

# Stem to Stern

Volume 1, Number 1

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## Interdisciplinary Program Completes Third Year Description of ECU's Graduate Program in Maritime History and Underwater Research

East Carolina University's Department of History received approval in 1981 from the University of North Carolina system for a Master of Arts track in Maritime History and Underwater Research. The curriculum developed for the new two-year, 45 semester hour graduate program contains an appropriate concentration of history, both classroom and advanced on-site experience in underwater archaeology, and a variety of cognates associated with underwater archaeological research.

Traditional history courses comprise 18 hours of the requirements. While historiography, a research seminar, and thesis research are requirements, the remaining nine hours may be selected from course offerings in American, Latin

American, European, and Asian history that are associated with a student's particular area of interest. Within the Department of History, an additional 15 hours have been developed specifically for students enrolled in Maritime History and Underwater Research. These courses include American Maritime and Underwater History; History of Marine Architecture and Ship Construction; History of Nautical Archaeology; and Field Research in Maritime History.

The Field Research in Maritime History course, which provides on-site field experience, prepares students for participation in, and to conduct underwater projects designed to generate historical and archaeological evidence. During each fall "research semester," second-year

graduate students put theory, research methods and techniques into practice and develop basic skills. In addition, students assume responsibility for various aspects of a research project.

When a project is concluded, they turn their attention to the processing and analysis of data collected. Cleaning, cataloging, analysis, and conservation of artifacts are undertaken, and a final report detailing project activities of the semester is prepared by students. During the field semester, courses in Thesis Research and Coastal Marine Resources Problem Analysis are combined to provide a total of 11 hours' credit for the full time demands of research activities.

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### Summer Field School Program

Each year, ECU conducts a summer field school in Maritime History and Underwater Research. College students and graduates throughout the United States are encouraged to attend, and all participants are provided with a basic introduction to American maritime history, underwater archaeology and related subject material.

Participants usually attend two weeks of classroom instruction on the ECU campus where they receive information on American trade patterns, transportation, shipbuilding and vessel architecture. Continued instruction at each particular project site centers around underwater archaeological research methods and techniques.

### Swansboro Summer Field School, '83

Eight students, participating in ECU's 1983 underwater archaeology summer field school, spent much of their time investigating an extant wharf structure on Deer Island, located across from Swansboro. The wharf's remains -- resin, ballast stones and exposed logs -- litter a promontory of land on the small island, where sometime during the past 200 years, a boatyard, naval stores manufacturer, steam-powered sawmill, and a saltworks once operated.



**Combine Terrestrial and Underwater Archaeological Techniques** - Burwell Jackson watches students as they excavate portions of the extant wharf structure in front of his house at Deer Island. From a promontory of land, the remaining wharf structure stretches into White Oak River. Each project workday, students

working at the wharf site separated into two teams; one investigated the structural remains of the wharf located on land, and the other studied the structural remains extending into the river. Other students surveyed and investigated Swansboro Harbor, White Oak River and Bogue Inlet.

Wooden trunnel fastenings (predating late nineteenth and twentieth century metal fastenings) on some of the wharf's exposed timbers suggest its early construction. Artifacts found

within the wharf's structure, such as saltglaze, stoneware, whiteware, creamware, clay pipe

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**Prepares Navigation Aid Lantern For Conservation** - Wes Hall, assistant archaeologist of the ECU maritime program, prepares a navigation aid lantern for conservation in ECU's conservation laboratory. The artifact, found in the White Oak River, was one of many found during the Swansboro summer field school.

## Swansboro

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stems, dark green to black bottle glass (and base fragments) date the wharf from the late eighteenth to the early nineteenth century. However, in contrast to wharves constructed along the New England coastline where yellow pine and oak were generally used, long leaf pine was used to construct the wharf at Deer Island.

Because the wharf is located both on land and underwater, the ECU group used terrestrial and underwater excavation techniques to examine the structure. The study of the Deer Island wharf structure, meanwhile, will help plan the investigations of other historic structures existing in former colonial port towns throughout Eastern North Carolina. It will also provide a good comparative example to other wharves that have been excavated along the Northeastern United States.

Under the direction of Dr. William N. Still, professor in maritime history; Dr. Richard Stephenson, professor in nautical science; and Gordon Watts, director of underwater research (all three from ECU), the students also surveyed and investigated Swansboro Harbor, White Oak River and Bogue Inlet using a proton precession

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magnetometer. Perhaps the most promising underwater sites that the summer project's research identified were a series of landings along the upper White Oak River.

Such sites could generate historical data not available in surviving manuscript sources. Future investigation of those landings could also shed new light on colonial and nineteenth century North Carolina.

Swansboro, the focus of ECU's sixth summer field school in Maritime History and Underwater Research and the sixth part of a colonial port survey project, was sponsored by ECU and Swansboro's 200th Anniversary Celebration Committee. ECU held field schools at Bath in 1979, Edenton in 1980, New Bern in 1981, and Beaufort and Cape Lookout in 1982.

## Field Research Semester, '83

# 18th and 19th Century Vessels Focus of Blossom's Ferry Project

Graduate students, enrolled in the second year of ECU's two-year master's program in Maritime History and Underwater Research, participate each fall in "field research semester." By participating in various projects, they receive on-site field experience; such experience prepares them to participate in and to conduct historical/archaeological investigations of underwater sites. During fall semester, 1983, four graduate students participated in projects on the Northeast Cape Fear River just outside Wilmington, North Carolina, and in the Bermuda Islands.

### Northeast Cape Fear River

Before construction of bridges became widespread in the late nineteenth and early twentieth centuries, ferries played a crucial role in transportation and commerce in Eastern North Carolina by providing important links in the early network of roadways. Historical records indicate that ferry service existed at Blossom's Ferry on the Northeast Cape Fear River from around 1735 to the establishment of a permanent bridge there in 1925.

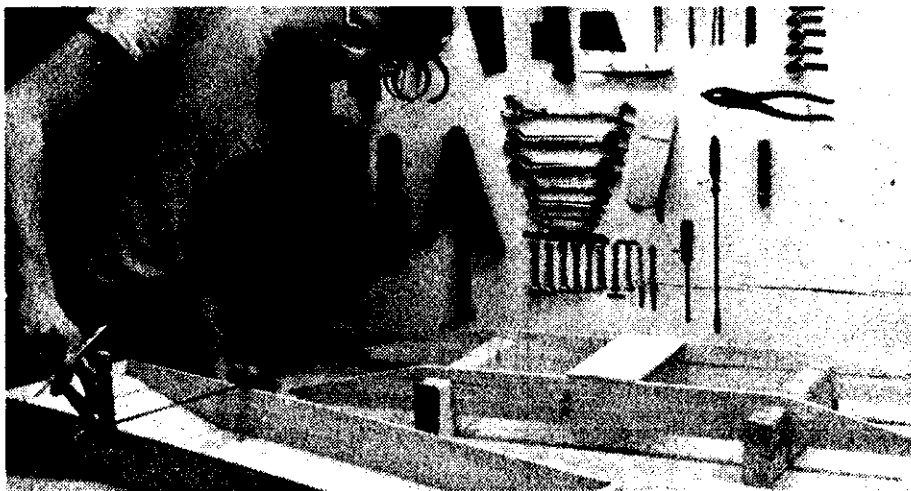
For four weeks this past fall semester, four graduate students recorded the architectural and construction details of the two historic, barge-like vessels. Gordon Watts, who directs the program's underwater research, led the investigation. The group first cleared the south side and center section of each ferry, and then established a longitudinal section and cross section on each vessel. Those sections served as references to control recording of each hull and recovery of associated artifacts. Once those references were established, sediment was excavated from the interior of each ferry, and design and construction details were identified and documented.

After both vessels were thoroughly examined and mapped, closed-circuit, high resolution underwater television provided a visual record of the ferries. Thirty-five millimeter underwater cameras, and a high intensity underwater light were also used to record a variety of underwater activities and construction details of the two wrecks. All material recovered from the site, including a unique 400 pound Civil War torpedo and other artifacts found in the vicinity of the two sunken ferries during the project, were wet-packed and transported to the conservation laboratory facilities at ECU.

Each rectangular-shaped ferry is referred to as simply the "West" or "East" vessel for its respective location in the Cape Fear River. Both ferries were constructed with flat bottoms, vertical sides and sloping ends -- each end fitted with an apron designed to facilitate loading and unloading of animals, carts, wagons, carriages and people. Stanchions along the sides of each vessel held rails and pulleys. The pulleys (within the stanchions) were used in maneuvering the vessels back and forth across the river on hemp cables.

Although a significant amount of deterioration has occurred, and both vessels are extremely

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**Observes Details Of Ferry Model** - Robert Schneller, a graduate student in the ECU maritime program, takes a moment to observe details of one of two ferry models he and other graduate students are currently constructing. The two models, representing the East and West vessels investigated last fall by an ECU

underwater archaeological team, will be used as teaching aids and in historical exhibits upon completion. Each scaled model is being constructed according to the architectural and construction data acquired during last year's Blossom's Ferry project.

## Wreck of the Mary Celestia Surveyed

# Civil War Blockade Running Activities Studied in Bermuda Project

The swift blockade runners that frequented the Bermuda Islands during the Civil War (1861-1865) have long since disappeared, but historical and archaeological evidence of their past activities still abound in Bermuda. ECU graduate students, co-sponsored by the Bermuda Maritime Museum and East Carolina University, participated in an investigation of those resources during November, 1983.

### Historical Background

During the War Between the States, blockade runners frequented Hamilton Harbor and especially St. George's Harbor in Bermuda. Ignoring Queen Victoria's Proclamation of Neutrality, issued about one month after the outbreak of the four-year war, Bermudians transshipped ammunition and supplies between England and the Confederate States of America. The swift *Mary Celestia* was one of many blockade runners travelling between Bermuda and the Confederacy during that war. However, the 207-ton side-wheel steamer -- loaded with a large quantity of bacon, rifles and ammunition -- wrecked upon reefs while en route to a Confederate port on September 6, 1864, a third of a mile off the South Shore of Gibb's Hill Lighthouse, Bermuda. The vessel quickly sank beneath 60 feet of water, but only one crewmember was lost.

### Project's Findings

The ECU scientific group successfully conducted its preliminary investigation of the wreck. After developing an overall configuration of the wreckage and mapping the bow and stern sections, the team surveyed the wreck's engineering space -- coal bunkers, engine room, boilers, paddle wheels, etc. No artifacts were recovered from the site. One of the most valuable aspects of the wrecked blockade runner is the architectural and engineering record it preserves. Future investigation of the wrecksite by another underwater archaeological group from ECU will involve excavation of the hull, and the recovery of artifacts that were associated with activities aboard the steamer.

### Graduate Program

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Courses offered through the Department of History are also complemented by cognates offered through other departments. The courses provide a more balanced curriculum for the program, and offer interdisciplinary studies essential to conducting underwater archaeological investigations. The cognate courses include Advanced Archaeological Research and Archaeological Method and Theory; Remote Sensing of the Environment; Advanced Cartography; Charts and Navigation; Coastal Zone Planning and Management; Geology of Coastal Processes and Environment; Marine Geology; and Sedimentation.

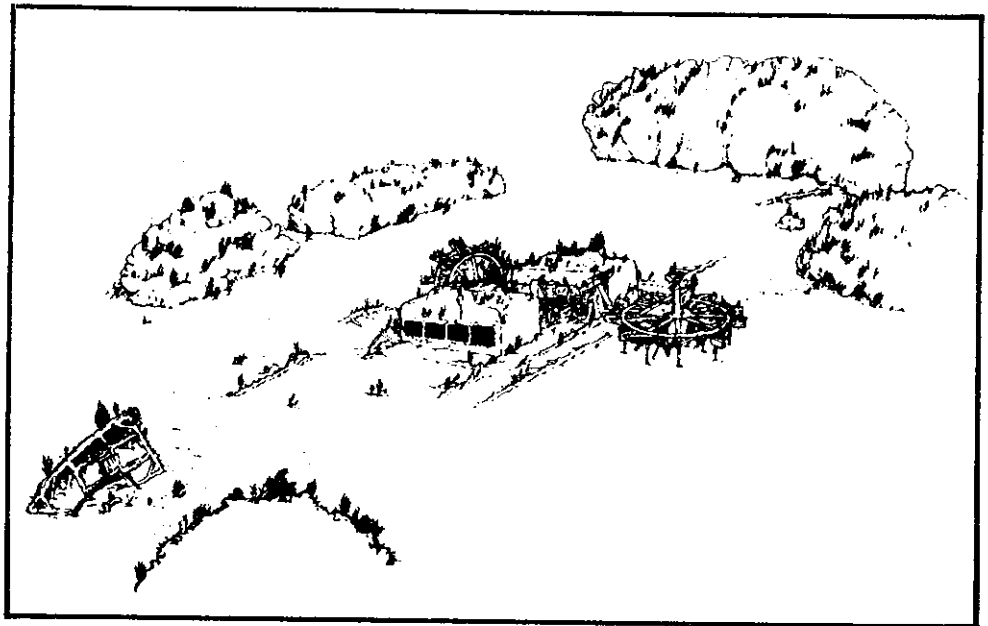
In addition to conducting research projects within North Carolina, the Program in Maritime History and Underwater Research has the geographical flexibility to cooperate in historical and underwater archaeological projects in other areas. Both short and long-term projects have been carried out, and are now being pursued in

The *Mary Celestia* was originally about 200 feet in length, 21 feet in beam (width) fore and aft of the paddle wheel boxes, and about 40 feet in beam across the paddle wheels. The hull of the ship was iron plate (riveted over a wrought-iron frame); the vessel also had oak decks, and a composite oak and iron superstructure. The bow appears to have been covered by a turtleback, a shroud that covered the forward-most 10 feet of the vessel.

The blockade runner's propulsion was provided by two 14-foot diameter paddle wheels that were driven by four-foot diameter pistons operating in oscillating cylinders. Steam was provided by two fire-tube boilers located fore and aft of the engine room. The stern of the ship, meanwhile, was designed to include an overhanging elliptical fan tail. The vessel was also probably fitted with three sails.

Gordon Watts and Dr. William N. Still, the co-directors of the ECU maritime program, led the ECU students in their historical and archaeological research in Bermuda. Watts, underwater archaeologist, guided the students in their underwater activities. Dr. Still, maritime historian, led them in their historical research. The Bermuda project was the first such cooperative effort between ECU and the Bermuda Maritime Museum; others are planned. Meanwhile, South Side SCUBA Dive Shop of Sonesta Beach, Bermuda, provided all diving support for the last year's project in Bermuda.

(Editor's Note: The ECU group also conducted a brief survey dive on the wreck of the blockade runner *Montana* which sank on January 1, 1864, about three nautical miles northwest of Ireland Point, Bermuda.)



**A Drawing of the Mary Celestia Wreck** - Artist Julie Melton depicts the wreck of the *Mary Celestia* as she appears today 60 feet beneath the water's surface a third of a mile off the South Shore of Gibb's Hill Lighthouse, Bermuda. To make the drawing, Melton closely

followed the engineering and architectural data obtained last fall by ECU's historical/archaeological group in Bermuda. She also used photographs and slides taken during the past project.

conjunction with other institutions, state and federal agencies and research organizations. The maritime program's staff and students are capable of conducting a broad spectrum of activities.

The program is now completing its third year, and offers an outlet for students interested in careers that interface maritime history and underwater archaeology. The program significantly expands the scope of graduate level opportunities, and offers a practical interdisciplinary approach to preparing for research and management activities. Participation in the program also provides the opportunity to engage in research-oriented historical and underwater archaeological investigations that have been limited in American underwater archaeology.

### Northeast Cape Fear River

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fragile, enough of the structure of each ferry remains to permit the production of comprehensive reconstruction plans. The oldest vessel (the East vessel) appears to have been constructed and used during the latter half of the eighteenth century. But the more recent vessel (the West vessel) appears to have been constructed and used during the second half of the nineteenth century.

The Maritime Preservation Grants Program of the National Trust for Historic Preservation sponsored the four-week project.

## Projects to be conducted in Georgia and North Carolina

# Summer Field School and Field Research Semester, '84

ECU's program in Maritime History and Underwater Research will conduct a field school in Columbus, Georgia, this summer. Graduate students enrolled in the second year of the program participated in a project in Philadelphia, Pennsylvania, during May; the same students will also participate in a project at Roanoke Island, North Carolina, during fall semester. The Philadelphia project, meanwhile, involved a six-day survey for American Revolutionary War vintage shipwrecks along the Delaware River in the vicinity of Philadelphia.

### Columbus, Georgia

ECU and the Confederate Naval Museum of Columbus will co-sponsor a summer field school in Maritime History and Underwater Research from June 4 to July 13. Participating students, representing colleges and universities across the nation, will receive a basic introduction to American maritime history, underwater archaeology and related subject material. To assist in the interpretation of material located during the

project in Columbus, two weeks of classroom instruction at ECU will provide background information on American trade patterns, transportation, shipbuilding and vessel architecture.

Columbus was an important manufacturing center during the Civil War. Heavy guns, machinery parts, boilers, etc., were manufactured there for Confederate warships. Once the site of a Confederate shipyard, the town was also an important center for railroad and water transportation throughout the nineteenth and early twentieth centuries. In fact, Columbus was the head of navigation for the Chattahoochee River; because vessels could not travel any further upriver, many docked at Columbus to load and unload passengers and cargoes.

After two weeks at ECU, participants will move to the project site in Columbus. For the next four weeks, they will survey and investigate cultural resource material preserved beneath the Chattahoochee River, including the remains of the Civil War vessel *Chattahoochee* and the Confederate navy yard.

### Roanoke Island, North Carolina

For almost 400 years, the disappearance of Roanoke Island colonists and the exact location of the "Lost Colony" have remained unsolved mysteries. But Raleigh's colonists settled in the immediate vicinity of the water (as was characteristic of almost all early European settlements), and archaeological remains associated with the lost settlement may have disappeared beneath water as environmental changes reduced the Roanoke Island land mass.

In an effort to locate submerged evidence of the first English colony in North America, students in ECU's graduate program in Maritime History and Underwater Research will participate in a 10-day systematic survey during fall, 1984. The project will be co-sponsored by ECU and America's 400th Anniversary Committee. During the survey, sophisticated remote sensing technology and archaeological methods will be employed in an attempt to identify cultural material and features associated with the colony site.

## Co-Directors of the ECU Maritime Program



Dr. William N. Still, Jr.

Dr. Still, who received his Ph.D. from the University of Alabama, currently teaches Maritime History, American Military History and American Civil War History at ECU. Among his numerous publications are: *American Sea Power in the Old World*; *The United States Navy in European and Near Eastern Waters, 1865-1917* (1980); *Iron Afloat*; *The Story of the Confederate Armorclads* (1970); and *Confederate Shipbuilding* (1969).



Gordon P. Watts

Watts, who received his M.A. from East Carolina University, now directs underwater research at ECU. Before joining the ECU staff and the Program in Maritime History and Underwater Research, Watts served as State Underwater Archaeologist for the North Carolina Division of Archives and History.

## Staff Members

Dina Hill, previously employed as an archaeological assistant for the Fort Fisher Branch of the North Carolina Division of Archives and History, is now working as research associate of the ECU maritime program and as coordinator for the Monitor project. Wes Hall, formerly employed with Ocean Data Systems, Inc., of Wilmington, North Carolina, is working as assistant archaeologist for the ECU program.

Dr. Richard Stephenson of ECU's Department of Geography teaches Charts and Navigation,

and also serves as a staff member in ECU's Maritime History and Underwater Research summer field schools.

In addition, Dr. John Tilley of ECU's Department of History teaches Naval History and Museology. Before joining the department, he was a curator at the Mariners' Museum in Newport News, Virginia. Dr. Tilley is an avid model shipbuilder; a number of his articles have been published in *Model Shipwright*, a British quarterly.



## USS Monitor Project

East Carolina University's graduate program in Maritime History and Underwater Research is closely associated with activities concerning the Monitor National Marine Sanctuary. On August 21, 1983, a team of scientists initiated the first phase of archaeological and engineering research designed to culminate in stabilization of the *Monitor's* wreck structure and recovery, preservation, and display of as much of the Civil War wreck as is technologically and fiscally possible.

Plans for the five-day expedition, during which the *Monitor's* four-fluked anchor was recovered, were formulated by ECU, the National Oceanic and Atmospheric Administration (NOAA) and Harbor Branch Foundation. The 1,600 pound, grapnel-like anchor is currently undergoing preservation at ECU. Gordon P. Watts, director of ECU's underwater research, was chief underwater archaeologist for that expedition; Wes Hall, a graduate student within the ECU maritime program, also participated.

*Cheesebox*, the *Monitor National Marine Sanctuary Activities Report*, is published by the Program in Maritime History and Underwater Research at ECU and is available free upon request. For a copy of *Cheesebox*, write: Program in Maritime History and Underwater Research, East Carolina University, Greenville, N.C. 27834.