

## Arch Cape Cannon Conservation, Interim Report #3

The Conservation Research Lab (CRL), at Texas A&M University, is currently conserving the two 18 pdr carronades recovered from Nehalem Bay, Oregon. The two carronades have been numbered A & B, for identification purposes (as per the report by Dennis Griffin, Ph.D., "Recovery of Arch Cape Cannon"). This report details how the concretion is removed, prior to the start of the conservation treatment.

The carronade is kept stored underwater in a large polyethylene water tank, so as to keep the artifact wet at all times. To facilitate easy handling of the heavy concretion, the artifact was placed on a heavy duty fiberglass grating. The grating has 2" x 2" angle reinforcing underneath, to prevent bowing, and has permanent lifting straps on either side. These straps are long enough to reach above the water line, to simplify the handling. (Image #001 shows the carronade on the grating, w/ the crew starting to remove the concretion).

The first step in the conservation process, is to mechanically clean the artifact. When working on an artifact the size of an 18 pdr carronade, it is easier to use a team of conservation assistants to get the job done. The carronade was placed in the open area in front of the Lab, and accessed as to the best plan of action. The artifact is made up of a number of different material types, which will all have to go through their own conservation treatments. To do this, one has to separate artifact into the various components. The cast iron carronade has to be separated from the wooden bed, which sounds like an easy task – but is actually fairly complex when the whole artifact is covered in a thick layer of concretion. The cast iron carronade is considerably heavier than the wooden bed, but can be very brittle and crack if it is not supported adequately. The surrounding concretion that has supported it for many years, was formed as the iron bled out of the metal into the surrounding matrix and solidified. When this is removed, one has to give adequate support to the artifact, so that it does not break from its own sheer weight.

The Lab crew started the mechanical cleaning by removing the concretion on the underside of the bed, and in the area between the bed and the carronade. Small Chicago Pneumatic air scribes are used to remove the hard concretion, and the artifact is slowly revealed underneath. Image #005 illustrates an air scribe in use, cleaning the concretion off the surface of the wooden bed. Image #011 shows the bed partially cleaned, clearly showing the difference between the two surfaces. Image #027 shows the cleaned underside of the wooden bed, with the bed pivot that would have fitted into the wooden slide and a forward reinforcing strap. The two wrought iron bolts in each piece, are attached to the pivot mount on the top of the bed. All of these bolts are badly corroded, as the wrought iron was the sacrificial anode for the cast iron carronade whilst it was corroding. Image #031 shows a void in the wood, where there was a piece of iron that was removed sometime during the wrecking process. This piece was lost in antiquity, and was most likely part of a reinforcing strap at the rear of the bed. The purpose of the two holes to the left of the void, will be determined when the top surface of the wood is cleaned. At the moment, we feel that these might have been used to fasten the elevation mechanism to the bed.

If you would like more information on a specific photo, please let me know the number and I will add information as required. Also, if there are any questions, please let me know.

Jim Jobling  
CRL 01/25/10