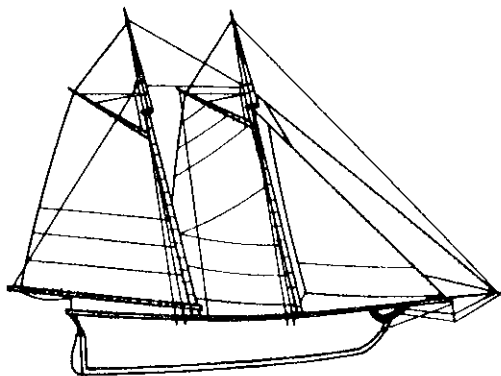


An artist's conception of E.C.U. graduate students mapping the remains of the Union transport *Maple Leaf* in the blackwater of the St. Johns River near Jacksonville, Florida. (Illustration by Martin Peebles).



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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 occupational 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

Program in Maritime History
and Nautical Archaeology
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FROM THE QUARTERDECK

East Carolina University's Program in Maritime History and Nautical Archaeology continued to expand and prosper in 1992. Through the efforts of faculty, staff, and students, the Program surpassed all goals that had been set for this year.

During the past year, one major objective of the Program was realized. In the late spring of 1992, the University approved a new name for the Program. The vague phrase "Underwater Research" was replaced by the more defined "Nautical Archaeology." It is hoped this name change will make the Program more identifiable to those working in the field.

Early in the year, the Program established two computer centers in the Eller Building. These labs, for Computer Aided Drafting, and Desktop Publishing, will enhance the ability of students to produce professional quality materials. Through the use of this new equipment students will acquire experience in the operation of a variety of computer systems and software packages. This knowledge will give them a competitive edge in a discipline where micro-computers are playing an increasingly important role.

The Program in Maritime History and Nautical Archaeology conducted two successful field projects in 1992. During the summer, students began excavations on a Civil War steamer in Florida's St. Johns River. In the fall, the Program's second-year students traveled to Bermuda to work with the Bermuda Maritime Museum on projects there.

In July, students and faculty traveled to Jacksonville, Florida, to begin the first systematic investigations of the Union transport *Maple Leaf*. Under the guidance of Professor Brad Rodgers, the team excavated and mapped a fifty foot section of the vessel deck two feet from the bow during the four week project. These plans represent some of the only detailed deck plans of an early Great Lakes side wheel steamer known to exist. Plans are currently being formulated to continue the excavations during the 1993 summer field school.

During September students, under the supervision of Professor Gordon Watts, traveled to Bermuda to work with the Bermuda Maritime Museum on projects in the waters around the island. Students participated in a continuing survey of the reefs around the island and excavations on a suspected sixteenth-century Spanish shipwreck. Students involved in these projects gained experience in site survey techniques, artifact illustration, and some conservation skills.

The Program in Maritime History and Nautical Archaeology also gained international recognition through the work of its students, three of whom took part in the excavations of a seventeenth-century merchant vessel in the Dominican Republic. In Europe, two students from the Program took part in a rare opportunity to work with the Rijksmuseum voor Scheepsarcheologie in Ketelhaven on ship sites in the Netherlands. In addition to this work, one student in the Program took advantage of the memorandum of agreement to between ECU and Exeter University in England and is currently studying there.

The Program in Maritime History and Nautical Archaeology's achievements in 1992 show that it continues to be one of the pacesetters in the field. In 1993 through its focus on both history and archaeology, the Program will continue to provide students with one of the best interdisciplinary educations available. The Program's emphasis on technology and hands-on training will insure its students have the skills necessary to compete in today's demanding job market. Through the efforts of the faculty, staff and students, 1993 will prove to be another successful year for the Program in Maritime History and Nautical Archaeology at East Carolina University.



BRIEFS

In January 1993, Dr. William N. Still, Jr., will begin his term as President of the North American Society for Oceanic History. He will be taking a respite from teaching and directing duties at the Program in Maritime History and Nautical Archaeology during the spring semester to finish a book for the Naval Historical Center. In November Dr. Still received the 1992 Christopher Crittenden Memorial Award. This prestigious award is presented by the North Carolina Literary and Historical Association to individuals who have made a significant contribution to the understanding of North Carolina History.

In the early part of this year, Dr. Carl Swanson took over the responsibility of Graduate Coordinator of the History Department at East Carolina University. The requirements of this position along with his teaching responsibilities provided for an interesting but challenging year. In the spring Dr. Swanson's book *Predator's and Prizes: American Privateering and Imperial Warfare 1739-1748*, published by the University of South Carolina Press, received the prestigious Lyman Award. This award is presented yearly by the North American Society for Oceanic History to the best book in the field of American Maritime History. The staff of *Stem to Stern* would like to congratulate Dr. Swanson on his outstanding achievement.

Stem to Stern would also like to extend a hearty "Welcome Aboard" to the Program in Maritime History and Nautical Archaeology's newest faculty member, Dr. Lawrence E. Babits. Dr. Babits, an historical archaeologist, will become the Acting Director of the Program in Maritime History and Nautical Archaeology during the spring semester of 1993.

In other news, the annual Lawrence F. Brewster Lecture in History was held on 10 November 1992. This year's speaker was Dr. Geoffrey Parker, Charles E. Powell Distinguished Professor of History at the University of Illinois, Champaign-Urbana. Dr. Parker presented the lecture "Beyond 1492: Spain's Struggle for Atlantic Hegemony." On 11 November 1992, Dr. Parker gave a short lecture on pursuing a Ph.D. to graduate students enrolled in the History Department.

ACADEMIC AWARDS

Recently two students in the Program in Maritime History and Nautical Archaeology were recognized for their scholastic achievements. *Hans Van Tilberg* received this year's Lawrence F. Brewster Fellowship. The Brewster Fellowship is awarded once a year to a student for excellence in

history. *Sabrina Faber* was awarded the Paul F. Murray scholarship; the Murray scholarship is awarded by the Graduate Committee to one student in the graduate history program.

PAPERS

The following papers have been presented by staff, students, and alumni in 1992.

Jonathan Bream. "Bermuda's Role in Sixteenth-Century Navigation." Conference on Historical and Underwater Archaeology. Kingston, Jamaica, January, 1992.

Michael A. Palmer. "The United States and the Persian Gulf: Past, Present, and Future." Paper presented at the Navy Museum, Washington, DC, September 1992.

_____. "Nationalism and the United States." Paper presented at the East Carolina University Symposium on History and Social Studies, Greenville, NC, September 1992.

_____. "The Battle of the Coral Sea: A Historical Overview." Paper presented at the Naval Aviation Museum Foundation/United States Naval Institute Symposium on the Battle of the Coral Sea and the Gulf War, Pensacola, Florida, May 1992.

_____. "The Storm in the Air: One Plan, Two Air Wars?" Paper presented at the Society for Military History's 1992 meeting, Fredricksburg, Virginia, April 1992.

Heidi Tobias-Smith. "Underwater Archaeology and Dive Tourism in the Pacific." Paper presented at the Fifth Pacific Congress on Marine Science and Technology, Kona, Hawaii, June 1992.

_____. "Inter-Island Shipping and the Wreck of the S.S. *Maui*." Paper presented at the Fourth Annual Symposium on Marine Archaeology and Maritime History of the Pacific, Honolulu, Hawaii, March 1992.

Richard A. Stephenson. "Vanishing Place Names in Eastern Carolina." Paper read at Pitt County Historical Society, Greenville, North Carolina, March 1992.

William N. Still, Jr. "Naval Logistics in World War I." Paper presented at the 18th Congress on Military History, Turin, Italy, August 1992.

Gordon P. Watts. "Education in Underwater Archaeology: A Brief Look at Academic, Avocational, and Public Education Programs in the Southeastern United States." Paper presented at the Australian Institute for Maritime Archaeology Conference at the Australian National Maritime Museum, Sydney, New South Wales, Australia, November 1992.

_____. "Underwater Archaeology in Bermuda: Investigating Shipwrecks from the 16th century through the American Civil War." Paper presented at Shipwrecks and Community Program Australian Institute of Maritime Archaeology Conference at the Australian National Maritime Museum, Sydney, New South Wales, Australia, November 1992

_____. "Maritime History, Shipwreck Archaeology, and the Museum." Paper presented at the Organization of American States Caribbean Conference on Museums and Culture, Trinidad, May 1992.

MARITIME THESES

The following theses were completed in 1992 by students in the Maritime Program:

--Kathryn E. Bequette. "An Archaeological Reconnaissance of the Anchorage, Seawalls, and Shipwrecks within Orange Bay, St. Eustatius, Netherlands Antilles."

--Wes Hall. "A Underwater Archaeological Survey of Heron's Colonial Bridge Crossing Site over the Northeast Cape Fear River near Castle Hayne, North Carolina."

--John O. Jensen. "The Unwanted: Cholera, Immigrants, and National Public Health in 1892."

--Robert Scott Moore. "Evolution of the Greek Warship and Its Tactics in the 4th Century B.C."

--David Whipple. "The Shipping Act of 1916."

A complete and updated list of all ECU maritime and naval theses is available upon request from Dr. William N. Still, Jr., Director, Program in Maritime History and Nautical Archaeology, Department of History, Admiral Ernest M. Eller House, East Carolina University, Greenville, North Carolina, 27858-4353. Copies of ECU theses may be ordered through Inter-Library Loan at your local university or public library from Joyner Library, East Carolina University, Greenville, North Carolina, 27858.

PUBLICATIONS

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

Babits, Lawrence E. *A Walking Guide to the Cowpens Battlefield*, Johnson City, Tennessee: Overmountain Press, In Press.

_____. "The Day was Ours" - Cowpens, 17 January 1781, submitted for publication.

_____. *Battery Wimberly: A Preliminary Topographical and Documentary Survey*, Wormsloe State Historic Site, Savannah, GA, 1992.

_____. Book Review: Jeremy Black, *War for America: The Fight for Independence*. in *Choice*, June 1992.

_____. "The Balloon" and "Archaeology of the Confederacy" two entries in *The Encyclopedia of the Confederacy*, Simon and Schuster, 1992.

Bream, Jonathan. "Diving for Pearls" *Bermuda Maritime Museum Quarterly*, 5, no.1 (Spring 1992).

Broadwater, John D. "Shipwreck in a Swimming Pool: An Assessment of the Methodology and Technology Utilized on the Yorktown Shipwreck Archaeological Project" in *Advances in Underwater Archaeology, Historical Archaeology* Publication, vol. 26, no.4 1992.

Delgado, James P. "Recovering the Past of USS *Arizona*: Symbolism, Myth, and Reality." in *Advances In Underwater Archaeology, Historical Archaeology* Publication, vol. 26, no.4 1992.

Foster, Kevin. "Threatened James River Shipwreck and Historical Sites" in *Advances in Underwater Archaeology, Historical Archaeology* Publication, vol. 26, no.4 1992.

Palmer, Michael A. *Guardians of the Gulf: The Growth of American Involvement in the Persian Gulf, 1833-1992*. New York: The Free Press, 1992.

_____. *On Course for Desert Storm: The U.S. Navy and the Persian Gulf*. Washington: Naval Historical Center, 1992.

_____. Book Review: Robert L. O'Connell, *Sacred Vessels: the Cult of the Battleship and the Rise of the U.S. Navy*

(Westview, 1991), in *Naval History*, 6 (Winter 1992): 66-68.

_____. Book Review: William Jeffrey Welsh and David Curtis Skaggs, eds., *War on the Great Lakes: Essays Commemorating the 175th Anniversary of the Battle of Lake Erie*. (The Kent State University Press, 1991), in the *Pennsylvania Magazine of History and Biography*.

_____. Book Review: Christopher McKee, *A Gentlemanly and Honorable Profession: The Creation of the U.S. Naval Officer Corps, 1794-1815*. (Naval Institute Press, 1991), in the *Pennsylvania Magazine of History and Biography*.

Rodgers, Bradley. *The ECU Conservator's Cookbook: A Methodological Approach to the Conservation of Water soaked Artifacts*. Herbert R. Paschal Memorial Fund, 1st Edition. Program in Maritime History and Underwater Research, East Carolina University, 1992.

_____. *Conservation of Water Soaked Materials Bibliography*. Herbert R. Paschal Memorial Fund, 3rd edition. Program in Maritime History and Underwater Research, East Carolina University, 1992:

Tobias-Smith, Heidi. "Underwater Archaeology and Dive Tourism in the Pacific Islands" in *Recent Advances in Marine Science and Technology*, Madison Wisconsin: Omnipress, 1992.

Stephenson, Richard. "The Urban Physical Environment" Chapter 6. *Interpreting The City: An Urban Geography*, 2nd edition, New York: Truman A. Hartshorn, John Wiley and Sons, Inc., 1992.

Stephenson, Richard and Michele Melaragno. *Design With Water*. New York: Van Nostrand Reinhold, forthcoming.

Swanson, Carl E. Book Review: Christopher McKee, *A Gentlemanly and Honorable Profession: The Creation of the U.S. Naval Officer Corps, 1794-1815*. (Naval Institute Press, 1991), in the *Northern Mariner/ Le Marin du Nord*.

Terrel, Bruce G. *The James River Bateau: Tobacco Transport in Upland Virginia 1745-1840*, ECU Research Report No.7, The Program in Maritime History and Underwater Research, East Carolina University, 1992.

Warren, Daniel J. "The Program in Maritime History and Underwater Research at East Carolina University" in *Carolina Comments*, North Carolina Division of Archives and History (September 1992).

IN MEMORIAM

ADMIRAL ERNEST M. ELLER

On July 30, 1992, one of the nation's leading promoters of naval history, Admiral Ernest McNeill Eller, passed away. His death was mourned by his family and by all those interested in naval history. After a distinguished career that included serving on Admiral Chester Nimitz's World War II staff and commanding the Navy's Middle East Force, Admiral Eller became Director of Naval History in 1956.

Under Admiral Eller's direction, the Navy's historical program expanded greatly. Actively involved in the promotion of naval history, the Admiral originated the Navy's oral history program, and he helped to establish the Oral History Office of Columbia University, in order to record interviews with retired naval officers.

In 1961, Admiral Eller also achieved the long-time ambition of many naval historians by establishing the Navy Museum in Washington, D.C. Admiral Eller's other programs included an extensive publication program aimed to increase awareness of naval history among historians, students, and the general public.

Admiral Eller's contributions to the field of naval history did not end after his retirement from the Naval Historical Center in 1970. Within a year of his retirement, he published *The Soviet Sea Challenge*, a textbook on the growing threat of the new blue-water strategy of the Soviet Navy. In commemoration of the nation's bicentennial, the Admiral also completed a cooperative work in 1981 on the maritime dimensions of the American Revolution in the Chesapeake Bay region.

On August 3, 1992, naval historians from all over the United States, including Dr. William N. Still, Jr., Director of the Program in Maritime History and Nautical Archaeology, gathered at Mitscher Hall at the U.S. Naval Academy in order to recognize the outstanding historian and naval officer, Admiral Ernest McNeill Eller. East Carolina University's Program in Maritime History has been a particular beneficiary of Admiral Eller's generosity. On behalf of the Program, we extend our sincerest condolences to the Eller family.

**CONGRESSMAN WALTER B.
JONES, SR.**

Congressman Walter B. Jones, Sr., a long-time resident of Farmville, North Carolina, passed away on September 15, 1992, after developing complications from pneumonia. Representing North Carolina's first district for twelve consecutive terms, Jones was the dean of North Carolina's Congressional Delegation.

Elected to the U.S. House of Representatives on 1966 in an interim election, Jones already had a distinguished political career. After serving one term as mayor of Farmville, he was elected to the North Carolina House of Representatives in 1955.

Jones served three terms in the House, and continued his political career in 1965, when he ran for the state senate. Within a year, he was elected by a special vote to the U.S. House of Representatives when the seat became vacant.

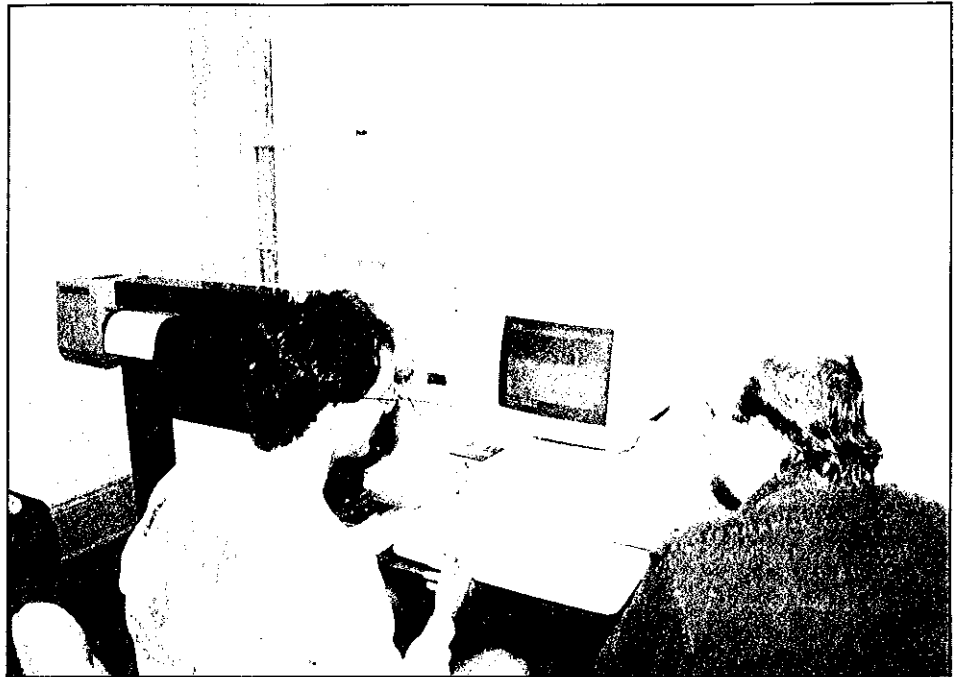
Environmentalists around the country applauded his role as Chairman of the Committee of Merchant Marine and Fisheries. As chairman, he delayed bills that would allow oil companies to begin a drilling program off the Outer Banks. Congressman Jones was also instrumental in the protection of Eastern North Carolina's estuaries and woodlands. The marine fleet, the Coast Guard, the Panama Canal, several Oceanographic Programs, and cargo shipping lines were also part of his jurisdiction. Congressman Jones also played an influential role in the Congressional Ratification of the "Abandoned Shipwreck Act of 1988" and was a staunch supporter of underwater archaeology projects concerning the *U.S.S. Monitor*.

The Program in Maritime History and Nautical Archaeology extends sincere sympathies to Walter B. Jones' family.

Sabrina Faber

**UNDERWATER ARCHAEOLOGY
COMPUTER LABORATORY**

Thanks to the generous support of an interested benefactor, the Program in Maritime History and Nautical Archaeology was able to establish a computer laboratory in the Eller Building. This laboratory will furnish students with an opportunity to operate and generate programs which will support efforts in underwater archaeological research and submerged cultural resources management. In recent years, underwater archaeological research has become more dependent upon the micro computer, therefore, the inclusion of practical computer experience is vital on the graduate-level of the educational process.



Program students Richard Mannesto (right), and Edward Prados digitize wreck site locations in the Program's new computer lab. (Photo Daniel Warren)

The Underwater Archaeology Computer Laboratory is equipped with two Gateway 2000 386/33 computers, each of which is equipped with a GETCO digitizing tablet and connected to a high speed Hewlett Packard drum plotter. The new hardware is supported by Autocad Version 11 software donations from Autodesk. At present AutoCad is being used to digitizing the Bermuda reefs and shipwreck sites located during the field research project jointly sponsored by the Bermuda Maritime Museum. This acquisition of computer aided design, mathematical modeling, and data base programs, will allow students to learn first hand how to process and develop remote sensing data used in magnetic contour mapping. Other programs will develop data from underwater site plans into two and three dimensional projections. The development of complex site files and artifact inventories will render the data base programs invaluable.

It is hoped that the Underwater Archaeology Computer Laboratory will not only provide students in the Program in Maritime History and Nautical Archaeology with the necessary practical experience that will enhance their competitive edge in a rapidly changing job market, but also permit commercially available programs to be adapted for use in submerged cultural resources research and management. High tech computer facilities will now be available for the Program in Maritime History and Nautical Archaeology because of the support of a benefactor interested in underwater archaeology.

Gordon P. Watts, Jr.

**MARITIME STUDIES
ASSOCIATION**

In the fall of 1991, the Maritime Studies Association (MSA), a non-profit organization affiliated with the Program in Maritime History and Nautical Archaeology, was formed. This organization was developed with the intent of assisting the Program's graduate students in their study of maritime culture worldwide. Currently, graduate students are conducting research in eleven states, as well as Bermuda and England. The topics presently being researched by students cover a wide spectrum including California shipbuilding, Yorkish naval policy, and Civil War naval history and architecture.

While in the Program, students gain valuable experience through participation in annual field schools. Field projects for 1993 will include further excavations on the Civil War transport *Maple Leaf* in the St. Johns River in Jacksonville, Florida and field research in Mobile Bay, Alabama. These field schools are essential for providing students with practical experience in the field. Students, however, often find themselves financially unable to participate fully in these projects due to the high costs involved. Assisting students financially, and thus enabling them to attend these field schools, was a primary reason behind the formation of the Maritime Studies Association. MSA, however, cannot accomplish this objective alone.

Continued on page 6

MSA would like to appeal to the readers of *Stem to Stern* to join in the establishment of the Maritime Studies Association Trust Fund Account. Any donation will be deeply appreciated. Please make your checks payable to the ECU Foundation for Maritime Studies Association Trust Fund, account number 0-94601. Anyone donating twenty-five dollars or more will receive a Maritime History and Nautical Archaeology T-shirt as a way of showing our appreciation. MSA would like to thank Performance Inc. and Divers Supply for their recent contributions.

PROGRAM'S NEW HISTORICAL ARCHAEOLOGIST INTERVIEWED



Dr. Lawrence Babits

Dr. Lawrence E. Babits is the Program's new staff archaeologist and along with his wife Nancy and his son John, plan to make ECU and Greenville their home. Below is an excerpt of an interview granted to Maritime History student Heather McAllister.

Describe your educational background.

Varied. I received a B.A. in Anthropology in 1969 and a M.A. in Anthropology in 1974, both from the University of Maryland and my Ph.D., in 1981, in Anthropology, from Brown University.

What role do you see yourself playing in the Maritime Program?

I'm trained in anthropological, archaeological, and historical theory and the practicalities of archaeology and interpretation. I believe the combination will be useful in my work here. As an historical archaeologist, I am a link between archaeology and history. Artifacts tell us of the past people, their technology, and some things about their society and its ideas.

What are some of your current research projects?

Cross-referencing pension, bounty land warrant files for Revolutionary War muster roles. Small boats of the 18th century, wrecked/abandoned vessel distribution patterns.

What would you like to accomplish with the Maritime Program?

I would like to be part of an institution producing well-rounded qualified professionals, capable of the practicalities of doing their work underwater or on land.

What do you see in the future for ECU's Maritime Program?

Some expansion, especially in the number and quality of students. Slight directional changes, such as the investigation of local sites, and the start of a Ph.D. program.

Heather McAllister

MAPLE LEAF : 1992 SUMMER FIELD SCHOOL

The early spring of 1864 brought a small victory to Confederate forces fighting in north Florida during the American Civil War. Using a relatively new weapon, the torpedo (mine), the Confederates sank the unsuspecting Union transport ship *Maple Leaf* as she plied the waters of the St. John's River near Jacksonville. Today this shipwreck represents an unprecedented chance to study the material culture of the Civil War and nineteenth-century maritime technology. This past year the Maritime History Program began an ambitious research project with Saint Johns Archaeological Expeditions (SJA EI), to document the history and archaeology of the vessel. In July, the Program held its annual summer field school and began the first systematic recording of the site.

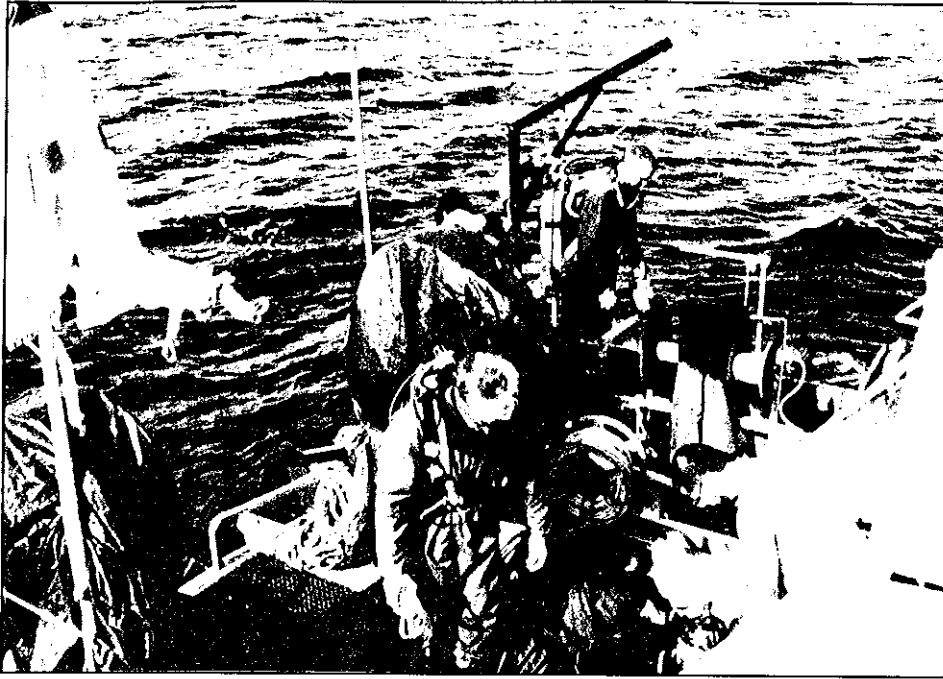
Under the direction of Professor Brad Rodgers, a team of twelve students and six staff members made the trip to Jacksonville for the four week field school. They found a difficult and challenging riverine environment awaiting them. Resting in twenty feet of water, the main deck of the *Maple Leaf* is buried under an additional eight feet of mud; very little of the ship protrudes above the bottom. Strong tidal currents plague the area, and visibility is restricted by blackwater and a suspended layer of silt flowing along the bottom. With a lot of ingenuity, and the help of SJA EI volun-

teers, a barrier was erected around the bow to isolate the work area and create a "friendly" environment. The rigid barrier panels blocked the flowing silt layer, keeping the excavation from filling in and "creating" workable visibility eight feet below the river bottom.

The *Maple Leaf* was built in Kingston, Ontario, in 1851, for service on Lake Ontario and the upper St. Lawrence River. Constructed as a side wheel paddle steamer, she measured 181 feet overall with a 24 foot beam and 10 foot depth of hold. Donald Bethune, an important steamboat entrepreneur from Toronto, had the vessel built for a lucrative mail contract with the Canadian Government. Over the next decade growing competition with the railroads and the panic of 1857 caused a decline in Great Lakes steamboat business. The *Maple Leaf* changed ownership several times but maintained a reputation for reliable passenger and freight service. After eleven years of service on Lake Ontario, a group of Boston investors purchased her for charter to the federal government as a transport vessel during the Civil War. She steamed out of the lakes in 1862 for army service on the east coast. National attention came briefly in 1863 when a group of Confederate prisoners took control of the ship off the coast of Virginia. The men escaped to shore using the ship's boat and evaded pursuing federal troops with the help of southern sympathizers. The vessel faded from notoriety until her loss on 1 April 1864, claiming four lives in the tragedy. A strong Confederate presence on the St. Johns River made salvage operations impossible during the war, and the ship and cargo were never recovered. After the war, the vessel posed a threat to navigation, and the Army Corp of Engineers had the superstructure, paddle wheels, and walking beam assembly demolished during the 1880's. Today the well preserved lower hull is all that remains under the anaerobic mud of the St. Johns River.

After removing the deep overlying mud, students found an open expanse of deck and evidence of the torpedo explosion. According to the *Maple Leaf's* second officer, the explosion caused considerable damage to the bow: "the hog frame was broken and the whole side of the vessel stove in." Splintered planking on the starboard side and the broken, disarticulated hogging truss verify the description.

Using powerful underwater lights, students laid out a mapping grid on the deck to document the bow, windlass, hatches, and hogging truss. At the end of each day accumulated information was plotted on the site map and examined for errors. Limited visibility often made work slow and



ECU divers on the barge "Mud Puppy" preparing to descend onto the Maple Leaf wreck site.

tedious, but persistence paid off, and fifty feet of the deck were uncovered and mapped.

Team members also helped document artifacts recovered by SJA EI in previous years. Much of the cargo space on the *Maple Leaf* is packed with boxes containing the personal effects of Union soldiers. Often, the original owner can be identified, and many times the artifacts reflect their owners economic and social standing. The small sample analyzed so far is beginning to yield previously unknown information on the material culture of the Civil War and the mid-nineteenth century.

The Maritime Program will hold field schools on the *Maple Leaf* in 1993 and 1994 while continuing related research under a cooperative agreement with SJA EI. The site has tremendous research potential

for students of ship construction, artifact conservation, and material culture studies. Currently, many parties are helping to make the investigation possible, including many companies and private citizens in Jacksonville and the state and federal governments. Funding for the work is provided by the Jacksonville Historical Society with a Special Category Grant from the State of Florida, Division of Historical Resources. The U.S. Army Center for Military History continues to provide expertise in documenting artifacts and adding to the military history of the vessel and the people involved with her. In addition, Kevin Foster, Maritime Historian for the National Park Service and ECU alumnus, is preparing a National Landmark nomination for the site.

Frank Cantelas

BERMUDA FALL 1992

The 1992 Fall Field School once again lured Maritime History and Nautical Archaeology graduate students out of Greenville to the waters of Bermuda. Bermuda has a long history of maritime activity, dating back to the early sixteenth century. A treacherous reef system surrounds most of the island providing the perfect setting for a wide variety of submerged cultural sites and creating an ideal training environment for Maritime History and Nautical Archaeology Students. Under the guidance of Professor Gordon Watts and the Bermuda Maritime Museum staff, students received hands-on training in locat-

ing, mapping, and recording submerged cultural resources.

The excellent visibility in the waters off Bermuda allowed for both magnetometer and towed diver surveys. Students began training by re-locating several previously known sites. This method of training provided students with experience in identifying the different components of an underwater site (i.e. ballast stones and bricks, concreted fasteners, copper sheathing, etc.) and proved invaluable during the search for unrecorded sites later in the project.

Once a potential site was located, the diver being towed behind the boat would

drop off the "towboard," staying over the site until the boat returned to record the location. Depending on the complexity and depth of the site, students would investigate it using scuba or skin diving equipment. During the underwater inspection, students sketched a site map and photographed the area using 35mm still and 8 mm video cameras. Once these tasks were completed, students returned to the boats where Professor Watts prompted them to draw conclusions (date of wreck, type of vessel, etc.) about the site based on ship construction details and diagnostic artifacts they had observed. Before leaving a site, the position was recorded using a Global Positioning System (GPS). The GPS utilizes satellites to triangulate positions anywhere on the Earth's surface. This system is extremely useful in underwater archaeology due to its accuracy in relocating sites. All students received the opportunity to learn and operate the system.

To aid in site location a magnetometer, a device towed behind the boat that detects anomalies in the earth's magnetic field, was also used. In cases where archaeological remains are obscured from view due to coral growth or shifting sands, the only means of finding them is through the use of a magnetometer. The ability to interpret magnetometer readings is an essential skill for the nautical archaeologist. Through hands-on training, students learned to differentiate between the signature presented by a cannon and piece of cable. Each day upon returning to the Bermuda Maritime Museum, all pertinent data (GPS coordinates, photos, site maps, etc.) were recorded and placed in individual site file folders. This included plotting the sites on a nautical chart, which allowed students to gain an understanding of site relationships and location.

During the month on the island, graduate students also conducted test excavations on a sixteenth-century shipwreck site. The purpose of these excavations was to determine if any hull structure remained at the site since it was salvaged by treasure hunters in the 1960's. Although no hull remains were located, students gained experience in excavation and dredging techniques. When weather conditions were not favorable for field work, students had the opportunity to conduct research at the Bermuda Library and Archives in Hamilton. In addition, students practiced basic conservation techniques at the Maritime Museum, under the direction of Jonathan Bream, a Program graduate student. Several conservation techniques were used by students including: electrolysis, concretion removal, ultrasonic cleaning, mold casting, and line drawings.

(continued on page 8)

The Bermuda Maritime Museum also provided full access to its photo laboratory, allowing students to develop their film processing techniques. All photographs were placed in the site file to assist future site identification and recording.

Compared with past years, the 1992 field school was relatively large. Graduate students involved were Adriane Askins, Michael Krivor, Richard Mannesto, Shawn Holland-Moore, Harry Pecorelli III, Edward Prados, Matt Russell, Tom Stoltmann, Hans Van Tilburg, and Daniel Warren. Also participating in the field school was Chris Ellis, an exchange student from Great Britain. More than thirty-five sites were located, mapped, recorded, and placed on permanent file at the Bermuda Maritime Museum during September 1992. These site locations are currently being digitized by students at East Carolina University's Program in Maritime History and Nautical Archaeology. Overall, the 1992 Fall Research Semester was a great success, accomplishing all of its goals and providing students with valuable field experience complementing techniques taught in the classroom.

Michael Krivor and Harry Pecorelli III

WISCONSIN FIELD SEASON

The summer of 1992 saw the continuation of a shipwreck survey being conducted by the State Historical Society of Wisconsin. This survey is part of a multi-year research project to document the underwater cultural resources of the state. David Cooper, State Underwater Archaeologist of Wisconsin and a Program alumnus, is director of this ambitious project. He is joined by assistant underwater archaeologist John Jensen, also a Program alumnus and two students: Rob Barros from Texas A&M University and Ray Tubby, of the ECU Maritime Program. The project is funded by the University of Wisconsin Sea Grant Institute with equipment and support provided by the University of Wisconsin, Madison.

This year's field season focused on the study of wrecks along three areas of the coast. The team began its investigations at Port Washington by conducting a preliminary survey of the *Niagara*, a side-wheel steamer that burned six miles north of the city in 1856. Adverse weather and time constraints allowed only a limited documentation of the site. A more extensive survey of the site is planned for 1993.

From Port Washington, the team moved



Program Graduate Students Harry Pecorelli, III (foreground), and Daniel Warren, photograph and examine the remains of an 18th century English wreck in Bermuda.

to Door County. This picturesque area, with its dangerous reefs and shoals, contains a variety of unique wrecks, and is a candidate as both a NOAA and state underwater preserve. The wrecks surveyed in 1992 include the stone barges *Ida Corning*, *Empire State*, and *Oak Leaf* at Sturgeon Bay, and two scow schooners at Fish Creek, the *Carrington*, a schooner carrying a cargo of pig iron and shingles when she stranded at Hat Island in 1870, and the *Emeline*, a double center-board schooner lost at Baileys Harbor in 1896.

In August the team shifted to the Apostle Islands National Lakeshore on Lake Superior to continue the work of previous field seasons. The main objective for this year was to complete the documentation of the *Pretoria*, one of the largest sailing vessels on the Great Lakes. She sank in the Great Blow of 1905 while being towed with a cargo of iron ore. Exceptional weather and good visibility allowed the team to complete its goal. On those rare days with rough weather the crew moved to calmer waters to investigate the Bayfield Saw Mill site and to monitor the condition of the schooner barge, *Noquebay*, mapping her newly exposed rudder and surveying for

additional wreckage in deeper water. The work in the Apostle Islands is part of a continuing cooperative effort between the State and the National Park Service to assess and monitor diver activity on underwater sites.

Ray Tubby

SPECIAL COLLECTIONS

Complementing East Carolina University's Program in Maritime History and Nautical Archaeology is Joyner Library's Special Collections Division. Special Collections, directed by History Professor Don Lennon, brings under one administrative roof an extensive Manuscript Collection, the University Archives and Records Center, the Rare Books Room, the North Carolina Collection, and the Hoover Anti-Communist Collection. It is primarily, however, the Manuscript, Rare Books, and North Carolina Collections that are of interest to naval and maritime researchers.

Military history, with an emphasis upon naval history, is one of the principal focuses of the Manuscript Collection. In fact, the

Director of Naval History has claimed that ECU's maritime collection is one of the top repositories of its kind outside of Washington, D. C. Chronologically, most of the naval papers date from the twentieth century; there are, however, some collections that go back to the 1820's. There are extensive data on the war-time navy, especially for World War II, in the form of letters, diaries, oral history memoirs, and photographs. However, there is also a large amount of information on naval policy and actions during the inter-war years. Examples of several recently acquired collections that concern naval history include the following:

—**George Leland Dyer Papers.** Dyer, a graduate of the U.S. Naval Academy at the end of the Civil War, served the navy from the 1870's until the early 1900's. His papers include more than two thousand hand-written letters to his wife; some are forty to fifty pages long. He was stationed in the Caribbean in the 1870's, was naval attaché to Spain at the outbreak of the Spanish-American War, commanded a ship in the blockade of Havana Harbor, and held the rank of Governor-General of Guam.

—**S.W. William Ruschenberger Papers.** Ruschenberger was a naval surgeon from the 1820's until the Civil War. His correspondence and journals reflect not only the policy of the U.S. Navy in South America and China, but also the customs and cultures of that period.

—**Dallas Longe Collection.** Recently obtained and currently unprocessed, these files deal with the *U.S.S. Ticonderoga* in World War II. The *Ticonderoga*, an aircraft carrier stationed in the Pacific, survived two direct-hits by Japanese kamikazes through the heroic efforts of her captain and crew, many of whom died in the process.

Special Collections, in addition to maintaining personal collections such as those above, is also the official repository for several professional naval organizations. It is the official repository for the **U.S. Naval Academy Class of 1941**, "a transitional class," according to Professor Lennon, which was the last graduating class before the outbreak of World War II. Available to researchers are the papers and oral histories of approximately one-quarter of the Class of 1941. Special Collections also maintains the files for the **Destroyer-Escort Commanding Officer's Association**. This group is unique among naval associations, for its members are primarily civilian seafarers who entered the navy in World War II for destroyer-escort duty. Finally, the U.S. Coast Guard Auxiliary has designated Special Collections as one of its official depositories. Currently, the collection

boasts over one hundred cubic feet of records from all fifty states, dating from the Auxiliary's inception (1941). These records are primarily in the form of minutes and newsletters.

For the maritime historian, the Manuscript Collection maintains the papers of a number of traders and travelers, including **William Sheppard** and **Samuel Fowle**; much of these data concern coastal shipping, fishing, and commerce in coastal North Carolina. A fascinating collection, the **Baron William Henry Von Ebenstein Papers** discuss international travel, whaling, sealing, and shipwrecks in the 1840's. Finally, the Manuscript Collection has several logbooks in its holdings, including one from the ship *Thetis*, which dates from the late eighteenth-century.

In addition to the Manuscript Collection, the Rare Books Room and North Carolina Collection contain some information for the naval and maritime historian as well. The Rare Books Room boasts numerous

maritime travel accounts and books on the pre-twentieth-century navy. Included in its holdings are a magnificent set of *Cook's Voyages*, and naval books such as *Naval Temple* and *Sailor life on Man of War & Merchant Vessel*. The North Carolina Collection, which became part of Special Collections last year, is concentrating on building a strong base of Eastern North Carolina history. Its expanding collection will undoubtedly include information on maritime affairs, fishing, and commerce in the region.

The future will bring even greater prestige and resources to Special Collections. If the General Assembly approves a \$600 million bond issue in November, Joyner Library will be expanded, and Special Collections will move into new quarters. Its new facilities will feature greatly enlarged stack space, an enlarged, circular search room with closed-circuit security cameras, a full conservation lab, and increased staff.

Edward Prados



Program Alumnus John William Morris, III, recording the dimensions of an 18th century English wreck in Bermuda.

INTERVIEW WITH DR. WILLIAM N. STILL, JR.

In 1981, Dr. William N. Still, Jr. and Professor Gordon P. Watts established the Program in Maritime History and Underwater Research at East Carolina University. Initially, only five students were enrolled in the Program. During the past twelve years, the Program in Maritime History and Nautical Archaeology, as it is now known, has grown dramatically. In a short interview with graduate student Daniel Warren, Dr. William Still expressed some of his thoughts about the Program in Maritime History and Nautical Archaeology.

The Program is now entering its twelfth year, has it lived up to your expectations?

Yes, It has lived up to my expectations both in terms of the number and quality of students and in terms of what they have done after leaving the Program. Most of them have been quite successful.

What are the future plans for the Program in Maritime History and Nautical Archaeology?

To continue developing the Program placing increasing attention on Naval History, Conservation, and Museology as fields of study. This is not to say that Nautical Archaeology will be cut back. We want to raise the other fields up to the level that Nautical Archaeology has already achieved. The University has also established this as a priority program, planning to offer a Ph.D. in Maritime History and Nautical Archaeology in the future.

The Program will also continue to establish formal ties with other institutions throughout the country and abroad that are interested in Maritime Heritage. Memoranda of Agreement have already been established between ECU and Exeter University in England as well as the Bermuda Maritime Museum. We are currently pursuing formal ties with several other institutions including the Confederate Naval Museum, University of Hawaii, and the Naval Memorial Foundation among others.

What are some of your concerns about the Program's Future?

My major concern is keeping the Program competitive in the upcoming years. New developments in technology are opening up large sections of the world's water-

ways, particularly deepwater. In order to remain on the cutting edge of Nautical Archaeology we will have to put an emphasis on technology. The lack of a School of Engineering handicaps us somewhat in this area, but the University has been helpful with solving the problem.

Daniel Warren

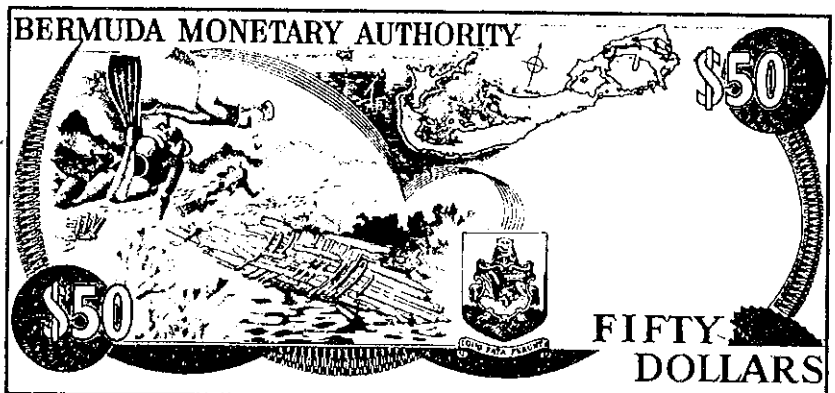
UNDERWATER ARCHAEOLOGY RECOGNIZED BY BERMUDA GOV'T

Recently the work of the Bermuda Maritime Museum and the program in Maritime History and Nautical Archaeology was recognized by the Bermuda Government. On October 12, 1992, the government issued a new limited-edition \$50 note commemorating the Columbus voyages. The reverse of the note is illustrated with an engraving from a shipwreck drawing produced by John W. Morris III and Martin D. Peebles from East Carolina University. The drawing represents the IMHA (Institute of Maritime History and Archaeology) 3 or "West-

ern Ledge" wreck site off of Bermuda.

The IMHA 3 remains could possibly be those of the Spanish vessel "Santa Lucia," which sank in 1584. The site, first discovered in the 1960s, was excavated and documented by ECU graduate students from the Program in Maritime History and Nautical Archaeology in cooperation with the Bermuda Maritime Museum between 1988 and 1990. In 1991, an international team of underwater archaeologists, under the coordination of Nautical Archaeology Director Gordon P. Watts, recovered the wreck from its four hundred year old resting place. The vessel's remains are currently at the Bermuda Maritime Museum where they will undergo several years of conservation before being put on display at the Museum.

The issuing of the \$50 note was part of the Bermuda Government's celebration of the 500th anniversary of Columbus' discovery of the New World. Other events in this celebration included, a formal dinner honoring Diego Colón de Carvajal y Gorosabel, the Marquis de Aguilafuente, 20th generation descendent of Christopher Columbus and the opening of a new display at the Bermuda Maritime Museum.



The new \$50 note issued on Columbus Day by the British Colony of Bermuda. The reverse side of the note is illustrated with a sketch of a 16th century shipwreck drawn by a team of ECU Underwater Archaeologists.

INDIVIDUAL STUDENT PROJECTS

WHITE FISH POINT SURVEY

A survey of the Whitefish Point Underwater Preserve was initiated during the past summer by Richard Mannesto and Whitefish Point Museum Director Tom Farnquist. Using a proton magnetometer from East Carolina University and a Klien towfish sonar hired by the Great Lakes Shipwreck Historical Society, the survey commenced on 28 July 1992.

The first part of the survey covered the area south of the harbor of refuge, where the *Invincible* and *Crosthwaite* are known to have sunk. The locations are still a mystery. Henry W. Bayfield's survey map of the area in 1828 depicts the location of the *Invincible*. The *Crosthwaite* was set adrift when she became engulfed in flames while waiting out a storm.

On 30 July 1992, using the towfish sonar, an old steam barge, which is believed to have sunk during the construction of the harbor of refuge at Tom Brown's fishery in early 1950's, was located. Research concerning the vessel is in progress to identify the original owners and verify the vessel's name. The barge is thought to be the *Sadie Thompson*, which was contracted to the U.S. Army Corps of Engineers to build the pier.

The next area searched was north of the point, looking for the *Frank Perew*, which sank in 1892 after succumbing to a typical violent late September storm on Lake Superior. After three days of intense searching, aboard Dave Trotter's *Obsession*, the search was terminated for the season due to mechanical difficulties.

The survey for the *Invincible*, which is believed to be in shallow water, then commenced in earnest using the proton magnetometer and towing divers. The search will continue during the summer of 1993.

Richard Mannesto

SHIP EXCAVATIONS IN THE NETHERLANDS

The 1992 summer field season offered two graduate students from the Program Maritime History and Nautical Archaeology the rare opportunity to engage in fieldwork with the Rijksmuseum voor Scheepsarcheologie in Ketelhaven, the Netherlands. Informed of this opportunity by Gordon Watts, AmyJo Knowles and Patrick Cole embarked on their adventure in mid-May. The rijksmuseum is located in the IJsselmeerpolders - the Flevopolder to be exact - east of Amsterdam. Surveys and excavations of shipwrecks and other previ-

ously submerged, but now buried, cultural resources have been ongoing since the polder - a tract of land sectioned off from the Zuider Zee (now IJsselmeer) by a series of dijks and reclaimed - was declared dry in the 1960s.

The first project (begun in April 1992) entailed the excavation and recording of a 16th century ship uncovered in a field near the town of Biddinghuizen. Identified by the designation M11, this ship carried a wide range of artifacts - from a large copper cooking pot, bellows, ceramic tiles, and numerous barrels of fish, to a leather bag containing the remains of a kalmoes root - a traditional remedy used for pain relief. The team excavated, mapped, and photographed most of the port side of the ship. *National Geographic* photographer Sisse Brimberg arrived on site in mid-June to shoot a story on the Hanseatic League. Photographs of the M11 and other contemporary ships from northern Europe will be featured in the article, slated to appear in the January 1993 issue.

While part of the team remained in



Archaeologists from the Rijksmuseum voor Scheepsarcheologie excavating a 15th century punter near Workum in Friesland. (Photo by AmyJo Knowles)

Biddinghuizen to continue the excavation of the M11, we, along with Rob Oosting, Director of the Rijksmuseum voor Scheepsarcheologie, Robert S. Neyland, a Ph.D. candidate from Texas A&M, and Kathleen McLaughlin, used the remainder of the summer, from late-June through July, to excavate, map, and remove a 15th century punter-type ship from a polder in the area southwest of Workum in Friesland - a polder which was constructed in 1627. This small, clinker-built punter was discovered by a local farmer who was digging an irrigation ditch. By law in the Netherlands,

the farmers reserve the rights to the top soil, while the State retains the rights to any resources *below* the soil. In order for construction of the ditch to continue, a team from the rijksmuseum was dispatched determine the importance of the cultural resource. The punter - a flat-bottomed vessel - was approximately 10 meters in length and approximately 2.5 - 3 meters in beam. Excavation revealed that she was full of straw, the only artifacts recovered being two leather children's shoes and pieces from a ceramic dish which was later reconstructed under the direction of Karel Vlierman, Curator of Collections for the museum.

Once mapped and extensively photographed (and viewed by the public on a much-publicized "geopend dag" or "open day"), the boat's timbers were labelled and removed, plank by plank, and transported back to the rijksmuseum where the team succeeded in drawing all of the outer planking reduced to a 1:10 scale by August 1, 1992. Responsibility for the reconstruction of the ship as well as the composition of a site report will be assumed by Mr. Robert S. Neyland, a doctoral candidate from Texas A&M, with the advice of Jaap Morrel.

AmyJo Knowles

MONTE CRISTI "PIPE WRECK"

Graduate students in East Carolina's Program in Maritime History and Nautical Archaeology, along with colleagues from Texas A & M University and the University of London, recently completed the 1992 field season of the excavation and study of the seventeenth-century "Pipe" wreck of Monte Cristi, located near the northwest coast of the Dominican Republic. The project, sponsored by the Pan American Institute of Maritime Archaeology, a non-profit research institute, is funded by Earthwatch International. Under the leadership of Texas A&M doctoral candidate Jerome Hall, the proposed five year project has thus far proven a model of cooperation between an archaeological research team and the cultural office of the Dominican government. Under the agreement between PIMA and government officials, all artifact material recovered from the Monte Cristi site will remain the property of the Dominican Republic, setting a new precedent where commercial salvage of shipwrecks had heretofore been the norm.

For the second season, the research team composed of archaeologists, a conservator,
(Continued on page 12)

a registrar, a doctor, and volunteers, lived in tents for three months on the desert island of Cabras, an environment, while possessing the idyllic beauty of the Caribbean, offered visitors the prospects of hurricanes, scorpion bites, bouts of intestinal distress, and island fever. The team installed a two meter square grid system, mapped in the ship remains, and excavated new areas of the site. To help in the processing of artifact material, the team constructed a field laboratory and darkroom on the island. Teams of six divers, using surface supplied air, worked in shifts from a platform anchored over the wrecksite. Cultural material recovered during the 1992 season included an iron naval cannon, fifteen pieces of eight with devaluation stamps, some from the Nuevo Reino mint in Bogota, navigation dividers, thimbles, tacks, a candlestick, numerous faunal remains, dozens of small concretions, and hundreds of diagnostic ceramic sherds and clay pipes, for which the wreck is named. Among the more notable finds was a bronze artifact, which some authorities believe to be part of a rare early navigational device known as a *cosmolabe*.

During the summer, ECU graduate maritime students Jemison Beshears, Harry Pecorelli, and Michael Krivor gathered data for a detailed study of the shipwreck remains. Besides detail mapping of the site, the students collected wood samples for testing at ECU, and selected timber specimens for a dendro-chronological dating survey to be completed by R.O.B., the Dutch dendrochronology center in Amersfoort, Netherlands. The project team members hope that their combined efforts on the Monte Cristi site will help increase the knowledge of early ship construction and illicit trade on the north coast of Hispaniola during the mid-seventeenth-century.

Jemison Beshears

VIDEO MOSAIC IMAGING

This past summer the staff of the Northwest Michigan Maritime Museum, volunteers for the state of Michigan's Manitou Passage Underwater Preserve, and the founders of Great Lakes Visual/Research Inc. (GLV/R), Harley Seeley and Jay Martin, linked up once again to work on mapping the schooner *Alva Bradley* using Video-Mosaic Imaging (VMI). One of the main goals of this year's project for Seeley and Martin was training museum staff and Preserve volunteers in the use of the video equipment, computer, and graphics soft-



ECU Graduate Students Harry Pecorelli III, Mike Krivor, and Jemison Beshears measuring a 17th century cannon at the Monte Cristi wreck site. (Photo by Jemison Beshears)

ware necessary to generate a map of the wreck site in Lake Michigan. Last year, the three groups had successfully field tested the feasibility of using VMI to make a map of a submerged archaeological site, and now GLV/R wanted to let the volunteers use the system on their own.

Since July 1991, when VMI was first tested on the *Alva Bradley*, the system has undergone a few minor changes. A new 4' x 20' lightweight grid made of PVC tubing replaced the ponderous steel grid used in the previous year's field test. Since, the camcorder did not use a direct video feed to the surface this season, the computer was not brought on-site. The computer, however, capable of video applications along with running graphics software, still remained the backbone of the system. The improvements to the grid and use of a standard underwater video system sped up the process of gathering images, and slightly lowered the overall cost of the system.

The project this year went rather smoothly since the grid had been redesigned and most of the crew had worked with the system the previous year. The deployment and assembly of the grid on-site was carried out in only a few dives by the Preserve volunteers under the supervision of GLV/R staff. The new grid proved easier to handle and move about on-site, although its stability posed problems at times. After several days of training, the GLV/R staff turned the project over to Jed Jaworski, the director of the museum, and work began in earnest to map as much of the *Alva Bradley* as possible in one week.

Jaworski hoped to gather video data of the entire 192-foot port side of the wreck from the keelson to the turn of the bilge in the allotted time. Once teams were established and assigned specific duties, dive operations commenced. Dive teams consisted of three "grid monkeys," who moved and leveled the grid over the wreck, and a camera operator who moved the camera carriage and grabbed video frames. At the completion of each video run the grid was moved 36 inches over along a base line set upon the keelson, and the process was repeated. Even though weather and boat problems (the rudder snapped off one of the Preserve vessels in rough weather and the boat drifted in the Manitou Passage for several hours.) allowed us to work on the site only four days, the crew still managed to complete the 192' x 20' section of the wreck in the time allowed.

The video footage taken of the *Alva Bradley* is now being manipulated to form a mosaic of the wreck's port side. Using an Amiga 2000 computer equipped with a NewTek Video Toaster card Jaworski is able to grab frames from the footage of the wreck and adjust the contrast, correct tone, rescale, and cut and paste the images together to form a complete picture of the wreck site. Unlike traditional photo mosaics, the video mosaics finished product has no seams, or contrast and tone variations within the final picture. Video-Mosaic Imaging has definitely proven itself to be a very useful archaeological tool for documenting submerged cultural resources.

Thomas Stoltmann

LAB UPDATE

The Maritime History Conservation Laboratory has focused its resources for the past year on developing equipment and supplies to meet Program field activity needs. The lab's second priority has been identifying and developing contract conservation projects to enhance funding.

Lab facilities currently include a wet lab with fifteen large artifact tanks in 400 square feet of floor space and three heated treatment tanks. The dry lab contains treatment rooms for microscopic analysis, electrolytic treatment, textile handling, and a drying and coating room. This building also houses the photography dark room, workshop, and a classroom. The lab has acquired and created various pieces of conservation equipment since its inception. Acquired items include a microscope for wood analysis, an IBM computer with dBase for record keeping, and a dedicated lab truck. Our most recent acquisition is a 120 kv X-ray cabinet for examining concretions.

We have expanded the 45,000 liter Bulking Agent Recovery Tank system, which enables the recovery and reuse of bulking agents. This system now has the capacity to hold in storage 1200 liters of sucrose and 2800 liters of the various grades of Polyethylene Glycol. The lab has also constructed a ceramic rinsing cascade tank, a textile treatment table, humidity control chamber, and a treatment hot box. We have also added a third large capacity, heated treatment tank. The laboratory has modified a boat trailer to function as a bulk item transport. This trailer is now suitable for transporting field gear and large artifacts. The lab has also developed a "quick response" artifact holding tank for objects larger than current holding tank capacity. This temporary holding tank can be assembled within a few hours to meet artifact dimensions up to 20 ft. Our latest "self-help" addition is a concretion rinse and examination table that uses a cistern of rainwater as the rinse medium. With a capacity of 100 gallons, the rinse station allows artifact cleaning without water waste. The system includes a holding tank that catches used water. The holding tank allows us to settle out debris and re-use the water.

In the past year the lab has conserved over 400 artifacts under contract with the State of Virginia Office of Cultural Resources. The lab has also supported the field school to Plymouth, North Carolina, the *Maple Leaf* project in Florida, and the Millecoquin project in Michigan. These projects have tasked the lab to support treatment of approximately two hundred artifacts. We have also treated five air-

frame artifacts for the Pensacola Naval Air Museum.

The lab has consulted on several outside projects. Lab Supervisor Brad Rodgers is currently consulting with the Confederate Naval Museum in Columbus, Georgia, on long term conservation needs of a Civil War iron clad. The Naval Air Museum at Pensacola has also consulted with the lab on treatment methods for recovered World War II aircraft from marine environments and long term storage of surplus metal plate.

Projects in the works include identifying and developing grant opportunities with the Office of Sponsored Programs and acquiring a Scanning Electron Microscope with an X-ray diffraction analyser.

David Whipple

WHERE ARE THEY NOW?

The following list updates the current location of former program members.

James Allan - Director, Institute for Western Maritime Archaeology, Berkeley, California.

Brina J. Agranat - Doctoral Candidate, University of Alabama.

Ray Ashley - Doctoral Candidate, Duke University.

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

David Beard - Contract Archaeologist.

Colin Bentley - Sailing instructor, College of Charleston.

Kathryn Bequette - Underwater Archaeology Consultant, Lakewood, Colorado.

Jonathan Bream - Archival Researcher, Bermuda Maritime Museum and Doctoral Candidate, University of Seville, Spain.

Robert Browning - Historian, U.S. Coast Guard, Washington, D.C.

David J. Cooper - Underwater Archaeologist, State of Wisconsin.

Diane Cooper - San Francisco Maritime National Historic Park.

Lee Cox - Archaeological contracting consultant Dolan Research, Philadelphia.

James P. Delgado - Director, Vancouver Maritime Museum, British Columbia.

Rita Folsie-Elliot - Contract archaeologist, Georgia.

Robert Feingold - Program Specialist in the Florida Keys for the Sanctuaries and Reserves Division of NOAA.

Kevin Foster - Historian, National Park Service, Washington, D.C.

Joe Friday - Police Officer, Greenville,

North Carolina.

Wesley K. Hall - Director Mid-Atlantic Technology, Wilmington, North Carolina.

Lynn B. Harris - Assistant Head of the Underwater Division, South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Charleston.

Rick Heron - Doctoral Candidate, Texas A & M University.

Bob Holcombe - Director, Confederate Naval Museum, Columbus, Georgia.

Claude V. (Sandy) Jackson - Contract Archaeologist, North Carolina.

John O. Jensen - Research Assistant, State of Wisconsin.

T. Kurt Knoerl - Working with the Buffalo Maritime society, Buffalo, New York.

I. Roderick Mather - Doctoral Candidate, Oxford University.

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

R. Scott Moore - Doctoral Candidate, Ohio State University.

Stuart Morgan - Doctoral Candidate, University of South Carolina and Publications Editor/Coordinator for the McKissick Museum at the University of South Carolina.

John W. (Billy Ray) Morris, III - Doctoral Candidate, University of Florida.

Kaea Morris - Archaeological researcher, Tupe, Arizona.

Sam Newell - Public school teacher, North Carolina.

James R. Reedy, Jr. - R2 Underwater Consultants, Morehead City, North Carolina.

Bradley A. Rodgers - Archaeologist/Conservator, Program in Maritime History and Nautical Archaeology, ECU.

James S. (Steve) Schmidt - Senior Archaeologist, GIA Consultants, Pittsburgh, Pennsylvania.

Robert Schneller - Naval Historical Center, Washington, D.C.

James Spirek - Underwater Archaeologist, State of Florida.

Bruce G. Terrell - Maritime Historian, NOAA, Washington, D.C.

Heidi Tobias-Smith - Seafight Engineering, Honolulu, HI, University of Hawaii.

Lolly Vann - Contract Archaeologist, Md.

Wilson West - Researcher, House of Representatives, Washington, D.C.

David B. Whipple - Conservation Technician, Program in Maritime History and Nautical Archaeology, ECU.

1993 SUMMER FIELD SCHOOL

During the second summer session in 1993, East Carolina University will sponsor its fourteenth annual Summer Field School in Maritime History and Nautical Archaeology. This unique program has been developed 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. Each student in the program will participate in classroom lectures, workshops, seminars, and will conduct on site research. Students who plan to participate in the diving aspects of the project must make arrangements with the East Carolina University Diving Safety Officer to insure that all aspects of a 60 foot depth certification have been met prior to the beginning of the field research.

Undergraduate (senior level) and graduate level credit will be offered. A tuition and fees schedule is available upon request. Semi-private residence hall rooms can be reserved for around \$30.00 a week on campus. For the time in the field, housing will be provided near the site with the students responsible for their own meals. This year, the field school will be held in Jacksonville, Florida, working on the Civil War shipwreck *Maple Leaf*. Skills used will include excavation, site mapping, and other archaeology-related techniques.

Applicants for the program should be enrolled in history, archaeology, geography, or related fields. For additional details, medical forms, application, and tuition and fee schedule, please contact:

Dr. William N. Still, Jr.
 Director of Maritime History
 Department of History
 Admiral Ernest M. Eller House
 East Carolina University
 Greenville, North Carolina 27858-4353
 Telephone (919) 757-6097

EMPLOYMENT SERVICE

The Program in Maritime History and Nautical Archaeology now has a procedure to notify alumni and students of potential employment opportunities.

If you would like to participate please send a copy of your curriculum vitae or resume and current address and telephone to:

Mary Miller
 Program in Maritime History and
 Nautical Archaeology
 East Carolina University
 Greenville, NC 27858-4353

IN PRINT

A limited number of the following publications are now available through the Program in Maritime History and Nautical Archaeology. Requests should be directed to Mary M. Miller, in care of the Department of History, Admiral Ernest M. Eller House, East Carolina University, Greenville, North Carolina 27858-4353. Please make checks payable to East Carolina University.

Cooper, David J., ed. *By Fire, Storm, and Ice: Underwater Archaeological Investigation in the Apostle Islands*. 1991. Available from David J. Cooper, State Underwater Archaeologist, The State Historical Society of Wisconsin, 816 State Street, Madison, Wisconsin, 53706.

Cooper, David J. and Bradley A. Rodgers. *Report on Phase One Marine Magnetometer Survey in Death's Door Passage, Door County, Wisconsin, 1989*. NOAA 1990. \$5.00 plus \$2.35 postage, also available from David Cooper.

Cooper, David J. *Survey of Submerged Cultural Resources in Northern Door County; 1988 Field Season Report*. \$7.00

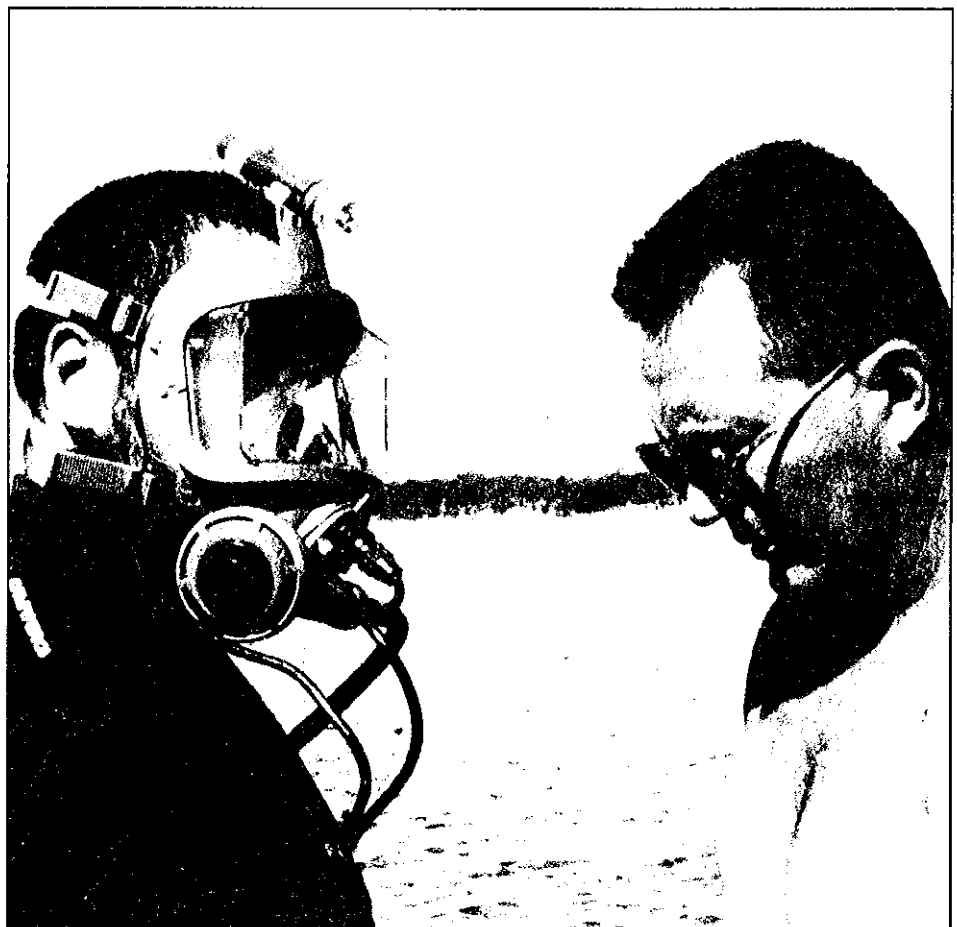
plus \$2.35 postage, also available from David Cooper.

Rodgers, Bradley. *The ECU Conservator's Cookbook: A Methodological Approach to the Conservation of Water soaked Artifacts*. Herbert R. Paschal Memorial Fund, 1st Edition. Program in Maritime History and Underwater Research, East Carolina University. 1992.....\$17.00

Rodgers, Bradley A. *Conservation of Water Soaked Materials Bibliography*. Herbert R. Paschal Memorial Fund, 3rd edition. Program in Maritime History and Underwater Research, East Carolina University. 1992.....\$13.00

Terrel, Bruce G. *The James River Bateau: Tobacco Transport in Upland Virginia 1745-1840*. ECU Research Report No. 7. Program in Maritime History and Underwater Research, East Carolina University. 1992.....\$8.00

Watts, Gordon P., ed. *In Search of Our Maritime Past, Proceedings of the Fifteenth Conference on Underwater Archaeology*. Program in Maritime History and Underwater Research, East Carolina University. 1988.....\$10.00



Dive safety officers Hans "Dutch" Van Tilburg (left) and Steve "Storm" Sellers prepare to use Underwater Communications on the *Maple Leaf* site. (Photo by Frank Cantalas)

Steamer Maple Leaf
Plan View 1992 Bow Excavation
St. Johns River Florida

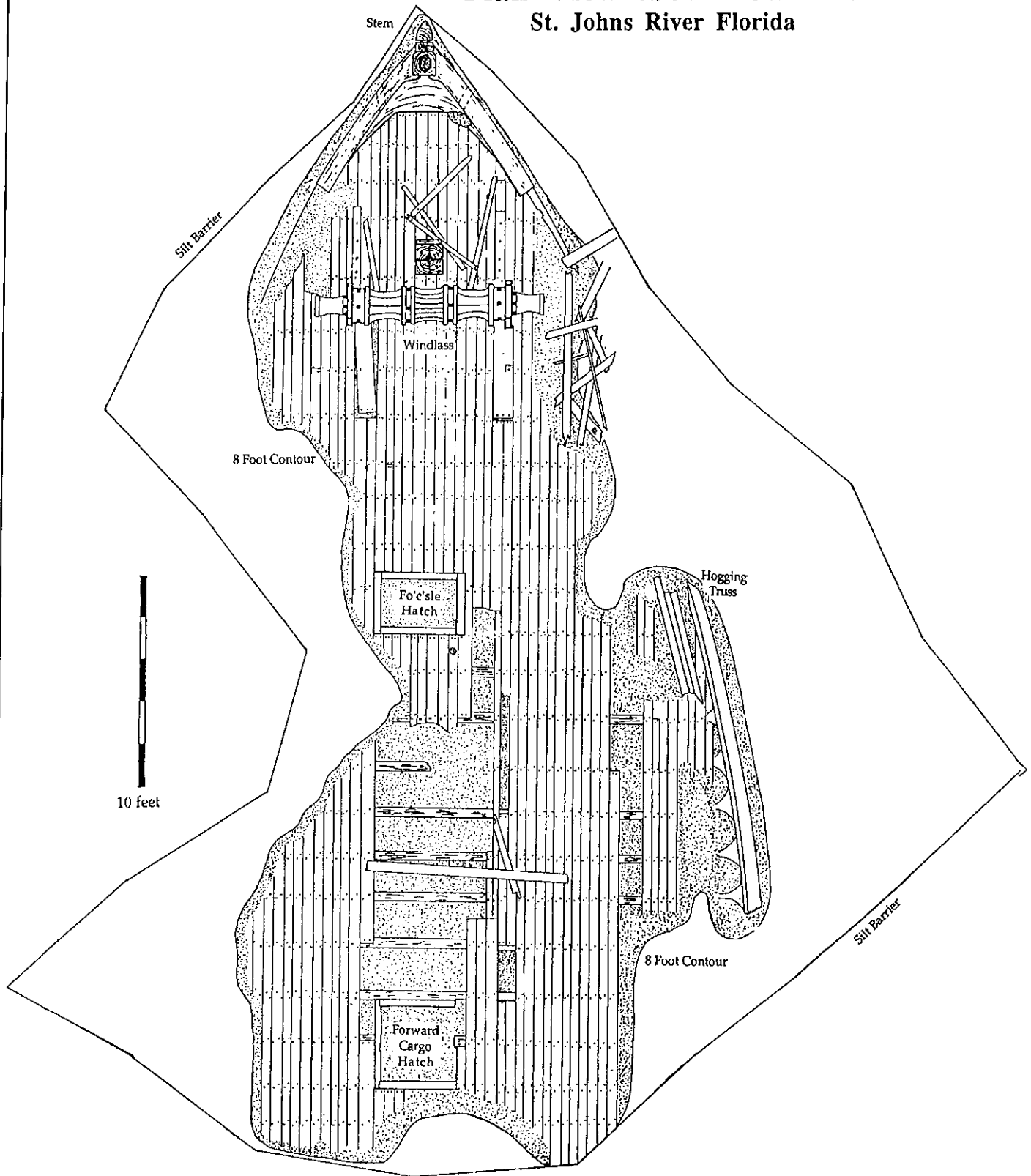


Illustration by Brad Rodgers.

GRADUATE STUDENT RESEARCH

The following list reflects research interests of students and of the program.

Brina J. Agranat: Rebuilding the *Peacock*: An Inquiry into the Early Navy's Practice of Rebuilding Vessels of War, and the Preparations for the First United States Exploring Expedition.

James Allan: The Maritime History of Fort Ross, California.

Raymond E. Ashley: Scurvy and Longitude: The Integration of Science into Eighteenth-Century Maritime Practice.

Adriane Askins: Eighteenth-Century East India Company Trade with China.

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

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.

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

Stuart Derrow: Santa Elena and Saint Augustine: Early Spanish Colonization Attempts in the Florida Territory.

Stan Duncan: A Historical and Archaeological Investigation of the Civil War Transport Vessel *Maple Leaf*.

Sabrina Faber: Aspects and Success of Gujarati Trade during Portuguese Domination in the Indian Ocean.

Steve Gibbons: Piracy and the Economics of North Carolina.

Cristen Gober: A History of the USS *Kearsarge*.

Tim Hastings: History and Site Report of the *C.S.S. Gaines*.

Bob Holcombe: The Evolution of Confederate Ironclad Design.

Shawn Holland-Moore: A Study of Women in American Seaports during the 19th Century.

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

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

AmyJo Knowles: Amsterdam Oud en Nieuw: Trade, Settlement, and Dutch Hegemony.

Michael Krivor: Research and Documentation of a 18th Century Wreck Site off Bermuda.

Richard Mannesto: A Submerged Cultural Resource Study of White Fish Point, Michigan.

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: Spanish-American Built Merchant Galleons of the Conquest Period.

Amy Mitchell: Wood use in 18th Century Vessels as exemplified by the Collier *Betsy*.

Jeff Morris: Shipyards of the Chesapeake Bay during the Colonial Era with an Emphasis on the Teward-Galloway Shipyard on the West River, Maryland.

Chris Olson: The Development of Naval Tactics in the First Anglo - Dutch War.

Glenn Overton: A Detailed Analysis of the USS *Schurz*.

Harry Pecorelli, III: Antbellum Ship Construction in Charleston, South Carolina.

Martin D. Peebles: Yorkist Policy and Naval Development in 15th Century England.

Edward Prados: Roman Challenges to the Ancient Arabia Spice Trade.

Shannon Richardson: The History and Future of Waterlogged Artifact Conservation.

Lisa E. Rupp: Early Successes of the Caribbean Pirates, 1550-1650.

Matthew Russell: A Historical and Archaeological Investigation of three Hall-built Pacific Coast Lumber Schooners: *Dora Bluhm*, *Comet*, and *J.M. Coleman* 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.

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

James D. Spirek: USS *Southfield*: A Historical and Archaeological Investigation of a Civil War Gunboat.

Thomas Stoltmann: The schooner *J.B. Newland*, North Manitou Island, Michigan.

William H. Thiesen: Policy, Technology, and Change: The ABCD Warship Program and American Naval Policy.

Hans Van Tilberg: Smuggling and West Coast Trade in the 19th Century.

Lex Turner: The Royal Navy's Impressment of Seaman in Colonial North America.

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

Lolly 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 during the mid-19th Century.

AmyJo Knowles

Stem to Stern

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