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James D. Spirek

University of South Carolina - Columbia, spirekj@mailbox.sc.edu

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Underwater Archaeology

Port Royal Sound Survey: Search Begins for *Le Prince*

By James Spirek

Introduction

For over five years now, the Underwater Archaeology Division has implemented the Port Royal Sound Survey with the goal to inventory shipwrecks for management purposes and for research opportunities. Present historical research indicates that over 50 recorded shipwrecks occurred in the environs of the sound. Over 40 of these ships wrecked on the shoals fringing the entrance channel to the sound. Predominately 18th-century British merchant ships, these ships, while sailing along the Atlantic Coast, ended their careers as casualties of the shoals. During the Civil War several colliers and other merchant ships struck the shoals due to storms or navigation errors. Perhaps the most historically and archaeologically intriguing shipwreck documented off Port Royal Sound is the French corsair, *Le Prince*, which shipwrecked in early 1577. From a nautical archaeology point of view the discovery and examination of this ship would reveal a component completely absent from the archaeological record associated with the early exploration, colonization, and contention of the New World—a 16th-century French corsair shipwreck. Several previous *Legacy* articles discuss archival research efforts to locate documents pertaining to the shipwreck. This article will focus on the first attempt to find the physical remains of the ship through remote sensing operations and visual inspections.

The Search Begins

The objective of the 2001 remote sensing survey was to examine the shoals and sandbars alongside the channel entrance to Port Royal Sound. The primary rationale for selecting this theater of operations was to search for the remains of the French corsair *Le Prince*, along with other known casualties. The main survey area encompassed the shoals and sandbars fronting the entrance to Port Royal Sound. Some secondary survey areas within the sound were prepared in the event of inclement weather precluding survey in primary areas (See Figure 1). Several factors determined high priority survey areas including historical research, coastal geomorphology, and oceanographic data that suggested a high potential to contain the remains of *Le Prince*, although other shipwrecks were anticipated to be caught in the electronic net we were casting. The survey strategy consisted of three parts: (1) a magnetometer survey to detect magnetic anomalies, (2) a magnetometer and sonar operation to gather more informa-

tion on prioritized magnetic anomalies, and (3) a visual inspection by archaeologists of magnetic and/or acoustic anomalies. Funds from an Archaeological Research Trust grant and from the anonymous donor to Drs. Chester DePratter and Stanley South's Santa Elena/Charlesfort research were used to implement the survey.

The electronic ensemble to search for *Le Prince* and other shipwrecks in Port Royal Sound consisted of the ADAP-III system. This system incorporates a Geometrics G-880 cesium magnetometer (used to detect steel or iron), a Marine Sonic 600 Khz side scan sonar (used to acoustically

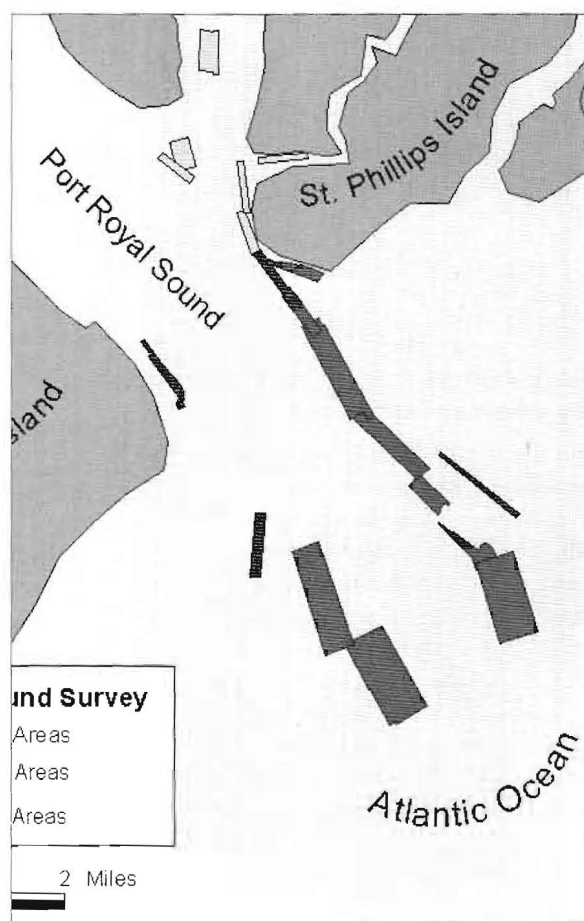


Figure 1: Map showing 2001 survey areas. (SCIAA drawing)

picture the bottom), a Cetrek digital fathometer (used to record water depth), and a Trimble AG132 Differential Global Positioning System (DGPS). Both the magnetometer and sonar sensors are towed behind our 25-foot research vessel, while the fathometer sensor is attached to the boat. Three onboard computers handle information acquisition comprising position, depth, sonar, and magnetometer data. Two auxiliary screens provide real-time guidance to the helmsman to ensure accurate survey transects or to steer towards a specified anomaly. Following data collection the magnetometer files are post processed using Gradient Analysis, a proprietary software to smooth the diurnal effects of the sun on the magnetometer, which are then entered into Microsoft Excel to create a database. Once all the data is finessed and smoothed the information is added to Earth Systems Research Institute's ArcView software, a Geographic Information System (GIS) program. We use the software to analyze and manipulate the magnetometer, bathymetric, and sonar data (See Figure 2). From this point, the magnetic or acoustic anomalies are prioritized for visual inspection by archaeologists to ascertain the anomaly source, for example, whether it is modern debris or a shipwreck.

In late February 2000, we attempted to begin the magnetometer survey, but were thwarted when the magnetometer ceased functioning on the first day. Delays in repairs and other job priorities precluded returning to Port Royal Sound until the following year. Finally launching the magnetometer survey from March 19 through April 12, 2001, we managed to complete approximately 409 linear miles covering an area

around 3.26 square miles. The survey boat traveled between six and seven knots and the lane transects were spaced 20 meters apart. Over 202,373 magnetometer points were gathered, which can be likened to an equal number of shovel tests. Water depths ranged from two to 40 feet. A total of 526 magnetic anomalies greater than one gamma, a measurement unit used to express the intensity of a magnetic field, were detected in the survey area. Of these anomalies, four anomalies showed promise as potential shipwreck sites, and another 38 most likely represented single-source objects.

Refining operations occurred from June 25 to 29 to gather more magnetometer and sonar information of the 42 prioritized anomalies. The refining process was intended to better define the geographical position of a magnetic anomaly and with the sonar to determine whether the anomaly was exposed or buried, and if exposed, to tentatively identify the target. Unfortunately, we had completed refining seven magnetic anomalies when late on the first day the sonar fish separated from its cable. Two days were spent looking for the sonar sensor until it was found and another two and a half days were spent defining targets solely with the magnetometer. A total of 24 targets were investigated. Seven targets were further defined

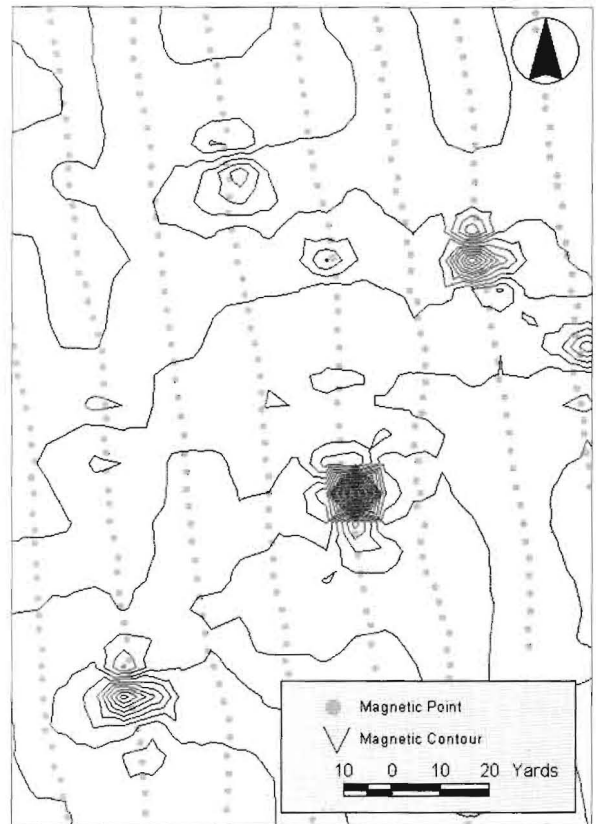


Figure 2: Several magnetic anomalies in a survey block. (SCIAA computer graphic)

with both the magnetometer and sonar, including three of the highest priority ones, while the remainder were further defined solely with the magnetometer.

From September 10 to 14, we donned our diving gear to visually inspect several of the magnetic and acoustic anomalies (See Figure 3). Two volunteers assisted us during the diving operations, Ronnie Rodgers from the Georgia Division of Historic Preservation, and Charles Hughson, my old colleague from the Pensacola Shipwreck Survey. Unfortunately, weather, heavy shrimp boat activity, and equipment problems hindered our diving operations. We managed to dive only one magnetic anomaly that had also produced an acoustic image showing a rectangular object (Figure 4). The water depth at the target was approximately 24 feet and visibility was about a foot or so in the water

See *LE PRINCE*, Page 28

LE PRINCE, From Page 27

column but practically nil at the bottom. The iron object was rectangular and measured approximately 5 feet wide by 12 feet long and stood about a foot and a half off the bottom. Snagged around the box were some shrimp nets. Definitely not part of a 16th-century ship, the object's function is indeterminate at this point.

Inclement weather on the last day of diving forced us over to Skull Creek where we took the opportunity to dive a known shipwreck in the channel. Sonar images revealed a large ballast mound with no visible ship timbers. During the dive, we encountered very large quarried ballast rocks, loose bronze drift pins, and large metallic objects strewn about and along the periphery of the ballast mound. The remains may represent the Martins Industry Lightship that was brought into the creek and destroyed by the Confederates in 1862 prior to the arrival of the Federal's Port Royal invasion force. More research is needed for a more conclusive identification, but the large stones seem to indicate that the ballast was intended to stay in place as one would expect for a lightship meant for year-round station out by the shoals, and the bronze fasteners

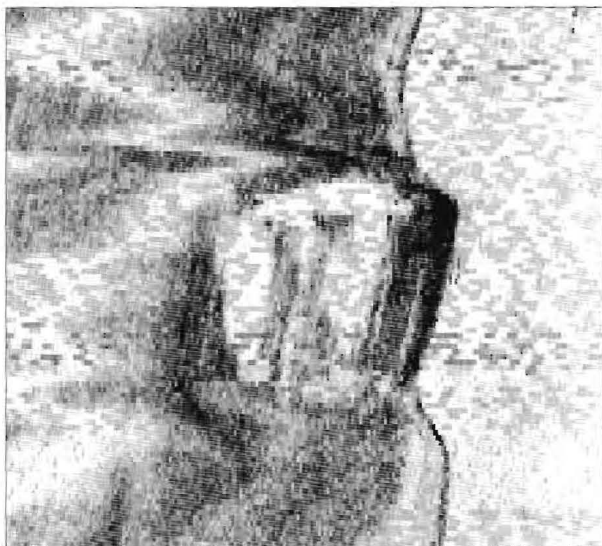


Figure 4: A sonogram of the rectangular object. (SCIAA computer graphic)



Figure 3: Joe Beatty about to dive on an anomaly off Hilton Head Island. Pictured from left to right: Ronnie Rodgers, Charles Hughson, Joe Beatty, and Lynn Harris in the water. (SCIAA photo)

indicate a temporal range from the 1850s. We still have three high priority anomalies to investigate to determine the source of the magnetics.

Conclusion

In the near future we plan to organize another ground-truthing endeavor, as well as to continue remote sensing operations. Good headway has been made in the first field campaign to search for *Le Prince* and other luckless victims of the Port Royal Sound shoals, despite equipment problems. We are also looking at using another method of remote sensing by employing an airplane to conduct an aerial magnetometer survey. An airborne magnetometer survey would serve to speed up the investigation by covering a large amount of the project area, which in turn would allow

us to focus strictly on examining detected magnetic anomalies. Whichever systematic survey method, or combination of the two, we use should eventually reveal the site of the *Le Prince* shipwreck, as the documents clearly state the ship was lost on the shoals of Santa Elena (Port Royal Sound).

I would like to express my thanks to the Board of Trustees of the Archaeological Research Trust for providing the funds and extending the grant to search for *Le Prince* and other shipwrecks and for their continued support of this research project. A debt of gratitude is owed to the Anonymous Donor of Drs. Chester DePratter and Stanley South for funds to assist in the project. Personnel at the Waddell Mariculture Center also helped in our endeavor with lodging and logistical support. Also, a debt of gratitude is owed to all the individuals who have participated in or lent support to our project. If you would like to help in our efforts please consider sending a tax-deductible contribution to the Archaeological Research Trust Fund earmarked for the Port Royal Sound Survey.