

THE HUNLEY (1864)

The Confederate States' Ship (CSS) H. L. Hunley was a submarine of the Confederate States Navy that demonstrated both the advantages and the dangers of undersea warfare. Hunley was the first submarine to sink a warship, though the sub was also sunk in the engagement.

It was a hungry time in Charleston, South Carolina, those early months of 1864. Bombarded by land and blockaded by sea, the city that cheered the opening shots of the American Civil War remained proudly defiant, but its Rebel defenders were looking mighty pinched. Salt pork, corn, boots, blankets, lead for musket balls, and most everything else the army needed was in critically short supply. The Union Navy's chokehold on the city's harbor would have to be broken soon, and the best hope for doing that lay with a strange and secret new weapon "diving torpedo-boat" christened the H. L. Hunley.

Privately invented and paid for, by Horace Lawson Hunley and built in 1863 by Park and Lyons of Mobile, Alabama, Hunley was fashioned like a cylindrical iron steam boiler, which was deepened and also lengthened through the addition of tapered ends. The Hunley was designed to be hand powered by a crew of eight: seven to turn the hand-cranked propeller and one to steer and direct the boat. As a true submarine, each end was equipped with ballast tanks that could be flooded by valves or pumped dry by hand pumps. Extra ballast was added through the use of iron weights bolted to the underside of the hull. In the event the submarine needed additional buoyancy to rise in an emergency, the iron weight could be removed by unscrewing the heads of the bolts from inside the vessel.

On August 29, 1863 five of a crew of eight were killed during a training attack, when the skipper accidentally dove with the hatches still open. On October 15, 1863 the Hunley failed to surface during a trial dive, killing its inventor Horace Lawson Hunley and seven other crewmen. In both cases, the Confederate Navy salvaged the vessel and returned it to service.

Shortly after sunset on the night of February 17, at a dock on nearby Sullivans Island, eight audacious Confederates squeezed inside the claustrophobic iron vessel and set out on a quixotic mission. Affixed to the boat's bow was a 22-foot long spar tipped with a deadly charge of 90 pounds of black powder. At the helm was Lt. George Dixon, a bold-hearted, battle-scarred army officer.

Behind him, wedged shoulder to shoulder on a wooden bench, sat seven crewmen whose muscles powered the sub's hand-cranked propeller. As the crew began turning the heavy iron crankshaft, Dixon consulted a compass and set course for a daunting target the steam sloop U.S.S. Housatonic, 1800 tons

with 12 guns, stationed four miles (six kilometers) offshore. The Rebels' plan was to run about six feet (two meters) below the surface until they neared the blockader. But in order for Dixon to take final aim, he would have to resurface just enough to peer through the sub's tiny forward viewport.

At 8:45 p.m. John Crosby, acting master aboard the Housatonic, spotted something off the starboard beam that looked at first like a "porpoise, coming to the surface to blow." There had been warnings of a possible attack by a Confederate "infernal machine," and Crosby was swift to sound the alarm. Sailors rushed to quarters and let loose a barrage of small arms fire at the alien object barely breaking the surface, but the attacker was unstoppable.

Two minutes later the Hunley rammed her spar into the Housatonic's starboard side, well below the waterline. The explosives were embedded in the sloop's wooden side and were detonated by a rope/trigger, as the Hunley backed away. The resulting explosion sent the Housatonic with five crew members to the bottom of Charleston Harbor, in five minutes. The Hunley also sank, moments after signalling shore, possibly because of the blast, although this is not certain.

The entire crew died, but the H.L. Hunley earned a place in the history of undersea warfare as the first submarine to sink a ship in wartime.

The Wreck

The search for the Hunley ended in 1995, 131 years later, when best-selling author Clive Cussler, and his team from the National Underwater and Marine Agency (NUMA) discovered the submarine after a 14-year search. At the time of discovery, Cussler and NUMA were conducting this research in partnership with the South Carolina Institute of Anthropology and Archaeology (SCIAA). The team realized that they had found the Hunley after exposing the forward hatch and the ventilator box (the air box for the attachment of a snorkel). The submarine rested on its starboard side at about a 45-degree angle and was covered in a 1/4 to 3/4-inch encrustation of ferrous oxide bonded with sand and seashell particles. Archaeologists exposed a little more on the port side and found the bow dive plane on that side. More probing revealed an approximate length of 40 feet with all of the vessel preserved under the sediment. Archaeological investigation and excavation culminated with the raising of the Hunley from its watery grave on August 8, 2000. A large team of professionals from the Naval Historical Center's Underwater Archaeology Branch, National Park Service, the South Carolina Institute of Archaeology and Anthropology, and various other individuals investigated the vessel, measuring and documenting it prior to removal. Once the on site investigation was complete, harnesses were slipped underneath the sub one by one and attached to a truss designed by Oceaneering, Inc. After the last harness had been

secured, the crane from Clarissa B (a U.S. Navy barge) began hoisting the submarine from the mire of the harbor entrance.

On August 8, 2000 at 8:37 a.m. the sub broke the surface for the first time in over 136 years, where it was greeted by a cheering crowd lining the shore and in hundreds of nearby watercraft. Once safely on its transporting barge, the Hunley finally completed its last voyage back to Charleston. The removal operation reached its successful conclusion when the submarine was secured inside the Warren Lasch Conservation Center, at the former Charleston Navy Yard in a specially designed tank of freshwater to await conservation.

The Crew

Apart from the commander of the submarine, Lt. George Dixon, the identities of the volunteer crewmembers of the Hunley remained a mystery. Douglas Owsley, a physical anthropologist working for the Smithsonian Institution's National Museum of Natural History examined the remains and determined that four of the men were American born, while the four others were European born, based on the chemical signatures left on the men's teeth and bones by the predominant components of their diet: four of the men had eaten a lot of corn, indicating that they were likely Americans, while the remainder ate mostly wheat and rye, indicating that they probably originated in Europe.

By examining Civil War records and conducting DNA testing with possible relatives, forensic genealogist Linda Abrams was able to identify the remains of Dixon and the four other men: Frank Collins, Joseph Ridgaway, and James A. Wicks. Identifying the European crew members has been more problematic, but was apparently solved in late 2004. The position of the corpses indicated that the men apparently died at their stations, and were not trying to flee the sinking submarine.

On 17 April 2004 the remains of the crew of the H. L. Hunley were interred in Charleston's Magnolia Cemetery with full military honors, and attended by as many as 10,000 civil war re-enactors and well wishers. Hunley herself remains at the "Lasch" conservation center, for further study and conservation. There have been many surprising discoveries over time, including the complexity of the sub's ballast and pumping systems, steering and diving apparatus, and its construction and final assembly. Another surprise occurred in 2002, when a researcher, examining the area close to Lieutenant Dixon, found the famous gold coin, long thought to be a myth, which his girlfriend had given to him. Legend had held that Dixon had the coin with him at the Battle of Shiloh, where he was wounded in 1862. A bullet, which would have probably cost him his leg and possibly his life, struck the coin in his pocket. The coin was badly bent but saved Dixon from injury and was later engraved by him to mark the occasion.