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From Gunboat to Garbage Can: The Conservation of a Cannonball *Part 2*

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Organic Materials (continued from page 11)

Leather wallet before (1) and after (2) conservation. ©Friends of the Hunley

Pipe bowl before (3) and after (4) conservation. ©Friends of the Hunley

From Gunboat to Garbage Can: The Conservation of a Cannonball Part 2
By Ashley Deming, Maritime Archaeologist, SDAMP Manager

In January of 2010, Hobby Diver Jason Thompson donated a cannonball to SDAMP. Since we weren’t sure if we had a potentially explosive Civil War shell or not, we were hesitant to begin the conservation process. The cannonball appeared to have fuses and we were reluctant to start banging on it to remove the concretions to see if the ‘nodules’ were fuses or not. After much humming and hawing over whether or not we wanted to try this ourselves, we called upon long time hobby divers and experts at conserving iron objects, Glenn Dutton and Rufus Perdue. Glenn and Rufus are involved with raising and conserving cannons from the Philadelphia off the coast of South Carolina. With over 30 years of experience each, we felt sure these gentlemen could give us the much needed info we required. To our great relief, Rufus kindly offered to come by our trailer office and remove the concretions for us.

Rufus looked the cannonball over and thought the same as everyone else, that this was most likely a Civil War fused shell. However, he wouldn’t know for sure until the concretions were removed. He took the ball outside and gently started tapping the concretions with a hammer to knock off the heavily concreted bits. Although Rufus assured us there was nothing to worry about, as you might imagine, Carl and I stood some safe distance back using the zoom on the camera to get pictures of the first stage in the conservation process (Figure 1).

To all of our surprise, there were no fuses at all! The shell appeared to be a solid round iron ball. The ‘nodules’ were just concretion after all. I must admit, I was a little bit disappointed not to have a Civil War shell to conserve, but mostly relieved that I didn’t have to deal with the extra trouble of removing gunpowder and any other explosive chemicals from the ball. So, we didn’t have a Civil War shell. Then what did we have? Our best guess, judging by the size and the uneven seam (Figure 2), we were probably looking at a Revolutionary War cannonball. This made me pretty fascinated since that is my personal historical period of interest. To have a cannonball that was involved in the pursuit of American freedoms, now that is exciting! Was it actual used? Who used it? Was it shot from a ship or off land? How did it come to end up in the water?

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These are the questions I found myself asking. We probably will never know the answers to these questions, but they are the types of questions that beat in the heart of every archaeologist. To be able to tell the story of the past through the objects left behind is what is so fascinating about this science. I digress...

We could now begin electrolysis on the cannonball to remove active corrosion and stabilize the existing iron. Electrolysis is a chemical reaction that transfers ions from the anode (+) to the cathode (-) using an electric current through a water solution. This stops the oxidation (rusting) and removes chlorides from the artifact so it does not continue to corrode. We used a 26-gallon plastic garbage can as a container and filled it with a solution of water and sodium carbonate. A stainless steel trashcan was placed into the container to act as the anode and is attached to copper wire with an alligator clip. The ball, acting as the cathode, is connected to copper wire using a stainless steel hose clamp. The cannonball wire is attached to a trailer light bulb. This bulb helps to regulate low amperage flowing through the circuit. Each end is attached to a DC battery charger that runs at ½ an amp to complete a circuit (Figure 3).

The cannonball remained in this set-up for 1 month and then was removed, the access corrosion cleaned off, and solution changed out (Figure 4). Once this was done, the ball was placed back into the solution and the process continued. The solution will be changed out and the ball cleaned every 3 months for a period of 1 year in total. Read more about the conservation process in the next issue.

Figure 2
Uneven mold seam

Figure 3
Electrolysis Set-up

Figure 4
Cannonball after first cleaning

Hobby Diver of the Quarter

This section of the newsletter is devoted to the hobby diver who goes above and beyond the call of duty. He/she has submitted excellent reports, been an exceptional volunteer, has gone out of their way to preserve cultural and/or natural heritage in the state, or has been a general inspiration to other licensees, the public, or us.

Each quarter we will pick a licensee that resembles one or more of these noteworthy traits. Hopefully, it will be you! If you know of someone who fits some or all of these categories and would like to nominate them, please send us a brief email of who and why you think they should be Hobby Diver of the Quarter.

The honor of Hobby Diver of the Quarter for Quarter 2 2011 goes to Hobby Diver #5117, Perry Hackleman. Congratulations, Perry! Perry is relatively new to the Sport Diver program, but he has gone above and beyond to help us out since day one. He has volunteered his expertise and time with the maintenance of our boat engines, helped us survey a shipwreck in Hilton Head, given us the use of his kayak for the Allendale project, and helped to pioneer SDAMP Wing Nights.

We are honored to have him as a volunteer and friend. Thank you, Perry! You are truly an inspiration to us all!

Hobby Diver
#5117
Perry Hackleman