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UNDERWATER ARCHAEOLOGY

SCIAA Teams with Naval Historical Center to Investigate *H. L. Hunley's* Foe, The *USS Housatonic*

By Christopher F. Amer and Robert Neyland

The 1999 *Housatonic* Survey was conducted as part of the ongoing research into the events that took place on the night of February 17, 1864. That evening, history was made as the *H. L. Hunley* became the first submarine to sink an enemy vessel during time of war. The

Hunley's adversary was the 1240-ton steam sloop-of-war USS *Housatonic*, which itself gained the reluctant distinction of becoming the first warship to be sunk by a submarine. After being torpedoed,

Housatonic sank in less than five minutes, its stern virtually blown off by the 135-pound charge. Moments later the *Hunley* itself sank, presumably with all hands. Within nine months of the sinking, divers reported that the *Housatonic* had settled five feet into the mud and sand bottom. Twice, the remains of the warship were blown apart to prevent it from being a hazard to navigation—in the 1870s—by a Mr.

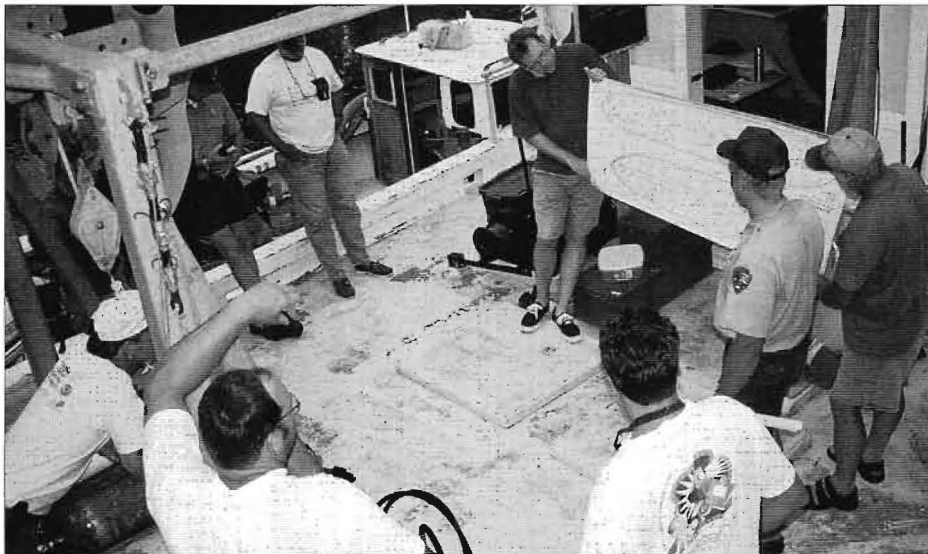
Maillerfort—and again in 1908 under contract to the US Army Corps of Engineers.

What the archaeologists found at the site is the result of these series of demolitions. It took the divers several dives to excavate down five to seven feet to uncover the highest

confusion of those last moments of this ship when, as the hull settled to the seafloor, the crew took to the rigging; ordinance fuses and a pistol, remnants of the ship's armaments; a wrecking bar found amid the tangle of iron, once used by divers to pry apart the blasted metal; copper drift

pins, once used to hold the hull together and now twisted into pretzel-like shapes; and coal, present in large quantities in all three test trenches excavated.

The project was divided into two parts. The goal of the first part, conducted during the last



The 1999 *Housatonic* Survey crew attend a morning project briefing aboard the SC Department of Natural Resources research vessel *Anita*. The ship plans (center) are of *USS Ossipee*, sister ship of *USS Housatonic*. (Photo by Christopher Amer; courtesy Friends of the Hunley)

remaining structure on the hull—usually twisted and broken machinery—and fittings distorted by the explosions in the hull. Archaeologists would have to dig twice that depth to uncover the lower portions of the wooden hull. Among the wreckage, archaeologists have found a multitude of artifacts that attest to the events on that cold February night 135 years ago—several shoes, reminding us of the terror and

week of May, was to obtain more information on the geology of the immediate area around *Hunley* by taking sedimentary samples. The United States Geologic Services—Center for Coastal Geology—under the direction of Mark Hansen took a total of nine cores of the sediments, six cores from around the *Hunley*, and three near the *Housatonic*. Four of these from around the *Hunley* are currently being analyzed for charac-

teristics, such as sediment sheer stress, by Soil Consultants Inc. of Charleston. This information is essential to designing the appropriate recovery vehicle for the *Hunley*. The other cores are being studied by USGS and Dr. Scott Harris of the Geology Department of Coastal Carolina University in order to accurately date the sequence of both vessels' burial beneath the sea bottom.

The second part of the survey began on June 7 and involved a survey on the remains of *Hunley's* adversary and victim, USS *Housatonic*. The goals of this survey were to verify that the wreck was still there and had integrity that might yield information on the brief engagement between the two foes. If found to be relatively intact, *Housatonic* and the area between and around *Housatonic* and *Hunley* can be considered eligible for listing on the National Register of Historic Places or as a National Landmark. The wreckage of *Housatonic* yields a large magnetic signature, one at least twice the size of *Hunley*. However, no one had previously verified the presence of extensive portions of the ship's hull and artifacts that could lead to interpretation of the events of the battle and life on the Union blockade in 1864.

Specific research objectives



David Whall prepares to descend into the turbid waters above the wreck of the *Housatonic*. Submersible communication gear in a specially designed mask (pictured here) allow divers to communicate with archaeologists on the surface in the black waters off Charleston Harbor. (Photo by Christopher Amer; courtesy Friends of the *Hunley*)

still present and if the historical description of the propeller shaft being sheared was correct. There was also a magnetic anomaly directly between the *Hunley* and *Housatonic* that we wanted to investigate prior to the recover of *Hunley*. This was to ascertain if it was part of either vessel and a relic of the battle or some other object of historic significance that might be impacted by the recovery of the *Hunley*. During the first two days of the survey, the object was relocated and excavated. It is a cylindrical iron marker buoy, probably the bell

related to the ship's sinking and included determining the orientation of the vessel at the time of the attack, if *Housatonic* was anchored with its bow to the north, northeast, or another direction. We also wanted to see if the starboard side of the vessel was missing or if the stern was completely blown off from the vessel. In addition, we wanted to determine if the propeller was

buoy for the *Housatonic* wreck shown in a 1908 chart. It is the only object in the area that protrudes above the bottom and is a known hang for shrimpers' nets.

To date, we have excavated three test areas, each about 10 feet in diameter and six to eight feet deep over the *Housatonic*, one near the bow of the ship, and the other two slightly forward of the area in the stern where the blast damage from *Hunley's* torpedo was the worst. In the bow we located two of the ship's water tanks, which helped to determine that the ship's bow was pointed in a northwest direction at the time of sinking. From this area we recovered personal effects of the crew such as six shoes (see photo) and a wood and lead pencil. The crew's quarters were located directly above these water tanks and these artifacts settled in the hull as the upper decks collapsed over time. The presence of the crew's footwear also is an indication that *Housatonic's* sinking was so sudden that the crew and officers had no time to recover their personal possessions or

clothing.

In the stern, archaeologists recovered some small arms and other weapons, including a pistol (see photo), fuses for exploding shells, solid shot, and a hanger for a short sword or dagger. A large wrecking bar, an artifact of the lowering of the hull



Among the artifacts recovered from the remains of the *Housatonic*, which lies buried more than 7 feet below the ocean floor, were at least six leather shoes. (Photo by Christopher Amer; courtesy Friends of the *Hunley*)

See *Housatonic*, Page 24

Housatonic, From Page 23

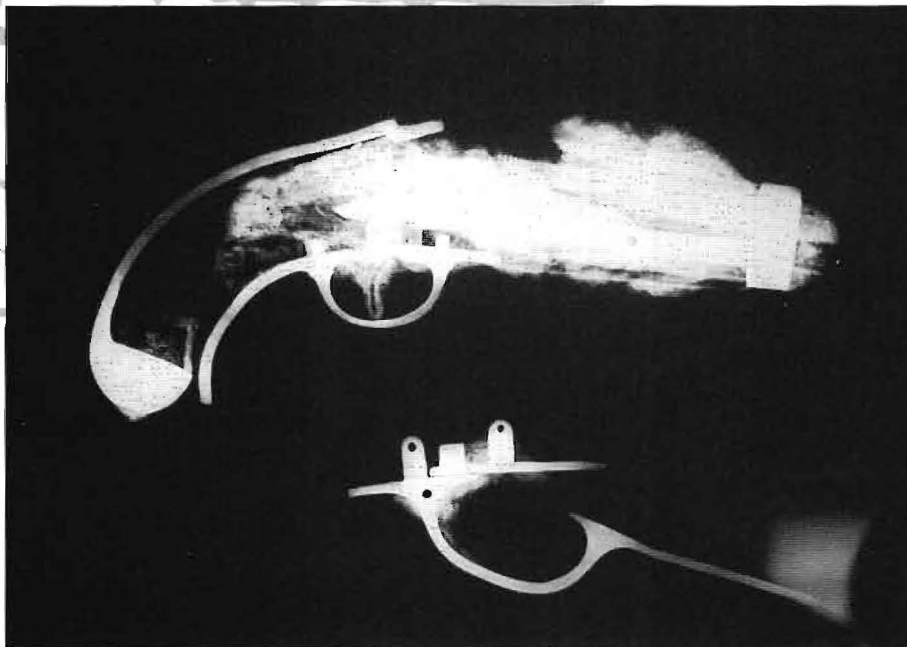
either in the 1870s or 1908, was also recovered.

As the test excavations were being conducted, we also probed the wreck with a high-pressure water jet. This was done to find the depth below the sediment of different parts of the wreckage and to obtain an outline of the wreckage. Nothing of *Housatonic* protrudes above the sea floor. The entire wreck is buried under six to 10 feet of sand, clay, and shells. Visibility on the sea bottom, except for very rare occasions, is pitch black.

Divers conducted all their operations by touch without the aid of sight. The probing mentioned above is conducted by laying a line with knots positioned at every foot. The diver uses a 10-foot-long pipe carrying high pressure water to jet down through the sediment. This pipe has marks every foot that the diver can feel with his hands. The diver then communicates with the surface by underwater communications gear to an assistant, who writes down the depth and distance on the line probed (see photo).

Excavation and interpretation of the remains of USS *Housatonic* will help us to complete the story of the events that occurred on that February night that marked the beginning of the submarine age. In addition, the

data will help us provide a more complete interpretation of the battlefield, the historic significance of both vessels, and allow us to nominate *Housatonic* and the site of the engagement of the two warships to the National Register of Historic Places.



The digital X-ray, made by the Medical University of South Carolina, reveals a brass and wood pistol inside a concretion. (Photo by Christopher Amer; courtesy Friends of the Hunley)

Acknowledgments

All archaeological projects conducted underwater require a great deal of planning and logistical support. This project is no exception. The 1999 *Housatonic* Survey was conceived and conducted by the staff of the Naval Historical Center's Underwater Archaeology Unit (NHC-UAU) and the South Carolina Institute of Archaeology and Anthropology's Underwater Archaeology Division (SCIAA-UAD), with the assistance of the National Park Service's Submerged Cultural Resource Unit (NPS-SCRU) and the South Carolina Department of Natural Resources' Marine Resources Division (SCDNR-MRD).

The principal investigators would like to express their appreciation to the Marine Resources Division of the Department of Natural Resources and its Director John Miglarese, for invaluable assistance with boats and able captains such as Captain Paul Tucker of the *Anita* and relief

Captains Mike Schwartz and Jeff Jacobs. SCDNR has really been a partner in both the 1996 *Hunley* assessment and the 1999 *Housatonic* survey. We would also like to recognize Randy Beatty, Head of Vessel Operation, and Mel Bell, Coordinator of the Artificial Reef Section and Head of the DNR Dive

Safety Program. Without them this project would not have been possible. This research project has also been aided by the College of Charleston, which has provided a location for the *Hunley* Research Center—a central location for this operation. We would also like to thank the Medical University of South Carolina Radiology Department, which provided extremely high quality X-rays of the artifacts.

Additionally, the principal investigators (especially Christopher Amer) would like to thank Mr. Warren Lasch for his generous donation of equipment to the Underwater Archaeology Division of SCIAA. The new trailer for the Division's 25-foot C-Hawk, donated



Co-principal investigator Dr. Robert Neyland confers with co-field director David Conlin on-site. The Underwater Archaeology Division's 17-foot McKee was reinstated into the Division's fleet with the addition of a new 90-hp outboard motor, donated by Mr. Warren Lasch. (Photo by Christopher Amer; courtesy Friends of the Hunley)

by Mr. Lasch last year, allowed us to safely move and deploy this boat, which became one of the primary operating platforms of the project. This vessel is also our primary survey vessel when fitted with the ADAP III marine survey system (See *Legacy*, Volume 3, Number 2, July 1998) and will be used on the division's upcoming survey of US Navy wrecks in the state's waters. This year, Mr. Lasch donated a 90-horsepower Mercury outboard motor, allowing us to activate the division's 17-foot McKee as a support

boat for this summer's survey (see photo). This craft is the division's most versatile platform and can be used for diving, survey, and support for projects like the *Housatonic* survey. Thank you Warren, for your enthusiastic support of not only the *Hunley / Housatonic* Project but of underwater archaeology in South Carolina. (Mr. Warren Lasch is Chairman of the Friends of the *Hunley*.)

Last, but not least, we would like to mention our archaeological research team:

Co-Principal Investigators or Project Directors:

Dr. Robert Neyland, *Hunley*
Project Manager and NHC-
UAU

Christopher Amer, Deputy State
Archaeologist for Under-
water, SCIAA-UAD

Field Directors:

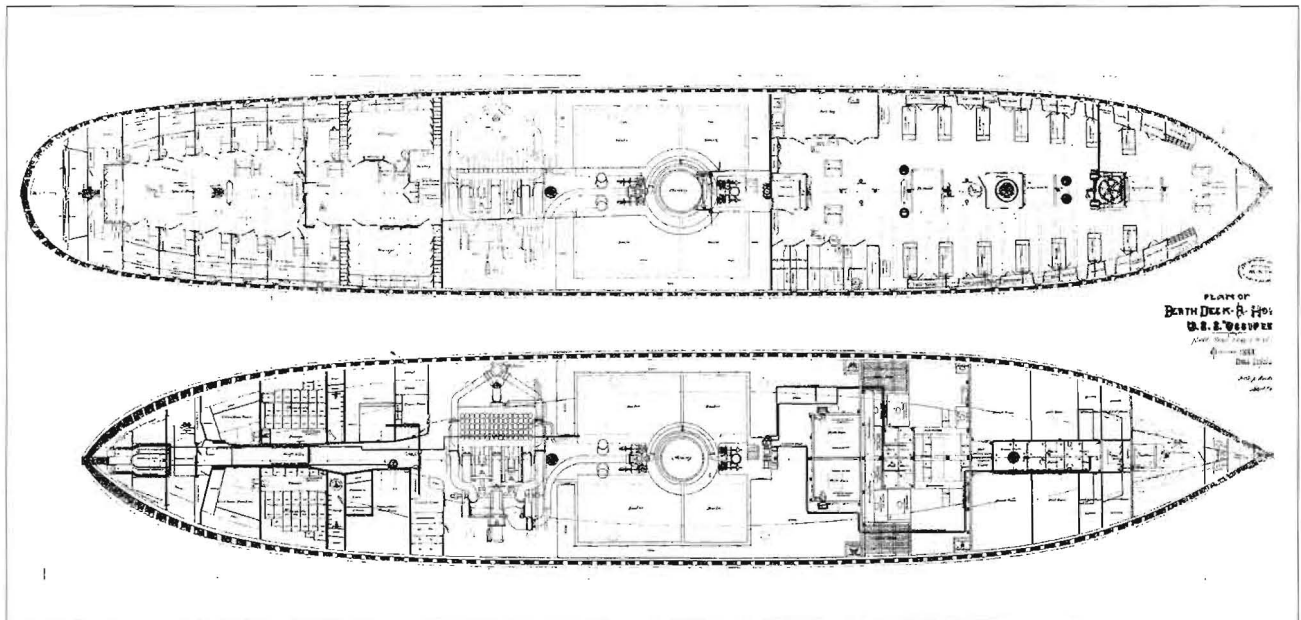
Dr. Dave Conlin, NPS-SCRU
Jim Spirek, SCIAA-UAD

Artifact Conservator/Archaeologist:

Claire Peachey, NHC-UAU
Jonathan Leader, SCIAA-OSA

Other Archaeological Team Members:

David Grant, NHC-UAU
Dave Howe, NHC-UAU
Carl Naylor, SCIAA-UAD
Joe Beatty, SCIAA-UAD
Brett Seymore, NPS-SCRU
David Whall, volunteer
Tristan Amer, volunteer
Mark Ragan, historian and
author



Plan view of the USS *Ossipee*, sister ship of USS *Housatonic*, October 1883. (Drawing by US Navy)

Prehistoric Dugout Found on East Branch of the Cooper River

By Douglas Boehme

Earlier this year, two sport divers discovered the remains of a prehistoric dugout canoe in the East Branch of the Cooper River. This is an exciting find, as very few prehistoric dugouts have been recorded in the state. This discovery will undoubtedly help to fill a sparsely written chapter of South Carolina prehistory.

When Mike Lucas and I were diving this January in the chilly waters of the Cooper River, we were surprised to discover a hollowed-out log protruding from the mud. Upon closer inspection, we noticed that the thickness was consistent and one of the sides was uniform. Further investigation revealed the inside of the log bore, evidence of having been burned and scraped. At this point we decided to surface and fix the location with landmarks on the surface. The next day we notified Lynn Harris, the head of the Institute's sport diver program, who confirmed that a canoe had not been previously reported at that location. Sport divers George Pledger and Sue Kane volunteered to join Mike, myself, Lynn, and Carl Naylor on several dives to the site. We recorded our observations, took preliminary measurements, and secured a wood sample for carbon-14 dating.

The canoe is embedded in the mud of the bank near the edge of the river channel. Approximately six meters are exposed, and the canoe's width is relatively constant at one-half meter. The exposed end is eroded as well as most of one gunnel. The other gunnel, the sides, and bottom of the canoe are well preserved. The preservation of the vessel improves closer to the bank. The wood is quite thick, seven or

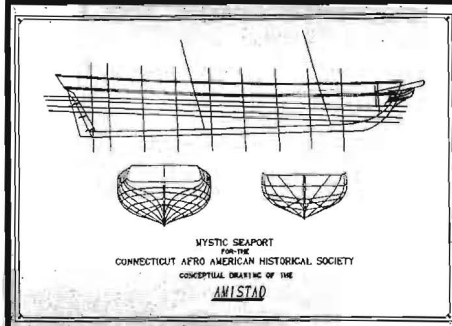
eight centimeters, and charring is evident on much of the bottom. The consistency of the wood is strongly reminiscent of cooked carrots. The carbon-14 test results put the date at 4120 ± 60 years BP, placing it in the Archaic period.

What's next? Ideas are currently being explored to excavate the covered portion of the canoe to record the shape of the finished end of the vessel and to determine the overall length. A detailed set of measurements would allow an accurate drawing of the canoe to be made. A set of underwater photos would also be taken, visibility permitting. The canoe would then be carefully stabilized and covered to protect it from the ravages of river currents and boat anchors.

There are currently only 19 dugout canoes in the South Carolina site files. Of these, most are historic, and only three have been carbon-dated. Two prehistoric canoes discovered on Hilton Head Island and on Kiawah Island were carbon-14 dated to 930 ± 90 years BP and 740 ± 200 years BP respectively. Another canoe, recovered from the Cooper River illegally by a diver, was confiscated by the SC Department of Natural Resources Enforcement Division last year. It was dated to 3700 ± 60 years BP. There have been numerous reports in the past of prehistoric canoes having been found; however, most cannot be substantiated and fewer still can be visited today. As one of the oldest known watercraft in the state, this discovery has the potential to fill a gap in our knowledge of prehistoric peoples in South Carolina. (No photos were available at this time.)

HISTORIC SHIP SUPPLY

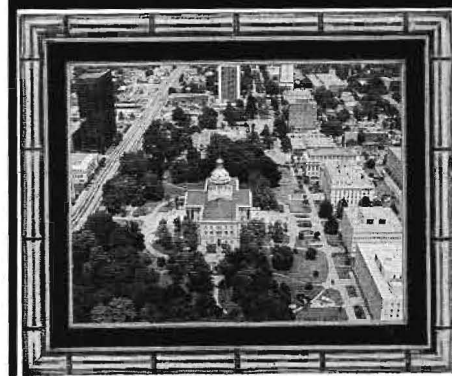
In cooperation with the SC Department of Transportation, division personnel James Spirek, Joe Beatty, and Christopher Amer continue to work with Quentin Snediker, Head Shipwright for the *Amistad* Replica Project at Mystic Seaport in Mystic, Connecticut. The keel for a replica of this historic vessel was laid last Spring, and the vessel has now been framed-up using live oak timber harvested from South Carolina live oaks.



Line drawing of *Amistad*. (Drawing courtesy of Mystic Seaport, Inc.)

STATE HOUSE PROJECT

During 1999, Christopher Amer continued cataloguing the 610 artifacts and architectural pieces removed from the State House building and grounds during the recent renovations to the building. He conducted the work as part of his internship requirements for the Museum Studies Program at the McKissick Museum. He also graduated from the program in August 1999.



South Carolina State House prior to the 1995-1998 renovations. (Photo by Hunter Clarkson, Alt Lee, Inc.)

H. L. Hunley Update

By Christopher Amer

Throughout the year, SCIAA has worked with the South Carolina Hunley Commission and the Friends of the Hunley to assist them in their goal of raising this historic vessel. In 1996, the commission and representatives of both the federal and state governments signed a programmatic agreement reaffirming federal ownership of this historic craft and turning over the raising and curating of the boat to South Carolina. The Underwater Archaeology Division continued its work on the *H. L. Hunley* Project through the review period. Using the ADAP III Marine Remote Sensing System, the division monitored the site for potential localized changes to the environment around this protected site. In May, the division conducted remote sensing operations over the sites of the *Hunley* and *Housatonic*. Concurrently, staff from the Naval Historical Center worked with the US Geological Survey to take core samples of sediments around the two sites. The information from these cores will be used to help plan the recovery of the submarine in 2001. In June, the Underwater Archaeology Division

and the Naval Historical Center coordinated on a project to investigate the *Housatonic* and two magnetic anomalies associated with the two sites (See article on Pages 22-25). Work focused on identifying the larger of the magnetic anomalies, which turned out to be an historic buoy that once marked the location of the *Housatonic*. Archaeologists on this project continue to conduct test excavations within the *Housatonic* site in an attempt to delineate the wreck and answer research questions about the engagement that took place on the evening of February 17, 1864. Investigation of the sites is funded jointly by SCIAA, the Naval Historical Center, and the Friends of the *Hunley*. Division staff and myself are actively assisting the commission in its efforts to raise the funds necessary to raise, conserve, and display the *Hunley* in perpetuity, through public lectures and by consulting on a variety of television, journal, and fundraising events. The recent made-for-TV movie on the *Hunley* acknowledged the assistance of the division in making the film during its recent premier.



A school group visits the Friends of the *Hunley* mobile exhibit during its recent visit to Columbia. (SCIAA photo by Christopher Amer)

LE PRINCE UPDATE

By James Spirek

Recently, five documents were obtained from the French archives, related to the corsair *Le Prince*, shipwrecked off Port Royal Sound in early 1577, and they have been translated (See *Legacy*, Vol. 3, No. 3, 1998, pp. 10-13). Chester DePratter and I pooled our resources to hire Bernard Allaire, a French researcher and finder of the documents, to transcribe the original documents and to translate them into modern French and English. Each of the documents shed light on the manner in which the corsair enterprise was organized from 1575 to 1576. The Charter Party document, 10 pages in length, related the financial arrangement between the principal investors, identified key officers and sailors, the purpose of the voyage, and outfitting and manning of the vessel. The other four one-page documents reveal later investors to the voyage, such as an innkeeper and Sieur de LeRoque, as well as attempts to collect debts owed to the ship's captain, Oratio Rosso.



We are now seeking funds to conduct extensive archival research in France and Spain to learn more about the corsair and the people involved. Early in the new millennium, we will launch our survey to locate the remains of the vessel and other shipwrecks on the Port Royal Sound shoals. If you would like to help sponsor additional archival research, translation of documents, or field work activities for the ongoing investigation of the French corsair and early history of South Carolina, please consider a tax-deductible contribution, earmarked for the project, to the Archaeological Research Trust. For additional information about the project, contact me at (803) 777-8170 or spirek@sc.edu.

The Pimlico Shipwreck Project (Part I)

By Lynn Harris

In October 1999, the Underwater Archaeology Division worked on a large shipwreck site in the West Branch of the Cooper River. The project was funded through an Archaeological Research Trust award. The site is located opposite the houses of Pimlico development and has been named the "Pimlico Shipwreck" by our staff. This wreck, reported to SCIAA by Jimmy Moss a hobby diver from Abbeville, was first recorded by SCIAA staff in 1993 and assigned the site number 38BK62. The vessel lies directly off a small island near the west bank of the river in 25 to 30 feet of water. The timbers are embedded in a sandy substrate with the bow facing towards the island shore. The ship lists to port and the starboard side is visibly more intact.

Strong tidal currents in this river bend made working on the site a real challenge at times. As student intern, Sue Kane exclaimed as she surfaced, "It is like diving in a horrible hurricane!" Ronnie Rogers from the Georgia Historic Preservation Office and Maria Jacobsen from the Hunley Research Center also joined us for a few days to gain low visibility, tidal working experience and were a great help on the project. "I really can't believe you actually work in the river," said Maria after her first dive. Two dives later she filled her underwater slade with measurements and remarked that the visibility that day was GOOD—three feet at least!

The large dimensions of the vessel and robust scantlings, such as frames and planking, suggest that the owner may have intended for the vessel to operate offshore rather than on inland waterways. In construc-

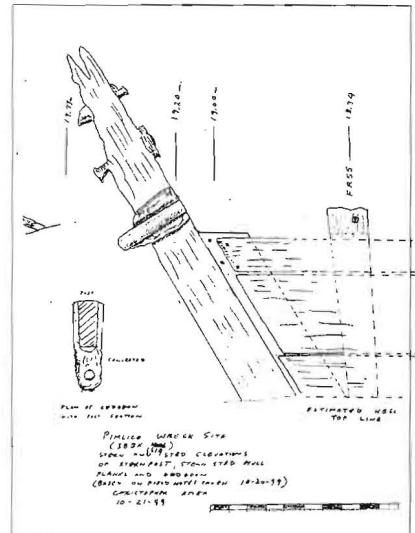
tion, it contrasts to other South Carolina vessels such as *Browns Ferry Vessel* (38GE57), *Mepkin Abbey* (38BK48), or the *Malcolm Boat* (38CH803). It has greater similarity to the *Freeda Wyley* (38HR301), an offshore lumber carrier, wrecked at Myrtle Beach. The other possibility is that it is an ocean-going vessel, for commerce or even warfare, sailing upstream to the "freshes" as a protective measure to prevent the marine organisms that attacked the bottoms of wooden ships in salt water.

When we arrived on the site at the start of the project only the frame tips were visible. The first task was to attach numbered tags to all the visible timbers. The next step was to excavate the wreck using underwater dredges. We decided to expose the entire length of the vessel only along the starboard side. The extent of the site was 19 meters in (62 feet, 4 inches) and we tagged 55 frames. Dredging operations revealed other features such as a stempost, sternpost, knees, and cant frames. One of the most interesting construction features were two large "saddle" maststeps designed to straddle the keel. This type of step is more typically used for larger offshore or coastal vessels. One maststep is located very close to the bow area, the other, almost in the middle of the vessel. This suggests that the vessel may have been rigged as a schooner, one of the most popularly-built vessels in South Carolina. Wood samples from the wreck have been sent to the Center for Archaeological Investigation at Southern Illinois University for analysis, and the results should yield information about where the vessel was con-

structed.

Unfortunately, Hurricane Floyd destroyed the relatively good visibility in the last week. We had to postpone our videography and photography recording of the site for next year. (See the next issue of *Legacy* for Part II of the Pimlico project to learn more about the ship.)

We are very grateful to the Archaeological Research Trust Board of Trustees for providing the funds to make this work possible.



Field drawing of stern structure of the Pimlico Wreck. (SCIAA drawing by Christopher Amer)

Sue Kane Interns This Year

The Underwater Archaeology Division office in Charleston has had Sue Vezeau (formerly Sue Kane) as an intern this semester. Sue brings with her a variety of experience, from both business and archaeology. During her internship with Lynn Harris in the Charleston office, Sue has had the opportunity to dive on a prehistoric canoe, investigate a newly discovered colonial period shipwreck, work on the reconstruction of the *Brown's Ferry Vessel*, assist in teaching a field school for hobby divers, explore and document a recently discovered rice trunk, work on the historic shipwreck trail, and assist in the Pimlico Shipwreck Project by diving, documenting, and drafting up the plans from the field notes. She reports that it has been an intensely rewarding experience for her, one that she has enjoyed to the utmost.