



Conservation of *H.L. Hunley* and its Associated Artifacts

05-106

Background:

H.L. Hunley was an American Civil War submarine that demonstrated the advantage and danger of undersea warfare. Built in Mobile, Alabama in 1863 by a coalition of southern machinists and businessmen, the tiny vessel would earn distinction as the first submarine in history to engage and destroy an enemy ship in combat. On the night of February 17, 1864, *H.L. Hunley* set out from Sullivan's Island, South Carolina and silently approached USS *Housatonic*, a Union sloop-of-war participating in the blockade of the city of Charleston. The submarine detonated an explosive charge against *Housatonic*'s starboard side just abaft its mizzenmast. Although successful in this endeavor, *H.L. Hunley*'s crew and their pioneering vessel were not seen again until 1995, when a team of archaeologists from Clive Cussler's National Underwater and Marine Agency discovered the submarine in Charleston's outer harbor. In August 2000 *H.L. Hunley* was recovered from its watery grave, and between 2001 and 2004 the interior of the vessel was excavated and documented by a team of archaeologists, conservators and other scientists. The effort to study and preserve *H.L. Hunley* has now entered a critical new phase: conservation of the submarine and its associated artifact assemblage.

Objective:

Ultimately, the ongoing effort to conserve *H.L. Hunley* will lay the foundation for a much larger public outreach and education goal: the creation of a museum that will permanently exhibit the submarine and its associated artifacts. Once the museum is established, it will serve as an international center for Civil War studies and maritime history that will feature *H.L. Hunley* and its artifact assemblage as the centerpiece exhibit.

Summary of Approach:

H.L. Hunley's overall conservation plan is comprised of three distinct phases: assessment, stabilization and long-term conservation. With respect to the hull and its interior machinery, the plan also includes a pre-stabilization regimen. A critical first step to the conservation process comprised a thorough corrosion assessment of the submarine's hull. Results derived from this survey encouraged project conservators to expand *H.L. Hunley*'s preexisting cathodic protection system to the interior of the submarine's ballast tanks. Additionally, other tasks were carried out in preparation for the submarine's long-term stabilization and eventual conservation in caustic chemicals. Finally, a significant number of complex,

fragile artifacts associated with the submarine were conserved.

Benefit:

H.L. Hunley's recovery in 2000 set in motion a groundbreaking effort to archeologically investigate and conserve the submarine and its artifacts. The benefits of the Hunley Project are varied, and include forensic research that has assisted the Mass Fatality Management Partnership; revitalization of the former Charleston Naval Base; and excellent public relations for the Department of the Navy and the Legacy Resource Management Program, both of which have been credited in internationally aired documentaries for their role in the project.

Accomplishments:

H.L. Hunley is one of the largest and most complex marine archaeological objects to be recovered from the seabed in its entirety. Many of the protocols and techniques developed by the conservation team have been adapted from reliable research available in preexisting conservation and/or general engineering literature. Others, however, have been developed by project conservators to meet specific challenges posed by *H.L. Hunley*. This is especially true for conservation of the submarine's numerous iron components. Many of the techniques currently being developed by the conservation team promise to significantly decrease the time and funding required to treat other historically-significant maritime artifacts. In addition, this research may have applications that extend beyond archaeological conservation and historic preservation. In order to ensure these innovative methods are disseminated to a large professional audience, the conservation team has published their research in a variety of academic journals and presented papers at several conferences organized around conservation and conservation-related themes.

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