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Program graduate student, Les Turner, records the dimensions of an eighteenth-century English wreck in Bermuda. (Photo: Gordon F. Watts, Jr.)
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 S. Still, Jr., served as President of the North American Society for Oceanic History (NASOHI). In March 1993, he organized the successful joint meeting of NASOHI and the Council of American Maritime Museums (CMM) 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. Babbitt 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:

MARTIME STUDENTS RECEIVE UNIVERSITY AND NATIONAL RECOGNITION

In addition to a number of research and teaching assistantships, ECU's Department of History offers scholarship awards to graduate students. These are granted by private benefactors in lieu of 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 P. Brewster Fellowship. The Paul Murray Graduate Scholarship in History has also 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. J. Rodrick Mathur, a doctoral student at Oxford University, was named the recipient of the Card Research Fellowship from the National Maritime Museum. One of the most well-known awards in Great Britain, the Card Fellowship is offered to students of British maritime history. Edward F. Prados was selected as a recipient of a Fulbright Scholarship, Fulbright Grant Country Award to the Republic of Yemen. Only 2000 American students annually are awarded Fulbright Scholarships. Edward has also been named a recipient of both the 1995 American Institute for Venetian Studies Fellowship and the Leigh Douglas Memorial Fund Scholarship for his proposed research into Venetian 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 Coast 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 promotes foreign exchanges and cultural understanding. The faculty, staff, and students of the Program in Maritime History and Nautical Archaeology offered 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:


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


GRADUATE THESSES IN MARITIME HISTORY

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


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


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 the 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 workstations, 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 also is in the process of acquiring a much-needed Klein sidescan sonar and a postoon 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 1992. MSA’s goals include assisting graduate students in the conduct of research, promoting interest in the 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 Som 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, Matt Bowditch, Vicki Schneider, Roy Tubbs, 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 is the course offered this Fall. Taught by 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 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 Greenville, England, and from all over the United States. Geographic diversity is also reflected in the research interests of MSA students. For example, members have ongoing 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 expertise, and 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 conduct 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 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 check payable to ECU Foundation for Maritime Studies Association Trust Fund (Acct. #10-24601). 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), 100 ECU Program in Maritime History and Nautical Archaeology, Admiral Ernest M. Ellet Building, Greenville, NC 27858-4353.
DIRECTOR ANNOUNCES RETIREMENT

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

Dr. William N. Still, Jr., began teaching at 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 university 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 for new archaeological training, 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. Since 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 November 1993, the Program in Maritime History encountered another milestone in its growing history: After twenty-five years of teaching history at ECU and twelve years of holding the Program, Dr. Still announced his retirement effective December 31st. Due to the poor health of his wife, Mabel, Dr. Still decided to retire early. They plan to move to the State of Hawaii next year.

In an interview granted to the editor of "Ston to Sea," 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 memo's 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 deepwater 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 turn, ECU will provide technical staff.

Another successful and important ongoing agreement is with the Bermuda Maritime 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, D.C. This agreement will provide students with internship opportunities 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 "unmanned 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 Ironclads; 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 hesbook in Civil War history; and the Christopher Crisfield 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, Mabel. 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 1984, 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 on 1 April. Due to a strong Confederate presence on the river, the wreck and cargoes were never salvaged. In the 1980s, 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. (SJAEI).

In 1992, the Maritime History Program, in conjunction with SJAEI, 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 side-wheel 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 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 to use the 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 Kjoresj, Jeff Morris, Christopher Olson, Paul Steinberg, Shawn Tanneur, and Hans Van Tilburg. Additional staff members included Frank Cantelus, Steve Sellers, Dr. Richard 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 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 SJAEI 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. Preserved under 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 SJAEI. The site has extensive research potential for students of ship construction, artifact conservation, and maritime culture studies for years to come.

Christopher Olson & Frank Cantelus

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

For the past five years, the Marine Option 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. Bradly A. Rodgers, the field school investigated the S.S. Kauai, an inter-island, nineteenth-century shipwreck 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. Fife-
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 Neda, 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 Oswald, 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's upraised bow. While much of the ballast protecting the surviving hull (upraised intact, salvage activity had exposed the extremities of the hull). A brief examination of the exposed synx was, after the vessel dated to the second or the third quarter of the eighteenth century, and artifacts sorted by the salvagers reinforced the conclusion 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 Darrow, Stan Duncan, Ted Huntoon, Steve Gibbons, Tim Hastings, Jeff Morris, Christopher Olson, and Les Turner—cleaned and documented the site during September. Data from the investigation is currently being analyzed by Michael Krivor, who has so far resolved 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, timbers, and fitil 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 edge 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 tanks were also found. The bulkhead and the tanks were recorded and photographically documented. Artifacts, including beer-

(continued on page 8)
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 bights 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 Betsy 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 British-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 review the site in detail, as 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 so as 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 Flagler College. In the event that sufficient “artefactual remains” survive at the site, an effort will 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. Ware, 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 housed a center for blockade-running activities on the Gulf Coast for three years. Leading a column of ironclads into the bay, the federal ironclad Ticonderoga hit a mine and sank in less than a minute with virtually its entire crew.
John William "Billy Ray" Morris, Margaret Franklin, Lee Tipton, Karl Gottschamet, and Tim Hastings consult before work on the USS Phipps. (Photo: Jeffery Morris.)

FORT FISHER RESEARCH PROJECT

On 19 April 1861, President Abraham Lincoln declared coastal blockade of Southern ports in an attempt to isolate the Confederacy from the industrial markets of Europe. Simultaneously, a railroad line to other parts of the Confederacy, Wilmington, NC, was the site of 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 sites of the river. The two Cape Fear entrances were separated by Smith Island and by Flying Pum Shoals which stretch for more than fifteen miles into the Atlantic Ocean. In addition, Fort Fisher, the largest earthenwork 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 guns, 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 ocean-going transports, such as the steamer Modern Greece which ran aground north of Fort Fisher in 1862. Others, like the Asaph, which was built at Nagata on the Lake to support maritime commerce and transportation on Lakes Erie and Ontario, were continued on page 10.
passed 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 Stormy Petrel. Losses were also suffered by the Union Navy in attempts to restrict navigation at New Inlet. Both the top USS Astor and the steamer USS Flumbeau were lost within sight of Fort Fisher.

The remains of the Fort Fisher shipwrecks represent unique features of one of the most significant battlesfields 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 will be necessary for 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 at Fort Fisher as part of the NPS Battlefields 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 run-ners 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, a 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 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 March 9, 1862, the CSS Alabama may well be the most well-known Confederate warship. Under the command of Captain Raphael 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 English port of Cherbourg for much-needed repairs. The French government donated Semmes permission to repair the vessel, and the USS Kearsarge 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 Kearsarge. The lightly-built Alabama proved to be no match for the Kearsarge, 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 1983. Since wanting to identify the shipwreck remains as those of the CSS Alabama, Captain Max Garoutte 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 Garoutte's research team in an investigation of the history and achievement of the remains of the vessel. In June 1988, Watts and Still travelled 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 swim to the wreck. Data from the 1988 expedition facilitated the development of plans for divers-supported research projects from 1989 to 1993. Research results included a complex plan of the wreck and the recovery of the ship's wheel and the motto "God helps those who help themselves," several flaming torches with transfer print ceramic bowls, a variety of plates, glasses, saltcellars, and deck tools for the vessel's ordnance tracks. Today, these items are housed in the United States Navy Yard Museum in Washington, DC.
In June 1993, Professor Watts returned toTchobour and joined a team of French divers, working under Captain Gourou’s direction, to conduct the first underwater test excavation. Because of the depth (around two hundred feet), bottom time is limited to approximately fifteen minutes. It is also difficult to support complex on-site activity due to current that exceeds forty knots during the tidal cycle. In spite of these limitations, a one-meter square test excavation was started in the stern of the Alabamu. Shell beds 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 items that had been stored in a cabinet in the officer’s quarters in the stern. These items have been identified as Brazilian and were probably brought onboard during the Alabamu’s visit to Brazil.

Material recovered from the CSS Alabamu illustrates the evolving potential of the archaeological record associated with the Confederate commercial raider. Although the historical record indicates that the Alabamu was a xerxes-class gunboat, the vessel sank prior to the battle, the surviving archaeological record has confirmed that many valuable artifacts remained aboard while the vessel sank. These artifacts can provide new insights into life aboard the Alabamu’s most successful commerce raider. During the next three years, Professor Watts will be working with Captain Gourou to continue exploring and documenting this historic ship and its contents. A major focus of future research will be an examination of the Alabamu’s machinery, ordnance, 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 and remove the remains of a two-masted slave ship, 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 ship, which is on display at the Confederate Naval Museum, is buried 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, and the bulk of the hull remains provides insight into ironclads that underwent major design changes during construction.

The Jackson, also known as the CSS Moneague, was designed originally as a sternwheeler. Only one drawing of the vessel as a sternwheeler exists. The ship was reassembled with steam propellers when it was found to be too much water. Without accurate blueprints, the detailed plans of the Jackson’s construction exist. Measurements and detailed drawings of the Jackson were combined with specific information from the public record to produce the ironclad’s initial form (see page 18) by Edward Prados and Richard Mahon.

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 debris that might blow against the shore by prevailing winds. In addition to identifying existing vessels, the survey will report on prehistoric sites visible from the water and associate 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 Babbis is the principal investigator, assisted by Jeff Morris, volunteer students, and local historians.

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. Reppe, one of the founding fathers of anthropological water archaeology, donated his collection of material culture and fieldnotes from his early travels.

Response to the Program’s library has been very good, according to Dr. Lawrence Babbis, but there are some additional sources that we would like to obtain. The Program is specifically looking for basic technology, and undersea archaeology textbooks, histories of underwater archaeology, and fact identification texts, and soil survey reports. If readers are interested in making library donations, please contact Dr. Babbis 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 heritage, but almost no federal funding goes into the preservation of maritime cultural resources. To address the lack of funding, two bills (HR 1039 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’re 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 27835
Dr. Bradley A. Rodgers

Dr. Bradley A. Rodgers joined the staff of the Program in Maritime History and Nautical Archaeology as the Program Conservation Archaeologist in March 1986. Dr. Rodgers holds a bachelor’s degree in Anthropology from the University of Montana, an M.A. masters from EU’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 Archipelago in the Illinois 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 arrived at EU’s Conservation Lab was a small closet in the basement of Regal Hall. Lack of space and rodents problems were characteristic of the early years at 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 while the new addition of a four-thousand-gallon capacity tank and a two-ton lift will greatly improve the Program’s routine 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.

IN SEARCH OF MACKNIGHT’S SHIPYARD

During the first week of August 1998, a small team of archaeologists led 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 Archeological Unit (NCUA). 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 Beulenville, an 8,000-acre estate that bordered the banks of Indian Town Creek and that encompassed the Indian Town Creek Bridge. At Beulenville, MacKnight built warehouses, wharves, 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, NCUA located a group of magnetic anomalies and a series of sub-aerial timbers in the vicinity of the Indian Town Creek Bridge. Historical research conducted by Barbara Snowdon, a former ECU graduate student and long-time resident of Currituck County, located MacKnight’s description of his Beulenville estate. In his narrative, MacKnight described the shipyard as ideal and indicated that it was near the river. Other historical evidence provided by Dr. Wilson Angley of the North Carolina State Archives indicated that a lumber mill operated in the area during the late-nineteenth century.

At the invitation of Richard Lawrence, North Carolina’s State Underwater Archaeologist, a team consisting of Dr. Lawrence Bulbs and ECU students, systematically surveyed a 200-foot section of the north shore of Indian Town Creek on the eastside of the Indian Town Creek Bridge. A 200-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 metallic artifacts were tested by excavating shovel test pits. These test pits revealed iron artifacts associated with 18th-century timber mill operations, but, unfortunately, not with 18th-century shipbuilding. Recovered artifacts included ringspikes, 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 ship 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 logging logs into the lumber mill. A small pit or barge, found in the bottom of the basin, was apparently 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 classes of the ship and its 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.

BOATBUILDING AT WOODENBOAT SCHOOL

Have you ever wondered what it would be like to drive in a drift pin or cut a rabbet? I did, so I sat 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 Rob Hiltzgar, the school operates annually from June through October.

The school’s main 64-acre campus houses Woodenboat magazine’s main offices, a shop loft, a heaven pound, the shopstall, a converted dairy barn, a dormitory, a camping area, and the boathouse. Some students stay at Woodenboat’s dormitories; others, 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 until seven or eight o’clock in the afternoon. In several income classes, students worked most evenings as well. There was a lot to learn, and a lot to do. Information filled the chalkboards, the boardwalks ran non-stop, and hammers and chains clinked all day long.

Courses generally lasted one to two weeks, and in several classes, students may participate in a race (or win the boat) built by the class. “Fundamentals of Boatbuilding,” the class that I took, is offered several times each year. Almost every face of small-boat construction is included in the class, from mold-making to ribbing, to planing, to curving, and to finishing. Students may also choose to take a lofting class, during which the plans for the upcoming Woodenboat’s class are bolted together.

While I was there, I also had the chance to row or sail any of Woodenboat’s more than thirty craft. From small sailing canoe, to dories to Beetlecats, to Haven 12s, there was a wide range of craft to choose from and to hone one’s sailing skills. Offshore, one may occasionally see a whale and seals and porpoises common sights. There is even an inhabited island that one can spend a weekend exploring with some excellent boating conditions. I might add, wednesday night is state night, a time when everyone can compute his or her sailing skills in fun, informal setting. Occasionally, there are great lectures, when I was there, a speaker gave a slideshow on—of all things—naval archeology in the north-east. Maine windjammers and other wooden boat enthusiasts periodically morr at Woodenboat. During my stay, we had the opportunity to go aboard the Rainbow, 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 weekends, Woodenboat might not be the school for you. However, it is certainly the school for those who enjoy the camaraderie of a group of like-minded individuals.
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 Synx 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 722-foot "Southwold," as she was called by her crew, displaced 44,000 tons at full load, sped at 22 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. Her Gilbert and Marshall Island operations, and the bombardment 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's meeting friends and enemies, by researching period source materials such as the ship's daily log and recorded histories, and by exploring areas that the ship's history, such as the bridge, sailing, and dock areas of the forward main battery, directed the highest point of the ship. With the assistance of the Registrar, I accessed forms crew member's over three hundred items donation to the Memorial. We properly preserved, marked, and eventually displayed these artifacts that included a Japanese figurines and bayonets, a salawat's uniform, photographs, ship correspondence, and 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, 1992 Donation Exhibit, and a new exhibit on Wilmington submarine. 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.

Edward F. Prado

Battleship USS North Carolina. (Photo: Christopher Olson)

The Lady Elgin: Once Again Receiving National Attention

Shortly after two in the morning of 8 September 1856 in Lake Michigan, the crew of a 125-foot schooner, the Augusta, attempted to right a shipwrecked boat. 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 burned. By 1860, the Lady Elgin was raised from the waves. Fifteen minutes later, she was almost entirely broken up. Approximately thirty-five 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 many exact causes of death are 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 salawat and commercial diver. While Zych claimed ownership and salvaged 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 1988. Meanwhile, it was discovered that the Lady Elgin claim had been paid off.

Darren Goepure

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by Aetna insurance. Aetna, now Cigna insurance, held on to the vessel's title and subsequently sold its interest to the Lea-Eglen Foundation, a corporation founded by Zych. In December 1988, the federal district court ruled that the Lea-Eglen Founda tion was the exclusive owner of the State. It is appealing this decision in the meantime, understanding that the State of Illinois and Zych reached an agreement which allows the State of Illinois to own and to manage the site pending the settlement of the appeal.

In 1992, several professional 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 weathered 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, only one was documented. As of the writing of this article, field work was suspended through October, and all hope the legal issues soon will 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 Exeter, 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 finest pubs of English culture.

The exchange also allowed me to substitute classes at Exeter for electives and required coursework at ECU. My classes spanned both the Fall and Spring terms at Exeter, and subjects included the commercialization in England 1600-1720, 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 all 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 yachtyard 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 different seafaring 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 quickly resolved, 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 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 Larry 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 map 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 seventy-ton steam engine recovered from a vessel in the Scuppernong River. To accomplish the conservation task, Les donned a rubber suit and plastic helmet with an air hose. Wearing the suit outdoors in ninety-five degree temperatures and ninety percent humidity became harder 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 Akins. The vessel in Indiantown Creek will serve as a basis for Lex Turner's research into nineteenth-century North Carolina-built coastal schooners.

The internship at Kure Beach was an invaluable experience and provided opportunities to work with members of a successful, state-sponsored, underfunded historical resources program and 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 grant-encouraged 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 scatter, 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 ferry registered in South Carolina. In 1705, James Child was granted the right to operate an 18 foot powered ferry there. Our team hiked and examined both sides of the ferry cross-bay, but due to time restraints, only one landing was uncovered and mapped. Riverine or marsh growth, which had overgrown the site, took too many days to remove. In particular, alligator grass had completely overgrown the freshwater portion of the site. Lines of sight could 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 traveled nearby shipwreck. The wreck may be one of the British vessels burned at the landing in July 1761 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 Pinckard's Shipyard. The three-slip yard, which was in operation from the early nineteenth 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 internships were an invaluable experience, and I exposed to many different field techniques and a diversity of sites. In addition, 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 Ayer (Head of the Underwater Archaeology Division), Lynn Harris (Archaeologist managing the Sport Diver Archaeology Management Program), Hel Naylor (Archaeological Assistant), Joe Beatty (Archaeological Assistant), William Barr, and Robin Dessom (Consultant Program Manager) for the educative, the good times, and the friendship.

Henry Pecorillo 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 communication between Dr. Mary Cauley, Director, ECU Co-Operative 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 enhance the entire gamut from archival management to various aspects of museum curatorial 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 completion of coursework and, thus, push back the date of graduation but the benefits of the Co-Op, for the most part, outweigh any perceived inconvenience. The position may even lead, as it did in the case of A.J. Knowles, to the detection of a thesis research topic. As a result of her exposure to the Coast Guard and the nautical records of Dr. Robert Browning (Co-Professor of Underwater Archaeology), she will pursue this thesis on the history and the development of motion 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.

Amy Jo Knowles

MICHIGAN FIELD SEASON

The title from a recent copy of the diving journal Sounders, "Many are Cold, but Few are Frozen," aptly sums up the successful operations conducted this summer and in Lake Michigan. Even in dry suits, divers felt the freezing effects of the water anywhere between one to four dives per day. Program alumnus John Benson of the State Historic Preservation Office directed the field season. The primary goal of the Sounders was to map the underwater remains of the Vaguaria, one of the largest side-wheel steamers of the nineteenth century. The ship burned and subsequently sank during the Civil War, along with five of the six people on board.

Several individuals associated with the Maritime Program participated in the investigation during the month of August. Andrew Lyddeck served as draftsman, Frank Cantellas focused on the extensive engine remains, and Hans Van Tilburg led talerization efforts in mapping hull sections. A team of volunteers from the Wisconsin Underwater Archaeological Association rotated on and off the site, providing valuable assistance in mapping and photography.

The National Park Service, led by Mildred Winnicki, directed the walk-in team that conducted the site finding. The walk-in team assisted local community volunteers in locating the site.

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sections of port and starboard sides surround the machinery plane. 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 all support a jumble of machinery and twisted iron affectionately named the 'Engine Gun!' that僚om over the site. Three boilers joined as a single unit are 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, receded back to the major axis of the port keelson. Two Jensen-styled Atlas traditional measurements 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, two alternate (land) site provided work for team members. One site, the Lottie Cooper, whose keelson, centerboard trunk, and sides were recovered from the lake shores, is presently being installed as a park exhibit in the city of Sheboygan, WI. Other field conditions high- lit included rocky prime rib meets at the luxurious Port Washington Hotel, several tablet-topped Anchor Pizzazz, and a breath 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 magnetoetry survey by the Pensacola Shipwreck Survey Team, which is under the direction of Program alumnum 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 six 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. Smillie and the University of West Florida conducted a field school to investigate the remains of the vessel. Program graduate student Stuart Berrrow 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 techniques 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 Baro Arnold discussed his work in the 1980's at the State of Florida's underwater archaeology. Other lectures also discussed sixteenth-century Spanish maritime history and archeology.

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 raising and appear to have been twisted off. The anchor is located at the forward (and sherdward) portion of the wrecksite.

A forty-meter by sixty-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 undisturbed 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 middle-style olive jar fragments, majolica wares, animal bones, part of a leather shoe, hemp rope, caulking, and bilge slams. By far the most significant and interesting find was a carved silhouette of a sixteenth-century Spanish galleine. The hand-carved artifact was discovered among the ship carpenter’s debris beneath the bal- last in the bilge of the ship. The carving is a profile of the fore and stern castles of a galley and its sloping square stern.

Both architectural 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 Berrrow
Conservation Lab (continued)

Among various conservators' 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 Beesey, and the nineteenth-century Maple Leaf. Material types include textiles, wood, and leadlines. Graduate assistantship positions have 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.

Avery 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, B.C., 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 arguments, and sources to Dr. Jeffrey Safford, Department of History, Montana State University, Bozeman, MT 59717. The deadline for submitting proposals is 31 January 1994.
The following reflects research interests of Program students:

James Allan - The Maritime History of Fort Ross, California
Adriane Askles - 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. Cantias - The Archaeological Investigation of the Millecocoq 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 Coogas - 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 Unite States Pacific Coast, 1875-1900
Stuart Darrow - 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, 1675-1721: Emphasis on North Carolina after 1700
Cristen Gober - A History of the USS Kearseage
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 Shipwreck, Currituck County, NC
John W. Kennington - The Ordinary Sailor of the Savannah River Squadron, 1861-1865
Annalise Corbin Kjorness - Comparitive Artifct Analyses 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
Amy Jo Knowles - History and Development of Minor Aids to Navigation in U.S. Waters
Michael Krivor - Research and Documentation of an 18th-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 Betty
Jeff Morris - Archaeological Investigation of the Chickahominy Shipyard, VA
Christopher Olson - A History and Archaeological Site Report on the CSS Celeg
Glenn Overton - A Detailed Analysis of the USS Kearsarge
Harry Pecorelli, III - Spanish Colonial Maritime Commerce in the Eighteenth Century
Martin D. Peebles - Site Report on the Relatie, 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 Artefacts 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 Half-built Pacific Coast Lumber Schooners: Dora Blom, Comet, and J. M. Colman, Located in the Canuel Islands National Park
Jola C. Schafer - 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 Stolzman - A Case Study of the Battle to Preserve the Railroad Ferry City of Milwaukee
Lex Turner - Site Report of the Civil War Era Merchant Schooner Scanpennog
Raymond E. Tubby - A Study of the Navy's Rejection of the USS Wanspanog
Hans Van Tilburg - The Early Ming Dynasty Navy: The Height of Chinese Maritime Power 1405-1433
Lolly C. Vana - The Star of the West: The Impact of Unsanctioned American Trade Activity in the Mexican Territory of California, 1845-1848
Daniel Warren - A History of the Steamship Monumental City and the Impact of American Shipping on British Colonial Policy in Australia