

The Ship (Part 1)

December 2015

On December 9, 2015, City archaeologists met with the conservator from the Maryland Archaeological Conservation Lab, archaeologists from the Underwater Archeology Branch of the Navy Department, and a local maritime historian to discuss the significance of a ship's hull discovered during the ongoing development of 220 South Union Street.

- See more on the ship discovery from the [January 2016 update](#).
- See information on the [1755 warehouse and other discoveries](#) from 220 South Union Street.



Historical Information

- The discovery is the port side of a vessel about 50 feet long, which may represent about 1/3 of the hull. The type of vessel has yet to be determined.
- Overlays of the changing shoreline on historical maps indicate that it was buried sometime between 1775 and 1798. The presence of trunnels (treenails/wooden pegs) and very few metal fastenings is consistent with its use in the 18th century.
- The ship appears to have been very sturdily built. The sections of the frame are very close together, suggesting that it carried something heavy. It was probably a coastal vessel, and its use for military purposes cannot be ruled out.
- There is evidence of the keel, the frame, a possible part of the bow stem, a section of the stern, exterior boards, and a section of the interior floor boards, or *ceiling*.
- Portions of the frame were deliberately chopped off, and the starboard side is missing. This chopping (perhaps with a broad axe) and removal of at least half of the hull could have been done while “banking out” or filling in the cove.

Significance

- The significance of the ship cannot be fully evaluated or understood until more research and excavation take place.
- Additional research will help determine its history and association with Alexandria.

Recommendations

- The City is working with Thunderbird Archaeology (the consultant for the developer) to record the vessel in place. The documentation will include 3-D laser scanning, photography, and measurements/drawings on site. The scanning will be accomplished in concert with the archaeology. A separate scan of each layer will be done after the archaeological removal of the overlying wood; it is projected that at least three layers will need to be scanned and photographed.
- The consultant will hire a specialist to identify the wood and conduct dendrochronology, which will provide information about the date of construction of the ship and could provide insight into the place where it was built.
- City archaeologists will help Thunderbird excavate, record, dismantle, and remove the pieces of the ship, marking them for future study and possible conservation and reconstruction.
- To maintain an option for conservation, the excavated wood will need to be submerged in a wet environment, allowing time for additional research, for comparison with other potential waterfront discoveries, and for identification of a funding source for possible conservation. A City team is working to identify a suitable location for submersion.

The Ship (Part 2)

January 2016

January was a busy month for Alexandria Archaeology. Work continued at 220 S. Union Street to record, dismantle, recover, and prepare for conservation the ship discovered during December.

Photos from January 5, 2016







Excavation

During the first two weeks of January, archaeologists from the City of Alexandria and Thunderbird Archaeology were joined by researchers from the Naval History and Heritage Command to help record and document the ship.

After removing the interior planking of the ship (called the ceiling [even though it is on the floor] or foot-waleing), archaeologists excavated the spaces between the wood frame. Trapped between the exterior and interior planking, any artifacts recovered from these sealed contexts may help us better understand the age of the ship, the purpose of the ship, what life was like on the ship, and where our ship has been.



One of the biggest challenges archaeologists faced was how to disassemble the ship without damaging it. It was extremely well-built in the 18th century and despite being buried more than 200 years ago, remained stubbornly well-built when archaeologists tried to take it apart. It required hammers and wedges and crowbars and pry bars and jacks and even a backhoe to gently loosen and free the individual parts of this ship from each other so that they could be removed for conservation. The amount of work required to take the ship apart can be seen as a testament to the 18th century shipwrights and

laborers that originally built it.



After the frame of the ship was removed, archaeologists were left with the exterior planking or skin of the ship. In these photographs, you can see the many trunnels (or literally, treenails) used to secure the planking to the frame of the ship. Some of these wooden pegs remained embedded in the pieces of the frame when they were removed, but most were left secured to the planking. Wood fasteners like these provide several advantages over metal ones: they were cheaper to make; they will not rust when exposed to water; and will expand when wet, which (as the field crew can attest) makes them more difficult to loosen or remove.



After the exterior planking was removed, a thin skin was found stuck to the sand under the planks. Known as *oakum* or *ploc*, this hair and tar mixture was placed on the bottom of the ship to help make it watertight and to prevent shipworms from getting into the wood. Samples of this material were taken, as were samples of other residues encountered during the recovery of ship. Here, archaeologists from Thunderbird document and recover samples of this layer. These will help us learn more about how the ship was built and what it may have been used for.





Next to the ship, archaeologists found this section of intact bulkhead. This wall runs north/south and ends approximately 30 feet into the lot, right up to the public alley that ran from Union Street to the river. This bulkhead was built as a part of the banking out that occurred during the late 18th and early 19th centuries. The wall would help retain dirt and fill dumped into the river to create new land. Documentary research into the history of the lot has revealed some clues to help us understand when and why this bulkhead and ship were placed in the ground. A lease of the northern parcel on the lot dated to May 8th, 1798 states:



...that he [the lessee] will extend into the River immediately in front of the premises hereby demised of such dimensions as he [the lessee] shall find convenient an abutment or Pier that he will construct the same with good substantial logs and fill it solidly with Brushwood and Earth or such of them as will suit him best...

The bulkhead falls entirely within this northernmost parcel and there's a good chance it is the abutment referred to in the lease. The ship straddles this parcel and the public alley immediately to the south and is parallel to the old coast line that runs diagonally through the lot. There is also a good chance our ship is also related to this or later episode of filling. The Gilpin Map, also from 1798, shows the block filled in to the east as far as the Strand (Strand Street). These two sources give us a good idea when this ship was buried.

Here, the partially excavated bulkhead can be seen (center-top) next to the exposed ship hull (top left). The bulkhead came to the edge of the northernmost parcel on the property and the ship is resting diagonally largely in what used to be a public alley.



While monitoring this final phase of excavation, Thunderbird archaeologists also discovered yet another privy on the site. This one was located closer to Duke Street than the ship, oriented the same direction as the previously excavated 1755 Carlyle Warehouse, and seems to date to the second half of the eighteenth century. The soils were water screened through 1/16" mesh screen, which will allow us to recover even the smallest of artifacts.



Research

As we disassembled the ship for conservation, we had the chance to examine some of its components in greater detail. Many of the ship's ribs show evidence of being chopped where they were joined to the keel. The starboard (or right) side of the ship has been removed and no trace of it was found during excavations. While the biggest unanswered question we have is in regards to the identity of this ship, two others we would like to answer are "why was it cut in half?" and "where is the other half of this ship?"

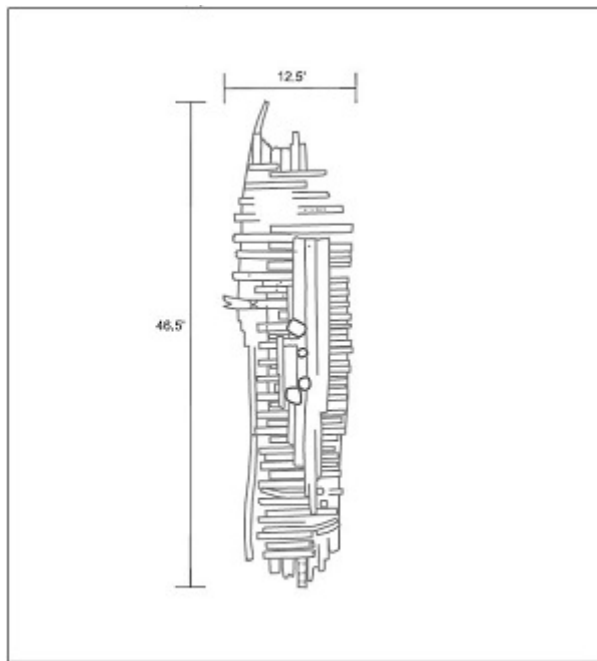


Inside this plank are many small holes created



by marine organisms. Sometimes called shipworms, these mollusks were a major nuisance as they would burrow into ships' hulls and cause major structural damage. Experts may be able to tell us something about where our ship has been by examining these holes.

After each major section of the ship was removed, the crew paused to record the newly exposed section of the ship. In addition to traditional measured plan view drawings, archaeologists also recorded the ship with a 3-D laser scanner. Laser scanners work by shooting a pulse of light (a laser) at the object to be scanned and timing how long it takes for that pulse to travel to the object, bounce off of it, and return to the scanner. Because the speed of light is a known constant (299,792,458 meters per second), this time can be converted into a distance between the scanner and the object. By including the horizontal and vertical angle of the instrument and a little bit of trigonometry, the scanner can automatically compute a three-dimensional coordinate of the point it scanned. This process can be repeated literally millions of times to produce extremely accurate digital representation of objects. This will allow us to reconstruct and study the ship digitally. Here, the 3-D laser scanner rests on the tripod just left of center below the ship.



Plan View of Ship



*Preliminary archaeological plan drawing,
Thunderbird Archaeology.*

Conservation

After being carefully disassembled and removed from the ground, the ship was transported to a city facility where we will begin the processes of stabilization and conservation. Once here, archaeologists and city employees were joined by conservators from the Maryland

Archaeological Conservation Lab who assisted us in carefully lower the labeled pieces of wood into these water-filled tanks. The wood will remain submerged in water until it has stabilized both physically and chemically. This process can take up to several years. During this time, we will be regularly changing the water in the tanks and monitoring the condition of the wood.

