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Maritime Research Division

Recovery of the CSS *Pee Dee* Armament from the Great Pee Dee River

By James Spirek and Jonathan Leader

On September 29, 2015, following 150 years of lying peacefully on the bottom of the Great Pee Dee River, three cannons jettisoned by the CSS *Pee Dee* during the waning days of the Civil War, were lifted onto the bank of the river to the delight and appreciation of numerous invited guests and colleagues (Figure 1). Under the general supervision of South Carolina Institute of Archaeology and Anthropology (SCIAA) archaeologists, James Spirek, State Underwater Archaeologist, and Dr. Jonathan Leader, State Archaeologist, the SCIAA team was complemented by a number of individuals and organizations to undertake the successful raising of these cannons. Finally resting on the riverbank, the cannons represented the culmination of years of searching and planning for the recovery of this unique trio of guns—the complete armament of a Confederate gunboat.

The search and recovery of the three cannons had been the focus of numerous individuals, organizations, and SCIAA for a number of years. The search area for the cannons initially centered at the shipwreck location a mile or so downriver, and when they were not found there, attention



Figure 2: Glenn Dutton teaching Nate Fulmer and rest of crew the Cross-Your-Heart strapping method to recover cannons. The practice cannon is an IX-inch Dahlgren recovered from the SS *Philadelphia*, a schooner carrying a load of scrap armament from Charleston in the late 1860's that wrecked in federal waters off South Carolina. (SCIAA photo)

turned to the waterfront of the shipyard. In 1995, the CSS *Pee Dee* Research and Recovery Team, a private avocational archaeology group, under the direction of Ted Gragg and Bob Butler, found the

first of the three CSS *Pee Dee* cannons—the IX-inch Dahlgren smoothbore—when systematically exploring the waterfront of the navy yard. Eleven years elapsed before the team found the supposed VI.4-inch Brooke rifle just a bit upriver from the Dahlgren in 2006. The team operated in the river at the waterfront of the Mars Bluff Navy Yard under the auspices of an Intensive Survey and Data Recovery License issued by SCIAA. The licenses ensured that SCIAA monitored and supported the team's efforts to document the site with as much archaeological detail as possible. The group did an excellent job expending painstaking efforts recording the archaeological features and artifacts of the site—both on land and an underwater. The group also conducted exhaustive historical research to detail the rise and demise of the shipyard and gunboat.



Figure 1: Recovery of double-banded VI.4-inch Brooke rifle. (Photo courtesy of Dr. Lawrence Babits)



Figure 3: Markings on left trunnion of “VI 4 IN” with weight “10620” and serial number “S 53.” (SCIAA photo)

Tangible results of the team’s efforts are on display at the South Carolina Civil War Museum in Myrtle Beach and in a book entitled, *Guns of the Pee Dee, The Search for the Warship CSS Pee Dee’s Cannons*.

In 2009, the Drs. Bruce & Lee Foundation, a charitable organization based in Florence, awarded SCIAA a grant of \$200,000 to continue the archaeological investigations at the site and to recover the armament of the gunboat for public display. With two of the three cannons located, SCIAA, in cooperation with the CSS *Pee Dee* Research and Recovery Team and the new property owners, Glenn Dutton and Rufus Perdue, launched efforts to search for the third cannon and to continue documenting the shipyard, both underwater and on land. Believing the project offered a great educational opportunity, SCIAA contracted with the Program in Maritime History at East Carolina University, Greenville, North Carolina to conduct a field school to

increase the work force and to gather as much information as possible at the site. The ECU-SCIAA field school, augmented

by a geophysical survey by USC students under the supervision of Dr. Leader, provided a great amount of information about land and underwater features at the shipyard that included recovering Brooke shells, friction primers, and other gunboat and shipyard-related artifacts, but no VII-inch Brooke rifle. ECU prepared a report entitled, *Prehistoric Pottery, Munitions and Caulking Tools: Archaeological and Historical Investigations at Mars Bluff Confederate Shipyard (38MA22/91) on the Great Pee Dee River*, that detailed the terrestrial and underwater work and findings that resulted from the field school.

SCIAA and our partners then spent the next several years looking for the VII-inch Brooke rifle, primarily focused on following the line of the other two jettisoned cannons by systematically detecting magnetic anomalies using a cesium magnetometer, metal detector, hand-held proton magnetometer and then excavating to determine the sources of the targets. By weeding through these targets, we found a number of objects—kitchen stove fragments, logging debris—many log dogs, a few other shells, but once again no missing Brooke rifle. In the summer of 2012, Dutton and Perdue, the property owners, took advantage of extremely low-water levels by deploying a metal



Figure 4: Corroded muzzle of VII-inch Brooke rifle. (SCIAA photo)



Figure 5: Detail of "FP No 513" on breech of IX-Dahlgren. (SCIAA photo)

detector in the river. Walking around the shallows, they methodically searched the riverbed for the elusive cannon. Moving out from the bank towards the channel and into an area of the river that currents had previously prevented our diving operations, the men found a large magnetic anomaly near a few exposed wooden pilings, believed to once form part of the gunboat's mooring area. Later in the fall of that year, SCIAA returned to the site to continue our investigations, as well as to begin planning to recover the two cannons. Preparing to launch our pontoon boat for the first day's work, Dutton informed Spirek of the possible discovery of the missing cannon. Our planned operations switched gears to confirm the discovery of the supposed VII-inch Brooke rifle. After metal detecting to define the target, dredging operations to clear the magnetic anomaly quickly confirmed that Dutton and Perdue had indeed found the lost cannon.

With all three cannons accounted for, we began in earnest to plan for their recovery. Following the Civil War, title to all Confederate States property reverted to the United States. Prior to any efforts to recover the jettisoned armament, a loan agreement between the custodians of the three cannons, the Administrator of General Services (GSA), was forged between the federal agency and the Florence County Museum, Florence County, and SCIAA. All parties signed the loan agreement in early 2015, which gave

the greenlight to proceed with recovering the cannons. In the meantime, we worked to secure the services of contractors to recover, transport, and conserve the cannons. We contracted with Long Bay Salvage Company (LBS), owned by Dutton and Perdue, to recover the cannons and to transport the guns to and from North Charleston. To conserve the cannons for outdoor display, we contracted with the Warren Lasch Conservation Center (WLCC), the same facility treating the Confederate submarine *H. L. Hunley*. A major concern also centered on locating the proper venue to display the cannons when they returned to Florence. Fortunately, Florence County, in conjunction with the Florence County Museum, offered to

display the trio at a new U.S. Department of Veterans Affairs Administration building, currently under construction. The facility will also house space for the Florence County Museum to display artifacts and interpretive materials related to the three cannons and other aspects of the Civil War in the Pee Dee region.

With the extraction, conservation, and exhibition plan squared away, we launched a two-stage approach over two weeks to recover the guns with the first phase consisting of preparing the guns for recovery and then the second step: Lift-Day! The preparations for recovery occurred during the week of September 21, that included dredging operations to clear the cannons of overburden, strapping the cannons, and re-positioning the supposed VII-inch cannon closer to shore. This was undertaken as a precaution, because this tube lay further out in the stream, and if the river level rose, it would potentially preclude diving operations on Lift-Day. This would ensure smooth operations on the arranged date with spectators and media present expecting three cannons to rise out of the water—not two. Happily the equipment, river, and weather cooperated and with a bit of hard work and some luck, the three cannons were strapped and readied for Lift-Day scheduled for September 29 (Figure 2).

Perhaps the readers of the article may



Figure 6: VII-inch Brooke rifle breaking the surface with MRD pontoon in background. (SCIAA photo)



Figure 7: Jonathan Leader and Tanner Dutton position VII-inch into position with other guns—VI.4-inch in foreground and IX-Dahlgren in the middle. Virginie Ternisien, Warren Lasch Conservation Center conservator, left in foreground. (Photo courtesy of Luke Spirek)

have noticed and wondered why the authors wrote, “supposed VI.4-inch” or “supposed VII-inch” when mentioning the discovery of these two cannons? When we re-positioned the “supposed VII-inch” closer to the river bank, we were dealt a surprise regarding the true identity of this particular gun. But first we must address the identity of the “supposed VI.4-inch.” Over the years, all the groups involved in the project measured the bore at the muzzle of this particular cannon between 6.4 or 6.5 inches. When the “supposed VII-inch” cannon was found, the muzzle bore was never measured, an oversight in hindsight, because this was the VII-inch. When we repositioned the “supposed VII-inch” and saw the cannon fully exposed, the size of the cannon struck some as small, and then we found engraved “VI⁴ⁱⁿ” on the left trunnion (Figure 3). All those years spent in search for the VII-inch was in fact a search for the VI.4-inch, which obviously meant all those years we had already found the VII-inch. This also meant re-thinking the position of the gunboat at its mooring when the crew jettisoned the cannons overboard. Rather

than pointed downstream, the bow of the gunboat was actually positioned upstream, the location of the forward VII-inch gun, perhaps intending to steam once more in support of the Confederate retreat over the river or was simply the preferred mooring orientation at the navy yard. The reason for the errant measurement was due to the muzzle of the VII-inch suffering more corrosion than the other two tubes from periodic intervals of exposure to the air during low river levels. The cannon when jettisoned landed on its breech end in the mud near the riverbank with the muzzle pointed upwards into the water column—unlike the other two that landed and fell lengthwise on the river floor. Whereas the muzzles of the two other guns were nearly newly casted sharp, the muzzle of the VII-inch had corroded to a smaller diameter that caused the mis-measurement of the bore (Figure 4). Regardless of which was which, all three cannons are now firmly identified. But that left one more identity to settle—where did the gunboat’s IX-inch Dahlgren come from?

The pedigrees of the two Brooke rifles are fairly complete even down to the

amount of iron used in pouring the mold and their shipment from Selma, Alabama to the Mars Bluff Navy Yard. The identity of the Dahlgren, however, remained problematic to a degree. Based on the markings engraved on the cannon, we had determined the weapon was Union-made and cast at the Fort Pitt Foundry outside Pittsburg, PA in 1862 and inspected by the assistant ordnance inspector, Captain John M. Berrien. Engraved at the top of the breech was the IX-inch’s serial number recorded as “FP 573.” Dr. Lawrence Babits, now-retired director of the Program in Maritime Studies at ECU, had posited three Union shipwreck candidates from which the gun came from—two from out West and the USS *Southfield*, sunk in the Roanoke River near Plymouth, N.C. in the spring of 1864. *Southfield* seemed the most viable source due to railroad logistics at this juncture in the war. Last year, when conducting research at the National Archives in Washington, D.C., we decided to confirm the identity of the vessel that the Dahlgren came from using the recorded serial number. When we reviewed the IX-inch Dahlgren smoothbore registry for “FP 573,” we learned that that gun was aboard the USS *Cincinnati*, operating in the Western theater and had been last fired in April 1865—clearly not our gun. We then looked for *Southfield* guns in the registry and also found another document that listed the specific ordnance aboard the gunboat. The armament of the gunboat at the time of its sinking consisted of a 100-pdr Parrott rifle and five IX-inch Dahlgren’s. The document listed the serial numbers and other markings on each gun. One of the IX-inches was “FP 513.” Information derived from the registry noted that “FP 513” had the same markings that we had seen on the Dahlgren in the river. The registry reported that the gun was sunk aboard the *Southfield* and never recovered by the Union navy. The Confederate navy, however, had recovered this gun like the rest of *Southfield*’s armament. This, therefore seemed likely our gun, but we had yet to confirm the “7” originally recorded during the field school was



Figure 8: Cannons wrapped and strapped on the trailer for delivery to Warren Lasch Conservation Center in North Charleston. (SCIAA photo)

actually a “1.” The week prior to recovery, we finally determined that the Dahlgren was indeed “FP 513” and was the missing *Southfield* gun recovered by the Confederates and used to arm the CSS *Pee Dee* (Figure 5). Corrosion had once again masked the identity of another one of the cannons.

Besides recovering the complete armament of a Confederate gunboat, what makes this a unique collection of cannons is having the individual histories of each of these tubes interweaved with the archaeological record. So it is hoped that visitors instead of simply gazing at these cannons in front of the VA building will nod knowledgeably about the journeys of each of these guns used to arm a gunboat intent on contesting Union supremacy on the rivers and seas during the Civil War. As an aside, the newsletter editor has asked Spirek to pen a brief narrative in the next issue of *Legacy*, detailing his previous work on the USS *Southfield* as a graduate student and the serendipitous nature of working to recover one of its guns from the Great Pee Dee River.

On Lift-Day, September 29, we recovered the three cannons working from the aft gun to forward gun or from downriver to upriver. The double-banded

VI.4-inch Brooke rifle, weighing in at 10,620 lbs. and the gunboat’s aft gun, breached the surface shortly after 10:00 AM and was brought to the riverbank by a large excavator. The assembled crowd broke into applause and whistles, as the cannon swung up from the river and then settled onto bedding blocks. The IX-inch Dahlgren smoothbore, weighing in at 9,193

lbs. and the amidships gun, was next, followed by the finale—the double-banded VII-inch Brooke rifle, weighing in at 15,000 lbs. (Figure 6). Once the cannons were positioned on the bedding blocks, the tape marking the safety zone was taken down for the spectators to get close-up views of the tubes (Figure 7). Two conservators from the WLCC worked on keeping the cannons wet, along with some assistance from invited guests. In the meantime, Spirek, Leader and other principals conducted media interviews discussing project particulars, historical significance, and near and long-term plans for the armament. As the crowd dwindled away, we began to prepare the guns for transport to the WLCC the next day by wrapping them in wetted blankets and plastic wrap. The following day the 18-wheeler arrived and we situated the three guns on the trailer for the three-hour trip to North Charleston (Figure 8). We arrived in good time at the WLCC and backed the trailer into the laboratory and then deposited the three large cannons into their conservation tanks (Figure 9).

The conservation plan for the cannons relies on electrolysis that will safely remove the encrustations, stabilize and neutralize the corrosion, and then finish



Figure 9: Glenn Dutton assists in positioning IX-inch into conservation tank at Warren Lasch Conservation Center. (SCIAA photo)



Figure 10: XI-inch Dahlgren in the conservation tank. (SCIAA photo)

with a coating of a special solution for outdoor display. This process should last approximately two years. As the cannons near completion, we will record the dimensions, markings, and other details of the exhibition-ready tubes. The concluding phase of the project will occur when the three cannons are transported and mounted on their pedestals in 2017, at the new U.S. Department of Veterans Affairs facility in Florence.

For those readers desirous of more background information about the history of the CSS *Pee Dee*, Mars Bluff Navy Yard, the three cannons, previous research efforts, and SCIAA's involvement in the archaeological investigations at Mars Bluff and the gunboat, please refer to the following articles in SCIAA newsletters *Quarterly Reporter* and *Legacy*, (*Quarterly Reporter*, Volume 1, Issue 4, 2011, pages 4-5; *Legacy*, Volume 13, Number 2, 2009, pages 1 & 4-8; Volume 17, Number 1, 2013, pages 16-17). All of these articles are available online at USC's *Scholar Commons* website.

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As with any large-scale undertaking to recover archaeological artifacts, especially large ones weighing between 9,000 to 15,000 lbs., requires a great amount of logistical support from paperwork to fieldwork that required the time, treasure,

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Figure 11: SCIAA team poses in front of VII-inch. (Left to Right): Dan Brown, Joe Beatty, Jim Spirek, Jonathan Leader, Nate Fulmer, and Jessica Irwin. Ted Gragg at far left with Glenn Dutton and Bob Butler. (SCIAA photo)