MARITIME ARCHAEOLOGICAL AND HISTORICAL SOCIETY

MAHSNEWS

VOLUME 24, NO. 2 FALL 2013

The Rutland Island Wreck – An Early 17th-Century Mystery

By Connie Kelleher

On the bottom of Rutland Harbor, near the small village of Burtonport (Ailt an Chorráin in Gaelic), in County Donegal, Ireland lies a mysterious shipwreck. The reason for it being there is as yet unknown, as is the background to its plying the Atlantic Ocean, or indeed the fate of those who manned its sails and swabbed its decks. What we do know is that it was an armed, wooden ship that carried both ordnance and weapons, and dates to the early part of the 17th century. Archaeological investigations on the wreck site since 2010 by the State Underwater Archaeology Unit (UAU) of the Department of Arts, Heritage and the Gaeltacht are slowly revealing at least some of the story of the ship and its crew.

Recording the stern of the Rutland Island Wreck in 2010. Inset: wooden bowl, musket shot and hazelnuts recovered from the wreck site. Photos by C. Kelleher & L. Dunne.

Background to discovery

Local recreational divers from the Burtonport area first discovered the site in 2009. Liam Miller, Oscar Duffy, Michael Early, Liam McAuley and Paudie Ward happened upon the timbers of the wreck protruding from the seabed during a planned survey of the harbor. They immediately reported the find to the UAU. The divers had already been liaising closely with the UAU since 2007. In that year they reported the discovery of a wreck in deeper water in Rutland Harbor. That wreck, dating to the 18th century and located southeast of the Rutland Island Wreck, was surveyed in 2008 and 2009 by the UAU in collaboration with Liam Miller and his diving colleagues. Towards the end of 2009, when diving nearby and carrying out a survey of the area under license to the Department, the divers discovered the wreck that is the subject of this article.

The archaeological work on site

With funding from the Department of Arts, Heritage & the Gaeltacht, the Rutland Island Wreck has been the focus of archaeological investigation by the

continued on page 3

INSIDE THIS ISSUE:

Notes from the Prez – Steven Anthony

This year MAHS conducted two summer field schools. The first one commenced on June 19 at the Cannon Patch in the John Pennekamp State Park, Key Largo, Florida. Tom Berkey and Jim Smailes lead the students to the park for their first underwater archaeology adventure and a great time was had by all. Their objective was to map the cannons and anchor that have been stored in the park since the 1970's. Reportedly, the cannons were salvaged from the site of the *San Pedro* wreck. Previously, with the assistance of Brenda Altmeier, Coordinator with the Florida Keys National Marine Sanctuary, we made arrangements to use the Cannon Patch site as our back up in the event bad weather forces us to cancel our work on Pickles Reef. So, this was a good opportunity to scope out the site which provides a shallow diving area with excellent visibility for training our students. Our plan is to continue collecting data on the site during future visits until we have enough information to contribute an updated site assessment to the park manager.

The second summer field school commenced on June 27 on Pickles Reef, near Tavernier, Florida. In stark contrast to the previous year, we enjoyed picture perfect weather conditions. Prior to the field school Matt Lawrence, an underwater archaeologist with NOAA, visited the site and identified the keelson remains and two mast steps. So, our objective was to relocate the mast steps and map them into our overall site map. The team also conducted a count of the cement barrels that characterize this site and collected additional data for selected features that will hopefully help us identify the wreck. The *Miami Herald* also became interested in the project and our work there and sent Cammy Clark, a special reporter, to cover the story of the shipwreck site and the work MAHS was doing to document the site for the Florida Keys National Marine Sanctuary.

In August we enjoyed our annual MAHS picnic again at Seneca Creek State Park, Maryland. The weather was wonderful, the food was plentiful and the beer was cold. You really can't get a better formula than that for a great summer picnic.

MAHS is also involved in several multi-year projects in the Chesapeake Bay. In November we scheduled our third Field School in Underwater Archeology on the Bodkin Point site. This site has been tentatively identified by Dave Shaw as the wreck of the *Harriet P. Ely*. Unfortunately, as in the previous year, the fall weather turned cold and stormy, and the expedition was cancelled for safety reasons. We plan

continued on page 18

Map of Ireland, showing location of Rutland Harbor. Clement Cruttwell, 1799. Library of Congress.

UAU since 2010. The Rutland Island Wreck is so called, pending positive identification, because of its location approximately 100m off the SE shore of Rutland Island. It lies at a depth that ranges between 3m at the stern end and 5m at the bow at high water, and the wreck is orientated east-west, with the bow to the west. Approximately 20m of the lower wooden hull is intact, with its starboard section buried in the seabed and the turn of port elevated and slightly exposed when discovered. The ship essentially came to settle on its lower starboard side and over the intervening centuries, its upper works have disappeared, perhaps through a combination of cultural salvage, natural erosion and degradation. The hull section is, however, remarkably well preserved and is extant up to the beginning of the orlop deck timbers, including hanging knees and floor planking. Similarly, the lower rudder mechanism is also present, still attached to the main sternpost, with lower iron pintles and gudgeons still in place. The initial 2010 investigation by the UAU targeted the bow and stern areas in order to reveal their extent and to orientate the wreck on the seabed.

Broken bow with spread of galley bricks. Photo by C. Kelleher.

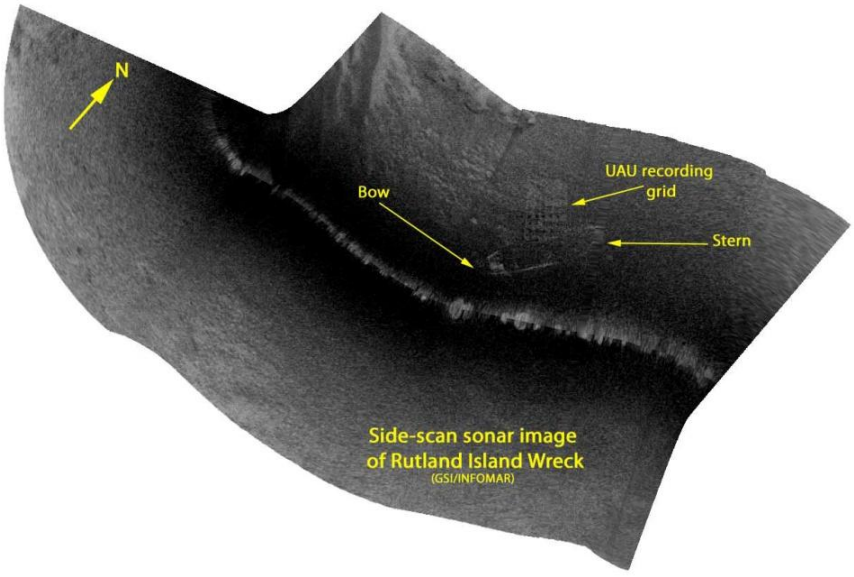
While the stern remains intact, with transom timbers and deadrise well preserved, the bow has broken open. The ship appears to have run bow-first into the sands at Rutland and as a result has deteriorated more over the centuries, with collapse and dispersal of material at the bow end. A scatter of red brick, spread across the broken bow section is indicative of collapse over time from the galley onto the seabed. Also in this area, two lead scuppers were recovered from the ship's drainage system. Initial investigations led to the recovery of a variety of pottery finds, including Iberian-type wares, porcelain fragments and an intact tripod pipkin. The latter object was recovered by one of the local divers Michael Early, during his survey with the UAU, and highlights the contribution that such divers can make through their involvement in projects like this.

Following the 2010 investigations, it was obvious that this was a significant wreck, with the potential to retain extensive artifactual material and to reveal important constructional details about ships of that period. In partnership with colleagues in the National Museum of Ireland, who are conserving all the material recovered, it was decided that the excavation should focus on the internal part of the wreck and recover the artifactual material from within it, whilst leaving the wreck itself *in situ*. The scope of the work also necessitated a larger diving platform and colleagues from INFOMAR (Geological Survey of Ireland &

Tripod pipkin discovered by local diver, Michael Early. Photo by C. Kelleher.

INFOMAR survey vessel RV Keary, *which acted as support ship and associated vessel RV* Geo, *which carried out seabed mapping during the project. Photo by C. Kelleher.*

Irish Marine Institute) joined the team to collaborate on the project. This not only provided logistical dive support but INFOMAR also took the opportunity to progress their own work and they mapped the seabed in Burtonport and the surrounding waters, including areas that had not been previously surveyed. The wreck site was also mapped, with both high resolution bathymetric and side scan sonar imaging carried out. Work on the site continued in 2011 and 2012, during which time most of the internal space within the wreck was archaeologically excavated. Detailed recording of the wreck structure formed part of the work. All material removed from the wreck was either hand excavated using trowels or with the assistance of an air lift that removed the covering of silts via suction dredge to the surface and where it was sieved by archaeologists on board the INFOMAR vessel, RV *Keary*.



Side-scan sonar image of the wreck. Image courtesy of INFOMAR.

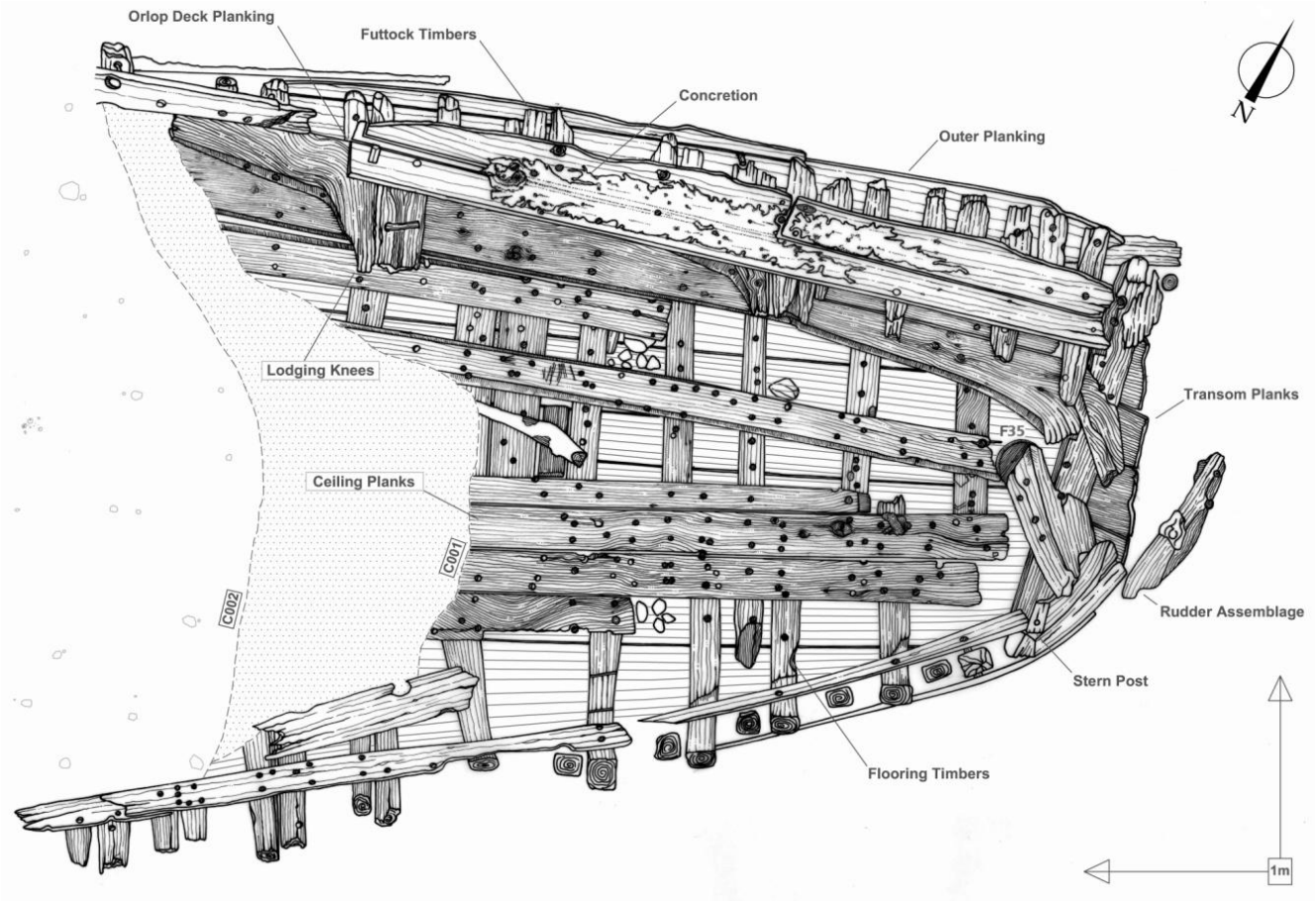
More pottery was recovered from the site as excavation progressed, including more Iberian-type wares, but also English utilitarian wares and a lovely turned wooden bowl, made of olive wood which was recovered from the stern area. A musketeer's leather bandolier belt was discovered between framing timbers on the starboard side of the stern. The belt retains double parallel perforations that would have facilitated the cords for the bandoliers but there are also personalised notches on the belt, made by its wearer and perhaps indicative of lives taken at some point. Though speculative, the belt and its incised notches bring both the human element and armed nature of the wreck into clear focus.

As excavation of the inside of the wreck progressed in 2012, a large amount of broken barrel material was encountered, comprising staves, hoops and withies. No intact barrels were identified and it appears that the barrels were either stored in a disarticulated state in the hold of the ship, to be assembled at some point or were broken up over the centuries, again perhaps during on-going salvage and scavenging of the wreck site. The shallow nature of the site would have easily facilitated the extensive and intensive foraging of the wreck remains over time and indeed, the investigation of the site is as much recording the cultural imprint of successive generations of wreck rummagers, as it is about the archaeology of the wreck itself.

2013 final season on site

The Rutland Island Wreck Project drew to a close following a further three-week excavation on the site in 2013. This season focused primarily on the wreck structure, specifically the bow and the stern. A large portion of the external area of the stern (transom and port side) was revealed following archaeological excavation of the seabed around it. The objective was to expose the keel to obtain structural details from the lower stern area. The keel, however, was far deeper than originally expected and an area measuring 6m N-S by 8m E-W and 4m deep had to be excavated to allow the full area of the stern, including the keel and bottom part of the rudder, to be exposed

The stern was recorded in detail. Three gudgeons and interlocking pintles were still present on the wreck, fixing the rudder to the sternpost. The rising deadwood was visible both on the port and starboard sides, with the fashion piece exposed above. The lower deadwood timbers were strapped with lead to prevent erosion around the rudder assemblage and the lower part of the keel and skeg were also fully encased in lead. The lower part of the stern was remarkably well preserved and



The stern plan, showing details of lower starboard timbers, orlop ceiling planking and knees, with rudder extending from transom. Plan by R. Bangerter.

the exposure provided excellent detail on construction and structure.

At the bow a small area of the port side was excavated to facilitate the taking of timber samples for dendrochronological dating. The area where the apron timber meets the keel was chosen, before the stem post rises at the bow proper, as this was the most accessible area of the bow to afford a viable sample. It would also provide the best opportunity to take measurements of the keel assemblage at that point and to access information on the construction and possible shape of the ship at the bow end. The keel at the bow was eroded beneath, indicating that it had been exposed at some point during the past. However, a good sample was obtained from the apron timber, where limber holes for the drainage system in the ship were also recorded within the main framing timbers. Dating of the sample produced a similar date to earlier wood samples taken from the stern section, providing a general date for the wreck between the years 1610 and 1630.

The fully exposed keel, port side and rudder of the Rutland Island Wreck. Photo by C. Kelleher.

Summary

The 2013 excavation was the last season on the site and a strategy for the long-term stability and preservation of the site was implemented. Geotextile matting was placed over the wreck to

act as a sediment trap and, where needed, sandbags were specifically placed across the wreck site. When this was done, a final covering of loose marine grade sand was gently hand guided, by way of cutting open suspended bags, over the wreck to ensure scouring will not take place. A program of monitoring through inspection dives will now be undertaken by the UAU, and local divers are also taking an active curatorial role on the wreck site. The UAU will continue to work with local divers and the local community in Burtonport to ensure the future protection of the Rutland Island Wreck.

As the UAU's work concludes on the wreck site itself, it is hoped that evidence will emerge during the post-excavation work, through analysis of the artifactual material and close scrutiny of the construction details of the wreck that may provide further insight into the type of ship it was, its loss and the fate of those on board, and that will help solve the mystery of this remote and mysterious shipwreck.

Legislation

Under the 1987 National Monuments (Amendment) Act all wrecks over 100 years old are protected. Under this legislation a dive license is required to dive on protected wreck sites. These licenses are normally for non- invasive, visual survey only, and license applications can be obtained from the Licensing Section, National Monuments Service, Department of Arts, Heritage and the Gaeltacht. It is an offense to dive on any protected wreck site, to search for archaeological artifacts or use a detection device for archaeological purposes, without a license from the Irish State

Connie Kelleher is State Underwater Archaeologist at Underwater Archaeology Unit, Department of Arts, Heritage & the Gaeltacht, Dublin.

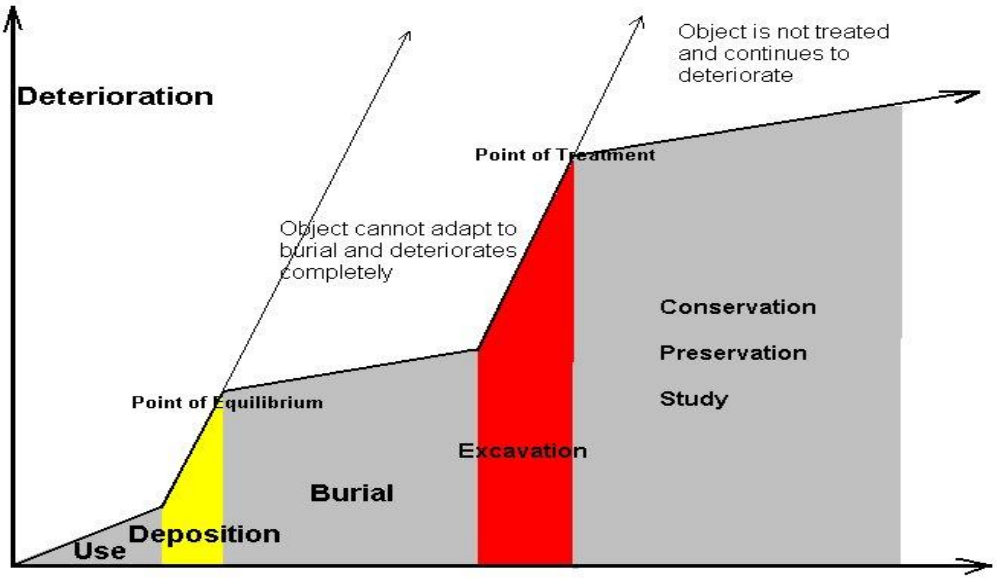
For more information about the Underwater ArchaeologyUnit see, http://www.archaeology.ie/UnderwaterArchaeology/

A Guide to Better Field Conservation

by Howard Wellman (reprinted from Maryland Archaeology *with the permission of the author)*

The duties of a conservator on archaeological projects can be very wide-ranging, from basic artifact conservation and stabilization, to more specialized tasks like analysis and identification, "lifting" fragile or complicated objects, or preparing the site for in-situ preservation.

This presentation will focus on the basic issues of stabilizing and handling artifacts in the field prior to their transportation to a conservation laboratory. I'm not going to try to cover every topic where archaeology and conservation collide. What I'd like to do is help you understand some of the thinking and skills that go into field conservation, so that you can make educated decisions about how to best care for your discoveries.



Graphic depiction of artifact deterioration with time (Illustration by the author).

This represents only the first stage in a long process—discovery and excavation necessitates stabilization, interpretation, curation, and then recurring cycles of use and re-stabilization. What happens in the early stages is critical to the long-term survival of the object. All objects deteriorate over time, and the rate of deterioration is affected by the changes in the environment. Radical changes like excavation increase the rate of deterioration, and must be compensated. The figure above is a schematic view to illustrate the point.

Artifacts deteriorate while being used until they reach the point when they are discarded. Once they are buried, they continue to deteriorate (generally faster) until they reach some sort of equilibrium with their environment. Some people disagree with the term "equilibrium" since decay never really stops, but some

artifacts will definitely reach a point where their deterioration has slowed considerably. When the environment is radically changed (in this case by excavation), the artifacts will begin to deteriorate again until a new equilibrium is reached, they disappear completely, or they are treated to force a new equilibrium point of the conservator's choosing.

The great shock during excavation comes from exposing the artifact to a new and hostile environment, which usually involves much higher levels of oxygen, light, and a change of moisture levels (either wetter or dryer). Field conservation acts to minimize the effects of these changes in the short term, while laboratory conservation tries to achieve long-term stability in the environment to which the artifact will have to become adjusted (usually a dry, temperate storage room).

The important thing is to characterize the environment from which the artifact is being taken, then identify the dangers of its new environment and act accordingly. When comparing the before and after, consider the following classes of hazards inherent in any environment:

- Physical Agents
  - Shock and Handling: the greatest dangers are from the archaeologists and conservators
    - Many degraded materials are much weaker than they appear
  - Changes in moisture level
    - drying causes shrinkage, cracking
    - wetting promotes biological activity
- Chemical Agents
  - Oxygen: accelerates corrosion, biological activity
  - Salts & pollutants: accelerate corrosion, cause cracking
  - Water: changes in moisture may accelerate other chemical reactions
- Biological Agents
  - Bacteria, Fungi, Mold: microscopic damage & staining
  - Vermin, Pests: macroscopic damage
- Light (which affects the other three)
  - Provides energy for biological growth, chemical reactions, organic breakdown and fading, and drying

The way that different materials survive these hazards under different burial environments determines what kind of conservation problems will be faced during excavation. A simple chart such as found in Watkinson and Neal (1998, Tables 1A and B) can help the excavator anticipate what kinds of material may be found on site, and plan their preservation needs accordingly. The other side of the coin, of course, is understanding what will have been lost already, which could be useful in site interpretation. For these reasons, conservation and conservators should ideally be part of an excavation's pre-planning.

Packing a fragile copper vessel for lifting on the sea-floor. All photos by H. Wellman, courtesy of Institute of Nautical Archaeology.

Once excavated, changes to the hazards noted above will take effect. Watkinson and Neal (1998, Table 2) help predict the sorts of damage that will occur to the artifacts. The conservator can plan their field supplies and activities accordingly. One question that comes up frequently is: How critical is the timing of this anyway? Because deterioration begins to accelerate almost immediately, timing is crucial and depends on the material involved. For instance:

- Cast iron from marine contexts will break up in a matter of hours after drying, while wrought iron or copper alloy can take months. The damage done is irreversible.
- Marine concretions (accumulations of deposited calcium carbonate, metal corrosion, and other environmental materials) will harden appreciably on drying, as well as shrink and crack, causing damage to enclosed objects.
- Waterlogged wood will begin to shrink & crack immediately on drying; this is irreversible damage.
- Micro-biological decay in organic or contaminated inorganic materials begins immediately, but may not be visible for days or weeks. This is irreversible damage.
- The different materials in composite objects may accelerate each others' decay in unpredictable ways.

A concretion partially deconstructed.

What happens next determines how well the artifacts will survive their transition to the conservation laboratory and archaeological study. Proper handling and understanding of what can and cannot be done in a field setting is crucial to the preservation of archaeological artifacts. The following is a brief summary of simple steps that can be taken to minimize the effects of common conditions:

- Physical deterioration
  - Use proper packing materials and ample padding
    - Use archival materials that will not degrade and add to the problem, or introduce other contaminants (i.e., cigarette cartons, old t-shirts, straw will all decay or affect the artifacts)
  - Provide ample structural support
    - External protection from blows
    - Rigid support of fragile materials
    - Avoid frequent transfers - can it be stored and transported in its lifting support?
    - Nest rather than wrap, when you can (unwrapping for inspection involves a lot of handling)
- Chemical
  - Prevent active metal corrosion:
    - store wet metals in solutions with pH >8 (e.g., 5% solution of baking soda)
    - store dry metals in desiccated microenvironment (a sealed container desiccated with silica gel)
  - Minimize oxygen content to slow corrosion
  - Remove from saline or polluted environments
  - Buffer pH to best preservative conditions
  - Protect from exposure to light
- Biological
  - Avoid packing materials that add to the problem
    - old t-shirts, saw dust, cotton wool, paper towels are food to microbiology
  - Avoid biocides - hazardous & toxic to humans
  - Chilled conditions will slow biological growth in moist materials
  - Avoid sunlight to restrict algae growth
  - Stir and oxygenate solutions to prevent anaerobic bacterial staining
  - Reduce moisture if possible

A common question is how wet or dry to keep freshly excavated materials. As noted above, moisture is a catalyst in many of the listed hazards. In general, if it's wet, keep it wet. If it's dry, keep it dry.

- Keep it Wet!
  - concretions & concreted objects from marine sites
  - soft organic materials from damp or wet contexts
  - metal from marine contexts
  - low-fired ceramics from damp contexts (wet soil or submerged sites)
  - weathered (iridescent) glass
- Can be dried if desalinated:
  - robust ceramics
  - unweathered glass
  - very robust bone
  - shell
  - metal from dry sites
- Better off dry:
  - Metal from dry or slightly damp sites will react strongly to moisture and oxygen, so they are better off in desiccated storage

A piece of rope, supported and stabilized ready for transport.

Packaging is a critical part of all of these steps, as it is the first defense against loss and damage. Standardized packing helps in planning, collections management, and reduces excess handling. Conservators will always emphasize the use of quality materials and archival supplies. These materials may cost more, but the quality means introducing fewer foreign contaminants to the system, and they tend to be more reusable in the future. Spending money up front saves money in the long run, since it reduces the amount of conservation work that has to be done later.

Whatever you do, do it in a timely fashion, and don't let anything stay in temporary storage for too long. When even the best packing gets ignored things dry out, packaging decays, objects get stuck together, and mold runs rampant. It is important to transport, process, and unpack finds promptly. Objects left in even the best transport containers will get ignored, lost, and forgotten. Stabilizing for transport is not the same as treatment, and must be monitored constantly.

When packing, consider what you are trying to achieve, and create your environments accordingly. For short term storage and transport, wet does not have to mean immersion. Wrapping the object in damp water-retaining foam, and sealing in a closed bag or rigid container will prevent evaporation. Longer storage means more monitoring, and frequent re-moistening. Wherever practical, make it possible to see the artifacts through the packaging, as this will reduce handling during inspections. Unless you are creating a sealed environment, make ventilation holes to allow environmental equilibrium. Watkinson and Neal (1998 Chapter 3) summarize basic packaging for more types of artifacts. The steps of handling and packing listed above are fundamental first steps towards stabilizing the artifact, and in some cases are even the first steps in long-term treatment.

One other aspect of field conservation involves preliminary cleaning, which is often required on site to aid in identifying and cataloging artifacts. There are no simple rules on whether to clean or not to clean, because some information has to be collected while you're still in the field. So you have to know all the pros and cons, and weigh the risks and benefits:

- Cleaning is good because:
  - reduces weight of soil and concretion
  - reveals areas of weakness
  - removes biological material that may decay
  - allows for on-site analysis that could aid site interpretation
- Cleaning is bad because:
  - removes supporting concretion and soil
  - exposes fragile surfaces
  - exposes more areas to decay and corrosion
  - disassociates composite objects
  - may remove surface details trapped in soil or concretion
  - may remove mineral preserved organics & pseudomorphs (impressions of objects in contact with the metal)

Ceramic vessels being studied in a holding tank.

In general, cleaning objects should only be done by people with the proper tools and experience. Because field conditions do not allow for constant monitoring, field cleaning should only involve mechanical cleaning, such as with scalpels and picks. Chemical or electrolytic processes, in addition to being potentially hazardous, require constant attention and far more resources than can usually be packed into the field.

- Common cleaning errors
  - Aggressive scrubbing of ceramics, removing delicate glazes, slips, tool marks
  - Rapid drying of porous materials after wetting may cause cracking and breakage – always dry such materials in the shade
  - Use of dirty water which contains abrasive dirt particles
  - Over-cleaning of metal corrosion, removing surface details, organic traces, and pseudomorphs preserved in the corrosion layers

Conservators do not need to be a constant presence on every field project, but the wide range of skills and information they can bring to bear can be of vital importance. Consider having a conservator on board

during the design of your field season to help plan for the materials needed to stabilize and pack out your finds, laying out the space and tools needed to preserve your artifacts, and being available for those special unanticipated discoveries. Conservators can also help to train your field staff in performing basic procedures to mitigate the hazards discussed above. As more and more curatorial facilities set higher standards for the care of the collections handed to them, it makes economic sense to begin that standard of care at the point of excavation.

Recommended Reading
These publications have lots of common sense suggestions and good diagrams:

First Aid for Finds. David Watkinson and Virginia Neal, 3rd ed. 1998, UKIC, London.

First Aid for Underwater Finds, Wendy Robinson, 1998, Archetype Publications, London.

A Conservation Manual for the Field Archaeologist, 3rd ed., Catherine Sease, 1994, Institute of Archaeology, UCLA.

Retrieval of Objects from Archaeological Sites, ed. Robert Payton1992, Archetype Publications, London.

Howard Wellman is President of Wellman Conservation LLC, based in Halethorpe, Maryland. He provides conservation and consulting services for archaeological collections, monuments, outdoor sculpture and historic cemeteries. He presents the Conservation lecture in the MAHS Introduction to Underwater Archaeology class. He can be reached by email at wellmanconservation@comcast.net. ⚓

MAHS Field School at John Pennekamp State Park, Key Largo, Florida

by Charlie Reid

Once a year MAHS conducts an Introductory Course in Underwater Archaeology. It is a ten-week, classroom course that covers such topics as Ship Architecture, Artifact Conservation, Archival Research and, of course, Survey and Mapping. Experts in the field come to the class and give presentations on each topic under study. The class instructs students in the fundamentals of the science of Maritime Archaeology. Upon completion of the classroom instruction and passing a take-home exam, the student becomes eligible to attend a field school in which the class conducts an underwater survey of a shipwreck or other marine archaeological site. While the Introductory Course is conducted just once a year, several field schools may be held each year.

Cannon Beach at John Pennekamp State Park. Photo by the author.

E. Reger and J. Gorman practice trilateration with J. Smailes supervising. Photo by the author.

As a scuba diver, I love diving on shipwrecks and studying their history. When I found out that MAHS had a course in Underwater Archeology and that students could also get a PADI certification by participating in the field school, I signed up immediately. The classroom sessions exceeded my expectations for an introduction to the subject. We even got an on-board tour of the USS *Constellation* in Baltimore, a sloop of war from the Age of Sail. The tour was guided by noted maritime archaeologist and Maryland State Underwater Archaeologist Dr. Susan Langley, who explained much about the ship's construction and how it is maintained. For me, it was the highlight of the class sessions.

In June 2013, I attended the MAHS field school in Key Largo, Florida. The field school was held in John Pennekamp State Park. In the area where snorkelers are allowed to explore, the Park has positioned more than a dozen authentic cannons taken from various shipwrecks in the Florida Keys. The cannons are located in about 5.5 feet of water, under a buoy located a few dozen yards from the park beach. The cannon site was the subject of our field school. Our mission was to survey the cannons and a co-located anchor.

J. Gorman and E. Reger trilaterating the position of one of the cannons. Photo by the author.

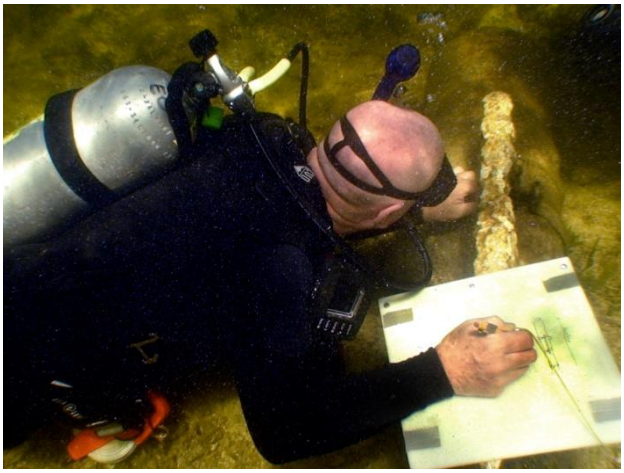
In attendance with me were two other students, Evan Reger and Jim Gorman. Jim Smailes and Tom Berkey (MAHS Directors) facilitated the field school as our instructors and dive masters. We assembled at one of the picnic pavilions on the beach early in the morning on a beautiful day in paradise. Jim and Tom explained our goals for the day and laid out the dive plan. The goal of the underwater survey was to locate, through trilateration, the anchor and about a dozen of the cannons. For practice, we did a mock survey on land first. We set down a baseline and several dry boxes around it as artifacts so we could practice our trilateration mapping skills.

Once the dry-land walk through was complete, we donned our dive gear and swam out to reconnoiter the site to get an idea of the location and position of the cannons, as well as to check the dive conditions. We returned to the beach, and Jim and Tom completed the details of the dive plan. Jim and Evan were paired as dive-buddy students and Tom was assigned to work with me.

Dive conditions that day were excellent. It was a beautiful day, with about a 5-knot wind. The snorkel park is in a sheltered lagoon, so the seas were calm and there was no current. The color of the water was a strange sort of yellow, but that did not affect the visibility, which was about 30 feet. The water temperature was a warm 84 degrees. Because the water was calm and shallow, we were able to rise to the surface to communicate when necessary. This was a luxury bonus because when you are surveying in deeper water that is not possible. Thus, it is wise to carry an arm-slung slate for communication underwater.

We first laid out the baseline on a north-south bearing and did the trilateration of the anchor, which was located at the northeast end of the cannon field. The cannons are positioned on both sides of the baseline a couple of yards apart, running about 30 meters from north to south and pointing in various directions. One team worked the east side of the baseline and the other team worked the west side.

Team members took turns performing the measurements, with one person recording the position on the baseline where the tape was stretched from the muzzle or the cascabel of the cannon. The other person managed the "dumb end of the tape," as it is sometimes known. That's somewhat of a misnomer—trust me, the person on the zero end of the tape is not dumb because he/she has to manage the tape well and remain steady in place on the baseline, or the measurement will be inaccurate. Buoyancy control is critical for both team members in order to achieve accurate results.



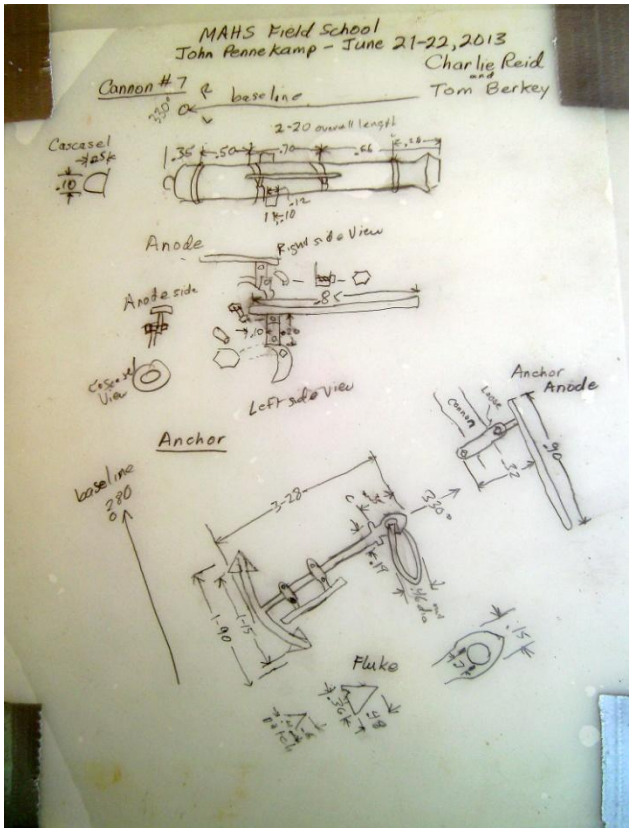
The author completing a detailed drawing of one of the cannons. Photo by W. Blodgett.

In addition to the trilateration, we drew and measured the dimensions of one of the cannons to collect details, as we would for artifacts of interest on any survey site. We repeated the trilateration for the other cannons we were assigned and then returned to the beach. It took us one day and a few hours the next day to complete the survey, but that's not the end of this story.

Once we had our survey data, we had to plot it on a graph to create a map. This is where it is helpful to have some drafting experience, although it's not a prerequisite because the instructors tell you all you need to know for this exercise. The challenge is to be able to take your

actual distance measurements and convert them to distances on the graph paper by using a scale. It's just a basic math problem, no geometry required. Mapping the cannons and anchor on the graph was the final step in this field school exercise. We did not combine the maps made by the teams, as would normally be done to produce one final site map.

However, MAHS will be going a step further with this survey. The data collected will be used, along with a supporting narrative and some other information, to create a map on a plastic card. The map card will be presented to the John Pennekamp Park Rangers and produced for snorkelers. The snorkelers will be able to use the card to locate the cannon site, understand the layout of the artifacts, and learn a little about where the cannons came from and what they represent.



Slate recording dimensions of cannons and anchor on mylar. Photo by the author.

I was privileged to be a part of the field school survey team and had a great time to boot. I thoroughly enjoyed the entire process of mapping the anchor and cannons and drawing the map. While I was a participant in the survey of the cannons, I also was taking photographs. I compiled the photos into a video as a documentary of the field school event. You can view the video at this url: http://www.youtube.com/watch?v=9TbMY35OOUU&feature=c4-overview&list=UUOw8zqvevswoZccnaWohhRw.

Anchor, with sacrificial anode attached to the shank on the right to arrest deterioration. Photo by the author.

J. Gorman and E. Reger mapping a cannon. Photo by the author.

I highly recommend that any diver interested in shipwrecks take the class and attend the field school. The entire experience was very rewarding and lots of fun. I learned how to research, evaluate, and understand what I am looking at when I dive shipwrecks. Moreover, I understand why it is so critical for all divers to respect the valuable historical resources we have in our underwater environments. We all need to support the preservation of the wrecks for future generations, for archaeologists and non-archaeologists alike. It is equally critical that everyone support marine conservation and do everything we can to protect our reefs and underwater environments for future generations to enjoy.

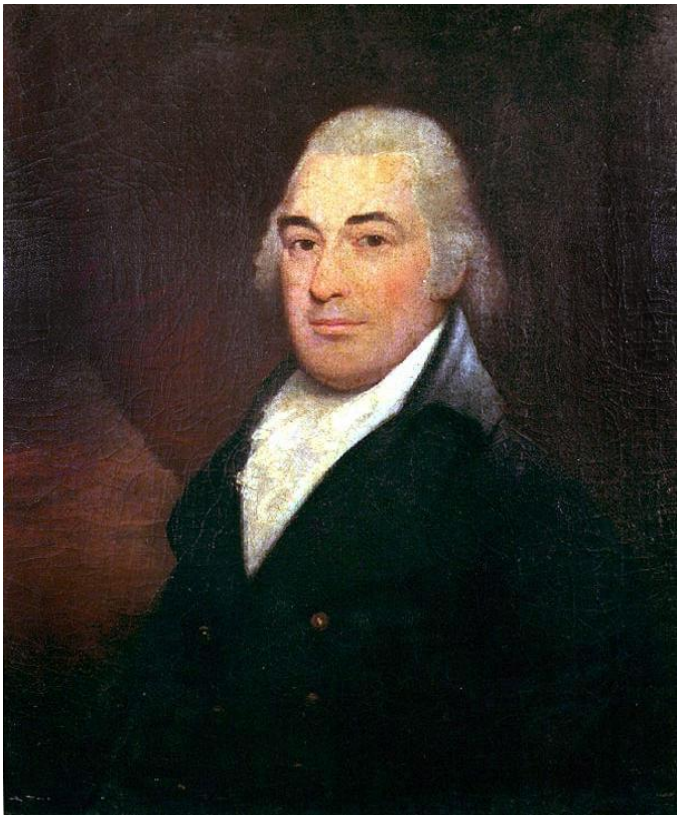
Charlie Reid was a participant in the 2013 MAHS Introduction to Underwater Archaeology class and John Pennekamp State Park Field School. ⚓

Secretary Who? William Jones, Virtually Forgotten by History

by Joseph Callo

This article appeared in slightly different format in the November 2012 issue of Military History *and is reprinted with permission.*

Naval history is replete with stirring tales of brave captains and stalwart crews, of swift and deadly warships, and of furious sea battles that changed the course of history. The War of 1812 offers particularly colorful examples of maritime warfare, including the Battle of Lake Champlain, USS *Constitution*'s victory over HMS *Guerriere*, and Master Commandant Oliver Hazard Perry's victory on Lake Erie.



William Jones, Secretary of the Navy 1813-1814. Portrait by Gilbert Stuart, Navy Art Collection, Washington, D.C.

As astonishing and important as these battles were, however, much of the credit for America's naval successes in that second war with Britain—and in the subsequent rise of American sea power—must go to a man who not once during the conflict set foot aboard a warship. He made his contributions from behind a desk in Washington, D.C., where he served as Secretary of the Navy between January 1813 and December 1814. His name was William Jones, and you may be excused for never having heard of him.

The organizational development of American sea power was inconsistent, at best, before Jones' appointment as its civilian leader. The Continental Navy, established in 1775, was a hastily formed force, and its very existence was not a settled issue. In 1785 Congress mandated the sale of the frigate *Alliance*, the last remaining ship of the wartime fleet, and for nine years after the United States actually had no navy at all. The ad hoc composition of the Revolution-era Navy carried over to its rules and regulations. Continental Navy captains often secured appointment on the basis of regional politics, and state navies competed with the Continental Navy for good seamen. While Captain John Paul Jones had made noteworthy strides to introduce professionalism to the service, legislators largely ignored his efforts.

In March 1794, responding to the depredations of the Barbary corsairs, Congress authorized the construction of six frigates to protect America's rapidly growing maritime commerce. Even then the lack of a well-organized naval department was a stumbling block, as was a pervasive political ambivalence about maintaining a standing navy. In his *American Naval History*, author Jack Sweetman summarized the political debate over establishment of the U.S. Navy:

> A Congressional resolution calls for the establishment of a navy to protect American shipping from the Algerines. Supported by Alexander Hamilton's Federalist Party, which speaks for the Northeastern mercantile and maritime community, the bill is bitterly opposed by Thomas Jefferson's Republicans, who represent the agrarian South and inland areas. The latter fear that a navy will be a ruinously expensive, aristocratic institution, subversive of democratic ideals, whose glory-hungry officers will drag the country into unwanted adventures overseas.

Among those opposing a standing navy was William Maclay, a Jeffersonian Republican from Pennsylvania who argued that it was cheaper to pay ransom for American sailors held by the Barbary pirates than to establish and maintain a navy. Another congressman who opposed the idea of a permanent navy warned that if such a force was established "this country may bid farewell to peace; because you thereby organize a class of society who are interested in creating and keeping up wars and contention." Others worried that a standing navy would prompt a pre-emptive attack by Great Britain akin to the Royal Navy's attack on Copenhagen in 1807.

In such an environment it was not surprising that the management of the U.S. Navy that emerged during the Barbary Wars and the 1798-1800 Quasi-War with France continued to be problematic. Compounding the problems at the onset of the War of 1812 was a thoroughly ineffective Secretary of the Navy, Paul Hamilton. Appointed by President James Madison in 1809, Hamilton is aptly characterized in recent histories of the War of 1812 by such terms as "ineptitude," "vacillation" and "defeatism."

William Jones reluctantly accepted the appointment by Madison as Secretary of the Navy at the beginning of 1813. During the American Revolution, Jones had served in a company of volunteer infantry at the Battles of Trenton and Princeton, then sailed as a privateer in the Continental service under Thomas Truxtun. In the latter capacity he was twice wounded and twice captured by the British. Following the war, Jones had sailed in the merchant service, founded a successful shipping company and served in Congress.

Despite his lengthy public service, Jones then had little interest in becoming a political appointee and had turned down Jefferson's earlier offers of the job. But Jonathan Roberts, a former colleague in Congress, wrote a compelling letter to Jones appealing to his patriotism: "The nation and the Navy point to you as the fittest man we have, and what is to become of us if the fittest man will not come forward in a moment of public danger?"

Jones was aware of the ugly side of Washington politics and understood his predecessor was leaving behind a nonfunctioning office. Yet America was facing a conflict with the country possessing the most powerful navy in the world. Jones swallowed his misgivings and stepped forward to become the Navy's civilian head. The "organization" he inherited was squeezed into three small rooms in a brick building just west of the White House. On hearing of Jones' appointment, friend Captain William Bainbridge commented: "You mention the inorganized [sic] state of your department....There never was any system in it, and for the want of it great abuses have crept in." After just one day on the job, Jones wrote to his wife about "the Herculean task I have to encounter." He addressed that task with considerable energy and intelligence, and an estimably organized mind.

Jones promptly replaced the office's chief clerk with Benjamin Homans, a former merchant ship captain who shared the secretary's understanding of the challenges ahead. Jones then issued a stream of orders and correspondence that addressed such basic management issues as personnel and shipbuilding. Historians have described his writing style as verbose and overbearing, but it also reflected his scrupulous honesty and dedication. His authoritative tone provoked some senior naval officers, who felt that Jones' new regulations compromised their authority as captains. Jones persevered, formalizing such administrative matters as transfers, promotions, officers' complaints and the redeployment of the ineffective gunboat fleet created by Jefferson. Jones established a correspondence system that adhered to the chain of command, enjoining, for example, junior officers from writing directly to the Secretary.

On the matter of ship construction Jones brought his management skills to bear, establishing uniformity in design, effective control of construction and maintenance costs, and oversight of the recruitment and retention of skilled shipyard workers. At one point he wrote to two captains in charge of construction and maintenance, showing his determination to bring order to what had been a haphazard process:

> Herewith you will receive the dimensions of masts, spars (etc.) for the sloops of war building

Thanks in large part to Jones' foresight in ordering the construction of two small but capable warships at Presque Isle, Pennsylvania, the U.S. Navy squadron under Oliver Hazard Perry defeated British forces in the September 10, 1813, Battle of Lake Erie. Painting by Rufus Zogbaum, Library of Congress.

under your inspection, to which you will please call the builders strictly to adhere, as well as to the precise position of the center of the masts, as designated in the draft in the gun deck line.

Jones' methods might today be termed micro-management, but they brought positive results. While he was secretary, the government-owned yards constructed the first U.S. ships of the line, several heavy frigates and a number of sloops of war designed for commerce raiding. In addition, the government contracted local yards to build the ships on-site that later carried the day for the Navy at the Battles of Lake Erie and Lake Champlain.

Jones' administrative innovations were a big step toward establishing a functional department, but his most significant wartime efforts focused on America's naval strategy. "His primary energies had to be devoted to the immediate business of fighting," wrote naval historian Christopher McKee in his 1991 book *A Gentlemanly and Honorable Profession*. The strategic naval situation facing the United States at the beginning of the War of 1812 was, to say the least, challenging: The Royal Navy had deployed more than 100 warships on the North American Station, including 11 ships of the line and 33 frigates. Opposing the British, the U.S. flotilla comprised 16 ships, none larger than a frigate, and many in need of repairs.

That imbalance of the opposing forces made clear the need for a naval strategy of asymmetrical warfare. Fortunately for Jones, Madison and most of the Navy's captains already agreed on the essentials of a realistic strategy: Attack the British sea lines of communication with single ships while establishing and controlling the lines of communication on the Great Lakes and Lake Champlain. Commodore Stephen Decatur articulated the first element of that strategy in a letter to Jones' predecessor, Paul Hamilton:

> [The] best use of the Navy would be to send single ships out with [a] large store of provisions so that they can cruise at a distance from the United States, and no more than two frigates together.

Jones himself spelled out the second element of the naval strategy to Commodore Isaac Chauncey, senior naval commander in the Great Lakes region:

> It is impossible to attach too much importance to our naval operations on the lakes—the success of the ensuing [land] campaign will depend absolutely on our superiority on all the lakes—and every effort and resource must be directed to that object.

Jones' primary achievement in the strategic area was, however, in applying the strategy dictated by the President, and doing so with consistency and clarity. In a February 1813 letter to the commanders of Navy ships then refitting he wrote:

> Our great inferiority in naval strength does not permit us to meet them on this ground [in squadron action] without hazarding the germ of our national glory. We have, however, the means of creating a powerful diversion and of turning the scale of annoyance against the enemy. It is therefore intended to dispatch all our public ships now in port as soon as possible in such positions as may be best adapted to destroy the commerce of the enemy from the Cape of Good Hope to Cape Clear and continue out as long as the means of subsistence can be procured abroad in any quarter.
>
> If anything can draw the attention of the enemy from the annoyance of our coast to the protection of his own rich and exposed commercial fleets, it will be a course of this nature.

In prosecuting this element of the U.S. naval strategy, Jones' merchant marine experience was a plus, as he was able to advise his captains on the best locations at which to intercept British merchant ships. The most significant outcome of commerce raiding by U.S. Navy ships—in combination with hundreds of American privateers—was the capture of thousands of British merchantmen during the war and the ensuing pressure from those in Britain whose livelihoods were based on ocean commerce (as well as their insurers) to end the war with the United States. The result was a softening of the British bargaining position at the peace negotiations in Ghent (in present-day Belgium) that began in August 1814.

The astonishing victories of the U.S. Navy in single-ship actions—including those between USS *Constitution* and HMS *Guerriere* in August 1812, USS *United States* and HMS *Macedonian* that October, and USS *Constitution* and HMS *Java* in December—were a most welcome byproduct of commerce raiding. But if the American public focused on the dramatic one-on-one victories, Jones kept those unexpected combat successes in perspective. "I like these little events," he wrote to Madison at one point. "They keep alive the national feeling and produce an effect infinitely beyond their intrinsic importance." It is clear Jones well understood the broader naval strategy, while recognizing the importance of civilian morale during war.

Jones actively supported the strategic effort to control the Great Lakes and Lake Champlain, although his stance was, for the most part, inappropriately defensive. It seems he had a strategic blind spot about the lakes and an approach at times out of touch with events on the water and in the surrounding regions. At one point Jones wrote to Madison emphasizing the

USS Constitution *defeats HMS* Java*. Painting by Anton Otto Fischer, public domain, digital image from Naval History and Heritage Command, Washington, D.C.*

importance of events in the Atlantic over those on the Great Lakes and Lake Champlain:

> One-fourth of our naval force [is] employed for the defense of a wilderness, while our Atlantic frontier—our flourishing cities, towns and villages, cultivated farms, rising manufactories, public works and edifices—are deprived of the services and protection of this valuable body of men, the loss of whom by any casualty would be to the nation a deep calamity.

Jones evidently believed that by early 1814 the British were not in a position to threaten American control of Lake Champlain. But on Sept. 11, 1814, U.S. Navy Master Commandant Thomas Macdonough engaged in a sharp naval action on the lake and defeated a British naval squadron. That victory, combined with Perry's earlier victory on Lake Erie in September 1813, turned out to be strategically crucial. Many consider Macdonough's victory the tipping point in the war, the point at which U.S. strategy got inside the British decision cycle. No less an authority than Alfred Thayer Mahan, the American prophet of sea power, stated unequivocally, in his book *Sea Power in its Relations to the War of 1812*, "The battle of Lake Champlain, more nearly than any other incident of the War of 1812, merits the epithet 'decisive.'"

But while Jones may have had a blind spot about the importance of the Great Lakes and Lake Champlain, he remained unflagging in the logistic support he provided for on-site construction of the fleets that fought and won the battles on both lakes.

Although Jones has gone largely unrecognized for his exceptional service as Secretary of the Navy during the War of 1812, it is clear upon examination of his record that he played a critical role. Neither a strategist nor a charismatic leader, Jones nonetheless forged the essential link between Madison's strategy and the naval means of executing that strategy. His management skills provided a conduit between Madison's policies and the courage and skill of the U.S. Navy's increasingly professional leaders. Thus he was the enabler for such successful naval officers as Isaac Hull, James Lawrence, Bainbridge, Decatur, Perry and Macdonough.

Moreover, Jones did far more than help bring the war to a more satisfactory conclusion for the United States. By his actions in organizing the office of the Secretary of the Navy, he strengthened the concept of civilian control of the military that remained, for the United States, a work in progress during the conflict. And with his organizational abilities he established the office as the means of effectively applying sea power during war and as an instrument of U.S. global influence. William Jones was, in plain terms, exactly the man the United States needed as Secretary of the Navy at an important juncture in its history.

For further reading, Joseph Callo recommends
The Navy Department in the War of 1812, *by Edward K. Eckert;*
A Gentlemanly and Honorable Profession: The Creation of the U.S. Naval Officer Corps, 1794--1815, *by Christopher McKee; and*
Perilous Fight: America's Intrepid War With Britain on the High Seas, 1812-1815, *by Stephen Budiansky.*

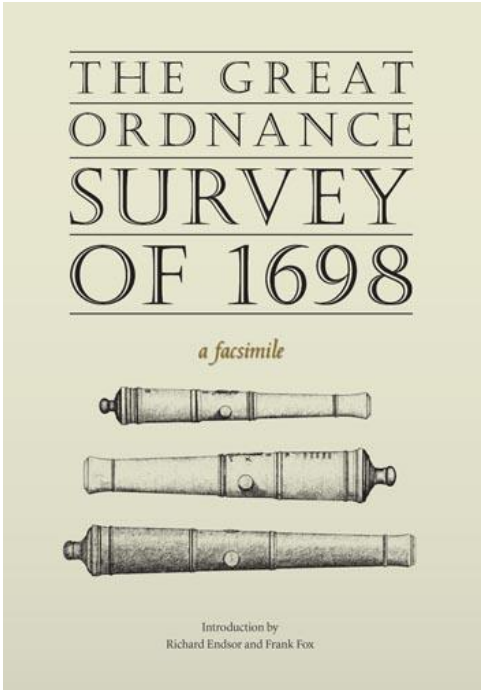
Joseph Callo's latest book, The Sea Was Always There, *was reviewed in the Fall 2012 issue of* MAHSNEWS. ⚓

It's never too late to renew your MAHS Membership. If you aren't a member, become one and join us in supporting maritime historic preservation.

The Great Ordnance Survey of 1698

Introduction by Richard Endsor and Frank Fox (SeaWatch Books, LLC, 2013)

reviewed by Dennis Knepper



The British Royal Navy was born as a professional institution out of the tumult of 17th century Europe, eventually rising to become the pre-eminent naval power we know from more recent history. Bringing armaments to bear on enemy targets was the main purpose of its war ships. Somewhat ironically, however, during much of this period naval guns were not under full control of the Admiralty and Navy Board. Instead, the British Board of Ordnance managed the supply and maintenance of arms and munitions for both the Royal Navy and British Army.

Formally created by Henry VIII in 1544, the office was renamed the Board of Ordnance in 1597, and from the start its main responsibility was Army weaponry. In the late 17th century, the Board's role was expanded to include Navy as well as Army munitions stores. As part of its new commission, the Board initiated an inventory of all the guns of the Royal Navy and coastal defense batteries. This inventory, the Great Ordnance Survey of 1698, as it has become known, was projected as an account of all guns in English warships, fortifications, and storage facilities. While the survey was never fully completed, it did record 14,801 weapons to a remarkable level of detail that included type of gun, its physical location, its weight and a series of painstakingly recorded dimensions—all accomplished in the course of about two years.

SeaWatch Books, a specialty maritime press in Oregon known for high-quality books on historical ship modeling, has undertaken publication of an impressive facsimile edition of the survey entitled *The Great Ordnance Survey of 1698*.

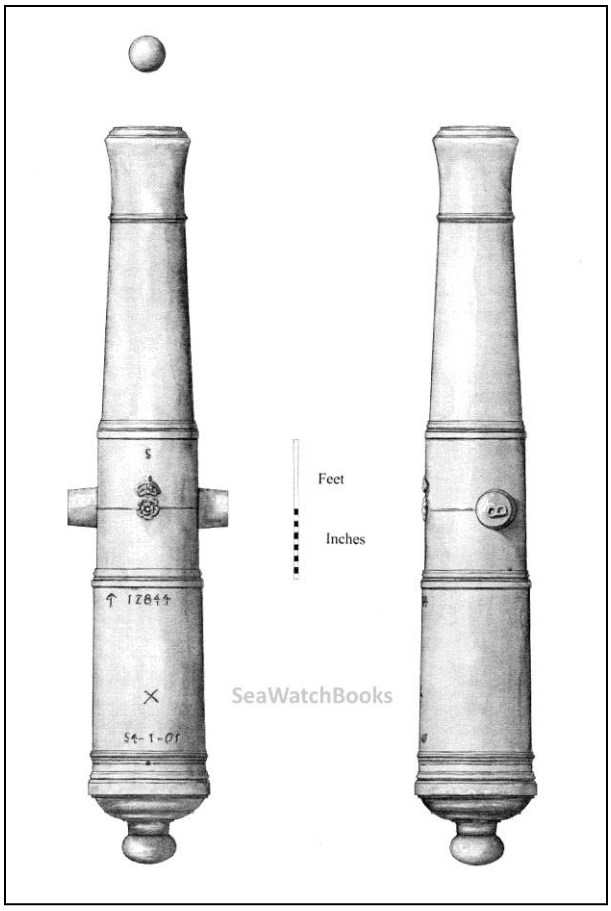
In a short introduction to the work, independent naval researchers Richard Endsor and Frank Fox describe the survey and its background. During the late 17th century, guns were uniquely cast, they explain, and thus the dimensions and weight of each piece varied, often to the extent that these measurements were used as identifiers. "Only rarely did two guns, even of the same type, have identical weights," they write. "For this reason the Ordnance Board had long used the weights as unofficial identification numbers, and commonly recorded them in various documents when weapons were issued to ships or received into store." In addition to recording these unique dimensions, the Ordnance Board incised a survey number on each gun during the survey. The number corresponded with the inventory listing and was designed to further simplify identification.

A bewildering number of gun types and names developed over the years. Endsor and Fox describe some of the complexity, including archaic type names such as minion, culverin, saker, and falconet. Adding to the difficulty of sorting out types, during the period between 1650-70 guns were often also described by shot weight. While not a deliberate aim of the 1698 survey, the inventory tended to standardize some of these terms if only by setting them down on paper.

Spelling, however, remained distinctly idiosyncratic, as was common in that period in which widespread use of the printing press had yet to promote a regular orthography. For example, the inventory heading for the survey number incised into each gun appears as "Number Cutt," while demi-cannon is written "Demy-Cannon." As the editors point out, some spelling variations, such as the ship's name, *Cornwall*, written as "Cornhill," may merely have been the result of the ignorance of the clerk as to the proper spelling.

Customarily, guns were not kept on board a ship when its commission ended. They were removed for storage, which may have been in part the source of the division between the Admiralty and Ordnance Board. A ship's guns might be in storage if, for example, the vessel were in ordinary, the term for a ship being out of service but in reserve. Guns might also be stored if a ship's armament were reduced—that is, if it sailed in peacetime or, ironically, if the ship was abroad in war. Thus, in order to render the inventory complete, the survey noted the location of each gun registered, whether shipboard or in storage.

The inventory was written out by a single clerk in a clear if florid hand. The document has been faithfully reproduced in digital facsimile as opposed to being



transcribed and reset. As noted by the publisher, Robert Friedman, in a blog post: "The materials have been reproduced from the original in the British Archives with very little retouching. It was printed using a digital press. In fact the whole project was made possible by digital technology." While a somewhat higher level of contrast in the reproduction would have made the entries a little easier on the eye, the resulting reproduction is very readable and gives a sense of working with the period document without the expense and trouble required in traveling to Kew. For those of us who have spent many hours in archives carefully pouring over old documents this is somewhat of a novel experience, although in these days when archives are increasingly available on-line the wonder may be slightly diminished.

The book is produced in a large volume format containing 474 pages in 8½-x-11 case-bound design. The print run is limited to 199 numbered copies. Endsor's fine scale drawings of examples of each of the principal weapons in the survey are reproduced in the introduction.

The Great Ordnance Survey of 1698 represents a valuable addition to the library of anyone interested in naval research. It is a snapshot of the arms capability of the expanding Royal Navy at a crucial time in the development of Britain as a global sea power. ⚓

---

continued from page 2

to reschedule our work on this site again next year.

We recently received some good news from Jeffrey Morris with Azulmar Research, LLC. He reported that they had completed their remote sensing survey and analysis of data from the Pamunkey River, Virginia, which is part of a multi-year MAHS project on that river. We look forward to contributing the survey results to the Commonwealth of Virginia in 2014 for state use in managing the UCH in the river.

So, as you can see we have a lot of projects in the pipeline and there will be plenty of challenges and interesting work for MAHS volunteers in 2014.

See you on the water,

Steven Anthony
President

MARITIME ARCHAEOLOGICAL AND HISTORICAL SOCIETY

Statement of Ethics

The Maritime Archaeological and Historical Society is organized for the purpose of enhancing public awareness and appreciation of the significance of submerged cultural resources and the science of maritime archaeology. In pursuit of this mandate, members may come into contact with unique information and cultural material associated with terrestrial and underwater sites containing evidence of the history of humankind. To protect these sites from destruction by commercial salvors and amateur souvenir hunters, the Society seeks to encourage its members to abide by the highest ethical standards. Therefore, as a condition of membership and pursuant to Article 2, Section 1 (A) of the bylaws, the undersigned executes this statement of ethics acknowledging adherence to the standards and policies of the Society, and further agrees as follows:

1. To regard all archaeological sites, artifacts and related information as potentially significant resources in accordance with federal, state, and international law and the principles and standards of contemporary archaeological science.
2. To maintain the confidentiality of the location of archaeological sites.

   To excavate or otherwise disturb an archaeological site solely for the purpose of scientific research conducted under the supervision of a qualified archaeologist operating in accordance with the rules and regulations of federal or foreign governments. Artifacts shall not be removed until their context and provenience have been recorded and only when the artifact and related data have been designated for research, public display or otherwise for the common good.
4. To conduct oneself in a manner that protects the ethical integrity of the member, the archaeological site and the Society and prevents involvement in criminal violations of applicable vandalism statutes.
5. To observe these standards and aid in securing observance of these standards by fellow members and non-members.
6. To recognize that any member who violates the standards and policies of the Society shall be subject to sanctions and possible expulsion in accordance with Article 2, Section 4 of the bylaws.

Signature _____ Date _____

MARITIME ARCHAEOLOGICAL AND HISTORICAL SOCIETY
PO Box 44382, L'Enfant Plaza, Washington, D.C. 20026

Application for Membership

Membership in the Maritime Archaeological and Historical Society is open to all persons interested in maritime history or archaeology whether or not they are divers. Members of MAHS have first preference for enrollment in all courses and other activities and projects of the Society. To join MAHS, please sign the Standards of Ethics above and send it to MAHS along with your check and this application form.

Name (print) _____

Address _____

City _____ **State** _____ **Zip** _____

Phone
(H) _____ **(O)** _____ **(FAX)** _____

E-mail _____

DUES ENCLOSED

___ **$30 Individual**
___ **$35 Family**
___ **$50 Sponsor**
___ **$100 Patron**

Skills (circle): research / dive / video / communications / writing / first aid / other:

_____

Please mail this form along with your check to: MAHS at PO Box 44382, L'Enfant Plaza, Washington, D.C., 220026

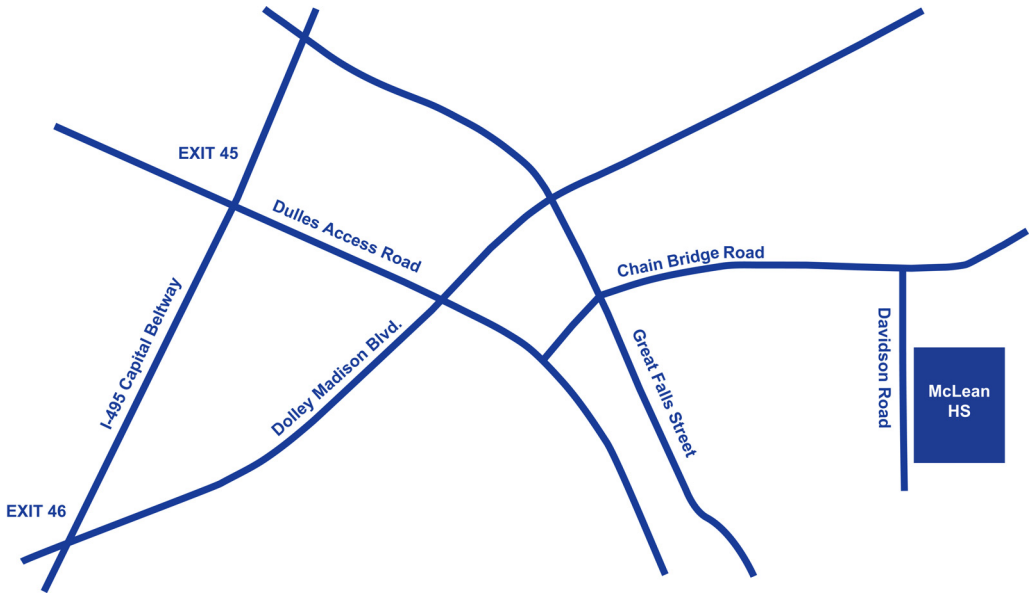
General membership meetings of the Maritime Archaeological and Historical Society are held on a bi-monthly basis, the second Tuesday of the month. Meetings are held at 7:30 p.m. at McLean High School, in McLean, Virginia, except in August and December. Meetings in August and December are held at other locations for special events and holiday parties.

Please join us and bring a friend. The school is located on Davidson Road, just inside the Capital Beltway (I-495) – use Exit 45, coming from Maryland, or Exit 46, coming from Virginia.

Check the website www.MAHSNet.org for e-mail advisories about any schedule changes.

Renew Now!

It's time to renew your membership in MAHS. It's easy. Just complete the application form on the inside back cover and sign the Ethics Statement, enclose a check for your dues, and mail!



MARITIME ARCHAEOLOGICAL AND HISTORICAL SOCIETY
PO BOX 44382, L'Enfant Plaza
Washington, DC 20026
www.mahsnet.org

ADDRESS SERVICE REQUESTED