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Program graduate student, Mike Coogan examines a small ceramic pitcher from a seventeenth-century wreck in Bermuda. (Photo: Gordon P. Watts, Jr.)
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FROM THE EDITOR

East Carolina University’s Program in Maritime History and Nautical Archaeology entered a second phase in 1994 with the retirement of Dr. William N. Still and the interim appointment of Dr. Timothy Runyan. A legacy to the vision of Dr. Still, the program continues to expand. Stem to Stern has grown along with the program. Entering its tenth year of publication, the 1995 edition is the largest printed, which mirrors the Program’s growth.

The Program’s needs have changed as it has grown. More focus must be given now to providing the equipment, facilities and faculty required to continue to provide a quality education. Dr. Runyan discusses these topics in his interview.

Students and faculty are constantly making contributions to the field of Maritime History and Nautical Archaeology. Unprecedented numbers of faculty, students and alumni presented papers at the 1994 and 1995 Conferences on Underwater Archaeology. This year seven current students will make presentations at the North American Society for Oceanic History Conference in Wilmington, NC. Also, a number of research projects have recently been conducted and others are underway. Details of the recent projects are covered beginning on page 17.

During this transition period, the faculty, students and university administration remain committed to maintaining the initiatives developed by Dr. Still and to explore ways to reinforce the program’s reputation and to enhance the quality of education received by the student while making significant contributions to the field of Maritime History and Nautical Archaeology.

IN BRIEF

Dr. Larry Babits was named by the Archaeological Institute of America’s Anita Margette McCann and Robert D. Taggart Lecturer in Underwater Archaeology for 1995-96. Congratulations.

Dr. Bradly Rodgers and the students of the 1994 Maritime Archaeology Field School in Hawaii received the 1994 Exemplary Program Award for the Credit Programs given by the Western Association of Summer Session Administrators. The field school earned the award because of its unique preliminary research to final site report approach to study.

IN MEMORIAM

ERNEST W. PETERKIN

The Program in Maritime History and Nautical Archaeology lost a good friend and affiliate colleague during the recent Conference on Underwater and Historical Archaeology in Washington, D.C.

Ernest Peterkin was stricken and died on Friday, 6 January while attending the meetings. He attended the Maple Leaf Symposium on Thursday and then met with SIAEI and ECU students to view shoes and boots recovered from the Maple Leaf. On Friday morning, he met with other students and discussed their work. He died on the way to the hospital after suffering a heart attack. He was 74.

Ernie was exceedingly curious about the past. His attention to detail serves as a model for those who would aspire to knowledge. He made major contributions to research on both the Monitor and the Fenwick. His knowledge of monitors was encyclopedic and readily shared. He prepared the engineering drawings of the USS Monitor for publication as part of a lifelong interest in Civil War vessels.

His knowledge of leather goods, especially shoes and boots, his abilities with needle and thread, and his expertise in the manual exercise of the late eighteenth century were legendary. He was one of the creators of modern living history and participated in events ranging from the Columbus voyages to the Plains Indian Wars in clothing he made.

While he worked closely with Bill Still, Gordon Watts and Larry Babits on various projects, his ready accessibility and willingness to provide sources benefited many Maritime students, some of whom never met him personally. He will be sorely missed but his legacy already can be seen in the many teachers and interpreters all over the country who learned their trade from him. In that aspect, his contribution to the future, he lives on.
MARITIME STUDIES ASSOCIATION

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

Lectures to local communities provide opportunities to reach the public. For example, Wendy Colle and Annalies Corbin-Kj preserving recently spoke to the local elementary schools on the role of divers and naval archaeology. Professional conferences also serve as an avenue for the dissemination of information.

Also, MSA’s newly-formed Speakers Committee is in the process of making arrangements for invited historians and archaeologists to visit ECU to talk about their research interests and current work. These lectures will be open to the public and are free of charge.

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

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

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

If you would like to contribute to the MSA Trust Fund, please make your checks payable to ECU Foundation for Maritime Studies Association Trust Fund. Anyone donating $25 or more will receive a Maritime History and Nautical Archaeology T-shirt in appreciation. In addition, anyone interested in becoming Associate or Alumna members of MSA may write to MSA (attn: Kerry O’Malley). ECU Program in Maritime History and Nautical Archaeology, Admiral Ernest E. Miller Building, Greenville, NC 27834-4553.

MARITIME STUDENTS RECEIVE RECOGNITION

In addition to a number of research and teaching assistantships, ECU’s Department of History offers scholarship awards to graduate students. These scholarships are provided by private benefactors in an effort to support research in the field of history, and are presented to students based upon their academic records and proven writing ability. In keeping with the Maritime Program’s tradition of excellence, the history department has once again awarded a number of fellowships to students in the Maritime Program. Thomas J. Marcinko and Joshua M. Smith were named recipients of the Lawrence F. Brewer Fellowship. The Paul Murray Graduate Scholarship in History has been awarded to Jeffrey L. Day. The Admiral Ernest E. Miller Graduate Fellowship in Modern Naval History were awarded second-year student Edwin L. Combs and first-year student Charles E. Bayman.

Michael P. Coogan was awarded the Rienard Cecil Todd Phi Alpha Theta Scholarship in History.

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

GRADUATE THESIS IN MARITIME HISTORY

The following theses were completed in 1994 by students in the Program in Maritime History:


Hans Van Tilburg, “The Maritime His- tory and Nautical Archaeology of China in Southeast Asia: Sung to Early Ming Dynas- ties (960-1435).”
NEW HISTORY CHAIR DR. ROGER BILES

Dr. Roger Biles moved into the corner office of Brewer A-301 in August to become the eighth chair of the East Carolina University History Department. Dr. Biles replaces Dr. Mary Jo Brannan, who was acting chair from 1992-1994. He comes to ECU from Oklahoma State University where he served as Interim Associate Dean of the College of Arts and Sciences and previously twice chaired the Department of History (1987-89 and 1991-93).

Dr. Biles was attracted to East Carolina University partly because of its history. While teaching at Memphis State University from 1981-84, Biles chose in research the city and the South. "Through my study of the South," Biles says, "I come to think highly of North Carolina as a state that supports higher education. ECU is part of the university system that has a good reputation academically, although it is probably better known on the coast."

Dr. Biles, an expert on the South, has written in two books: Memphs in the Great Depression (1986) and The South and the New Deal (1994). "While my graduate training isn't in Southern history, I decided to apply my graduate training to the city in which I was living at that time." Trained as an urban historian, he received his doctoral history from the University of Illinois at Chicago in 1981. Biles, a native of Illinois is a 1972 Phi Beta Kappa graduate of the University of Illinois at Urbana-Champaign, from which he also received his master's in history in 1974.

"I am fascinated by urban politics and big city issues," Biles says. His first book, Big City Bosses in the Depression and War: Mayor Edward J. Kelly of Chicago, was published in 1984, and 1995 will see the publication of his biography of former Chicago mayor Richard Daley. However, Biles reasures to be categorized as just an urban historian. "My work at Memphis State and Oklahoma State University demanded that I teach more broadly," Biles asserts. "I taught twentieth-century American history. In the course of research, I developed a particular interest in the 1930s, an interest that led to the publication of A New Deal for the American People (1991). "I'm as much a historian of that era as an urban historian," he confides. As he settles into Greenville, what has he found here and where does he see the department going? "We are at a defining point in the ECU Department of History. We have a mature department, but it also has a blend of young faculty," Biles relates. "This will continue as new people replace faculty members who retire." Biles indicated that two to five faculty members will retire in the next five years. Also, the department recently hired Civil War historian Dr. David Long.

Since his arrival, Dr. Biles has nodded several strong aspects of the department. "This is a very good teaching department with a good commitment to classroom instruction," Biles notes. "Also, I've been pleasantly surprised by Journeys Library. Its holdings in American history are better than I thought it would be, and of course, it'll get better after the construction of the new wing."

Another item that has impressed Dr. Biles is the Program in Maritime History and Nautical Archaeology. "I came to ECU with only a vague knowledge and understanding of what the program was," Biles confessed. "In four months here, however, I've been tremendously impressed by what I've seen." Biles indicated that he was particularly struck by the quality of the program, qualities of the students, and the dedication and achievements of the faculty.

In fact, Dr. Biles immediate goal is to establish a doctoral program in Maritime History and Nautical Archaeology and to continue to improve the program. Despite the fact that the most recent doctoral program proposal was turned down by the UNC Board of Governors, Dr. Biles is not ready to give up on the proposal. "We'll be persistent and continue to try to get the Ph.D. Biles asserts. "The program has been very successful but to survive it continues, we need to address issues of funding andSomeone to keep it at that level." Biles admitted the program was experiencing growing pains and needs to be viewed as a Masters program before addressing the concerns of establishing the doctoral program. "Not only has the program grown, but the potential is there, it seems, to be almost unlimited," Biles remarks. "However, we can't let it grow without maintaining a balance of students, faculty and funding."

In the long run, where does Dr. Biles see the department going? "Generally, I'd like to see the doctoral program place. Also, I'd like to see the same attention to teaching with an increased attention to research and publications," Biles states. He knows, however, that these goals won't magically appear. "I realize that I have to do things to let that happen," he says. "I have to provide support and incentives to get it to happen." Hosting Dr. Biles in Greenville are his wife, Mary Claire, and children, Brian, Grant and Jenny. Phil McQuaid

RUSSIAN HISTORIAN FILLS NEW POSITION

Dr. Semion Lyandres joined the History Department at ECU this fall as a historian of Russia and the Soviet Union. The Leningrad State Pedagogical Institute awarded Dr. Lyandres a B.A. in Russian history in 1980. Seven years later, Dr. Lyandres earned an M.A. in modern European history from Boston University followed by an M.A. in Russian history from Stanford University in 1988. Dr. Lyandres also earned his Ph.D. in 1992 from Stanford with a major in Russian/Soviet history and a minor in Eastern European history.

Dr. Lyandres's experience includes research assistantships at Harvard and Stanford from 1986-1992. He also taught as a Visiting Assistant Professor in Russian/Soviet history at Stanford from 1988-1991. Immediately before coming to ECU Dr. Lyandres was a National Fellow at the Hoover Institution on War, Revolution and Peace.

PAPALAS JOINS MARITIME PROGRAM

Dr. Anthony J. Papalos became the latest permanent addition to the Maritime faculty last spring when he began to offer a course on maritime history of the Wesem World in 1415. "An ancient world historian," Dr. Papalos with to provide the Maritime Program with an ancient history dimension. Dr. Papalos received his B.A. and M.A. in history from Wayne State University. In 1969 he earned his Ph.D. from the University of Chicago. He taught at Carthage College for a short period before moving to ECU. He recently published a book entitled Ancient Ireas.

After directing several M.A. theses concerning ancient maritime history, Dr. Papalos found himself wanting to take a more active role in the Maritime Program. Dr. Papalos realized that with his background he could fill a need for an ancient maritime historian, so in the spring of 1994 he began teaching the course on early maritime history.

"I like the variety of students in the program," says Dr. Papalos. "He hopes to see more work done by students in the field of ancient maritime history. Dr. Papalos would like to see more courses concerning ancient history as the program expands and attracts more students with ancient history interests."

Mark Bardette
COFFEE TALK WITH
Dr. Runyan

In August, Dr. Timoth Runyan arrived at the Ellen House to fill the vacancy left by Dr. William Still when he retired in June. Dr. Runyan came to East Carolina University from Cleveland State University, where he has taught since 1969. After he graduated from the University of Maryland with a degree in marine history, he won a fellowship to do research and attend the Institute of Historical Research at the University of London for two years. He has taught at the University of Maryland, Cleveland State University, and Oberlin College, in addition to holding a number of administrative positions. He is a past president of the North American Society for Oceanic History, and currently is President of the Great Lakes Historical Society. Dr. Runyan spearheaded the final finishing for the renovation of the Great Lakes steamship William G. Mather, a 185-foot bulk carrier. He has published a book on medieval maritime history, a column of essays for NASHO, articles in Ships, Seafaring, and Sailing, and in 1994 co-edited with Jan M. Coper's To Die Gallantly: The Battle of the Atlantic (A Military Book Club selection). He is a co-editor of The American Neptune, a quarterly journal of maritime history published by the Peabody Essex Museum, Salem, MA.

On some mornings Dr. Runyan holds staff meetings at his "annex office" across the street from the Ellen House at a local coffee shop. We joined Dr. Runyan here one morning, and spent time trying to understand where the program stands and where it is going.

Editor: Why did you take the role of visiting professor and interim director of the program in Maritime History and Nautical Archaeology?

Dr. Runyan: I'm here because this is an exceptional program that has won national and international recognition as a place to train undergraduate archaeologists and produce maritime historians. I was flattered to have the opportunity to come down here to work with the faculty and students who I've found very dedicated to what they're doing and very effective in their efforts. My main focus has been to contribute what I can, in the way of teaching and research, and to advise and help in some of the things that I have been involved with, including The American Neptune, which is being produced here at the university this year. Also, for my own purposes, I came to learn from the others who are here, especially the archaeologists, because at Cleveland State, we don't have any underwater archaeologists. This is a great opportunity for me.

On the more administrative side, I hope to bring some focus to decision-making and prioritization in practices that will make us more efficient. Also, I want to develop some of the initiatives the program has started, primarily the development of the Ph.D. program.

Editor: What did you expect to find here?

Dr. Runyan: I have known some of the maritime faculty before I came here through conferences and organizations in which I had been active. The personalities and

"students learn in the field which is one of the unique features of this program."

Some of the key figures in the program were not new to me. I was also well aware that the only other program was at Texas A&M University, and that although a number of universities have talked about or made efforts to develop programs, none of them have really developed the way that the program at East Carolina University or Texas A&M have developed. So I had a good idea of what to expect.

Editor: What have you seen over the past several months? What are the program's strengths and weaknesses?

Dr. Runyan: I can't talk about weaknesses, (laughs). Its strengths are that you've got here a collection of faculty which

has attracted an excellent core of students who have been coming in and out of ECU ever since the program began in 1981. Therefore, you have an established reputation in the field and you've trained some of the key figures who hold important positions in the maritime field in the country today. One strength of the program is that it runs field schools. Students learn in the field which is one of the unique features of this program. We conducted four field schools in one year. That is a tremendous commitment to the program on behalf of faculty who are willing to go other months at a time to work in not-always-friendly environments. This allows students the opportunity to work in the field, so that a graduate of this program comes out really ready to work in the field and that is very important. This is an initiative that must be maintained by the program.

Another strength is the relationship the program has with the new chairman of the history department, Dr. Roger Biles. I think Dr. Biles has provided organizational skills and leadership that have helped me. Also, Dean Keats Sparrow has been a principal supporter of the program since its inception and has always pushed the program in Maritime History and Nautical Archaeology in the forefront of his agenda for the College of Arts & Sciences. Vice Chancellor Yardhouse and Chancellor Richard Fackin have stepped up in the support of this program.

The students are a strength. This was best expressed recently when the students asked 'what can we do to make the program
Editor: We'd like to talk about the program's weaknesses. You may turn them, as some have, into opportunities. But every program has weaknesses that need to be acknowledged. What have you found?

Dr. Runyan: The weaknesses that I've noted is the program if that's the proper term, sit places where there is opportunity for improvement, which I think is a better way to put it.

The program could use better financial support from the university and administration because the program is responsible not only for the maintenance, but also the provision (for teaching) of a large amount of technical equipment. If one is emerge from this programs trained in the latest equipment, then the program must have that available. It has to provide the opportunity for students to work with that equipment. We must have a working magnetometer, a working GPS system, and other state-of-the-art equipment, so that our students emerge from the program fully competent in the technology of the field.

In addition, the program here is a demanding one that takes more than two years. My own view is that the focus is too often the process of going through the program rather than the final product, which is the thesis. We need to look at the program from the point of view of the consumer, which is the student, and see if we are providing the information and guidance to succeed in the program.

I think we also need to build better bridges with some of the other units of the university that link to the work that we do.

Editor: Give the strengths and weaknesses you've identified for the program, where do you sit?

Dr. Runan: The program has the potential to grow, if additional staff are added so that there are more students can be accommodated. Without additional staff, there is not much opportunity for growth because the program can handle more students that its currently enrolling which is about 15 each year.

Dr. Runan: Growth in quality can come in curriculum and facilities development. We can establish a program link with other institutions. We have an agreement with the Navy Memorial Foundation and we have an intern there in.

"No program can sit still. You have to continue to grow."

Washington, D.C. We have links with the University of Hawaii where we've run a field school. We have a link with the University of Exeter and have begun talks with King's College in London which should be pursued.

More recently, we have a possible relationship in Denmark with the University of Aarhus and the University of Copenhagen. The list of potential links is virtually unlimited because the ability to work in any country would mean a commitment of resources and faculty.

Editor: What are the threats here to the program success or you've outlined?

Dr. Runan: Of course, the decision could be made by the university to reduce its support and that would cause problems. Another is if the faculty are not supported or stabilized in their positions, then you become vulnerable to anyone. If you don't have the necessary continuity that is acquired by retaining the faculty who have been developing the work they are currently doing. In the end, the university is just a name, it is really composed of the individual faculty members who constitute the program, and they are the ones who attract the students to come here to study.

No program can sit still. You have to continue to grow. We must explore these new opportunities and we need the resources to develop the international contacts and broader-based national contacts. Through the development efforts currently underway, we need to build a base of resources that is funding, so to do just a small amount of work necessary to make the program always on the cutting edge of the profession. When you are one of only two programs in this country you have to compete. You don't want to be a distant second. If you want to be first, you have to
do what the competition does and take the initiatives necessary to make it attractive for students and faculty to come to East Carolina University.

Editor: Where do you see the program in five years?

Dr. Runyan: The initiatives we're already spoken about in terms of ties to other programs, including those in Europe, and elsewhere, will be an important part of this program. The continued work to develop the doctoral program is very important, and that's going to determine where a lot of the energies of the program are focused in the next several years.

The other main focus will be on where the maritime historians see their work progressing. There are some new opportunities, i.e., in that field because the archival resources, particularly for contemporary history, have provided a number of different areas of study. We've gone through a period where historians have focused on social history. This has now reached into the maritime and naval historical field, and there are a lot of opportunities there.

On the archaeological side, we're in an age where deep water diving and retrieval are available. If you can do core recovery, work on sites and shipwrecks at great depths, it opens up a whole new world of opportunity. Are we prepared to invest in this kind of work and are we prepared to address the risks that are involved? Although it produces tremendous rewards, it is also very expensive.

It probably means that you have to work in conjunction with other institutions or government agencies that have the resources and funding to do that kind of work. Some of that has been done in the United States and the initiatives that we've been involved with in France with the Alphonse are working their way into these categories. If we decide not to do that, then we're confined to working primarily shallow water sites with the limitations inherent in that work.

One problem area for the program is that it is funded throughout the history department. However, the program operates like a hard science, and, therefore, needs a budget correspondent to a hard science department like biology, chemistry and physics. It is unusual for a humanities department to manage a unit like this or the equipment necessary for this program as part of its operating budget. The Maritime History and Nautical Archaeology program is unique and needs to be funded for the program it is.

Editor: Thank you.

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**Brazilian Fulbright Scholar: Luiz Cunha**

The Program in Maritime History and Nautical Archaeology welcomed its second Fulbright scholar and first visiting Fulbright, to campus in January. Luiz Cunha, a visiting Fulbright scholar from Brazil, chose East Carolina University, because of its reputation in nautical archaeology.

"I received my Fulbright under the Cultural Preservation Program, study conservation at ECU," Luiz said. Besides conservation, he is studying ship construction and maritime material culture.

Cunha is a native of Rio de Janeiro, Brazil, and received his degree at Estao de Sa University. Bennett Methodist College and St. Ignatius Catholic University. His visit is sponsored by the Latin American Scholarship Program of American Universities, and supported by the Center of Advanced Training for Graduate Students and the Sao Paulo Version Institution.

Cunha has a goal of leave of absence from the Naval Oceanographic Museum located on historic Imperial Square in downtown Rio de Janeiro. Originally hired as a museum's undersea archaeologist in 1988, today he is Section Chief of Conservation and Restoration and Intern Section Chief of Cataloging and Research. He is responsible for administering all Brazilian shipwrecks in coordination with the Brazilian Navy.

While continuing fieldwork and research in underwater archaeology, Luiz also advises state government archaeologists on maritime issues and trains university students in archaeology, conservation and restoration.

When he returns to Brazil, Luiz would like to continue his association with ECU through jointly sponsored projects in Brazil. "I am a keen underwater archeologist in Brazil and there is so much to do," Cunha said. One possible project involves investigating the 1827 British-built Brazilian frigate Dona Paula. This well-preserved vessel could provide a model for other joint projects. In the future, Luiz hopes to develop a program to train future Brazilian archeologists through the university system.

Immediate plans call for improving the Federal conservation laboratory and updating conservation techniques used in Brazil. In addition, he wants to investigate the suspected site of a Portuguese caravel in Guanabara Bay in Rio de Janeiro. Cunha plans to write a monograph on Brazilian nautical archaeology, placing it in a worldwide context.

The Fulbright Program and ECU are not Cunha's only exposure to the United States and education, however. An exchange student, he graduated from high school in Detroit, Michigan in 1976.

Luiz enjoys the university environment and is impressed by the high caliber of students in the Maritime Program. "I do not have much spare time but I like to jog and ride my bicycle and play pool with other students."

Frank Cantelas
CSS Alabama: The 1994 Campaign

Investigation of the Confederate commerce raider CSS Alabama took a dramatic turn during the summer of 1994. An impressive exhibit of material associated with the CSS Alabama and artifacts from the wreck was opened in Cherbourg and under the direction of Captain Max Guerout, a team of archaeologists and volunteers raised the warship's Blakely rifle and pivot carriage. The exhibit focused on the career of the Alabama, the engagement with the USS Kearny, and the discovery and subsequent investigation of the wreck site. Recovery of the heavy gun attracted the interest of a variety of European news and television services and focused almost as much attention on the Alabama as the celebrated engagement with the USS Kearny. A well-illustrated article by Captain Guerout in the December issue of the National Geographic magazine hailed recovery of the Blakely rifle and provided an introduction to work on the Alabama for the American public. In 1994, program graduate and University of Florida doctoral candidate John W. "Billy Ray" Morris, III, joined Program Director of Underwater Research Gordon P. Watts, Jr., in working with Captain Guerout's team. With the exception of an investigation of the USS Monitor carried out under Watts' direction in 1983, work on the CSS Alabama is the deepest research project in which the staff and students of the Program have been involved.

The 100-pdr Blakely rifle was the Alabama's most sophisticated piece of ordnance. It was mounted on a heavy pivot carriage forward of the vessel's stack and could be rotated across the deck to fire from either side of the ship. Both the gun tube and the carriage were located on top of the starboard forward boiler near the extremity of exposed hull structure. During the first week of diving, the pivot carriage was moved away from the gun tube using lift bags. It was repositioned inside the hull and secured on top of a lifting frame for recovery. With the pivot carriage out of the way, the gun tube was rigged with lifting slings. During the second period of diving, the carriage and gun tube were recovered. Both the carriage and the gun tube were floated off the wreck with heavy styrofoam lift bags. The French navy vessel Le Fidèle lifted the carriage and gun tube using a massive frame on the bow designed to position and recover buoyy. Once on deck the dimensions of the carriage and tube were recorded.

After a short celebration at the dock in Cherbourg, the Alabama's ordnance was shipped to the conservation laboratories of Archéosite International for stabilization and preservation. Initial inspection of the Blakely confirmed that the tube contained a fused projectile. Equally interesting was the absence of readily apparent maker mark and proof marks on the gun. Once the Blakely and carriage were recovered, the focus of on-site attention was turned to the test excavation initiated in 1993 and examination of the after pump. Contained excavation produced a collection of artifacts that included additional Delaware tableware with a nautical motif consisting of a cable around the rim and crossed anchors within the symbol of the garter. A variety of different styles of ironstone cups were also recovered. The different styles suggest that the officers and crew of the Alabama collected tableware from their prizes. The remains of a small wood box with the stenciled inscription "WINCHESTER'S PER- FUMED SALTWATER SOAP BOSTON, MASS." suggests that salvage priorities included a broad spectrum on ammunitions. Recovered material also included a number of glass and ceramic storage containers for vegetables and condiments. A gimbaled brass bulkhead lantern with the number 39 etched on the base was also found in association with the glass and ceramic material. On-site investigation included examination and documentation of one of two pumps carried fore and aft aboard the Alabama. Although the pump was heavily fouled with marine growth, it appears to be a small vertical cylinder steam engine. Exposed elements of the pump included the cylinder, upper steam housing, flywheel, a pressure chamber, discharge pipe, and what appears to be part of a strainer mechanism. Although the pump has not been identified, it is likely to be a patented and commercially available small steam pump. A current survey of maritime sources may shed light on the pump and its manufacture. Although the pump would have been suitable for desalinating the hull, it probably also served for fire suppression and/or washing. Small steam pumps were common in 1861 and the Alabama's may well have been produced in Birkenhead, Liverpool or the surrounding area.

In addition to helping document the technology associated with the design and manufacture of small steam pumps, additional examination of that artifact can provide insight into the Alabama's steam propulsion plant. The pump's components provide a model for the ship's machinery. The physical condition of the pump's components should reflect those of the principal steam plant. Problems and solutions associated with conservation of the steam pump will provide insight into the methods and costs of conservation of the Alabama's main steam plant. To provide insight into those problems, additional investigation and recovery of the pump has been recommended as a priority for the three-year research design developed by the CSS Alabama Challenge Organization. Gordon Watts, John Morris and James Allan, other ECU alumni, have been invited to join the French team in that three-year research project.

Gordon P. Watts, Jr.
In April 1990, a young boy named David Head made an important discovery in maritime history. Eroding from the bank of the Millescoquins River on the north shore of Lake Michigan were the remains of a vessel that had not been seen since 1849, when it was mentioned in a survey report by William Ives. The wreck lay buried under a forested area a few hundred feet from the lake shore. The existence of the newly rediscovered vessel was first reported to Michigan State Archaeologist John R. Halsey. After a preliminary investigation, Halsey contacted East Carolina University’s Program in Maritime History and Nautical Archaeology to arrange for extensive site documentation and analysis.

A preliminary site investigation began in 1991 when a crew of 10 graduate students and Maritime staff spent ten days excavating a portion of the vessel. The 1991 project included an intensive excavation of both the bow and stern sections of the vessel. To the investigators’ surprise it was discovered that the wreck lay in an amazing state of preservation. Personal items of the crew as well as the cargo were still on board. The 1991 investigation demonstrated that another look at the Millescoquins wreck was warranted.

The 1994 project was made possible with the assistance and funding of the Great Lakes Maritime History and the Hiawatha Sportsman’s Club. The Hiawatha Sportsman’s Club, which owns the wreck site, also provided lodging for the students as well as heavy equipment and logistical support for the project.

In early September of this year Dr. Bradley A. Rodgers assisted by Frank Cantelas and three other graduate students, Wendy Coble, Annalies Corbin Kajotros, and Ann Merriam returned to Nashwauk to re-investigate the Millescoquins site. The ECU crew were aided by numerous program alumni, along with the good wishes and hearty cuisine supplied by the volunteers of the Hiawatha Sportsman Club. The 1994 investigation focused on the cargo hold of the ship. Field work began with the removal of the box led and covering the wreck with full heavy equipment. Then came a grid of stem was set up over the cargo spaces, and the team commenced the back-breaking removal of sand by shovel, trowel, and brute strength. As the wreck lies below the level of the lake, water pumps were used to help keep the site dry and maintain the essence of a “land” project.

In order to maximize data collection while minimizing the site impact, excavators concentrated their efforts on the starboard side of the cargo spaces from the keelson to the side of the hull. Previous sampling in 1991 suggested the ship was carrying a cargo consisting of fish. This was verified in this year’s excavation as the team found the remains of numerous barrels. Most of the barrels were in a remarkable state of preservation, lying on their side and “flattened” due to the weight of the sand overlaid, but were still largely intact and specific. Within these the team found a significant amount of fish remains. There was evidence that the barrels had been disturbed by storm action since being placed in the ship. Originally the barrels appeared to have been stored on their side end to end throughout the cargo hold and stacked several layers thick. There were exceptions to this as several barrels were found standing at either end of the hold.

The team extracted and examined 28 barrels from the starboard side of the hold. It was determined that there were four different types of barrels on board the ship. Samples were taken of the fish and seven samples of different barrel types were recovered for closer examination and conservation at ECU’s conservation laboratory. Near the end of the project, the team excavated a storage cabinet or pantry.
MILLECOQUINS SHIPWRECK

(Continued from page 1)

located near the after cabin bulkhead. Numerous pieces of china were discovered along with a variety of silverware, a ceramic jug, glass fragments, and an intact brass dinner bell. These items are also being conserved at ECU.

In addition to cargo documentation, drawings of the hull will be used to aid in the study of the ship’s structure. The historical significance of this craft lies not only in its contents, but in the wealth of new information it will provide concerning early trading vessel structure in the Great Lakes and its lives of the crew that worked them. After the cargo was removed, extensive measurement were taken and drawings made of the hull structure in the cargo area.

This project was a success in part due to the interest and support of the local population. In return, the students of East Carolina University provided a learning experience for the local residents, who turned out daily in numbers to watch our progress. The Millecoquins shipwreck is significant because it is a rare representation of working vessels on the Great Lakes in the early nineteenth century. Though a common site on Lake Michigan in the past, today it is a unique and historically significant find. Two seasons of excavation have answered many questions concerning the ship's significance and activity; however, many questions still remain, including the vessel's identity.

Annelies Corbin Kjorgen

ECU PUBLISHES THE AMERICAN NEPTUNE

The American Neptune, a quarterly journal of Maritime History published by the Peabody Essex Museum, Salem, MA, is being published at ECU this year. Founded by Pulitzer Prize winner Samuel Eliot Morison and others in 1941, it is the leading journal to the field. Editor Timothy J. Ruyan is receiving help from several students who are learning the ropes about scholarly publication. Editorial assistant Paul Steinberg has done the production work. Jinky Smallley, Eleutheria Mantzouka, RJ Combs, Molly Conlin, and Rail McGinn have assisted.

FORT FISHER/UNDERWATER ARCHAEOLOGY UNIT INTERNSHIP

The State of North Carolina through the Youth Advocacy and Involvement Offices, sponsors an internship program that is open for residents of North Carolina. To qualify for this program, a North Carolina resident needs to be enrolled in any U.S. college or university. The program selects approximately one hundred students and places them in various state government departments. The placement of the students is dependent on their academic background and interests. The internships occur during the summer months, which allows students to take advantage of the time afforded by summer break. These internships, which last about three months, can provide students with valuable practical experience.

For the summer of 1994, the internship program selected Christopher Olson, a graduate student in East Carolina University’s program in Maritime History, to work with the North Carolina Underwater Archaeological Unit (UAV) located in Kure Beach, NC. Olson was assigned to help conservator Leslie Bright in the conservation lab.

Conservation work centered primarily on the preservation of a seventeen-ton compound engine recovered from the scuttled boat Estelle Rendell, which burned in 1910 in Columbia, NC. This project involved sandblasting and the application of a rust retardant. A specialENTIONAL sandblaster made the work touch more challenging. A plywood cover was also fabricated to replace the missing steering wheel. Other conservation projects included cleaning and treating artifacts recovered from the wreck of CSS Kearsarge and the CSS Alabama.

Practical fieldwork experience was gained during the Fort Fisher National Park Service survey. See F. Fisher story on the cover. Working in the cramped cabin of the Snug-dragon, UAV’s research vessel, Olson gained experience setting up and operating a Mini-Ranger navigation system, a magnetometer, and a Side-Scan Sonar. Four people worked the equipment during survey runs. Richard Lawrence, Director of the UAV, piloted Snug-dragon. Julep Gillam-Bryant (UAV) monitored the Side-Scan Sonar. Olson tracked the magnetometer head out, and another ECU graduate student plotted survey lane positions and related information to Richard. Sonar images were obtained for the first time of all the block-and-runner wrecks of the vicinity of Fort Fisher. The locations annotation to the present-day shoreline were accurately plotted. In addition to the known wrecks, the location of an 1851 shipwreck was discovered.

For the student in maritime history and archaeology, this internship provides tremendous practical experience.

Chris Olson
FORT FISHER RESEARCH PROJECT

Funded by the National Park Service (NPS), a two-year project began this summer for the mapping and investigation of Confederate and Union vessels wrecked off Fort Fisher, NC. Beginning in the first week of July 1994, a combined effort was made between graduate students from East Carolina University under the leadership of the program's Director of Underwater Research, Gordon P. Watts, Jr., a team from North Carolina's Underwater Archaeology Unit (UAU) and Southern Oceans Archeological Research, Inc. of Pensacola, Florida, to systematically map the remains of several Confederate blockade runners located off Beaufort Inlet and Fort Fisher.

Operating in conjunction with a comprehensive battle site survey being conducted by UAU, students instructed by John W. "Billy Ray" Morris, III, Marianne Franklin, and Gordon Watts, Jr., began mapping the Confederate blockade running vessels. Externally strong winds and chronic thunderstorms forced the cancellation of many dive days for safety reasons. Nevertheless, site plans were produced for the Condor and the Arabian, both celebrated blockade runners. In addition, the Venus and Stormy Petrel were roughly mapped and the USS Aster and USS Louisiana were located and investigated for future documentation. The July 1995 field school will complete the two-year research project with the investigation of the Union vessels. Once the blockade runners have been mapped, attention will ultimately turn to the Union vessels with the intention of completing a representative sample of both Confederate and Federal vessels operating during the war.

The remains of the Fort Fisher shipwrecks represent unique features of one of the most significant battlefields of the American Civil War. A detailed plan of these wrecks will be made for their upcoming inclusion on the National Register of Historic Places. In addition, the project will complete the development of plans for site protection and interpretation in conjunction with programs at Fort Fisher.

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FORT FISHER: CONFEDERATE GIBRALTAR

On 19 April 1861, President Abraham Lincoln declared a naval blockade of Southern ports in an attempt to isolate the Confederacy from the industrial markets of Europe. Situated on a railroad line to other parts of the Confederacy, Wilmington, NC, allowed the shipment of goods between the South and other European countries. Of all the Southern ports, Wilmington proved to be the most difficult to blockade because of its unique geography near the Cape Fear River and a series of formidable fortifications constructed along the two accesses of the river. The two Cape Fear entrances were separated by Smith Island and by Frying Pan Shoals which stretch for more than fifteen miles into the Atlantic Ocean. In addition, Fort Fisher, the largest earthwork fortification in the Confederacy, protected the New Inlet entrance to the Cape Fear River north of Smith Island. Heavily armed with several British-supplied Armstrong and Whitworth cannon, it served as the most effective deterrent to Union efforts to close the Cape Fear, until captured in an amphibious assault in January 1865.

Although the Union blockade failed to destroy Confederate maritime commerce, the risks of blockade running were extraordinarily high. More than thirty steam-powered vessels were lost in attempts to run into Wilmington, and several sank within a mile of Fort Fisher. The vessels represent a sample of the Anglo-Confederate trade. Blockade runners sank in North Carolina waters included large oceanic transports, such as the steamer Modern Greece which ran aground north of Fort Fisher in 1862. Others, like the Arabian, which was built at Niagara-on-the-Lake to support maritime commerce and transportation on Lakes Erie and Ontario, were pressed into clandestine trade. The wreck-off the shore of Fort Fisher also include examples of vessels designed and built specifically for blockade running, such as the Condor and Stormy Petrel. Losses were also suffered by the Union Navy in attempts to reverse navigation at New Inlet. Both the tug USS Aster and the steamer USS Flamborough were lost within sight of Fort Fisher.
MAPLE LEAF FIELD
SCHOOL 1994

On 1 April 1864, a Union transport, the Maple Leaf, carrying the personal effects of three Union regiments, the 112th and 169th New York and the 17th Indiana, collided with a Confederate mine 12 miles south of Jacksonville, FL. On the St. Johns River. No salvage attempts took place due to a strong Confederate presence near the river. The side wheel steamer then settled into the muddy river bottom. The exposed superstructure posed a threat to navigation and the Army Corps of Engineers had it demolished in the 1880’s. The remains of the Maple Leaf lay covered in silt and mud for more than 100 years until its rediscovery by the Saint Johns Archaeological Expeditions Inc. (SJARE) in 1984.

The 1994 field season, under the direction of Frank Cantelas and Dr. Larry Babits, was the third consecutive field season conducted on this site. The primary objectives of the two previous field seasons were to excavate and record the faunal remains and starboard engineering spaces. Last summer, our objective was to finish recording the starboard side of the vessel, focusing on the hogging truss and the aft desk with the hope of locating the rear cargo hatch.

The members of the field school were a mixture of first-year maritime students: Chris Kirby, Tim Marshall, Michael Coogan, and prospective students: Charlie Clausen, Filippo Ronca, and Johnny Bilou. After two weeks of scientific and blackwater dive training, they were split into three teams: Paul Steinberg and Annalies Corbin Kjorness, members of the 1993 Maple Leaf field season; and Rick Jones, a trained dive master, supervised these teams. The duties for each team rotated between dive, dive support and logistics. Steve Sellers and Jim

MAPLE LEAF
SITE EXCAVATION
1992 to 1994

Above: Graduate Students Chris Kirby (Front) and A student. (Photo: Frank Cantelas)
Below: Final Maple Leaf site plan, showing three yrs.
Sithorpe from ECU’s Dive Safety Office supervised all diving operations.

The Maple Leaf, less than 25 feet below the surface of the St. John River, and the excavation area was surrounded by a steel barrier. This barrier, developed to prevent mud from sliding back into the excavated site during the first field season, has been used each subsequent season. After an initial dive to become familiar with the site, all team members quickly became accustomed to the difficult diving conditions: low visibility and strong currents.

Dredging began immediately to remove the accumulated silt. When a shell layer containing cultural material was encountered, a 1/4 inch mesh catch bag was placed over the exhaust end of the dredge. The contents of the bag were screened on the surface to recover artifacts. Artifacts, such as bullet casings, glass bottles, and buttons, were preserved and sent to the SIAEI conservation lab for preservation and cataloging. Some of the more outstanding artifact recoveries included a well-preserved Enfield rifle and other state of plug tobacco.

Mapping the site involved dividing the site into grids and assigning each team member a unit to map. One of the more difficult tasks was mapping the hogging stress of the entire site. This structure acted like a bridge truss, making the vessel longitudinally rigid and thus preventing hogging or sagging at the ends. The astern end of the vessel was found fallen over on the deck. To expedite documentation, the crew was placed on a cradle, raised to the surface, and drawn by Chris Kirby and Annalies Corinth Kjorsness.

Divers wore full face masks equipped with wireless communication. This enabled the students to be in contact with the surface at all times. Even though getting an air check every fifteen minutes was distracting.

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HAWAII FIELD SCHOOL
RECORDS PBY &
HONORS

For the second year, graduate students in Maritime History and Nautical Archaeology, and students from the University of Hawaii participated in a joint summer field school in Hawaii. Dr. Bradley A. Rodgers directed the field school sponsored by East Carolina University, the University of Hawaii, and the National Park Service. The class was designed to give students an understanding of method and theory in underwater archaeology. In addition, students were expected to complete a project from preliminary research to the final site report for the first time in any East Carolina University field school. This unique approach to field training along with the talents and efforts of staff and students allowed the field school to win the prestigious Western Assemblage Summer Sessions award in the category of summer session credit programs.

The field school combined the talents of an eclectic group of five graduate students and ten undergraduates. Among the participants were a chef, a characterologist, a geologist, and students of underwater resource management. Attending graduate students from ECU included Dive Safety Officer and assistant Field School Director Hans van Tilburg, with crew chiefs Jinky Smalley, Ann Merriman, Wendy Coble and Rob Dickens.

The field school was structured in three segments to more accurately convey the entire range of archaeological Phase II field work. Students learned that pre-disturbance field work involved a great deal of planning, logistical preparation and historical research.

The project this year centered on a sunken PBY Catalina flying boat believed to have been destroyed by attacking Japanese planes on December 7, 1941. The flying boat lay in the protected waters off Kaneohe Marine Base, Oahu, where it was likely stationed as a reconnaissance plane just prior to America’s entry into World War II. In that time three were three squadrons of PBY’s stationed at Kaneohe Naval Air Station (now Marine Base) and one at Pearl Harbor. The wreck site consisted of a left wing, the cockpit and forward fuselage, and remnants of a tail section.

Students spent the first two weeks receiving six hours per day of classroom instruction in preparation for the field work. Each day ended with a round table discussion of various cultural resource management subjects. The difference between archaeology and salvage became one of the more colorful debates along with discussions ranging from the education of sports divers in basic field techniques, to priorities in choosing sites for fieldwork and what cultural resource managers should do with a sunken battleship. During this segment university graduate students delivered lectures on different maritime topics.

Also during this first segment, students prepared for the field segment by learning electronic and manual field mapping techniques for accurate shoreline and wreck site positioning. Students were divided into three working teams with graduate students assigned as team leaders. Each team researched and worked together on a specific historical and archaeological portion of the project.

The second two weeks were devoted to field work on the PBY site. During this section of the field school, students learned techniques of measurement, sketching, archaeological diving, and the layout of site and shoreline maps while Jim Adams of the National Park Service took video footage and still photography of the site. A copy of the underwater video footage will soon be available in the Rumpe Memorial Library at the Program’s Admiral Elmer House. As this was Phase II pre-disturbance work, no artifacts were removed and no excavation was done.

The final days of field work gave participants an opportunity to work on the U.S.S. Arizona in Pearl Harbor. Students assisted the National Park Service test site deposition on the wreck as well as photograph reconnaissance buildup at designated test areas. Team members found time spent at the memorial an excellent opportunity to talk with some of thearium’s 4,000 daily visitors about nautical archaeology and the Maritime Program at East Carolina University.

During the field school’s final segment, students completed the Kaneohe site maps, their historical research, and practiced their newly acquired skills by drafting the site plan of the S.S. Kawai from the previous year’s field work. To complete the field school, the three teams and presented a 90-page research paper on PBY flying boats, the history of the Kaneohe base, and future research options for the PBY site. Preliminary results of the survey could not conclusively prove whether the plane was damaged, abandoned or destroyed during the

December 7, 1941 attack on Oahu.

In the future according to Sherwood Mapani, director of the Marine Options Program at the University of Hawaii, Manoa, the field schools will continue to focus on pre-disturbance wreck surveys in the shallow waters around the islands. The university’s goal is to document as many sites as possible before they can be adversely affected by storms and human usage. Because of its success, the Field School has been nominated at the national level for best summer course, 1994.

Wendy M. Coble

FORT FISHER

(continued from page 11)

Currently, the interpretive program at Fort Fisher focuses primarily on the fort’s defensive role. Little has been done to make the public aware of the importance of Civil War blockade runners. An assessment of the surviving vessel structure and the nature and scope of the archaeological record will be developed. A management plan will also be designed to ensure protection of the resources. The plan will involve an assessment of the possibility of developing one or more of the wrecks as an underwater park. The concept of an underwater park established to develop natural or cultural resources has proven highly successful in several wests. With the continued growth of SCUBA diving as a major tourism for the development of a system of underwater parks could attract visitors and stimulate the local economy.

Mike Coogan

MAPLE LEAF

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It was reassuring to know that you were not alone in the dark, murky water of the St. Johns. Divers usually remained submerged 90 minutes in the 80 degree waters. After four weeks of long, hot and stormy days, the team had achieved its objectives: the hagging trees, rubber pants, rear cargo hatch and aft deck fuses were recorded and plotted. (See Site Plan on pages 12-13).

On 12 October, 1994, the Maple Leaf became the fourth underwater National His-
toric Landmark, after the Arizona, Utah, and Monitor. Although East Carolina Uni-
versity plans no field season for the Maple Leaf in 1995, conservation and research continue on the artifact collection.

Paul Steinberg
BERMUDA FIELD SCHOOL MEETS A 'STONEWALL'

The Fall Field School Program in Bermuda entered its second decade in September with the arrival of students from East Carolina University for the eleventh season of shipwreck research. Sponsored jointly by the Bermuda Maritime Museum and the program in Maritime History and Nautical Archaeology, the 1994 Fall Field School focused on systematic shipwreck survey activities along the reef complex. A second objective included the relocation of the remains of a vessel called the 'StoneWALL' wreck and documenting the vessel, if sufficient structure remained. The survey included both magnetic and echo sounder and towed diver searches along the north and western areas of the Bermuda reef system.

A differential global positioning system (DGPS) was used to control the survey. Coordinates were recorded for each contact that was confirmed to be a vessel. The data will be used to create an electronic database site file inventory maintained by the Bermuda Maritime Museum. As part of the field school, the team revisited the site of the 1992 & 1993 Field Schools, an eighteenth-century British collier, to check on vegetal deposit on the wreck and to look for additional disturbance by divers. The wreck site, subject of Michael Krivor's thesis, was visited several times. The brochure was restored along the deck and the piece in 1992 season and a photograph was taken to document the state of preservation. During the survey process, tow boarders saw a ballast pile resembling a stone wall. Subsequent investigation confirmed the site to be the 'StoneWALL' wreck. The vessel lay buried in sand at a depth of four to five meters. The Bermuda Maritime Museum then applied for and received a government permit to record the preserved data. The site had been previously documented by a team from Franklin Pierce College in 1975. Under the auspices of the permit, the 16-member team cleaned and documented the site in September. The 1994 Field school team consisted of eight Program in Maritime History and Nautical Archaeology students: Ed Combs, Mike Congan, Rick Jones, Chris Kirch, Eletheria Mantzouka, Tim Marshall, Phil McGuinn, Jinky Smatly, and Paul Steinberg, in addition to Jim Stithbor, Diving Safety Officer for the 1690s versus the estimated date of 1650 which was given by the Franklin Pierce College study. Nevertheless, a more definitive analysis and conclusion must await additional survey and study. During the 1995 field season, efforts will be exerted to uncover and document the rest of the wreck and provide more answers to the origin and date of the wreck.

Portions of the field school also included conservation and archival research training. Students worked through the Bermuda Maritime Museum's state of art conservation laboratory to work with Dr. Leslie Dean on artifact conservation and preservation. In addition, students worked in the Hamilton Library and Bermuda Archives reviewing the Bermuda Gazette and other documents for references to shipwrecks for inclusion in the museum's data base.

Phl McGuinn

Mapping exercise in Bermuda Graduate students see a two-meter grid system to map the uncovered portions of the hull on the 'StoneWALL' wreck. The baseline runs through the two center grid squares and above the keel. (Photo: Gordon P. Watts, Jr.)
CONSERVATION LABORATORY NEWS

In 1994 the Program's Conservation Laboratory continued its commitments to conserve artifacts from the Millecomines Shipwreck Project, Yorktown Shipwreck Archaeological Project, and the Norfolk Navy Museum while beginning new projects such as the conservation of the Lake George Redman's gun port lids. Students under the direction of Program Conservator Dr. Bradley A. Rodgers will conserve many of these artifacts as part of their work in History 684 "Conservation of Metal from Underwater Environments," thus gaining valuable hands-on training.

Materials from the Millecomines Project include conservation of artifacts of wood, metal and composites, ceramics, and textiles. Conservation processes include immersion in polyethylene glycol (PEG), electrolytic reduction, freeze drying, and treatment in the Cascade Agitation Tank. Some of the more interesting artifacts include a composite brass and wood bell, blue and red transfer ware china, a delicate sail needle, and wooden barrel heads stenciled with words. After conservation, the artifacts will be returned to the Williamsport Sportsman's Club in Naubinway, Michigan for museum display.

Work continues in the treatment of a large anchor from the Norfolk Navy Museum in Virginia. Conservation began in April 1994 with the assistance of the Spring conservation class. The anchor is being treated by electrolytic reduction of the lab's custom-built holding tank. The Yorktown Shipwreck Project conservation is nearing an end. The few remaining artifacts are in their last stage of treatment and completion is anticipated by December. Conservators represent the last of hundreds conserved for the Yorktown Project and mark the end of an association for the Program that began in 1984.

The Conservation Lab Library continues to grow. Items cataloged total 370 with additions made weekly. Lab technician Ann Merriman has recently instituted a new laboratory proceedings notebook to more efficiently track artifacts and cleaning schedules. Wet and Dry Lab reorganization and computerization began in August 1994 and will continue throughout the school year to increase lab proficiency.

Ann Merriman

NEW EQUIPMENT RECEIVED BY MARITIME PROGRAM

The Maritime Program has received some badly needed new equipment. The new acquisitions include a truck, two boats and a variety of computer equipment. Also new this year is an improved system to keep track of equipment in use by students and faculty.

One of the most important new acquisitions is a blue 1994 Ford Kingcabin pickup truck with a special heavy duty towing package. The vans previously used for towing boats in and from various sites were inadequate for the job, especially over long distances. The Kingcabin with the towing package provides a more dependable, powerful towing vehicle.

The Program also recently acquired two new boats: a Playcraft pontoon boat and a pontoon platform. Designed to be used in conjunction with each other, the Playcraft provides motive power while the other serves as a diving platform. The craft are designed for work on rivers and lakes.

The Program has also received new computer equipment in the form of a Hewlett Packard laser printer, two Gateway Pentium computers, and a Hewlett Packard Scanjet Scanner. Dr. Larry Babcock submitted a proposal in January to upgrade the Student Computing Facility located in the Eller Building. The $76,000 proposal would replace the IBM-266 and 360 machines with IBM Pentiums, upgrade the printers and Macintosh machines, and improve the scanning equipment.

Finally, in order to keep track of Program equipment new and old, equipment coordinator Rick Jones and Mike Coogan developed an equipment status board. The board enables students and faculty to know the location and status of repair of equipment at any given time and to reserve the equipment for future use. This new system should clear up problems that occurred when the need of various students for program equipment conflicted. The system should also provide for much needed maintenance time for the equipment.

Mark Burdette

CANTELAS JOINS MARITIME STAFF AS ARCHAEOLOGIST

In January, Frank Cantelas was hired as a full time staff archaeologist. Reflecting increased importance of the Maritime Program, Cantelas fills the position held by Dr. Bradley A. Rodgers who moved into a newly created faculty position. Dr. Rodgers remains the conservator for the Program while Cantelas will be responsible for field project coordination and grant application and management.

"Our immediate need is to ensure all the equipment is working and ready for the summer field schools," Cantelas said. For the spring, he is focusing on maintaining and repairing equipment and seeing to the details to get ready for the summer field school. He is working closely with Rick Jones and Mike Coogan to further the work they had done preparing the maintenance schedules and tracking equipment.

Cantelas knows the program and his new position well. He has over a decade of experience. He is completing his Master's degree from East Carolina University in Maritime History and Nautical Archaeology. In addition, he has been working as the project archaeologist on the Maple Leaf project under contract with SNAEL and sponsored by the State of Florida. As project coordinator, Cantelas coordinated and organized the summer field school on the Maple Leaf and supervised the Saint John's Archaeological Expedition. Volumes to document the site.

Desiring to make an immediate contribution to the program, Cantelas wants to address areas of the program that haven't been fully explored to date. "After we get a good handle on the equipment issues for the summer field schools," Cantelas said, "I want to look into developing some ideas related to ship construction based on model reconstructions."

Phil McGuire

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READER’S POINT
VESSEL EXCAVATION

In a cooperative effort, students from Texas A&M University and Ed Monschau, an economic geologist, excavated the Reader’s Point vessel in St. Ann’s Bay, Jamaica. Conducted under the auspices of the Jamaica National Trust (J.N.T.), the project was supervised by Dorrick Gray, Director of Field Research. The team spent spring 1994 excavating the site, documenting the vessel and conserving recovered artifacts and wood samples. The core crew consisted of Dorrick Gray, Greg Cook, and Oliva Chapman. Both Texas A&M students, Amy Rubenstein and David Ames. Other volunteers included Norine Carroll, Karl Gotschamer, Darrell Hall, Mike Lowery, and Darla Merwin. Juan Vera and Rich Willen, all of Texas A&M.

Cook and Rubenstein worked together planning the project and raising funds. Support came from private and public sources. Cook was awarded a Jan Juffa Fellowship to conduct the project. Other donations from local sources and companies were just as important.

After receiving funding, Cook prepared an operating budget and Rubenstein prepared plans for the conservation of artifacts. Conservation lab supplies and chemicals were purchased by Rubenstein, who had worked as a conservator before in St. Ann’s Bay.

Field work began using common excavation tools, a dredge and a water pump. An air compressor supplied air simultaneously to two divers and to an air scribe. The vessel lay buried under approximately six feet of mud and a large baulk pile at a depth of three feet.

The team removed the baulk pile and mud to expose the hull so documentation. The hull was recorded in situ. The most interesting part of the project involved the mappin and recording of the data. Permanent diagrams were set up from which direct measurements were taken. Once divers had recorded measurements, the data was transferred to the WEB computer program. The WEB computer program was created by Nick Rule of the Mary Rose project.

The program uses computer algorithms to indicate bow-fit and the degree of error of the data. This enabled the divers to identify incorrect measurements and make them while still in the field. Artifacts and hull structures were mapped using the computer program and a hand-drawn site plan. In addition, a photo-mosaic was taken to verify the site plans.

The anaerobic environment contributed to the preservation of the artifacts and hull. Several artifacts were retrieved.

From the excavations, almost the entire length of the ship is believed intact. The excavation revealed a total length of 220 feet from the bow to the stern. The excavation was conducted along the keelson to the ended stern. The data indicates that the ship is relatively well preserved. The ship was constructed by a method of planking and fastening, and the hull was covered with a lead hull.

The leather, glass, and bone artifacts were treated by soweb fettigation. The bone and glass were also consolidated in a polivinyl acetate solution. The glass samples included green, clear, soda, and leaded varieties.

Wooden artifacts were treated using the action/resin method since no oven was available. These artifacts, in solution, were heated only by the Jamaican sun. All metal objects were encrusted and nearly all of them were iron. Where metal retained, the objects were treated by electropolishing. Epoxy casts were made of the archeological excavations.

Interesting artifacts included an iron, sheaves, buckles, a carpenter’s plane, and a loom comb. Initial analysis dated the vessel to the last quarter of the eighteenth century. This conclusion was based on details of pipe bowls, ceramics, glass bottles, and the skull of a brown Norway rat. The Norway rat has been documented as the dominant ship rat in Western Europe by 1720, so it is

(Continued on page 18)
MacKnight Shipyard Wreck Project

Field investigation of the MacKnight Shipyard Wreck was carried out in May 1994 in a cooperative effort between the North Carolina Department of Cultural Resources, Underwater Archaeology Unit (UAU), project supervisor Rick Jones and volunteers from the Program in Maritime History and Nautical Archaeology at East Carolina University. The vessel was discovered the previous season during an investigation of the suspected colonial shipyard of Thomas MacKnight.

Before beginning field work, historical research was initiated. Unlike many wrecks which are stand-alone archaeological sites, this wreck had the potential to be closely associated with a historic land site (MacKnight’s Shipyard and New Shore to New Shore Volume 9, Fall 1992). Moreover, even if the wreck were not associated with the shipyard, the continued use of the site from the 1750s through the present posed the possibility of artifact contamination and confusion in interpretation. The area does not have a history of sport diving, thus the wreck should be relatively undisturbed. A preliminary survey by Mark Wilde-Ramsing and Julep Gillman-Bryant from UAU, the previous season indicated this was the case. Their survey revealed a partially intact wooden vessel with the stern post, keelson and some exposed frames.

On-site operations took place in less than optimal conditions. Heavy rains and cold weather made operation uncomfortable. Joining UAU members Mark Wilde-Ramsing and Julep Gillman-Bryant and project supervisor Rick Jones were several ECU graduate students. Mike Cowan and Tim Marshall assisted with the land based survey while Paul Steinberg and Jinky Smalley conducted dives under the supervision of project dive safety officer Annables Corbin Kjorness.

Our field objectives were threefold:
1) determine the extent of the remains,
2) document the vessel by mapping the remains, and
3) to obtain wood samples and diagnostic artifacts (if any) for analysis.

Although conditions were less than ideal with high winds, rain, an unusually cold period, and the traditional “blackwater” environment found on North Carolina/tides the crew did an excellent job reaching all our objectives. A heavy matting of organic materials made excavation difficult and slow, therefore, most of the excavation concentrated around the stem and stern posts, along the port side of the keelson and stern transom at the mast-step. The vessel appears to be intact with a length of 44 feet between perpendiculars, a beam of 14 feet, and a depth of hold of four to five feet. The outer planking was discovered in good condition although the extent was impossible to determined.

Ceiling planking on both port and starboard sides extended almost to the turn of the bilge. All but one of the floors and timbers remained in place on the port side. The timbers showed on the starboard side bow area were in place although they had become detached from the keelson and were buried in the sediment.

A gudgeon strap and a broken pintel, initially, were all the evidence of the stern post/rudder system. Mark Wilde-Ramsing made one final effort to excavate around the stern on the last day. He was rewarded with partially uncovering the rudder itself with the other gudgeon strap intact.

The most intriguing find, however, was the presence of three steps along the keelson. The first step was located five feet abait the stem post and the next two at 10-foot intervals with the last being a saddlestep.

Wood analysis indicated the use of white oak for the keel, keelson, stern and stem post, timbers, ceiling and outer planking. Interestingly, the frames were of red cedar. Iron nails were used very little in the construction of the vessel, mostly to hold the planking in place for the timbers.

Diagnostic artifacts such as pieces of ceramics, brass and copper buttons, and a wrought iron three-legged kettle helped to preliminarily date the vessel’s sinking to circa 1790-1810. The construction material, the construction method and the historical record of a cannon operating adjacent to the site during the projected time period seemed to indicate a locally built vessel.

A preliminary interpretation of a locally built sloop, connected to schooner, engaged in the inland waterway commerce of single/ lumber/stoneware trade seems to fit the archaeological and historical record thus far uncovered.

Wilson and Barbara Snowden, Currituck County Historians, provided invaluable logistic support and encouragement.

Rick Jones

Reader’s Point Wreck Conservation. Karl Gomes-Hoover pours epoxy to make casts of iron objects. (Photo: Amy Rubenstein)
CHICKAHOMINY WRECKS EXCAVATED

A combined team from East Carolina University's Maritime History and Nautical Archaeology program and the Maritime Archaeological and Historical Society, with the approval of Virginia's Department of Historic Resources, completed two weeks of work on a revolution-era shipyard and two row galleys in the Chickahominy River. Led by Gordon P. Watts, Jr., ECU's Director of Nautical Archaeology, and Jeff Morris, ECU graduate student, the 80-member joint team documented the well-preserved remains of two warships scuttled by the Virginia State Navy during an attack by the British in 1781 and the site of Virginia's major Revolutionary War shipyard.

Working in limited visibility, the team carefully measured the underwater wreckage and mapped the site using sonar, sight and feel. "We've seriously groped these wrecks in the last couple of weeks," said Gordon Watts, as much of the work had to be done by touch because of the poor visibility.

Although much of the site's wreck remains were covered by sand and silt, equipment and a large number of artifacts were identified. The team then lifted and transported to the surface for study, at which point further excavation and analysis were planned.

The site is located in the Chickahominy River near the town of Byrdsville, in Accomack County, Virginia. The site is also one of the most important areas in the United States for studying the early history of naval warfare.

The site was discovered after a long, painstaking search by the Virginia Department of Historic Resources and the Maritime Archaeological and Historical Society. The team's work is part of a larger effort to preserve and study the site, which is located in the Chickahominy River near the town of Byrdsville, in Accomack County, Virginia. The site is also one of the most important areas in the United States for studying the early history of naval warfare.

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PAPERS

The following papers have been presented by staff, students, and alumni in 1994.


Commentary for the Post World War II European Navies session, presented at the Eleventh Naval History Symposium, Annapolis, MD, October 22, 1995.


CUA PAPERS 1994-1995


1994

Askins, Adrian, and Matthew Russell. “Artifact Analysis of Rubber Blankets and Ponchos from the Union Transport, Maple Leaf.”


1995

Rabits, Lawrence E. “The Maple Leaf: An Initial Report.”

“Tenting of the Maple Leaf.” Conference on Underwater and Historical Archaeology, Society for Historical Archaeology, Washington, DC, 1995 (with David Prenter).


Rivenson, Robert M. “The Coast Guard and Submerged Cultural Resources.”

Castell, Frank, and Bradley A. Rodgers. “A Brief Look at the Steamship Maple Leaf.”

Drew, Stuart. “Preliminary Analysis of the Faunal Remains from the Emanuel Point Shipwreck.”


Harris, Lynn. “Integrating Shipwreck Management, Research, and Public Education in Southern Africa.”

Jackson, Claude V. “The Cape Fear Comprehensive Study: Historical and Cultural Resources in Southeastern North Carolina.”


Morris, Jeffrey D. “1994 Investigation of a Revolutionary War Shipwreck on the Chickahominy River, Virginia.”

Morris, John W., III, and Marianne Franklin. “Naval Architectural Evaluation and Half Model of the 18th Century Vessel as Town Point in Peninsular Province, Florida.”


Peebles, Mattox. “CSS Raleigh: The History and Archaeology of a Confederate Ironclad in the Cape Fear River.”

Reedy, James R. “Documenting and Analysing of a 19th Century Centerboard Schooner.”


Smalley, John. “Light in War: Lighting Devices from the Maple Leaf.”


Terrell, Bruce G. “Managing the Resources of the National Marine Sanctuary.”


Van Aalberg, Charles N. “Beneath the Surface: An Environmental History of the Maple Leaf Site, 1864-1947.”

1995 SUMMER FIELD SCHOOL
East Carolina University will sponsor the sixteenth annual field school in Maritime History and Nautical Archaeology from May 16 to June 20, 1995. This program has been developed to provide qualified students with a basic introduction to American maritime history and the scientific methods and techniques employed in nautical archaeology research.

The program begins with a two week training session to acquaint students with the principals of nautical archaeology techniques. Dive training held in Greenville, North Carolina, includes pool and open water exercises. Following the training session field operations will commence on two shipwreck sites near Greenville. The field school will conclude on Tuesday, June 20, 1995.

The 1995 field school will investigate two shipwreck sites in the Pamlico River drainage system in the vicinity of Greenville. Both vessels are threatened by river erosion and shoreline development. The Cypress Landing wreck found in 1994, is a nineteenth century centerboard schooner, a type of vessel indigenous to the tidewater area of North Carolina. The site will provide shallow water training in water depths to 10 feet. Tasks will concentrate on mapping exercises.

The investigation will then shift to the primary objective of the field school, the Chicko Creek Wreck, near Grimesland, NC. This Civil War gunboat was built by the Confederates in 1862 to patrol local waterways. As Federal troops advanced on Washington, NC in 1862, the Confederate commander burned the gunboat to keep it from falling into Union hands. Today, the vessel is historically significant as a rare example of Confederate naval technology. The well-preserved hull rests in twenty-five feet of water allowing students to practice mapping and recording techniques learned during earlier exercises.

Students will participate in classroom lectures, workshops, and seminars. On-site activities provide practical experience in excavation techniques, underwater mapping, and documentation procedures. Non-diving students gain experience in historical research. Students participating in project diving must make arrangements with the East Carolina University diving safety officer to ensure that all aspects of a thirty foot depth certification have been met prior to the start of field research. This is normally completed during the Greenville training period.

Two semester hours of credit are offered at the graduate and undergraduate (senior) level. Tuition and fees for out of state students are $1053.00. In-state students will pay the state legislature. Students will be responsible for their own housing and food while staying in Greenville. Semi-monthly air conditioned residence hall rooms can be reserved for $250 for the summer field school.

Applicants for the field school should have a background in history, archaeology, anthropology, geography, or related fields.

Deadline for Application is April 15, 1995

Please contact:
Program in Maritime History and Nautical Archaeology
East Carolina University
Greenville, NC 27858
910/328-6097

PAMLICO SURVEY

In 1993 the Program in Maritime History, and Nautical Archaeology began investigations of a survey along the north shore of the Pamlico River. The survey focused on the areas between Bath Creek and Pamlico Beach and was completed in the spring of 1995. The survey focused on sunken vessels, shipwrecks and floating debris. Vessel types found in the survey included several buattoms, trailers, skiffs, barges, freight box, and one aging house boat. The survey also located a number of prehistoric sites along the shore as well as several eroding into the river.

All submerged sites were documented with magnetometer signatures and differential Digital Global Positioning System locations. The final report has been submitted to the Underwater Archaeology Unit, North Carolina Department of Cultural Resources.

Currently, ECU is conducting another survey of the Pungo River between Wades Point and Woodstock Point on the river’s western shore. The Pungo River survey is expected to be completed this spring. The 1993 survey as well as the current survey were funded by a survey and planning grant awarded by the Department of Cultural Resources.

Dr. Lawrence Babits is principal investigator, assisted by Jeff Morris, Annalies Corbin Kjornes, volunteer graduate students, and family members.

STUDENT RESEARCH PROJECTS

(continued from page 24)

Darren Pupore - United States Naval Operations During the Battle of the Santa Cruz Islands. October 26, 1942
Shannon Richardson - The History and Future of Waterlogged Artifacts Conserva-
tion

Amy L. Rubenstein - The Conservation and Artifact Assessment of an 18th-Cen-
tury British Merchant Vessel in St. Ann's Bay, Jamaica
Matthew Russell - An Archaeological and Artifactual Investigation of Three Half-
built Pacific Coast Loomer Schoners: Dora Blum, Comet, and J. M. Colman. Located in the Channel Islands National Park.

Jinky Smalley - The Manila Galleon Trade and its relation to Spanish/Philippine/ Chinese intercourse as evidenced in ship construction trade goods, and ship comple-
ments.

Joshua M. Smith - Defending Massa-
chusetts in the War of 1812: State and Local Resistance to Federal Authority, during the 1812-15 conflicts.

Paul Steinberg - An Historical and Ar-
cheological Investigation of the USS Flashedome, a Civil War Blockade, located off Fort Fisher, NC

Ray Tubbys - An Historical and Ar-
cheological Survey of the Crumer Wreck, Millville, New Jersey

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

Daniel Warren - A History of the Steam-
ship Monument City and the Impact of American Shipping on British Colonial Policy in Australia

SPECIAL NOTICE

Karen Underwood joined the Program as Administrative Office Assistant last year. She provides invaluable support to the five professors and multitude of students working in Eiler House, and is our primary link to the outside world. Karen recently returned from maternity leave following the birth of her second child, William. Karen and her husband Tom also have a daughter, Ashley. We are glad to have her on our staff.
Boh Holembe - Director, Confederate Naval Museum, Columbus, GA
Claude V. (Sandy) Jackson - Underwater Archaeology Unit, State of North Carolina, FI, Fisher, NC
John O. Jensen - Doctoral Candidate, Carnegie Mellon University, Pittsburgh, PA
John Kennington, J. - Historian, Colonial Society, Savannah, GA
Kurt Knoerl - Construction Supervisor, Detroit, MI
Amy Jo(AJ) Knowles - Museum Curator, US Coast Guard, Washington, DC
J. Roderick Mather - Doctoral Candidate, Oxford University
Amy Mitchell - Institute for Wood Analysis, Troy, OH
Dave Moore - Director of Archaeology, St. John's Expeditions, Inc., East Palatka, FL
R. Scott Moore - Doctoral Candidate, Ohio State University
Stuart Morgan - Doctoral Candidate, University of South Carolina
John W. (Billy Ray) Morris, III - Doctoral Candidate, University of Florida and Director, Southern Oceans Archaeological Research
Kara Morris - Archaeologist, Zuni, NM
Sam Nosella - Public school teacher, Green, IL, NC, and Contract Naval Archaeologist
Gen Overton - Contract Naval Archaeologist and Dive Charter Operator, Wilmington, NC
Martin Peebles - Archaeological Illustrator and Contract Naval Archaeologist, Carolina Beach, NC
Heidi Primo - Professor of Social Studies and Pacific Islands History, College of Micronesia, Kohnston, Pohnpei, Federated States of Micronesia
James R. Reedy, Jr. - Contract Naval Archaeologist, Beaufort, NC
Skammich Richardson - Archaeologist, Fort Niagara, NY
Bradley A. Rodgers, Ph.D. - Visiting Assistant Professor of History, East Carolina University
Matthew Russell - Submerged Cultural Resources Unit, National Park Service, Santa Fe, NM
John Schafer - Researcher, Naval Memorial Foundation, Washington, DC
James S. (Steve) Schmidt - Nautical Archaeologist, Expe. Huson Associates, Austin, TX
Robert Schneller, Ph.D. - Historian, Naval Historical Center, Washington, DC
James Spierke - Nautical Archaeologist, State of Florida
Thomas Stoltman - Northwestern Maritime Museum, Emporium, PA
Hans Van Tilburg - Nautical Archaeologist, University of Hawaii
Bruce G. Terrell - Maritime Historian and Acting Maritime Archaeologist, NOAA, Washington, DC
William H. Thiesen - Doctoral Candidate, University of Delaware
Ray Tubb - Nautical Archaeologist, Tidewater Atlantic Research, Washington, NC
Lolly Vann - Contract Archaeologist, MD
Daniel Warren - Electrician's Apprentice, Bulloch, IL
Wilson West - Researcher, U.S. House of Representatives, Washington, DC
David R. Wisspe - Historian, Naval Historical Center, Washington, DC

**NATIONAL MARITIME HERITAGE ACT PASSED**

Passage in fall 1994 of the National Maritime Heritage Act established a process to generate resources for preservation, education and support of maritime programs. The act for the first time will enable federal support for maritime resources. An advisory committee will be created to assist in the establishment of the National Maritime Reserve. The act also provides for the establishment of a National Maritime Heritage Grants Advisory Committee. The plan for the grant will determine the activities of the project. The Board of Directors. The remaining bill will fund maritime heritage education projects through the National Trust for Historic Preservation. The act was not complete but the government is looking forward to it. A number of federal programs is planned to be funded. The bill must be passed, however, without the outstanding efforts of the National Maritime Alliance and the National Maritime Initiative. The act would not have been possible, however, without the outstanding efforts of the National Maritime Alliance. Dr. William N. Still, Jr., Dr. Timothy Ryan, and Kevin Foster serve on the Board of Directors.
The following reflects research interests of Program students:

James Allan - The Maritime History of Fort Ross, California
Adriane Askins - Site Report on the Sacred Heart of Jesus, Edenton, NC
Charles E. Bayman - Operational Difficulties Experienced by Admirals Gates, Shubman and Howe on the North American Station, 1775-1778
Jemison R. Beshears - Dutch Maritime Trade in the Caribbean and Related Shipwreck Sites
Mark Burdette - The Development of United States Navy Air Defense, 1929-1941
Jay Chapman - American Post-Revolutionary War Sea Power
Edwin Lawrence Currie - History of the Wilmington Squadron, Confederate States Navy
Michael P. Coogan - Historical and Archaeological Investigation of USS Louisiana - Powder Ship destroyed off of Fort Fisher, NC, December, 1964
Blaine Cooper - From Small Ways to Big Business: The Growth of the Wooden Ship Construction and Waterborne Industries Along the United States Pacific Coast, 1875-1900
Stuart Darrow - An Historical and Archaeological Study of Sixteenth-Century Spanish Shipboard Substance
Ted Dunlap - Development of U.S. Naval Regulation over its Historic Shipwrecks
Sabrina Faber - Social and Economic Aspects of the Athenian Naval Empire
Paul Fonteny - Development and Economic Success of Steamboats in Northeast America
Steve Gibbons - Piracy and Economics of the Carolinas, 1675-1725: Emphasis on North Carolina after 1709
Cristen Gober - A History of the USS Kearsarge
Tim Hastings - History and Archaeological Site Report of the CSS Gaines Sunken at the Battle of Mobile Bay
Rick Jones - Site Report on the MacKnight Shipyard Wreck, Carrickton County, NC
Atoelles Corbin Kjornes - Comparative Artifacts: Analysis of nineteenth-century Western Steamboat Passengers' Personal Possessions with particular attention in the steamboats Forest and Bertrand
Ann Jo Knowles - History and Development of Motor Aids to Navigation in U.S. Waters
Michael Krivor - Research and Documentation of an 18-Century British Collier, Bermuda
Eleftheria Mantzouka - Classical Transport Amphora from a Shipwreck at Alonnesos, Northern Sporades, Greece
Betsy Mathews - A Study of the Construction and Design of the Six-Maned Schooner George W. Wells and Its Relationships to Bulk Shipping
Heather McAllister - 18th-Century Silver Trade from Mexico to Spain
Christopher Olson - A History and Archaeological Site Report on the CSS Curlew
Kerry O'Malley - Early 19th Century North Carolina Shipping
Tim Marshall - An Historical and Archaeological examination of the steamship Arabian
Glen Overton - A Detailed Analysis of the U.S.S. Scourge
Harry Pecorelli, III - Spanish Colonial Maritime Commerce in the Eighteenth Century
Martin D. Peebles - Site Report on the Rattlesnake, Fort Fisher, NC
Heidi Primo - Sea Venturers and Dream Traders: Anglo-American Rivalry in the Early China Trade. 1784-1860

(Continued on page 22)