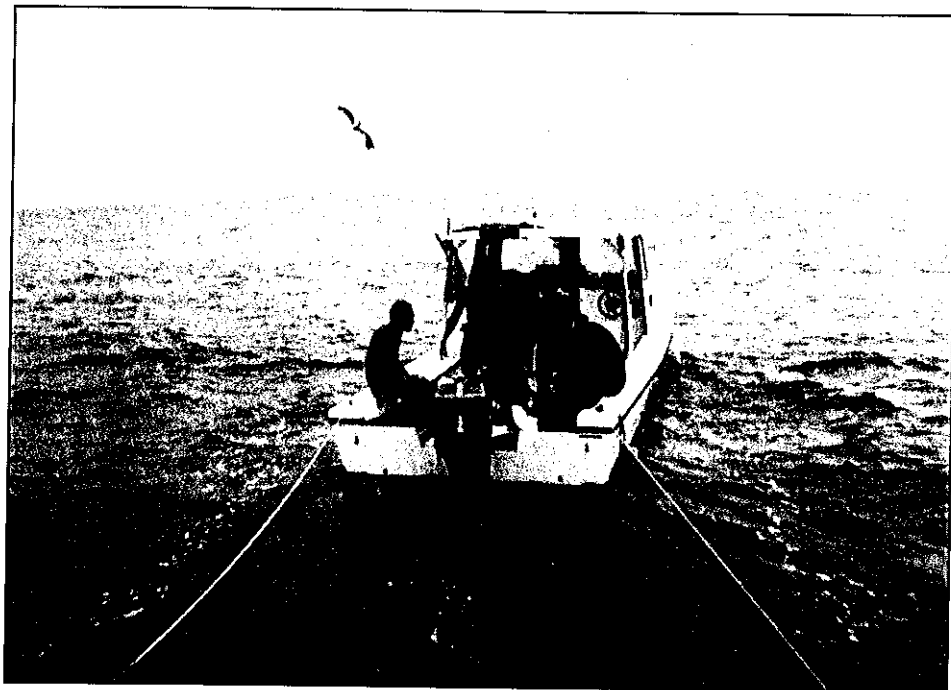
onboard. Despite the *Tecumseh's* demise, Admiral Farragut urged his forces through the minefields and into the bay. In the ensuing battle, the CSS *Gaines* deliberately ran aground at Fort Morgan after Union shellfire shattered its hull below the waterline. The USS *Philippi* became the final casualty of the day after it grounded outside the main channel and was burned by a Confederate boarding party.

Through a grant provided by the U.S. Department of the Interior, National Park Service, ECU conducted a Fall Field School at Mobile Bay in October 1993. Five ECU graduate students—**Ted Dunlap, Steve Gibbons, Tim Hastings, Jeff Morris, and Lex Turner**—assisted **Professor Gordon Watts** during the month-long excavations of the *Tecumseh*, *Gaines*, and *Philippi* at the mouth of the bay. Former Program graduate James William Morris and Marianne Franklin, both of Southern Oceans Archaeological Research, Steve Sellers of the ECU Dive Safety Office, and Karl Gottschamer provided invaluable help to ECU students. Field school participants stayed at a renovated nineteenth-century officer's quarters at Fort Morgan, where they had access to marina facilities near all three ships. Objectives for the field school were to assess the condition of the exposed hull on the *Tecumseh* and to document the wreck sites of both the *Gaines* and the *Philippi*.

The students obtained excellent experience working on the submerged archaeological sites. On occasion, tidal currents were heavy, with visibility often restricted to a few feet. After using the magnetometer and locating the three wrecks, the ECU field school participants split into two groups. One group strung a polypropylene web over the *Gaines* and mapped the remaining hull and machinery features. Portions of the armor plating and the ram are intact, as well as a set of solid brass railings that the students documented and recovered to prevent possible theft by treasure hunters.

On the wreck of the *Tecumseh*, the second ECU team mapped the exposed wreckage and surveyed the hull for possible unauthorized access holes that may have been cut into the iron plating. The *Tecumseh* is a protected wreck, and no divers are allowed on it without the permission of the federal government. The divers found several holes in the hull, but none were large enough for a person to gain access into the ship's interior.

After surveying the hull of the *Tecumseh*, a team of divers located the *Philippi*, lying in the middle of the passage between Fort Morgan and Dauphin Island. A large boiler



John William "Billy Rae" Morris, Maryanne Franklin, Lex Turner, Karl Gottschamer, and Tim Hastings consult before work on the USS Philippi. (Photo: Jeffrey Morris.)

and numerous pieces of machinery remain; however, none of the wooden hull is exposed above the sand. Artifacts including small arms and six-inch artillery ammunition were also present. The ECU team mapped these features and recovered pieces of machinery, ceramics, and projectiles for future analysis.

After the three sites were mapped, their precise locations were recorded using an Electronic Distance Meter. On the few days that adverse weather prevented diving, graduate students conducted archival research at the City of Mobile Museum, the Mobile Municipal Archives, and the Mobile Public Library. Before departure, the deck railings and other artifacts recovered from the three sites were turned over to the staff at Fort Morgan State Park for conservation and eventual display at a newly-planned museum in Mobile.

Tim Hastings

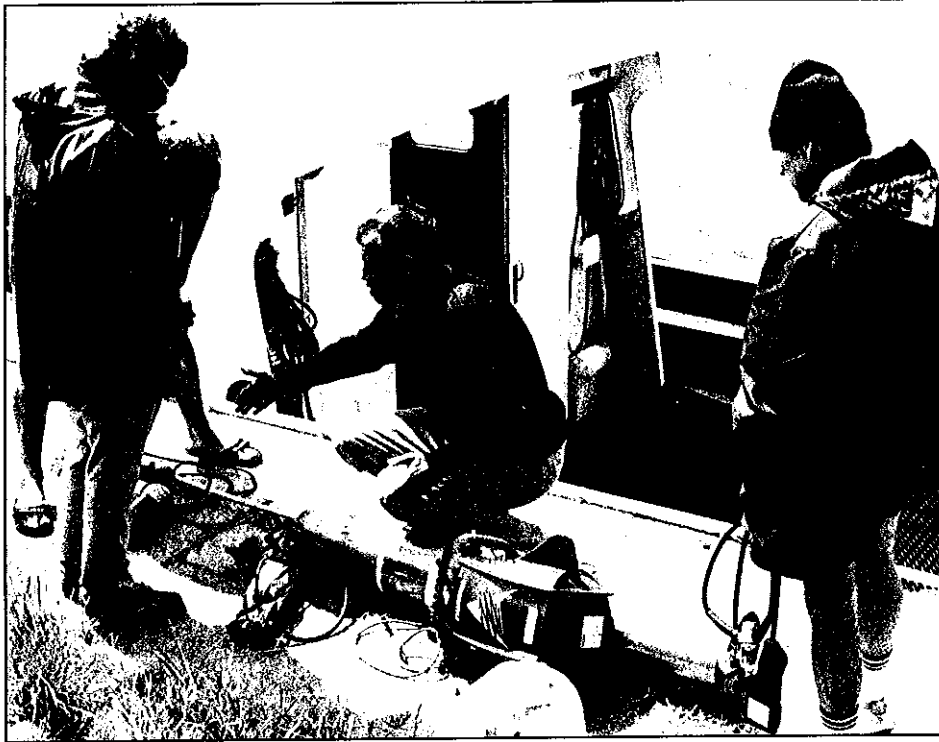
FORT FISHER RESEARCH PROJECT

On 19 April 1861, President Abraham Lincoln declared a naval blockade of Southern ports in an attempt to isolate the Confederacy from the industrial markets of Europe. Situated on a railroad line to other parts of the Confederacy, Wilmington, NC, allowed the shipment of goods between the

South and other European countries. Of all the Southern ports, Wilmington proved to be the most difficult to blockade because of its unique geography near the Cape Fear River and because of a series of formidable fortifications constructed along the two access inlets of the river. The two Cape Fear entrances were separated by Smith Island and by Fryng Pan Shoals which stretch for more than fifteen miles into the Atlantic Ocean. In addition, Fort Fisher, the largest earthwork fortification in the Confederacy, protected the New Inlet entrance to the Cape Fear River north of Smith Island. Heavily armed with several British-supplied Armstrong and Whitworth canon, it served as the most effective deterrent to Union efforts to close the Cape Fear, until captured in an amphibious assault in January 1865.

Although the Union blockade failed to destroy Confederate maritime commerce, the risks of blockade running were extremely high. More than thirty steam-powered vessels were lost in attempts to run into Wilmington, and several sank within a mile of Fort Fisher. The vessels represent a sample of the Anglo-Confederate trade. Blockade runners sunk in North Carolina waters included large oceanic transports, such as the steamer *Modern Greece* which ran aground north of Fort Fisher in 1862. Others, like the *Arabian*, which was built at Niagara-on-the-Lake to support maritime commerce and transportation on Lakes Erie and Ontario, were

(continued on page 10)



Max Guerout explains the adaptation of a Scubapro scooter to power an induction dredge for work on the *Alabama*. (Photo: Gordon P. Watts, Jr.)

and recreational potential. Selected sites will be documented and further researched to provide educational support for public access.

Gordon P. Watts, Jr.

CSS ALABAMA PROJECT

With the possible exception of the CSS *Virginia*, which fought the historic battle with the USS *Monitor* at Hampton Roads, VA, on 9 March 1862, the CSS *Alabama* may well be the most well-known Confederate warship. Under the command of Captain Rafael Semmes, the *Alabama* made a two-year cruise that resulted in the capture and, in some cases, the destruction of more than sixty Union merchant ships. The British-built steamer was the most successful of the fleet of Confederate commerce raiders that nearly destroyed the Union merchant fleet. At the end of the two-year cruise, Semmes brought the *Alabama* to the French port of Cherbourg for much needed repairs. The French government denied Semmes permission to repair the vessel, and the USS *Kearsage* arrived off the coast of France to prevent the *Alabama's* escape. Rather than attempting to escape or abandoning the vessel, Semmes elected to fight the *Kearsage*. The lightly-built *Alabama* proved to be no match for the *Kearsage* and the Confederate raider sank off the French coast after a two-hour battle.

The remains of the *Alabama* were found by a French Navy mine hunter in 1985. Since working to identify the shipwreck remains as those of the CSS *Alabama*, Captain Max Guerout has directed an annual series of investigations at the wreck site. In 1987, Professors William N. Still, Jr., and Gordon P. Watts, Jr., were invited to join Captain Guerout's research team in an investigation of the history and of the remains of the vessel. In June 1988, Watts and Still traveled to France and participated in a survey of the shipwreck. Using a manned submersible to support on-site observation, Watts became the first American to visit the wreck. Data from the 1988 expedition facilitated the development of plans for diver-supported research projects from 1989 to 1993. Research results included a complex plan of the wreck and the recovery of the ship's wheel with the motto "God helps them who help themselves," several flushing toilets with transfer print ceramic bowls, a variety of plates, glasses, salt cellars, and deck tracks for the vessel's ordnance trucks. Today, these items are housed in the United States Navy Yard Museum in Washington, DC.

pressed into clandestine trade. The wrecks off the shore of Fort Fisher also include examples of vessels designed and built specifically for blockade running, such as the *Condor* and *Storny Petrel*. Losses were also suffered by the Union Navy in attempts to restrict navigation at New Inlet. Both the tug USS *Aster* and the steamer USS *Flambeau* were lost within sight of Fort Fisher.

The remains of the Fort Fisher shipwrecks represent unique features of one of the most significant battlefields of the American Civil War. A detailed plan of these wrecks will be made for their upcoming inclusion on the National Register of Historic Places. In addition, a comprehensive assessment of the condition of each of the shipwrecks is necessary to support the development of a plan for protection, for interpretation in conjunction with programs at Fort Fisher, and, possibly, for development as a recreational site for divers. Currently, the interpretative program at Fort Fisher focuses primarily on the fort's defensive role. Little has been done to make the public aware of the importance of Civil War blockade runners.

A two-year research project has been approved by the National Park Service (NPS) for work on Fort Fisher as part of the NPS Battlefield Protection Program. The first field season will begin in 1994 and will include a survey of each of the six wrecks

near Fort Fisher. An assessment of the surviving vessel structure and the nature and scope of the archaeological record will be developed. A management plan will also be designed to ensure protection of the resources. The plan will involve an assessment of the possibility of developing one or more of the wrecks as an underwater park. The concept of an underwater park established to develop natural or cultural resources has proved highly successful in several states.

Both historical and archaeological investigations of blockade vessels and runners have identified many of the wrecks and produced new insight into the Confederacy's maritime commerce. In order to explore the possibility of increasing public access to these shipwrecks, the Program in Maritime History and Nautical Archaeology at ECU has joined the Underwater Archaeology Unit of the North Carolina Division of Archives and History in examining the potential for developing the underwater park concept. Because SCUBA diving is a growth industry in North Carolina, development of a system of parks could attract visitors and stimulate the Cape Fear economy.

During the next three years, an effort will be made to locate and to identify each of the blockade runners that sank off the Cape Fear coast. Each shipwreck site will be examined and assessed for educational

In June 1993, Professor Watts returned to Cherbourg to join a team of French divers working under Captain Guerout's direction to conduct the first on-site test excavation. Because of the depth (almost two hundred feet), bottom time is limited to approximately fifteen minutes. It is also difficult to support complex on-site activity due to currents that exceed four knots during the tidal cycle. In spite of these limitations, a one-meter square test excavation was started in the stern of the *Alabama*. Shell hash and sediment were removed using two Scubapro underwater scooters that were adapted to serve as dredges. The test exposed a collection of ship's china, glassware, and coins that had been stored in a cabinet in the officer's quarters in the stern. These coins have been identified as Brazilian and were probably brought onboard during the *Alabama's* visit to Bahia, Brazil.

Material recovered from the CSS *Alabama* illustrates the exciting potential of the archaeological record associated with the Confederate commerce raider. Although the historical record indicates that Semmes and the crew discharged some of the vessel's contents before the battle, testing the archaeological record has confirmed that many valuable artifacts remained aboard while the vessel sank. These artifacts can provide new insight into life aboard the Confederacy's most successful commerce raider. During the next three years, Professor Watts will be working with Captain Guerout to continue exploring and documenting this historic ship and its contents. A major focus of future research will be an examination of the *Alabama's* machinery and ordnance, and on-site research will resume in June 1994.

Gordon P. Watts, Jr.

CSS JACKSON

In January 1993, Professor Gordon Watts and eight ECU graduate students participated in a project to document the remains of the ironclad ram, CSS *Jackson*. The goal of the project was to determine the vessel's construction prior to its relocation to a more protected environment. ECU and the Confederate Naval Museum in Columbus, GA, have a working agreement to pursue research projects on Confederate naval vessels.

The ram, which is on display at the Confederate Naval Museum, was burned to the waterline and sank when the city of Columbus fell to Union forces under General James H. Wilson in April 1865. The lower hull of the *Jackson* was recovered in

November 1964. Study of the hull remains provides insight into an ironclad that underwent major design changes during its construction.

The *Jackson*, also known as the CSS *Muscogee*, was designed originally as a sternwheel ironclad. Only one drawing of the vessel as a sternwheel exists. The ship was redesigned with twin propellers when it was found to draw too much water. Since neither accurate blueprints nor detailed plans of the *Jackson's* construction exist, measurements and detailed drawings of the *Jackson* were combined with specific information from the paddle wheel-type ironclad into an Autocad drawing (see page 18) by Edward Prados and Richard Mannesto.

PAMLICO SURVEY

The Program in Maritime History and Nautical Archaeology is conducting a survey along the north shore of the Pamlico River between Bath Creek and Pamlico Beach. This survey was designed to inspect the north shore as a likely trap for floating derelicts which might be blown against the shore by prevailing winds. In addition to identifying eroding vessels, the survey will report on prehistoric sites visible from the water and magnetometer targets noted during the survey. The final report will include an overview of earlier river surveys and known archaeological sites outside the project area.

To date, the survey has located approximately fifteen anomalies and has established that one known wreck is incorrectly shown on maps. The project is funded by a survey and planning grant awarded by the Department of Cultural Resources. Dr. Lawrence Babits is the principle investigator, assisted by Jeff Morris, volunteer students, and family members.

Lawrence E. Babits

RUPPE LIBRARY SEEKS SUPPORT

The Program in Maritime History has recently established an in-house library to provide students with easy access to source materials. To date, over five hundred volumes have been received and catalogued. Recently, Dr. Reynold J. Ruppe, one of the founding fathers of anthropological underwater archaeology, donated documentary materials, a type collection and copies of early articles.

Response to the Program's library has been very good, according to Dr. Lawrence

Babits, but "there are some additional sources that we would like to obtain." The Program is specifically looking for basic archaeology and underwater archaeology textbooks, histories of underwater archaeology, artifact identification texts, and site/survey reports. If readers are interested in making library donations, please contact Dr. Babits at the Program in Maritime History.

On 31 October 1993, Dr. Ruppe died at home. The Program extends sincere condolences to his family.

SAVE OUR MARITIME HERITAGE

A national movement spearheaded by the National Maritime Alliance is working to provide much-needed funding to protect the maritime resources of the United States, such as seaports, canals, submerged cultural resources, lighthouses, and ships, and to save maritime-related educational projects.

The United States has a rich maritime history, but almost no federal funding goes into the preservation of maritime cultural resources. To address the lack of funding, two new bills (HR 3059 and S 1727), as part of the Maritime Heritage Act of 1993, have been proposed in the U.S. House of Representatives and the Senate. The Maritime Heritage Act proposes to draw funding from the scrapping of obsolete, surplus ships in the National Defense Reserve Fleet. Since these ships cost money to maintain, the federal government will not have to appropriate new funds to protect maritime heritage resources and to promote educational grants.

Please help save our maritime resources. If you are interested in supporting the Maritime Heritage Act, please write to your legislators.

EMPLOYMENT SERVICE

Established last year, the employment service of the Program in Maritime History continues to notify Program alumni and current students of potential employment opportunities.

If you would like to participate in this service program, please send a copy of your curriculum vitae or your resume with current address and telephone number to:

"Jobs"

Program in Maritime History and
Nautical Archaeology
East Carolina University
Greenville, NC 27858

DR. BRADLEY A. RODGERS



Dr. Bradley A. Rodgers. (Photo: Mary M. Miller.)

Dr. Bradley A. Rodgers joined the staff of the Program in Maritime History and Nautical Archaeology as the Program Conservator/Archaeologist in March 1986. Dr. Rodgers holds a bachelor's degree in Anthropology from the University of Minnesota, and a masters from ECU's Program in Maritime History. In November 1993, he received his doctorate from Union Institute, Cincinnati, OH. Dr. Rodgers worked under the direction of Donny Hamilton of Texas A&M University and Andrew Lambert of King's College, University of London. His dissertation is entitled "Guardian of the Great Lakes: The US Paddle Frigate *Michigan*: An Iron Archetype on the Inland Seas." Dr. Rodgers hopes to publish his dissertation within the next year.

In the meantime, Dr. Rodgers will continue to serve as Program Conservator and head of the Conservation Laboratory. When Dr. Rodgers first came to ECU, the Conservation Lab was a small closet in the basement of Ragsdale Hall. Lack of space and rodent problems were characteristic of the early years of the lab. Since that time, the Conservation Lab has come a long way. In 1990, the lab moved to its present location in trailers near the Allied Health facility. Keats Sparrow, the Dean of Arts and Sciences, donated funds for the purchase of scientific equipment, such as an X-ray machine, to equip the new facilities. Dr. Rodgers points out that the recent addition of a four thousand-gallon capacity tank and a two-ton lift will greatly improve the Program's marine artifact conservation capabilities.

Dr. Rodgers will continue to work with students on thesis projects and will direct summer field schools. His primary research interest is in the field of technological change in ship construction. He hopes to develop a new course on technological evolution in maritime history, in addition to his continued work on expanding the Program's conservation capabilities. Expansion of the Conservation Lab has been funded largely by the Program's own efforts, and Dr. Rodgers hopes that more contracts and grants will allow for the future growth of the lab.

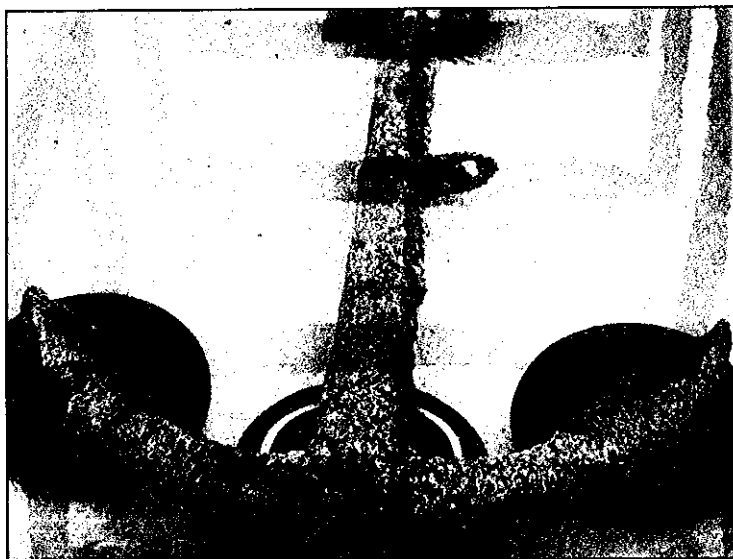
The Program in Maritime History and Nautical Archaeology extends hearty congratulations to Dr. Bradley A. Rodgers on the successful completion and defense of his dissertation.

NEW EQUIPMENT ENHANCES CONSERVATION CAPABILITIES

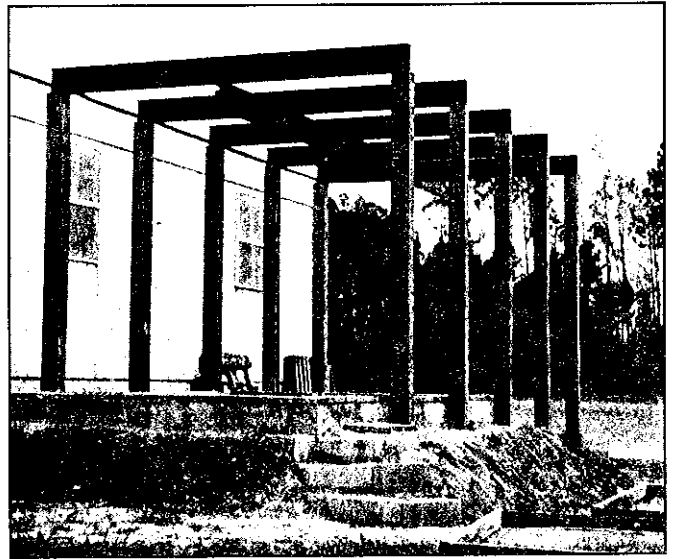
1993 has witnessed many changes at the Conservation Laboratory. The most impressive of these changes has been the construction of a large electrolytic reduction/artifact storage tank adjacent to the lab. Designed and built by **Dr. Bradley A. Rodgers** with the assistance of current graduate student **Hans Van Tilburg**, the new tank holds nearly 4,000 gallons and is constructed of poured concrete and cinder blocks. Currently, the holding tank is home to an anchor that is being conserved under a contract from the Hampton Roads Naval Museum, Norfolk, VA. Additionally, the tank features a single trolley two-ton hoist system designed for maneuvering large artifacts in and out of the electrolyte or holding solution. Dr. Rodgers believes the addition of this tank to the other facilities of the Conservation Laboratory will increase the scope of conservation opportunities available to laboratory personnel and students.

Other recent features of the Conservation Lab include the creation and the compilation of two databases, one for articles and texts in the conservation library and a second for the artifacts conserved and stored in the laboratory facility. The bibliographic database is carefully cross-referenced to facilitate the search for information con-

(continued on page 18)



U.S. Navy Anchor in New Holding Tank. (Photos: A.J. Knowles)



IN SEARCH OF MACKNIGHT'S SHIPYARD

During the first week of August 1993, a small team of archaeologists lead by **Jeffrey Morris**, an East Carolina University graduate student, conducted an intensive survey of a site on Indian Town Creek, Currituck County, NC. The purpose of this survey was to investigate more thoroughly a series of anomalies found by the North Carolina Underwater Archaeological Unit (NCUAU). These anomalies were believed to be a shipyard owned by Thomas MacKnight, a prominent resident of Currituck County.

Thomas MacKnight, an influential businessman who was also active in colonial politics, lived in Currituck County from 1754 to 1776. He owned Belville, an 8,000-acre estate that bordered the banks of Indian Town Creek and that encompassed the Indian Town Creek Bridge. At Belville, MacKnight built warehouses, wharfs, and "the most commodious, and I will venture to say the best shipyard in the province." However, Thomas MacKnight fell prey to the political turmoil of the mid-1770s, and as a result of his Tory politics, his lands were confiscated. MacKnight fled the country for England in 1776.

During a routine survey of Indian Town Creek in 1992, NCUAU located a group of magnetic anomalies and a series of submerged timbers in the vicinity of the Indian Town Creek Bridge. Historical research conducted by Barbara Snowden, a former ECU graduate student and long-time resident of Currituck County, located MacKnight's description of his Belville estate. In his narrative, MacKnight described the shipyard in detail and indicated its location. Other historical evidence provided by Dr. Wilson Angely of the North Carolina State Archives indicated that a lumber mill operated in this area during the late-nineteenth century.

At the invitation of Richard Lawrence, North Carolina's State Underwater Archaeologist, a team consisting of Dr. Lawrence Babits and ECU students systematically surveyed a 200-foot section of the north shore of Indian Town Creek on the east side of the Indian Town Creek Bridge. A 240-foot baseline was surveyed along the shoreline, and a metal detector survey of this area was also completed. All magnetic anomalies were marked with flags and later plotted on a map. Areas with concentrations of

metal artifacts were tested by excavating shovel test pits. These test pits revealed iron artifacts associated with 19th-century lumber mill operations, but, unfortunately, not with 18th-century shipbuilding. Recovered artifacts included ring spikes, an axe head, and other metal objects used in lumbering operations. Also, late 19th-century bottle glass and ceramics were found.

Once the metal detector survey and the soil test pits were completed, an investigation was carried out on a submerged timber structure located during the 1992 survey. The structure was uncovered and mapped, and test excavations were completed inside the structure in an attempt to locate any evidence of 18th-century use or shipbuilding. Nothing indicative of the 18th century or shipbuilding was found during these investigations. It appears, however, that the structure was used to facilitate floating logs into the lumber mill. A small flat or barge, found in the bottom of the basin, apparently was used to float timber in and out of the mill.

After an investigation of the timber basin, a metal detector survey was continued farther down along the shoreline. At this time, a visual search was also performed along the bottom of the Creek, with the hope of finding other clues to the shipyard's location. However, these methods failed to reveal the site of the shipyard.

The week-long survey proved unsuccessful in locating Thomas MacKnight's shipyard. However, the investigation did confirm the location of the 19th-century lumber mill. It is possible that with a future survey MacKnight's shipyard will be found.

Jeffrey Morris

BOATBUILDING AT WOODENBOAT SCHOOL

Have you ever wondered what it would be like to drive in a drift pin or cut a rabbit? I did, so a stay this summer at WoodenBoat School presented me with an excellent opportunity to gain additional, practical experience in maritime studies. The school, located on the Maine coast and Eggemoggin Reach, offers more than eighty courses in wooden boat construction, seamanship, and related maritime crafts. Founded by *WoodenBoat* magazine thirteen years ago and currently directed by Rich Hilsinger, the school operates annually from June

through October.

The school's main 64-acre campus houses *WoodenBoat* magazine's main offices, a gift shop, a beaver pond, the boatshop (a converted dairy barn), a dormitory, a camping area, and the boathouse. Some students stay at *WoodenBoat*'s dormitories; I opted, however, to sleep under the stars and save my money by staying at its campground. I also chose *WoodenBoat*'s meal plan which offered excellent, hearty portions, and a Friday evening, all-you-can-eat lobster-bake at the waterfront.

Classes ran all day, from eight o'clock in the morning, and often until well past five o'clock in the afternoon. In several intense classes, students worked most evenings as well. There was a lot to learn, and a lot to do. Information filled the chalkboards, the bandsaws ran non-stop, and hammers and chisels clinked all day long.

Courses generally last one to two weeks; and in several classes, students may participate in a raffle to win the boat(s) built by the class. "Fundamentals of Boatbuilding," the class that I took, is offered several times each year. Almost every facet of small-boat construction is included in the class, from mold-making, to ribbanding, to planking, to sparmaking, and to finishing. Students may also choose to take a lofting class, during which the plans for the upcoming Fundamentals class are lofted full-size.

While I was there, I also had the chance to row or sail any of *WoodenBoat*'s more than thirty craft. From a little sailing canoe, to dories, to Beetcats, to Haven 12 1/2s, there was a wide range of craft to choose from and to hone one's sailing skills. Off-shore, one may occasionally see a whale, and seals and porpoises are common sights. There is even an uninhabited island that one can spend a weekend exploring (with some excellent bouldering, I might add). Wednesday night is race night, a time when everyone can compare his or her sailing skills in a fun, informal setting. Occasionally, there are guest lecturers; when I was there, a speaker gave a slideshow on—of all things—nautical archaeology in the northeast. Maine windjammers and other schooners periodically moor at *WoodenBoat*. During my stay, we had the opportunity to go aboard the *Bowdoin*, a wooden schooner built for Arctic voyaging, and currently operated by the Maine Maritime Academy. For those who do not wish to spend evenings or the weekend at *WoodenBoat*, Acadia National Park is less than an hour away, sea-kayaking opportunities abound, and biking is an excellent way to see Maine's

historic villages or explore its rock-strewn coast.

Perhaps, though, the best experience that WoodenBoat offers is the opportunity to meet a wide, eclectic, and wonderful bunch of people from almost every state, other nations, and varying backgrounds. From a San Francisco tugboat captain who was once a lawyer, to a young woman who spent three years sailing in the Pacific with her family in a 41-foot ketch designed and built by her father, one is constantly exposed to different viewpoints and different realms of experience. I learned a lot from both the teachers and my fellow students alike.

For a college student, WoodenBoat School courses are not inexpensive. There are, however, some partial tuition scholarships available. Additionally, lodging at the campground is inexpensive, and its quietness and views of the Bay are well worth the marauding mosquitoes. For further information, please contact: WoodenBoat School, P. O. Box 78, Brooklin, ME 04616.

Edward F. Prados

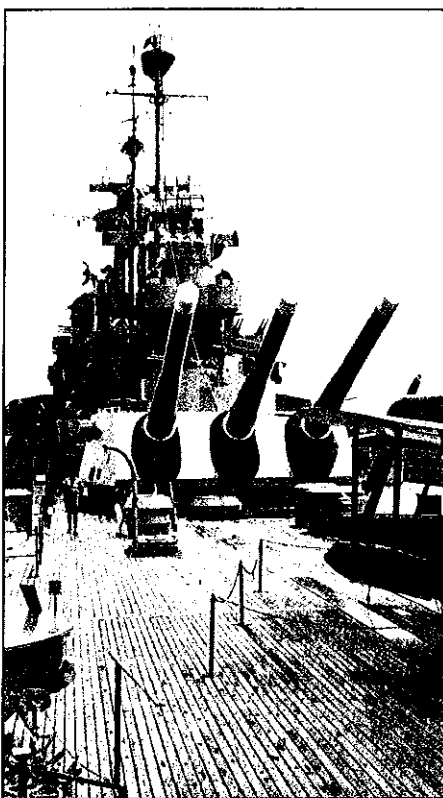
SUMMER MUSEUM INTERNSHIP: USS NORTH CAROLINA

This past summer, I was fortunate enough to have the opportunity to work as a curatorial intern at the USS *North Carolina* Battleship Memorial in Wilmington, NC. The internship, under the supervision of Registrar Michael Thomas and Curator Kim Sincox of the Battleship Memorial, and Dr. John Tilley, Associate Professor at ECU, focused on collections management and exhibit design and installation.

Actual work on the USS *North Carolina* proved to be one of the most interesting aspects of the summer internship. The first of the U.S. Navy's modern battleships, the 728-foot "Showboat," as she was called by her crew, displaced some 44,000 tons at full load, sped at an impressive twenty-eight knots, and was armed with nine 16-inch guns and twenty 5-inch guns. Commissioned in April 1941, just prior to the entry of the U.S. in the Second World War, the USS *North Carolina* participated in almost every campaign in the Pacific Theater, including Guadalcanal, the Gilbert and Marshall Island operations, and the bom-

bardment of Iwo Jima and Okinawa. She earned fifteen battle stars for her service and survived one torpedo hit during the war.

Throughout the summer, I learned about the battleship by meeting former crew members, by researching primary source materials such as the ship's daily log and recorded oral histories, and by exploring areas of the ship that lie outside the roped tour route, such as the brig, aft steering, shaft alley, and the forward main battery director (the highest point of the ship). With the assistance of the Registrar, I accessioned a former crew member's over three hundred-item donation to the Memorial. We properly preserved, marked, and eventually



Battleship USS North Carolina. (Photo: Christopher Olson)

stored these artifacts that included a Japanese rifle and bayonet, a sailor's uniform, photographs, ship correspondence, and a Japanese naval ensign. Several records were made and entered into a collections management software program. I also assisted in the completion of several exhibits, including the opening of the quarterdeck, the 1992 Donation Exhibit, and a new exhibit on Wilmington shipbuilding. In addition, I observed and participated in school group educational programs.

The summer internship at the Battleship Memorial was a rewarding experience, and

I would wholeheartedly recommend it to anyone interested in learning about modern naval history and museum techniques.

Darren Pouppore

THE LADY ELGIN: ONCE AGAIN RECEIVING NATIONAL ATTENTION

Shortly after two in the morning of 8 September 1860 in Lake Michigan, the crew of a 125-foot schooner, the *Augusta*, attempted to right a shifted deck load. The crew was so busy with the task at hand that it failed to see the *Lady Elgin*, a 300-foot sidewheel steamer. Within minutes, the *Augusta* rammed the *Lady Elgin* just behind the port side wheel above the water line. In the process, the *Augusta* turned 180 degrees and simultaneously ripped out large sections of the hull. The crew of the schooner, believing that they had sustained the worst damage, ran for shore. In the meantime, the *Lady Elgin*, throwing cattle overboard to lighten the load, also ran for shore. Within seven minutes, the steamer lost power, and the *Lady Elgin* turned abeam to the waves. Fifteen minutes later, she was almost entirely broken up. Approximately three hundred and fifty passengers floated toward shore on bits of wreckage and dead cattle. Some were mortally injured as the waves beat them against rocks on the shore. Once the *Lady Elgin*'s lifeboats reached shore, rescue attempts were initiated by local residents and students of Northwestern University. One hundred and fifty passengers were saved. Although an exact count is unknown, the death toll was about two hundred and ninety-seven, with the recovery of approximately two hundred and fifty bodies. The sinking of the *Lady Elgin* was one of the worst disasters in the history of the Great Lakes.

The *Lady Elgin* remained almost forgotten until 1989, when she was located by sidescan sonar by Harry Zych, a salvor and commercial diver. While Zych claimed ownership and salvage rights to the wreck, the State of Illinois disputed the claim. The State of Illinois claimed ownership to the site based on the Abandoned Shipwreck Act of 1987. Meanwhile, it was discovered that the *Lady Elgin* claim had been paid off

by Aetna insurance. Aetna, now Cigna insurance, held on to the vessel's title and subsequently sold its interest to the *Lady Elgin* Foundation, a corporation founded by Zych. In December 1990, the federal district court ruled that the *Lady Elgin* Foundation was the exclusive owner. The State is appealing this decision; in the meantime, an understanding between the State of Illinois and Zych was reached which allows the State of Illinois to own and to manage the site pending the settlement of the appeal.

In 1992, avocational archaeologists, from the Underwater Archaeological Society of Chicago (UASC), volunteered their time, skills, and resources to assist the state in the documentation of this historic resource. Professional archaeologists arrived in 1993 to lend their expertise to the project. Goals included recording the remaining hull sections, boilers, and a football field-sized artifact debris field. Although recovery and conservation were planned, recovery was prohibited by the courts in the event that the site reverts to Zych. A working conservation lab for waterlogged artifacts was developed over the summer and will eventually be housed at the State Museum in Springfield, IL. Of the three sections of the bow, one was documented. As of the writing of this article, field work was planned through October, and all hope the legal issues will soon be settled.

Amy L. Rubenstein

UNIVERSITY OF EXETER EXCHANGE PROGRAM

During the 1992-93 academic year, I took advantage of an exchange agreement between the Program in Maritime History and Nautical Archaeology and the Centre for Maritime Historical Studies at the University of Exeter, in Devon, England. This program gave me the opportunity to study under some of the foremost British maritime historians, to visit premier maritime museums and historic vessels, and of course to enjoy the finer points of English culture.

The exchange also allowed me to substitute classes at Exeter for electives and required courses at ECU. My classes spanned both the Fall and Spring terms at Exeter, and subjects included the commercial revolution in England 1660-1720, British naval history, and British historiography. I also attended the annual maritime history conference sponsored by the Centre at historic

and picturesque Dartington Hall. The university administrators have a lot of experience dealing with foreign students and were very accommodating. The professors at the Centre were also very helpful and went out of their way to further my research; for this, I owe them many thanks.

Between classes and research for my thesis, I managed to visit a number of historic sites, including the naval dockyard at Portsmouth, the National Maritime Museum in Greenwich, and the *Great Britain* in Bristol. I also frequented local maritime museums, such as the one in Exeter that houses a spectacular collection of small craft and the oldest working steamboat in Britain. Aside from maritime sites, I also toured Stonehenge, despite its dubious maritime connections. My stay at Exeter afforded me an opportunity to absorb the history of several different time periods.

There were a few difficulties involved in the exchange program, as I was the first ECU student to attend the Centre. Upon my return to ECU, the graduate school required me to re-apply to the Maritime Program, but I was assured that I would be re-admitted. When I tried to register in order to obtain my assistantship, I was told that as an exchange/foreign student, I could not register. Apart from these inconveniences that were resolved quickly, the exchange program was rewarding.

Unfortunately, a student from Exeter has yet to complete the exchange. The Centre is still in its early phases, but as it attracts more students, a regular exchange inevitably will occur each year. Students will pay tuition at their home university and will be responsible only for room and board at the foreign institution. The ECU-Exeter Exchange Program is a tremendous deal, and one not to be missed. Due to the guidance of the Director of the Program in Maritime History, **Dr. William Still**, and the enthusiasm of the co-directors of the Centre, **Dr. Stephen Fisher** and **Dr. Michael Duffy**, the ECU-Exeter program will likely prove a great success in the years to come.

Patrick Cole

INTERNSHIP: FORT FISHER, NC

The State of North Carolina sponsors an annual internship program for residents of North Carolina enrolled in colleges and universities throughout the country. The program, under the auspices of the Youth Advocacy and Involvement Office, provides students with opportunities to contribute to state government, as well as to

obtain valuable professional experience. The internship program selects approximately one hundred students annually and places them in various departments, depending on the students' academic background and interests. These internships last approximately three months and occur usually during the summer months in order to allow students to take advantage of the program opportunities during the summer break.

This past spring, the internship program selected both **Darryl Law** and **Lex Turner**, graduate students in East Carolina University's Program in Maritime History to work with the Underwater Archaeology Unit (UAU) based in Kure Beach, NC. Darryl Law was assigned to help in the production of site maps from previous archaeological investigations, and Lex Turner assisted Leslie Bright, Conservator/Archaeologist, in the conservation lab.

Conservation work in the lab involved sandblasting and applying rust retardant to a seventeen-ton steam engine recovered from a vessel in the Scuppernon River. To accomplish this conservation task, Lex donned a rubber suit and plastic helmet with air hose. Wearing the suit outdoors in ninety-five degree temperatures and ninety-percent humidity became rather challenging.

In addition to the previously mentioned projects, there were many opportunities to assist the UAU members on a variety of assignments. These assignments included historical research, boat maintenance, and field investigations. UAU's primary summer field investigations included sites located in Edenton and Indiantown Creek, NC. These sites were also supported in part by the Program in Maritime History. Information gleaned from these sites will be incorporated into the thesis research of two graduate students from ECU. The Edenton site, which consists of the remains of a late eighteenth-century vessel, will form the thesis research for **Adriane Askins**. The vessel in Indiantown Creek will serve as a basis for Lex Turner's research into nineteenth-century, North Carolina-built centerboard schooners.

The internships at Kure Beach were invaluable experiences and provided opportunities to work with members of a successful, state-sponsored submerged cultural resources program and to gain insight into the daily affairs involved in making the program a success.

Lex Turner

Mary Miller has resigned as Office Manager and has accepted a position with the Medical School.

INTERNSHIP: SCIAA

Like most graduate students, the end of the Spring semester found me actively seeking summer employment. The difficulty lies in finding a three month position, in your field, that pays more than room and board. Fortunately, the South Carolina Institute for Archaeology and Anthropology (SCIAA) offered me an internship from July through August this year. The position was made possible by a state appropriated grant for the relocation and assessment of archaeological sites reported to SCIAA. The project, which is scheduled to take the better part of a year, assesses reports made by hobby divers; these reports often consist of no more than brief descriptions of submerged vessels or artifact scatters, and estimated distances to a landmark.

Unfortunately, I was only able to work on the initial projects. SCIAA selected sites based on two important criteria: the lack of previous study and environmental factors. Ferry landings headed the list of sites. Since very little is known about South Carolina ferry landings, William Barr, a graduate student at South Carolina State University in Columbia, SC, has selected them for his thesis research. Recognizing the need for further research in ferry landings, SCIAA targeted Strawberry Landing as the first project of the summer.

Strawberry Landing, located on the west branch of the Cooper River, may be home to the first registered ferry in South Carolina. In 1705, James Child was granted the right to operate an oar-powered ferry there. Our team located and examined both sides of the ferry crossing, but due to time restraints, only one landing was uncovered and mapped. Riverine or marsh growth, which had overtaken the site, took days to remove. In particular, alligator grass had completely overgrown the underwater portion of the site. Lines of sight also had to be cleared to existing datum points. All of this was conducted, however, under constant protest from the local inhabitants—mosquitoes, gnats, flies, wasps, snakes, alligators, and other creatures that we could only hear.

When the tides were unfavorable for working on the landing, which was often, we recorded a nearby shipwreck. The wreck may be one of the British vessels burned at the landing in July 1781 by Colonel Wade Hampton. The site was in twenty-five feet of water and offered the only available relief from one of Charleston's hottest summers on record.

During the last two weeks of my internship, SCIAA scheduled the excavation of

an eighteenth-century building foundation at Pritchard's Shipyard. The three-slip yard, which was in operation from the early eighteenth century to the middle of the nineteenth century, is located on Hobcaw Creek, across the river from Charleston. During the Revolutionary War, Americans heavily employed the shipyard for warship repairs. SCIAA plans to continue excavations throughout the Fall of 1993.

The internship was an invaluable experience, and it exposed me to many different field techniques and a diversity of sites. In addition, as anyone who has worked or is working for a state agency would agree, learning how things really work is an education one can not get in the classroom. I would like to personally thank Christopher Amer (Head of the Underwater Archaeology Division), Lynn Harris (Archaeologist managing the Sport Diver Archaeology Management Program), Carl Naylor (Archaeological Assistant), Joe Beatty (Archaeological Assistant), William Barr, and Robin Denson (Consultant Program Manager) for the education, the good times, and the friendship.

Harry Pecorelli III

ECU Co-OPERATIVE PROGRAM

Co-Operative Education at East Carolina University was a little-known option for students in the Program in Maritime History, until last year. As a result of constant communication between Dr. Mary Cauley, Director, ECU Co-Op Education Department and the Program, two students have been placed successfully in Co-Op positions in Washington, DC. Current graduate student, **A.J. Knowles**, worked with the U.S. Coast Guard Historian's Office for the 1993 Spring and Summer semesters. The second student, **John Schaefer**, is currently working with the Naval Memorial Foundation, also in Washington, DC.

Co-Op positions vary and are not always limited to government service. Experience gained can encompass the entire gamut from archival management to various aspects of museum curatorship and to the Presidential Management Internship which traditionally leads recipients to opportunities in the higher echelons of government administration. Most Co-Op positions require that the student take a semester away from school prior to the completion of classwork and, thus, push back the date of graduation, but the benefits of the Co-Op,

for the most part, outweigh any perceived inconveniences. The position may even lead, as it did in the case of A.J. Knowles, to the definition of a thesis research topic. As a result of her exposure to the Coast Guard and the tutelage of **Dr. Robert Browning** (a Program alumnus), she will compose her thesis on the history and the development of minor aids to navigation in U.S. coastal waters—a subject about which not much is generally known or written.

Co-Op provides students with the opportunity to gain experience in their own and related fields, make valuable contacts in the field, and broaden the scope of available employment and research opportunities upon completion of the masters degree.

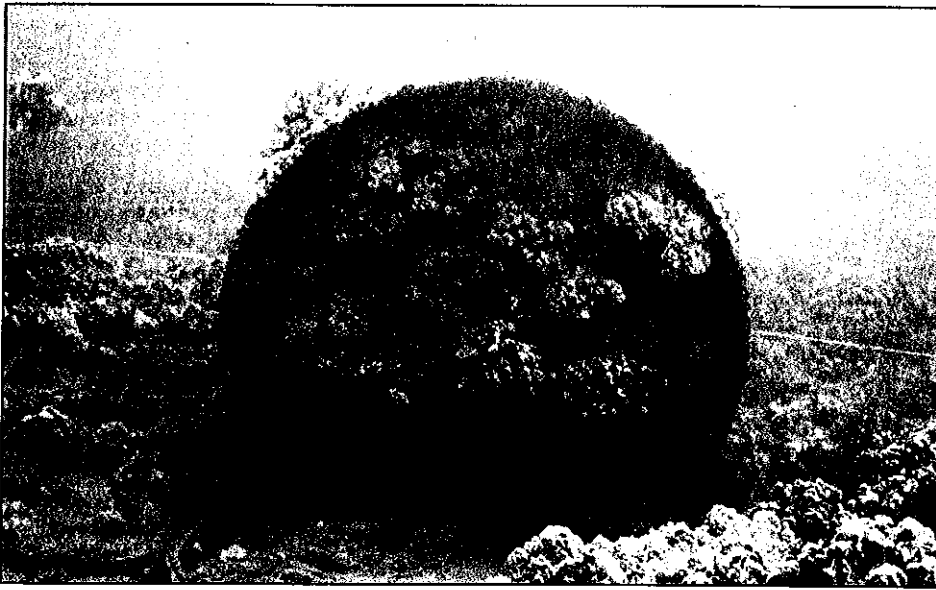
AmyJo Knowles

MICHIGAN FIELD SEASON

The title from a recent copy of the diving journal *Sources*, "Many are Cold, but Few are Frozen," aptly sums up the successful operations conducted this summer on and in Lake Michigan. Even in dry suits, divers felt the water's chill, while making anywhere between one to four dives per day. Program alumnus **John Jensen** of the State Historical Society of Wisconsin directed the field session. The primary goal of the season was to map the underwater remains of the *Niagara*, one of the largest sidewheel steamers of the nineteenth-century. The ship burned and subsequently sunk during a storm in 1856, with the loss of more than sixty people.

Several individuals associated with the Maritime Program participated in the investigation during the month of August. Andrew Lydecker served as draftsman, **Frank Cantelas** focused on the extensive engine remains, and **Hans Van Tilburg** led trilateration efforts in mapping hull sections. A team of volunteers from the Wisconsin Underwater Archaeological Association rotated on and off the site, providing valuable assistance sketching, measuring, and filming the wreck. Patrick Labadie from the Canal Park Marine Museum, U.S. Army of Corps of Engineers also assisted in the three-week field season.

The *Niagara* lies seven miles north of Port Washington and sixty feet below the surface. Well-preserved features, such as boilers, engine cylinder and valves, and the walking beam provide the local community with a popular dive site for SCUBA classes. Mid-section floors, twin keelsons, and large



Donkey Boiler from the SS *Kauai*. (Photo: Steve Russell.)

sections of port and starboard sides surround the machinery pile. Although much of the wooden hull structure remains perfectly intact, the truly important information comes from the engine area. Condenser, hotwell, cylinder, walking beam, valves, and linkages and supports form a jumbled mountain of machinery and twisted iron (affectionately named the 'jungle gym') that loom over the site. Three boilers joined as a single unit lie more than two hundred feet from the wreck. The bow section was also located several hundred feet from the mid-section remains.

Several baselines for trilateration measurements were needed, due to the vertical interference around the site. All of these, however, related back to the major axis of the port keelson. Two Jensen-styled Alaskan moorings from the mid-section bow and stern greatly aided operations. Visibility, as much as fifty feet on some days, averaged generally around five to ten feet. The water temperature remained in the very low fifties degree Fahrenheit, but diving conditions were bearable.

The crew, operating two vessels out of Port Washington, resided at a local school. On poor weather days, an alternate (land) site provided work for team members. One site, the *Lottie Cooper*, whose keelson, centerboard trunk, and sides were recovered from the lake shore, is presently being installed as a park exhibit in the city of Sheboygan, WI. Other field session highlights included many prime rib meals at the luxurious Port Washington Hotel, several triple-garlic triple-anchovy pizzas, and a brush with death on the icy Lake Michigan. Needless to say, everyone enjoyed themselves immensely.

Hans Van Tilburg

PENSACOLA FIELD SEASON

Late in 1992, State of Florida underwater archaeologists discovered a fourth colonial-period shipwreck in Pensacola Bay, FL. The wrecksite was located during a magnetometry search by the Pensacola Shipwreck Survey Team, which is under the direction of Program alumnus **James Spirek**.

The wreck is believed to be one of thirteen vessels that formed Tristan de Luna's fleet. In 1559, de Luna made an abortive attempt to settle the coast of present-day Florida, but failed when a hurricane destroyed seven of his thirteen ships. Careful excavation of the site has revealed well-preserved and undisturbed hull remains containing features and artifacts similar to those studied on a small number of New World Spanish shipwrecks that date from the sixteenth century. The wreck rests in ten feet of water on a sand bar.

During Summer 1993, State of Florida Underwater Archaeologist Dr. Roger C. Smith and the University of West Florida conducted a field school to investigate the remains of the vessel. Program graduate student **Stuart Derrow** and graduate and undergraduate students from the University of Florida, Florida State University, and University of West Florida participated in the field school. The students were exposed to a variety of methods involved in the study and the excavation of shipwrecks.

During the six-week field school, a number of mystery guest speakers were also

invited to discuss aspects of shipwreck and underwater archaeology. For example, State of Texas underwater archaeologist Barto Arnold discussed his work on the 1554 Spanish shipwrecks off Padre Island, TX. Also, Carl Clausen described his work in the 1960s as the State of Florida's underwater archaeologist. Other lecturers also discussed sixteenth-century Spanish maritime history and archaeology.

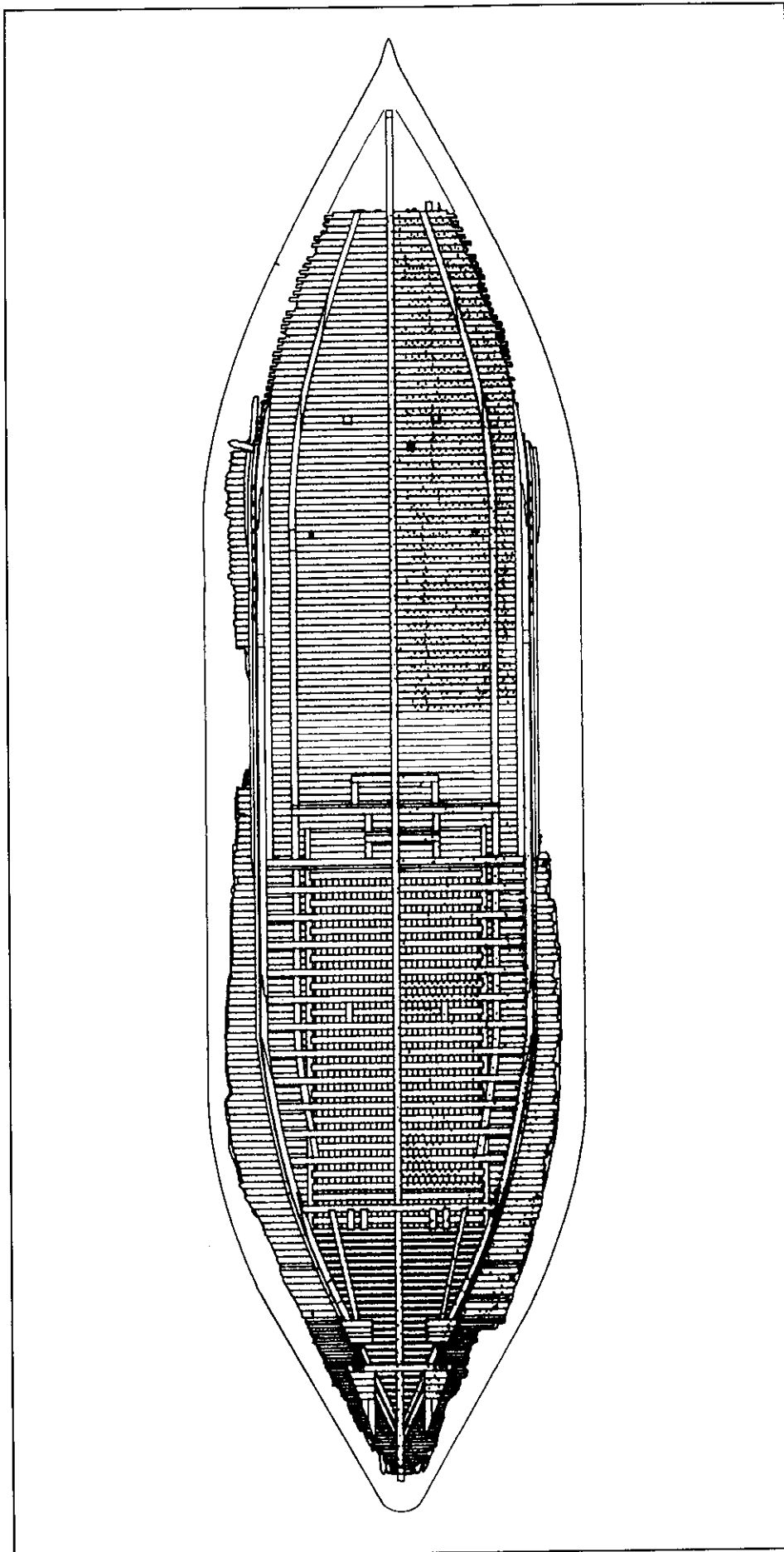
In 1992, a large magnetic anomaly was first detected, isolated, and uncovered. A nine-foot long wrought-iron anchor was buried down in the sediments with only a small portion of the fluke projecting from the sandy bottom. The anchor's eye and ring were missing and appear to have been twisted off. The anchor is located at the forward (and shoreward) portion of the wrecksite.

A forty-meter by thirty-meter grid system was established using steel pipes as datums. Polypropylene lines served as guides in near-zero visibility. The only visible features of the wreck are an anchor tip and oyster-encrusted ballast pile. The excavated hull remains include footwales, internal and external frames, and the keelson. The mainmast and possibly two bilge pumps were fitted into the keelson. Although the pump shafts and mast were missing, the pump seat of one pump and the mast heel were still in place. The mainmast heel was wedged into the mast step mortise.

Three one-meter square test units were opened, exposing more of the hull structure and an unidentified metal feature towards the stern of the ship. Artifactual materials recovered during the excavation were conserved under the direction of Program graduate student and staff conservator **Amy Mitchell**. Some of the artifacts include early to middle-style olive jar fragments, majolica wares, animal bones, part of a leather shoe, hemp rope, caulking, and bilge slime. By far the most significant and interesting find was a carved silhouette of a sixteenth-century Spanish galleon. The hand-carved artifact was discovered among the ship carpenter's debris beneath the ballast in the bilge of the ship. The carving is a profile of the fore and stern castles of a galleon and its sloping square stern.

Both artifactual and construction analysis indicate that the vessel is Spanish and from the middle of the sixteenth century. These features resemble wrecks located off the Bahamas, Bermuda, Cuba, Canada, and Great Britain. The Florida Bureau of Archaeological Research in conjunction with the University of West Florida plan to continue fieldwork on one of the earliest shipwrecks found in Florida's waters over the next five years.

Stuart Derrow



Plan View of the CSS *Jackson*. (Illustration: Edward Prados and Richard Mannesto.)

Conservation Lab (continued)

cerning various conservation techniques. The on-line bibliographic database is now available for use by the students since the Fall 1993 Conservation class. The artifact database includes site, recovery, and provenance data, as well as details of conservation strategy and photographic and descriptive information about the artifacts. This database and its various cross-references are slated for completion by January 1994.

Conservation work continues on artifacts stored in the lab. These artifacts are from a number of projects including the eighteenth-century *Betsey*, and the nineteenth-century *Maple Leaf*. Material types include metals, wood, and textiles. A graduate assistantship position has been added to the laboratory staff to expedite artifact conservation and to provide some off-hours supervision and direction for students in the conservation class. A fixed term faculty position that includes conservation as well as general teaching duties will be available in Fall 1994.

A Waterlogged Artifacts Conservation course will be offered in Spring 1994. The course is being offered as a semester-long study instead of as a condensed course in conjunction with Fall underwater research. One of the benefits of an extended conservation course will be a completion of more complex projects by students.

Amy Jo Knowles

NASOH CALL FOR PAPERS

The North American Society for Oceanic History (NASOH) will hold its annual meeting with the Canadian Nautical Research Society (CNRS) at the Vancouver Maritime Museum in Vancouver, BC, Canada, on 25-28 May 1994. The theme of the conference will be "The Pacific Coast and Wider Seas."

Anyone interested in presenting a paper or organizing a session of papers on a common theme focusing on Pacific maritime history should submit a one page proposal, which indicates the title, the major argument(s), and sources to Dr. Jeffrey Safford, Department of History, Montana State University, Bozeman, MT. 59717. **The deadline for submitting proposals is 31 January 1994.**

WHERE ARE THEY Now?

James Allen - Institute for Western Maritime Archaeology, Berkeley, CA

Brina J. Agranat - Doctoral Candidate, University of Alabama

Ray Ashley - Doctoral Candidate, Duke University

Adriane Askins - Submerged Cultural Resources Unit, National Park Service, Santa Fe, NM

David Baumer - Curator of Small Boats, Mariners' Museum, Newport News, VA

David Beard - Archaeologist, Christopher Goodwin, New Orleans, LA

Colin Bentley - Sailing Instructor, College of Charleston

Kathryn Bequette - Underwater Archaeology Consultant, Lakewood, CO

Jonathan Bream - Doctoral Candidate, University of Seville

Robert Browning, Ph.D. - Chief Historian, U.S. Coast Guard, Washington, DC

Frank Cantelas - Saint Johns Archaeological Expeditions, Inc., Jacksonville, FL

Patrick Cole - TAR, Washington, NC

David J. Cooper - On-leave Underwater Archaeologist, State Historical Society of Wisconsin; Naval Archaeologist, Naval Historical Center, Washington, DC

Diane Cooper - San Francisco Maritime National Historic Park

Lee Cox - Contract Archaeologist, Dolan Research, Philadelphia, PA

James P. Delgado - Executive Director, Vancouver Maritime Museum, BC

Rita Folse-Elliott - Contract Archaeologist, GA

Robert Feingold - Program Specialist, NOAA, Florida Keys, FL

Kevin Foster - Historian, National Park Service, Washington, DC

Joe Friday - Police Officer, Greenville, NC

Wesley K. Hall - Director, Mid-Atlantic Technology, Wilmington, NC

Lynn B. Harris - National Monuments Council, Cape Town, South Africa, designing a shipwreck database and underwater archaeology education program

Rick Herron - Doctoral Candidate, Texas A&M University

Bob Holcombe - Director, Confederate Naval Museum, Columbus, GA

Claude V. (Sandy) Jackson - Underwater Archaeology Unit, State of North Carolina, Ft. Fisher, NC

John O. Jensen - Acting Underwater Archaeologist, State Historical Society of Wisconsin

T. Kurt Knoerl - Buffalo Maritime Museum, Buffalo, NY

Richard Mannesto - Great Lakes Historical Shipwreck Museum, Sault Ste. Marie, MI

I. Roderick Mather - Doctoral Candidate, Oxford University

Dave Moore - Director of Archaeology, St. John's Expeditions, Inc., East Palatka, FL

R. Scott Moore - Doctoral Candidate, Ohio State University

Stuart Morgan - Doctoral Candidate, University of South Carolina

John W. (Billy Ray) Morris - Doctoral Candidate, University of Florida and Director, Southern Oceans Archaeological Research

Kaea Morris - Archaeological Researcher, Zuni, NM

Sam Newell - Public school teacher, Greenville, NC, and volunteer underwater archaeologist

Martin Peebles - Underwater Archaeology Unit, State of North Carolina, Ft. Fisher, NC

Edward F. Prados - Fulbright Scholar, Republic of Yemen

Heidi Primo - Professor of Social Studies and Pacific Islands History, College of Micronesia, Kohlonia, Pohnpei, Federated States of Micronesia

James R. Reedy, Jr. - Contract Archaeologist, Beaufort, NC

Bradley A. Rodgers, Ph.D. - Archaeologist/Conservator, Program in Maritime History and Nautical Archaeology, East Carolina University

Matthew Russell - Submerged Cultural Resources Unit, National Park Service, Santa Fe, NM

John Schaefer - Intern, Naval Memorial Foundation, Washington, DC

James S. (Steve) Schmidt - Senior Archaeologist, GAI Consultants, Pittsburgh, PA

Robert Schneller, Ph.D. - Historian, Naval Historical Center, Washington, DC

James Spirek - Underwater Archaeologist, State of Florida

Thomas Stoltman - Northwest Maritime Museum, Empire, MI

Bruce G. Terrell - Maritime Historian and Acting Maritime Archaeologist, NOAA, Washington, DC

William H. Thiesen - Doctoral Candidate, University of Delaware

Ray Tubby - TAR, Washington, NC

Lolly Vann - Contract Archaeologist, MD

Daniel Warren - Archaeologist, Christopher Goodwin, New Orleans, LA

Wilson West - Researcher, U.S. House of Representatives, Washington, DC

David R. Whipple - Historian, National Park Service, Washington, DC

1994 SUMMER FIELD SCHOOL

During the first summer session (2 May - 27 June 1994), East Carolina University will sponsor its fifteenth annual Summer Field School in Maritime History and Nautical Archaeology. The field school has been developed in order to provide a limited number of qualified students with a basic introduction to American maritime history and the scientific methods and techniques employed in underwater archaeological research. The program will include classroom lectures, workshops, seminars, and on-site research. Students who plan to participate in the diving aspects of the program must make arrangements with the East Carolina University Dive Safety Office and must prove that basic 60-foot depth dive certification has been met.

Both undergraduate (senior) level and graduate level credit will be offered, and a tuition and fees schedule is available upon request. Semi-private residence hall rooms can be reserved in advance for about \$30.00 per week. While on site, housing will be provided by the university, but students will be responsible for their own meals. The 1994 Summer Field School will be held in Jacksonville, FL, continuing work on the Civil War shipwreck *Maple Leaf*. Work will include excavation, mapping of the site, artifact processing, and other archaeological techniques.

Applicants for the program are invited and should be enrolled in programs in history, archaeology, geography, or other related fields. For additional information, such as medical forms, applications, and a tuition and fee schedule, please contact:

Program in Maritime History and
Nautical Archaeology
Admiral Ernest M. Eller Building
East Carolina University
Greenville, NC 27858-4353
Telephone (919) 757-6097

ENCYCLOPEDIA OF THE CONFEDERACY

Simon and Schuster's *Encyclopedia of the Confederacy* was published this fall. The list of contributors includes three faculty members and four former students. **Dr. William N. Still, Jr., Dr. Lawrence E. Babits, Professor Gordon P. Watts, Jr., Dr. Robert Browning, Kevin Foster, Robert Holcombe, and John Kennington.** Dr. Still served as consulting editor for the four volume set.

Mary M. Miller

GRADUATE STUDENT RESEARCH

The following reflects research interests of Program students:

James Allan - The Maritime History of Fort Ross, California

Adriane Askins - Site Report on the *Sacred Heart of Jesus*, Edenton, NC

Jemison R. Beshears - Dutch Maritime Trade in the Caribbean and Related Shipwreck Sites

Mark Burdette - The Role of the Royal Navy in the Battle for Quebec, 1759

Frank J. Cantelas - The Archaeological Investigation of the Millecoquin River Wreck: An Early Nineteenth-Century Great Lakes Sailing Vessel

Jay Chapman - American Post-Revolutionary War Sea Power

Edwin Lawrence Combs - History of the Wilmington Squadron, Confederate States Navy

Michael Coogan - Manning of the Royal Navy in the Eighteenth Century

Diane Cooper - From Small Ways to Big Business: The Growth of the Wooden Ship Construction and Waterborne Industries Along the United States Pacific Coast, 1875-1900

Stuart Derrow - An Historical and Archaeological Study of Sixteenth-Century Spanish Shipboard Subsistence

Sabrina Faber - Social and Economic Aspects of the Athenian Naval Empire

Paul Fontenoy - Development and Economic Success of Steamboats in Northeast America

Steve Gibbons - Piracy and Economics of the Carolinas, 1675-1725: Emphasis on North Carolina after 1700

Cristen Gober - A History of the USS *Kearsage*

Tim Hastings - History and Archaeological Site Report of the CSS *Gaines* Sunk at the Battle of Mobile Bay

Rick Jones - Site Report on the MacKnight Shipyard Wreck, Currituck County, NC

John W. Kennington - The Ordinary Sailor of the Savannah River Squadron, 1861-1865

Annalies Corbin Kjorness - Comparative Artifact Analysis of Personal Effects in the *Arabia* and the Historical Importance of Future Investigations of Wrecks in Western Rivers

T. Kurt Knoerl - An Archaeological Investigation of the Cove Area of Old Fort Niagara

AmyJo Knowles - History and Development of Minor Aids to Navigation in U.S. Waters

Michael Krivor - Research and Documentation of an 18-Century British Collier, Bermuda

Betsy Mathews - A Study of the Construction and Design of the Six-Masted Schooner *George W. Wells* and Its Relationship to Bulk Shipping

Heather McAllister - 18th-Century Silver Trade from Mexico to Spain

Amy Mitchell - Wood Use in 18th-Century Vessels as Exemplified by the Collier *Betsey*

Jeff Morris - Archaeological Investigation of the Chickahominy Shipyard, VA

Christopher Olson - A History and Archaeological Site Report on the CSS *Curlew*

Glenn Overton - A Detailed Analysis of the USS *Schurz*

Harry Pecorelli, III - Spanish Colonial Maritime Commerce in the Eighteenth Century

Martin D. Peebles - Site Report on the *Raleigh*, Fort Fisher, NC

Heidi Primo - Sea Ventures and Dream Traders: Anglo-American Rivalry in the Early China Trade, 1784-1860

Darren Poupore - United States Naval Operations During the Battle of the Santa Cruz Islands, October 26, 1942

Shannon Richardson - The History and Future of Waterlogged Artifacts Conservation

Amy L. Rubenstein - The Conservation and Artifact Assemblage of an 18th-Century British Merchant Vessel in St. Ann's Bay, Jamaica

Matthew Russell - An Historical and Archaeological Investigation of Three Hall-built Pacific Coast Lumber Schooners: *Dora Blum*, *Comet*, and *J. M. Colman*, Located in the Channel Islands National Park

John C. Schaefer - Maritime Trade Routes in 17th-Century Canada

Victoria Schneider - Maritime Trade in America's Revolutionary Era

Jinky Smalley - An Archaeological Investigation of a Manila Galleon

Paul Steinberg - Historical Overview of the Naval Battle of Elizabeth City and the Destruction of the "Mosquito Fleet" and an Archaeological Survey

Thomas Stoltman - A Case Study of the Battle to Preserve the Rail Car Ferry *City of Milwaukee*

Lex Turner - Site Report of the Civil War Era Merchant Schooner *Scuppernon*

Raymond E. Tubby - A Study of the Navy's Rejection of the USS *Wampanoag*

Hans Van Tilburg - The Early Ming Dynasty Navy: The Height of Chinese Maritime Power, 1405-1433

Lolly C. Vann - *The Star of the West*: The Impact of Unsanctioned American Trade Activity in the Mexican Territory of California, 1845-1846

Daniel Warren - A History of the Steamship *Monumental City* and the Impact of American Shipping on British Colonial Policy in Australia

Stem to Stern

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