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H. L. Hunley Completes the Journey Home

By Christopher F. Amer

At 8:40 AM on August 8, 2000, history was made when the submarine H. L. Hunley rose out of the waters off Charleston Harbor and was placed on a barge in preparation for completing its final journey home. It had been 136 years since the boat had last seen the light of day. For all those years the Hunley had lain beneath the sediments of the sea floor waiting for someone to discover it. That day arrived in early May 1995, when a team of divers from the National Underwater Marine Agency (NUMA), working in cooperation with the South Carolina Institute of Archaeology and Anthropology, got their first glimpse of the forward hatch and snorkel box of the silent submarine. What happened after that is no less a dramatic story than that of the submarine's original exploits.

It was to take almost a year and a half to sort out the ownership/custodianship issue and over half a decade before the sub would break the surface. Many of our readers are familiar with the early history of the Hunley...
submarine, its discovery, and the events leading up to the decision to recover the boat. It is to this latter subject and the completion of the journey home that I will devote this article. For those readers who would like to bone up on the history of the Hunley and the history of the project since 1995, here are some places to go for information: http://www.cla.sc.edu/sciaa/hunley1.html; http://www.hunley.org; and Hunley updates in past issues of Legacy, Vol. 1, Nos. 1 and 2; Vol. 2, Nos. 1, 2 and 3; Vol. 3, No. 2; Vol. 4, Nos. 1-3; and Vol. 5, No. 1.

Guard was eating up the budget. Then there was the conservation issue. While the Hunley was entombed in its protective mantle of sediments, it remained in a relative state of equilibrium, with its environment isolated from the deleterious effects of seawater and oxygen. However, after the 1996 assessment, which exposed approximately one-third of the hull, those effects could once again nibble away at the boat’s fabric.

Then there was the pressure from the political arena, as well as demands from the public, to protect the boat and provide the world with a view of this artifact that had come to represent to many the spirit of the Confederacy—the underdog in the conflict sometimes referred to as “The Unnecessary War.” And recovery would provide the brave crew, who perished in the Hunley’s final voyage, with an appropriate burial along side the Hunley’s two other fallen crews. To add to the tension, all this was happening at a time when South Carolinians were hotly debating the disposition of the Confederate Battle Flag, then flying atop the State House dome.

Lastly, though by no means least, was the scientific reason. The Hunley can be considered the great-grandfather of the modern-day leviathans that silently slip beneath the oceans of the world. The feat of a submarine sinking an enemy ship was not to be repeated for over half a century, when German U-Boats sank Allied ships during the First World War. It was readily apparent to those of us in the 1996 assessment that the Hunley was much more sophisticated than had been previously imagined. Far from being a product of desperation,
slapped together from a boiler and spare parts, the exterior of this submarine was sleek and suggested a sophistication of design and implementation born of experience and testing. After all, James McClintock, Baxter Watson, Horace Hunley and the members of the Singer Submarine Corps (aka. the Confederate Secret Service) had already built and tested two other designs before embarking on the Hunley. If the exterior surprised us in that way, surely the interior must hold far more surprises that had the potential to rewrite, or at least add a substantial chapter to, the history of submarine development.

Who, How, When, How Much

With all that in mind, the questions became obvious to the Commission: Who would raise the sub? How would it be raised, conserved, and exhibited? When would all this happen? And the ultimate question, how much would all this cost? Since as early as 1995, SCIAA had addressed the issue of cost when the Hunley Project Working group released its management plan for dealing with the site. At the request of the Hunley Commission, the group estimated between 12 and 20 million dollars for the recovery and conservation effort, a number that has stood the test of time. For the next half decade, the Commission would focus its attention on putting a team together to recover the boat, raising funds, and securing a place for the submarine to reside in perpetuity.

With an approximate dollar value in mind, the Hunley Commission formed the Friends of the Hunley to provide fundraising and management oversight for the project. In the Fall of 1999, the Friends sponsored the Hunley Symposium. The purpose of this three-day-meeting was to gather together many of the world’s top marine metals conservators and experts who had dealt with large metal objects, especially submarines, and come up with a consensus of how to raise and preserve the Hunley. Dr. Robert Neyland, Hunley Project Manager, opened the meeting by saying that, “Hunley is the most difficult composite iron artifact ever undertaken, and it is by far the largest and most complex object ever recovered.” The work that had been undertaken to date and the planning that emanated from the symposium working sessions, led Michael McCarthy from the Western Australian Maritime Museum’s Department to raising and preserving the Hunley.

The Hunley sees daylight for the first time in 136 years. (SCIAA photo by Christopher Amer)

Hunley Recovery Project Director Bob Neyland working on the forward hatch, while the 13-ton recovery truss looms overhead. (Photo courtesy of Friends of the Hunley)

Jim Spirek sorting artifacts at one of the screens used to separate historical objects from bottom sediments. (SCIAA photo by Christopher Amer)

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of Maritime Archaeology to state, "Hunley is raising the bar for underwater archaeology and conservation. Not only is she viewed as a significant object of history, but also a significant research and science project; this is perhaps the most exciting find of the century." From this meeting-of-the-minds, came the plan that to recover the Hunley was to be implemented the following year.

While securing a building that would be transformed into a state-of-the-art conservation facility for the submarine, the Hunley Commission and Friends of the Hunley set about selecting the players who would actually do the work. Dr. Robert Neyland had been brought in to head up the recovery project. Oceaneering International, Inc. was selected to draft the recovery plan and drive the recovery operation. Archaeology would be conducted by archaeologists from the Naval Historical Center, National Park Service's Submerged Cultural Resource Unit, the Underwater Archaeology Division of SCIAA, and a number of contract archaeologists. This international team would work beside the Oceaneering team to recover not only the submarine, but also the information contained at the site, and ensure that the operation was a success.

Unlike most underwater archaeology projects, the recovery of the Hunley would be conducted as a commercial operation. To do that the archaeologists had to be trained in commercial diving protocols and in the use of commercial diving equipment. Through April 2000, Division staff spent many long hours with the recovery team training in the use of the Superlyte 17 diving helmets in the low visibility water off Charleston.

On the afternoon of May 12, 2000, Senator Glenn McConnell announced at a press conference that the Hunley Recovery Project had begun. Now battle against time to get the submarine up before hurricane season and the inevitable bad weather that would descend on the South Carolina coast. The project was divided into two phases. During the first phase, the team would work to expose the hull, which lay from three to eight feet below the sediments of the seafloor. Diving from a 160-ft oil rig tender, the team worked 12-hour days, each team member logging up to four-and-one-half-hours per dive, digging a trench around the sub 100 ft long and 40 ft wide and five ft deep to prepare the boat to receive the lifting equipment.

By the end of June, the site was ready for the suction piles and lifting truss to be installed. The plan was to sink suction piles into the sea floor approximately four feet forward and astern of the hull's extremities. These piles, each weighing 40 tons, would become a stable base for positioning the lifting truss over the submarine.
Edisto resident and Karlissa B., crane operator, Jenkins Montgomery, gingerly places the Hunley and its protective truss on the deck of the transport barge. (SCIAA photo by Christopher Aber)

The hull would then be slung beneath the 13-ton truss and the sub and truss lifted as a unit. Positioning these heavy materials would require the utmost precision and full cooperation from the weather, as they would be deployed from a floating barge crane. Unfortunately, the weather was not totally understanding in this matter. While the summer winds occasionally abated, the rough waters and ground swells, characteristic of this stretch of water, did not.

Plan B necessitated using a stable platform to complete the second phase of the project, the recovery. After much searching, red tape, and paperwork, this platform was secured. In late July, the 600-ton jack-up crane barge, Karlissa B., slowly made its way through Charleston Harbor to Pier Mike at the old Naval Base. The B. had been under tow for almost two weeks on its trip from the Dominican Republic to South Carolina. When it arrived, more than a few of us were scratching our heads, wondering what we were in for.

Working off the Karlissa B., turned out to be quite an experience, one that most of us will not soon forget. For the final phase of the operation, we went to a 24-hour work schedule with 12-hour shifts (Joe Beatty and I won the draw for the not-so-coveted night shift, while Jim Spirek worked the day). The “vampire shift,” as the 7:00 PM to 7:00 AM shift came to be affectionately known, turned out to be fairly decent. We experienced very few visitors, press, or VIPs to slow down the work and the lights, both underwater and topside, lent a Disneyland-like air to the work. For each dive, from two to four divers descended into the murky water in a cage on a motorized hoist—two archaeologists and two Oceaneering divers. Visibility on the bottom at 30 ft varied from zero to two or three ft, and very rarely exceeded that. Consequently, it usually made little difference what time of the day one dived, except that when the visibility improved, there was more sea life visible at night, as the nocturnal creatures came out to feed and frolic around one’s face plate, drawn to it by the helmet lights.

The Karlissa B. was stationed some 75-ft to port of the Hunley, while a materials barge was moored.

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off the boat's starboard side. The materials barge carried the suction piles and truss, as well as the excavation equipment and spare anchors. It would also become the transport vessel for the submarine on its voyage through Charleston Harbor. Personnel transportation to-and-from the two barges was facilitated by a Billy Pugh or by boat, although many of us preferred the aerial ride because of the spectacular views each ride afforded us (some people pay money for such rides).

Working around the clock, the Hunley Recovery Team carefully, and with rocket-science-accuracy (well, almost), placed the suction piles and installed the truss over the hull of the Hunley. The divers used water jets to carve tunnels beneath the hull so that the nylon lifting straps could be installed. By the end of the first week of August, all 32 slings were in place and taking the full weight of the submarine. A computer on the surface monitored the strain on each sling via load cells installed on the truss. Everything was checked and rechecked, then checked again. In each person's mind was the knowledge that we were about to lift a prototype. There would be no second chance if things went wrong.

August 8th dawned with sunny skies and a slight breeze that kicked up small waves atop the perennial ground swell. Onboard the Karlissa B. preparations for the lift had been in full swing since before dawn. A National Geographic Society team was busily fitting cameras onto the three-ton lifting block of the crane to capture images of the submarine rising out of the water, while the rest of the recovery team finished their chores and secured positions from which to view the Hunley making its appearance. By 8:00 AM, one of the hopper barges used for collecting and disposing of channel and harbor sediments had been placed up-wind to act as a breakwater. These barges are the largest of their type in the world. This one dwarfed the B., which itself stood 30 feet above the waves.

At 8:40 AM, the cable on the 300-ton crane became taught and slowly the Hunley made its way into daylight. With kid gloves, crane operator Jenkins Montgomery gingerly placed the 23-ton load on the deck of the heavy materials barge, and the load was readied for its three-hour trip to the Warren Lasch Conservation Center at the old Charleston Naval Base. Today, looking at the news footage of the voyage, it is truly amazing—500+ boats accompanying the barge, reenactors on shore firing 21-gun salutes, crowds along every inch of waterfront from Fort Moultrie to the bridges. From the vantage point of
sprinkler system that kept the hull wet and studying the details that had eluded us for so many years. However, the sheer magnitude of the boat escort and spectators soon drew our attention from the Hunley. Perhaps one of the more interesting points of the trip was riding in on the barge, it was magical. Despite being at the epicenter of the festivities, it was the first time that those of us who had worked for so many years on the submarine had actually seen the entire boat. Those of us lucky enough to have been on dives sporting good visibility could remember seeing both hatches from the same vantage point, but never the entire hull.

Much of the early part of the barge ride was spent checking the having take-out-pizza delivered to us mid-harbor by the harbor police. Too soon for many of us, we arrived at Pier Juliet. One last leg in the journey home had yet to be completed. Slung beneath a huge mobile crane, the 137-year-old submarine made its way along the last one-quarter mile to the Warren Lasch Conservation Center. There it would enter its final phase of the work. Its protective mantle of concreted sediments that had helped to preserve its fabric for so long will be removed so the archaeologists can gain entry to the hull and explore its secrets. The hull will go through a lengthy conservation process (up to 10 years), while the salts are removed from the cast and wrought-iron components and the hull is made stable for curation. Then, and only then, will the historic submarine be put on display in a yet-to-be-built wing of The Charleston Museum. The proposed exhibition will focus on the Hunley, its foe, USS Housatonic, and submersible development during the Civil War. The Hunley will be the centerpiece, but the exhibition will also include artifacts from inside the submarine and the Housatonic to tell the story, as well as a scale replica of James McClintock’s first submarine, Pioneer. The replica was built by interns at the Bosch Company, in Charleston, and was donated to The Charleston Museum last year.

Probably one of the more significant and fitting aspects of the project will be the burial of the Hunley’s last crew. The remains of Lieutenant George Dixon and his crew will be exhumed from their iron coffin this spring and laid to rest beside their fallen comrades—the crews from the first two sinkings—at Magnolia Cemetery. At that point their mission will be finally ended.