

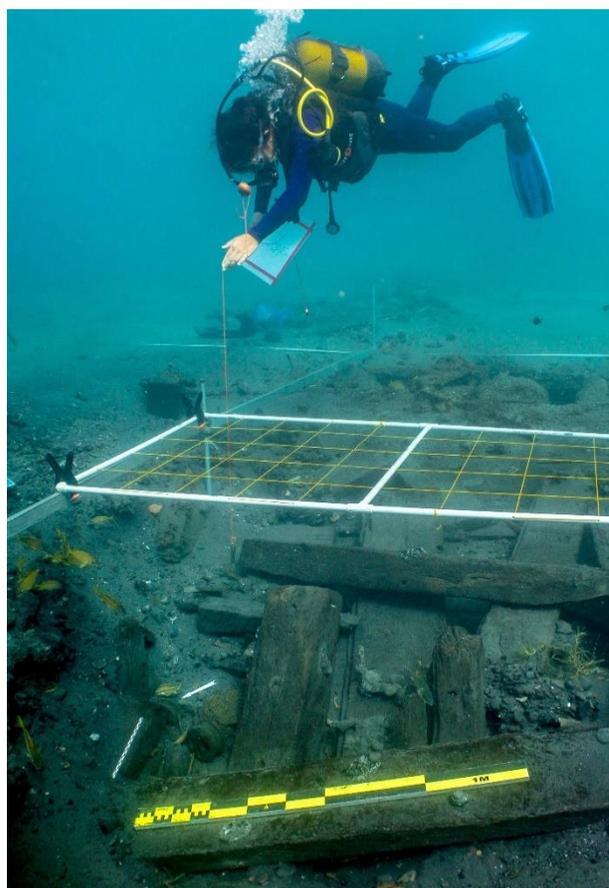
Wreck Site Formation Processes in Saint-Pierre, Martinique (French West Indies): First Contribution

By Jean-Sebastien Guibert

Saint-Pierre lies on the northwest coast of the island of Martinique. Although Fort-de-France (originally Fort Royal) has long been the formal administrative capital of the island, Saint-Pierre was for many years the cultural capital, known historically as "the Paris of the Caribbean." Shipping from across the Caribbean and Atlantic called at the harbor throughout much of the colonial period, making it one of the most important economic centers in the French West Indies. This status changed in 1902, however, when Mt. Pelée, an active volcano north of Saint-Pierre, erupted with catastrophic effect. The town was completely destroyed by the resulting pyroclastic flow and at least 28,000 people were killed. The devastation was such that Saint-Pierre never regained its former prominence.

Today, the harbor of Saint-Pierre contains a variety of shipwrecks and other maritime sites dating from various stages of the island's colonial history. To date, research has focused mainly on the 1902 eruption's shipwrecks, which created a unique ship cemetery in the West Indies. A concentration of ships built from the 1860's-to-1880's, for example, represents maritime activity at the end of the 19th century, a critical period in the development of globalization.

Among the wrecks known in the harbor from this era are the *Biscaye*, a three-masted, 159-ton vessel built in the Basque region of Spain in 1878; the *Diamant*, a



Guinguette shipwreck site during excavation of Trench Test 2, Saint-Pierre Bay, Martinique. Photo by C. Michaud, 2017.

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Notes from the Prez – Steven Anthony

MAHS conducted its Introductory Course in Underwater Archaeology again this winter for the 32nd consecutive year! A shout out to all the instructors who have made this course so successful for so many years. The 2020 class included a wonderful group of engaged divers with an interest in learning about the science and techniques of underwater archaeology and the role recreational divers can play in the protection and preservation of historic shipwrecks. It was a pleasure to see that several families were attending the classes.

However, the Coronavirus pandemic created challenges to completion of the course this year. In mid-March, MAHS received an announcement from Fairfax County school system that it was closing McLean High School, where we conduct our live classes, as part of their effort to stem the spread of the Coronavirus. In response, the MAHS Board of Directors acted quickly to convert the last four classes of the course to a combination of Zoom presentations and Google Drive.

Fortunately, this conversion went smoothly, and we thank all of our dedicated instructors for their unwavering support. The last four classes proceeded in an online, virtual format and were successfully presented as scheduled. The only casualty was our Pool Session, which the MAHS Board determined to cancel.

The final step in the MAHS certification process is the MAHS Field School which had been planned for Pickles Reef in the Florida Keys from June 25 through June 28. After consulting the various pronouncements from Divers Alert Network, consultations with Rob Blesser of Quiescence Diving Services, Inc. in Key Largo, Florida and others, the Board of Directors concluded that protecting our students from Covid-19 infection relied too much on untested rental tank cleaning procedures, the need for social distancing on the dive boat and the uncertainty of travel and accommodations. Therefore, the MAHS Board of Directors made the difficult decision to postpone the Field School until the Fall of 2020. At that time we expect to have a better handle on the status of Covid-19 risks and our students will have had the opportunity to recover from the financial impact relating to the state mandated Stay-at-Home orders.

The year 2020 has also been one of important transitions for the field of maritime archaeology generally and for MAHS specifically. We learned that Maria del Pilar Luna Erreguerena, a pioneer in the field of underwater archaeology, who founded the Division of Underwater Archaeology at the Mexican National Institute of Anthropology and History (INAH), died on March 15. Among many firsts, Pilar was recognized for her strong stand opposing treasure hunters working in Mexican waters and for her role in the ratification and

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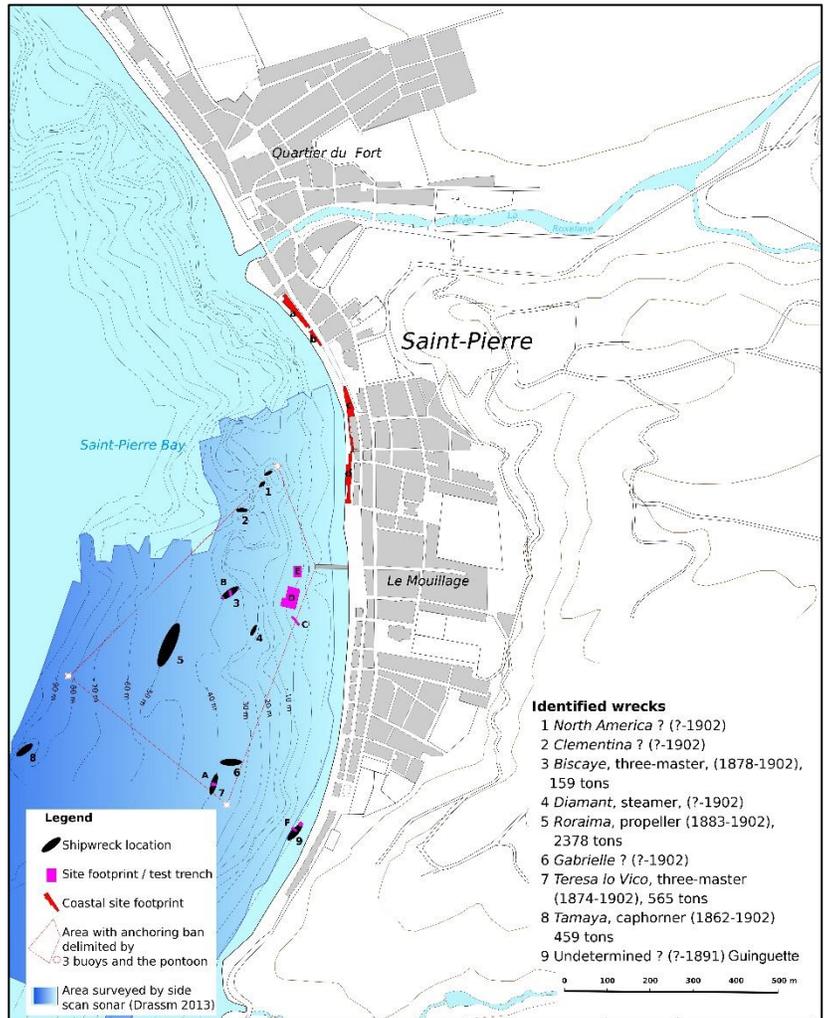
MAHSNEWS will consider articles and notices for publication which enhance public awareness and appreciation of maritime history, archaeology, and heritage preservation.

local steamer that linked Saint-Pierre and Fort-de-France; the *Roraima*, a 2,700-ton, 110-meter propeller ship with a 6-meter draft, built by Aitken & Maud shipyard of Glasgow for the Quebec Steamship Company in 1883; and the *Tamaya*, a 495-ton Cape Horner, built in 1862 and identified thanks to the recovery of its bell in 1985. Four other wooden-built sailing ships are referenced in archives but have not been conclusively identified: they include *Teresa Lo Vico*, *North America*, *Clementina*, and *Gabrielle*.

But in spite of the number and variety of wrecks in the Saint-Pierre harbor, archaeological and historical research has remained underdeveloped. While initial research efforts began in the 1970s, magnetometer surveys in the 1990s were the first to locate many of the wrecks that resulted from the 1902 eruption. Yet, a study by Serge Veuve, in a volume for the Ministry of Culture and Communication in 1999 that recorded some of these findings, still noted the general lack of concerted research. Since then, terrestrial archaeology in Saint-Pierre has increased significantly, primarily due to development-led projects. Yet underwater archaeology has continued to lag behind.

In 2013, a new archaeological survey was undertaken by DRASSM, the Department of Underwater and Submarine Archaeological Research of the French Ministry of Culture, to pinpoint the sites of shipwrecks and analyze anomalies in the bay. The team used side-scan sonar and was able to image much of the area. The survey was concentrated in the four-to-thirty-meter depth zone, although other, deeper areas were investigated in the vicinity of the deepest known site, the *Tamaya* at 85 meters. The result was a final document mapping most of the bay and showing the main anomalies and targets. The wrecks of 1902 were precisely located and visualized (orientations of the ships, shapes of the wrecks, and dispersion of the remains). The survey provided more than 50 targets to be tested by diving. These are assumed to be anchors, other structures, or unknown wrecks. As a result of the broader attention paid to underwater heritage in 2012, the main concentration of ship remains was protected from ship moorings and anchors by buoys indicating the wreckage area.

This state of research in Saint-Pierre Bay offers an excellent opportunity to reflect on the processes of underwater site formation. Due to the topography of the bay and the lack of a coral reef, the dominant mechanism for on-going site development appears to be underwater erosion from swell and cyclonic waves. Sedimentation



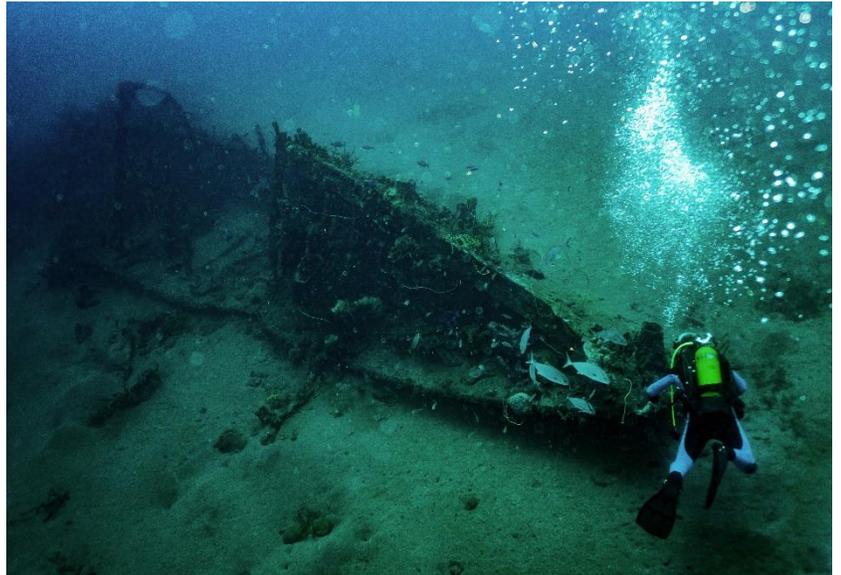
Archaeological projects and shipwrecks in the Saint-Pierre Harbor. Map by the author.

is rapid, which can result in site burial and good preservation, while major storms often represent very different processes that can expose features and disrupt artifact distributions or alternatively, bury them with sediment.

Several sites illustrate the range of processes at work in the bay. Most of the wrecks from the 1902 eruption are located close to their mooring area at depths from 30 meters to 85 meters. A general trend is noted in their orientations, with the wrecks presenting their bows to the coast toward the source of the eruption, although it is uncertain whether this was directly attributable to the blast. Iron vessels with surviving structure and high relief—from decks to masts or frames and hulls—have not in some instances been fully buried, even though their deterioration is continuing, as in the case of the *Roraima*. In seeming contrast, wooden vessels typically have only lower features of hulls, such as quick-works or spirketting, sheathing, or rudders, surviving. Occasionally, as in the *Biscaye* and the presumed *Theresa Lo Vico*, cargo (raw material, tiles, concrete



Side-scan sonar survey in Saint-Pierre Bay. Imaging by F. Leroy, DRASSM (French Department of Underwater and Submarine Archaeological Research).



Surveying the local steamer, Diamant, in Saint-Pierre Bay. Photo by the author, 2018.

barrels) is present. We can distinguish ships that sank at different stages of the eruption. Vessels such as the *Diamant* or the *Biscaye* may have sunk during the blast. Others, with burned wooden planks or that contain melted ceramic or glass artifacts, appear to have burned before sinking, as in the case of *Theresa Lo Vico*, where melted glass has been found, or *Roraima*, which burned for three days before sinking.

The case of the Guinguette wreck, named for the beach near which it was found at the south end of the bay, contrasts with the wrecks from 1902. This unidentified vessel lies very close to the shore in 4-to-5 meters of water in a sublittoral location and could not be reached by side scan-sonar. The wreck is oriented parallel to the shoreline on a flat bottom. Erosion had at one time left the site visible, but Hurricane Maria, which struck in September 2017, reburied the hull features. Before the passage of the storm, the stern area and bolts along the central axis of the ship were visible. In a test trench across the center of the wreck, the starboard side of the hull and what may be upper deck features were found under a 50-centimeter layer of sediment. In this area, structure and artifacts were well preserved. Although the ship has not been identified, material culture, ship construction, and location analysis suggest that it may be a vessel sunk during to an earlier hurricane, recorded in August 1891.

Another case illustrating the variety of site formation processes present in the bay is research on the so-called port dump site of Saint-Pierre, conducted by Laurence Serra in 2010-2012. This site was exposed following Hurricane Lenny in 1999, when ceramics from the late 19th century were originally thought to be from a shipwreck. Five test pits were excavated to a depth of 1.80 meters, which was the maximum depth divers could safely trench. The excavations revealed discrete stratigraphic layers sealed by several intervening layers of ballast. Rather than a shipwreck, the site appears to be a large dump site associated with part of Saint-Pierre's anchorage for merchant ships. Of interest here was the thickness of the overlying deposits that had accumulated in less than 150 years, showing the possibility that wrecks from the 18th century might be deeply buried in the harbor sediments.

To date, archival evidence combined with the first results of field work show good potential for shipwreck studies in the area of the shoreline in the Saint-Pierre harbor. Research undertaken thus far has mainly focused on wrecks from the Mt. Pelée eruption, despite the potential for wreckage from events such as weather-related hazards. During hurricanes, ships often are driven ashore in shallow waters, as shown by the example from Guinguette. Doubtless, other wrecks are located in this area. Major storms have been recorded in 1699, 1747, 1751, 1780, 1788 or 1822. As the bay is open, swell and wind would bring moored ships on shore with irremediable destruction. In those cases, the loss mechanism contrasts with that of the 1902 eruption, even though some ships may have been refitted. Instances of ships sunk at anchor or cast offshore are rare during climatic hazards.



Late 19th-century images of Saint-Pierre Bay, with Mt. Pelée in background; top, Anse Latouche prior to the 1891 hurricane; bottom, the south end of Saint-Pierre mooring, now Guinguette beach, showing the effects of the storm. Images from Archives territoriales de Martinique 21/Fi/109.

Moreover, site formation studies suggest that overlapping wreck sites may be present, given the potential for high sedimentation rates as seen in the port dump site. Additional processes may further complicate interpretation at some sites. Post-storm salvage in areas with easy access, for example, or dredging which has been conducted in several areas since the beginning of 19th century, may have intermixed overlapping wreck features. In the Saint-Pierre harbor this activity seems localized in shallow water close to the shoreline due to sediment deposition.

As the preliminary information presented here indicates, the bay of Saint-Pierre contains a wealth of archaeological data, including the remains of ships from many periods of European colonization in a variety of

depositional contexts. Along with information about the type of shipping in the port, ship construction, and cargoes, the sites demonstrate good potential for the study of underwater formation processes. Additional research will be required to permit us to expand on these first impressions.

For further reading, the author suggests:

Lucien Abénon. *L'activité du port de Saint-Pierre (Martinique) à la fin du XIXe siècle.* L'Harmattan, Paris, 1996.

Michel Météry. *Tamaya Les épaves de Saint-Pierre.* Institut océanographique, 2002.

Jean-Sébastien Guibert, Max Guérout and Laurence Serra. Past and present research in the Underwater Archaeology of Saint-Pierre. *ACUA Underwater Archaeology Proceedings 2018:* 149-154.

Jean-Sébastien Guibert, Annie Bolle, Max Guérout, Marc Guillaume, Frédéric Leroy and Laurence Serra. An Overview of Research of Maritime Archaeological Research of Colonial Period in French West Indies. *International Journal of Nautical Archaeology*, 48.1: 123-150, 2019.

Serge Veuve. *Saint-Pierre de la Martinique Document d'évaluation du patrimoine archéologique des villes de France.* Ministère de la Culture, Paris, 1999.

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Liberty Ship *John W. Brown* Returns to Baltimore

by David Shaw and Dennis Knepper

Early in 2020, the Liberty ship *John W. Brown* returned to Baltimore following a period in drydock in Norfolk, Virginia, for inspection and maintenance. The ship is one of three surviving World War II-era Liberty ships, the mainstays of cargo transport during the war, that are still afloat. Two are fully operational: the *Jeremiah O'Brien* (docked in San Francisco) and the *John W. Brown*. The third, *Arthur M. Huddell*, was restored and renamed *Hellas Liberty*, and now serves as a static maritime museum in the harbor of Piraeus, Greece. A fourth ship, the *Albert M. Boe*, was converted for use as a fish cannery; it was the last Liberty ship built and was renamed *Star of Kodiak* and is now landlocked in Kodiak, Alaska.

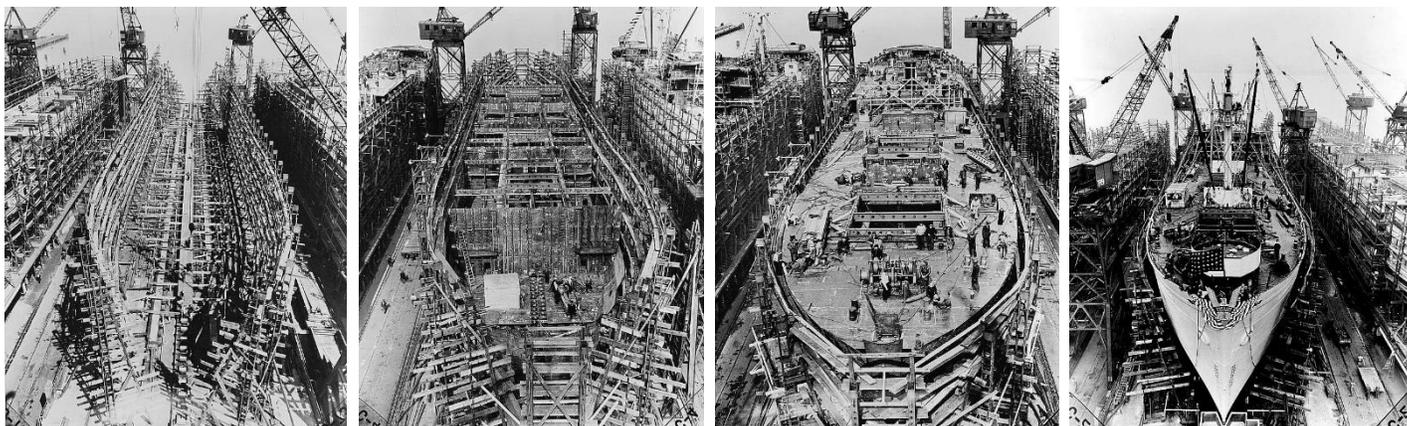
An old saw sometimes attributed to Napoleon has it that an army travels on its stomach. In a wider and perhaps more apt reading it has been said that amateurs talk tactics, professionals talk logistics. Liberty ships served a critical logistical role in World War II, transporting as much as two-thirds of the cargo shipped from the U.S. during the war years. The design of the ships originated with Britain's Ocean-class cargo carrier, a 416-foot, steel-hulled vessel. The Ocean class itself grew from an earlier British tramp steamer known as the Sunderland Tramp, first built in 1879 and discontinued in the 1930s. A prototype of the Ocean class, *Empire Liberty*, was built in England by Thompson & Sons, Ltd., of Sunderland, and was launched in August of 1941. Ocean class steamers were built on the original design in American yards in support of the British merchant marine which, early in the war, was losing freight transports at a high rate to Hitler's Sea Wolves, as the German submarine force was known. The first group steamers was contracted to Todd



The Liberty ship *John W. Brown* moored in Baltimore.
Photo by the author.

Shipyards Corporation, with 30 to be built in South Portland, Maine, and 30 in Richmond, California. Rapid production was to be a hallmark of this construction effort, and sunken basins constructed for the purpose at the Maine yard were reportedly the first in the world used to mass-produce ships. The first of the ships to be built, aptly named *Ocean Vanguard*, was launched in California in October 1941.

After the attack on Pearl Harbor and the U.S. entry into the war in December of that year, the nation's need for its own large and updated transport fleet was readily apparent. The Ocean class, already in production, was re-designed for increased capacity, greater speed, and more rapid construction, and manufacture began almost immediately. Between 1941 and 1945, 2,710 of the new



Liberty ship construction sequence, Bethlehem-Fairfield Shipyards, Baltimore. Images from the Library of Congress.

Day 2

Day 6

Day 14

Day 24

cargo haulers, now called Liberty ships, were built. President Roosevelt is said to have remarked that they “weren’t much to look at—a real ugly duckling,” and the nickname stuck. The vessels became emblematic of the industrial might of the U.S., however, not only for the cargo they carried but for the pace at which they were constructed—it is estimated that on average, three ships were built every two days during the period.

The ships were constructed in sections. Much of the riveting in construction was replaced by welding, a faster process that reduced labor costs by a third—it was estimated that there were 43 miles of welding in the ships’ hulls. Other efficiencies decreased manufacturing time dramatically; while the first Liberty ships were built in about 230 days, the average fell to 42 days. The record was set by SS *Robert E. Peary* at the Richmond, California yard, in somewhat of a propaganda show. Prefabricated sections were assembled and launched in 4 days and 15½ hours. The ship was delivered for service in a total of 7½ days.

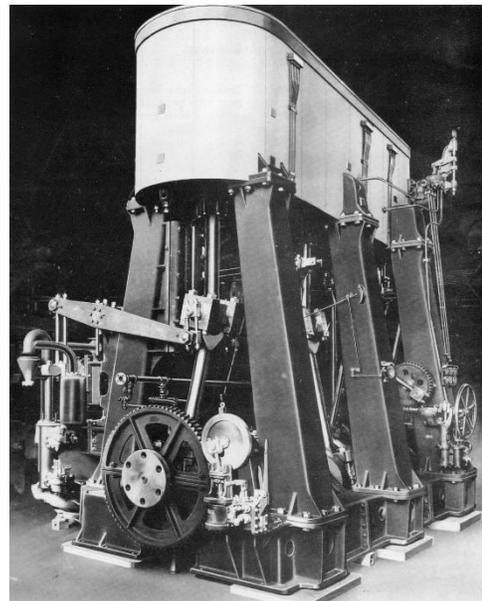
Liberty ships were driven by a 140-ton, vertical, triple-expansion steam engine. The engine was an obsolete design, less efficient and less powerful than the new, finely tuned steam turbines used in most vessels then built for the Maritime Commission, but it was cheaper and quicker to manufacture. The ships were designed for a service speed of 11.5 knots, and while higher speeds were possible, the increased fuel consumption necessary was considered uneconomical.

The ships were armed for defense. Weaponry typically included four-inch and three-inch guns, 20-millimeter and 37-millimeter cannon, and 0.3-inch and 0.5-inch machine guns. In the typical arrangement, a four-inch gun was placed at the stern, flanked by two smaller guns. Four guns (often 20-millimeter cannon or machine guns) were usually located on the superstructure, two guns at the forward mast, and a three-inch gun at the bow.

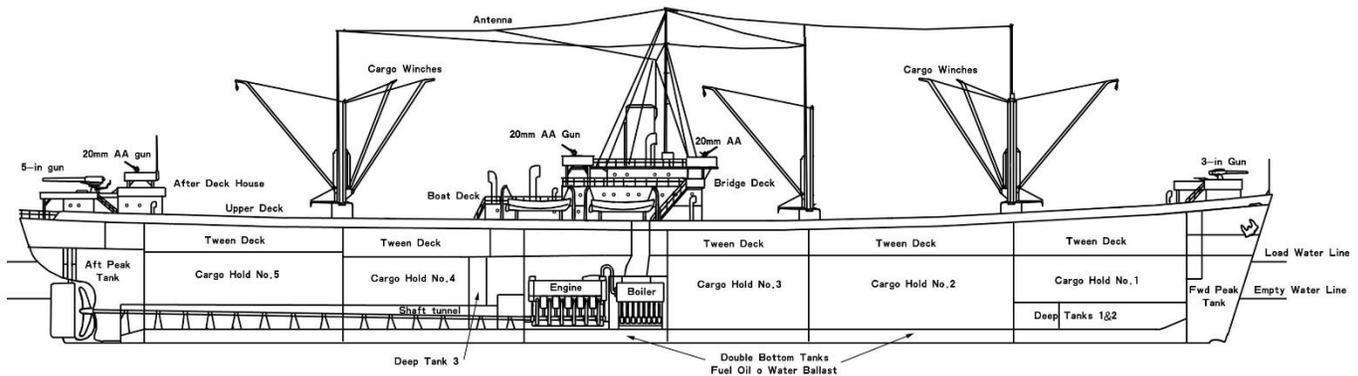
Crew accommodations lay within a single house amidships, as had been the case for other ships designed

for the Commission. While designed for general cargo, the ships were easily converted to tankers, tank carriers, boxed airplane carriers, and colliers. Others became troopships, hospital ships, or repair ships.

Liberty ships were considered expendable, with at best a five-year life span. Some of the earliest examples developed cracks in their hulls, which occasionally led to the loss of the vessel—three of the ships broke in half without warning. The defect was not tied directly to welding but to the steel plates becoming brittle, especially in the cold waters of the North Atlantic. The problem was, however, compounded by factors such as the predominantly welded hull construction that allowed small fissures to spread, the number of square corners that focused stress, and by the fact that the ships were frequently grossly overloaded. Minor design modifications helped alleviate the problem, and the ships’ durability is indicated by the fact that they continued to sail for nearly 20 years after the end of the



Liberty ship 140-ton VTE engine. United States Maritime Commission photo from the public domain.



Liberty ship cutaway. Kallgan, Creative Commons.

war. Some served as support vessels in the Korean War, while many others were decommissioned and formed the heart of commercial fleets through the 1950s and 1960s.

John W. Brown was officially known as an ECS-S-C1 Maritime Commission Emergency Cargo Ship, Hull #312. The keel was laid at the Bethlehem-Fairfield Shipyard in Baltimore, on July 28, 1942. The ship was launched on September 7, 1942, the third of three Liberty ships launched at the yard that day and the 62nd of 384 ships built at the yard. Fitting out was completed



John W. Brown, outbound with deck cargo, ca. 1943. Project Liberty ship. Image from the public domain.

on September 19, 1942, making the total construction time 54 days. Production required about 500,000 man-hours and costs ran approximately \$1,750,000. The Liberty ships were named for prominent Americans from all walks of life. The *John W. Brown* was named for the Canadian-born American labor union leader of that name, who died in 1941. Perhaps reflecting society at the time, the vessels were known for the role that women workers took on in their construction, but the only ship to carry a female name was the *Harriet Tubman*, built in Maine in 1944.

As the war progressed, a larger and faster cargo hauler took shape in the Victory ships. Based on the Liberty ship design, Victory ships were 14 feet (4.3 m) longer than the Liberty class, 6 feet (1.8 m) wider, and drew a foot more when loaded. A higher forecastle and reworked hull shape allowed greater speed when powered by more efficient engines, which included steam turbines and diesel engines. The first of the Victory class to be produced was *SS United Victory*, completed in early 1944 at Oregon Shipbuilding Corporation in Portland, where Liberty-class ships were also built. The Victory program began slowly, with only 15 vessels delivered by May of that year. By the end of the war, however, 531 had been constructed.

Liberty ships sailed in all parts of the world. They anchored off beachheads in North Africa, Europe and the Pacific islands, carried cargo, Allied troops and prisoners of war, served as hospital ships, evacuated rescued Allied prisoners and brought troops home when the war ended.

John W. Brown made a total of thirteen voyages, eight during the war and an additional five in the immediate aftermath. The first was the ship's sole cruise carrying only cargo, an eight-month voyage to the Persian Gulf via the Panama Canal and Cape Horn, a roundabout route to avoid the submarine-infested North Atlantic. There it unloaded military hardware for transport overland to the Soviet Union. The ship returned to New York via the South Atlantic, stopping to load bauxite from Surinam and Trinidad.

Following its return, the *John W. Brown* became the first of 220 Liberty ships to undergo conversion as a troop ship. Most of its remaining cruises carried cargo and troops to the Mediterranean, initially to North Africa and later to Naples. On the fourth cruise the ship carried high explosives and troops to Anzio, as the Allies broke out of their beachhead on April 23, 1944.

The ship experienced few problems in its wartime career other than occasional storms and high seas. On the third cruise, however, the ship's convoy was attacked by submarines in the Mediterranean. Two ships near the *John W. Brown* were torpedoed and lost, but the *Brown* was not damaged. On a later cruise the ship suffered its only known major mechanical problem, boiler trouble, which required it to drop out of convoy for a time while temporary repairs were made. Ignoring standing orders to take a zig-zagging course if forced to sail alone, the *Brown* then steamed straight ahead and was able to rejoin the relative safety of the convoy. Full repairs were undertaken on arrival in Brooklyn. The ship's final cruise of the war carried cargo to Antwerp and returned to New York with Army personnel.

John W. Brown's five post-war voyages were largely humanitarian in nature, carrying general stores to Europe—grains to Marseilles, wheat to Naples, coal to Copenhagen, general cargo to Hamburg and grain to England. Returning troops were brought home on several of the trips back.

In 1946, *John W. Brown* was given to the New York Board of Education for use as a vocational school emphasizing maritime studies. It served there until 1982, a span of 36 years. Near the end of this period, a preservation seminar was held on board at which Project Liberty Ship was born. Congress transferred title of the ship to Project Liberty Ship and, with the backing of the National Maritime Historical Society, the organization focused on the preservation of the vessel. A suitable berth for the *Brown* could not be found in New York



John W. Brown in the Great Lakes, 2000. Project Liberty Ship. Image from the public domain.

when its career as a vocational school ended. The ship was towed out of the harbor and south to the James River Reserve Fleet in July 1983. A berth was eventually secured for the ship in Baltimore at Pier 1, Clinton Street, and in August 1988, the *John W. Brown* was towed to Baltimore to begin restoration. After three years and an estimated one and a half million man-hours of volunteer labor, the ship was fully operational and successfully completed extensive sea trials, which the project lightheartedly referred to as a "Matron Voyage."

The ship was in good condition when acquired by Project Liberty Ship, since it had not been subjected to the rigors and demands of commercial service at sea under full power following the war and had been well-maintained while serving as an educational platform. During the war the deck spaces had been converted from cargo to troop carrying, that were readily later transformed as classrooms for the high school. Today the spaces can be used as museums, display areas, meeting rooms and classrooms, easily accessible to the general public.

Among the many honors the ship has received, the World Ship Trust awarded the *John W. Brown* their prestigious Maritime Heritage Award, one of only six ships in the United States to be so recognized. The ship was also inducted into the Maritime Hall of Fame at the American Merchant Marine Museum [NY], it was named the 2007 Ship of the Year by the Steamship Historical Society of America and has been designated a National Historic Landmark by the Society of Naval Architects and Marine Engineers. The *John W. Brown* was listed on the National Register of Historic Places in November 1997.

Project Liberty Ship currently reports nearly 2,000 members nationwide and in a number of foreign countries. Their website notes that the *John W. Brown*

provides a fully operational training platform for U.S. Navy Sea Cadets, police and fire first responders, U.S. Customs and Border Patrol, the Baltimore-based Maritime Institute of Technology and Graduate Studies, the Marine Engineers Beneficial Association, and a Science, Technology, Engineering and Mathematics, or STEM program for Anne Arundel County (Maryland). Since its return to Baltimore in 1988, the ship has sailed more than 25,000 miles and visited 29 North American ports on its cruises. The ship also offers a popular "Steam School" and "Merchant Seaman School" program for public participation in three-day courses with overnight stays on the ship.

The *John W. Brown* returned to Baltimore in February 2020 after completion of scheduled five-year maintenance work at Colonna's Shipyard, Inc., in Norfolk. Four weeks of work in drydock included the painting of the ship's bottom and freeboard, propeller overhaul, refurbishment of sea valves, U.S. Coast Guard inspections and various internal work. The ship will now share pier space with *NS Savannah*, a historic vessel in its own right. Built in the late 1950s, the *Savannah* was the world's first nuclear-powered combination cargo and passenger ship. The federally owned ship is currently in Philadelphia undergoing work related to its nuclear power plant decommissioning.



NS Savannah at Pier 13, Baltimore, in 2012. Acroterion, Creative Commons.

Some of the information in this article is from promotional literature distributed by Project Liberty Ship.

For further reading:

James Davies, Liberty Cargo Ship, WW2Ships.com. 2004.

Gus Bourneuf, Jr. Workhorse of the Fleet: A History of the Design and Experiences of the Liberty Ships Built by American Shipbuilders during WWII. American Bureau of Shipping, Spring, Texas. 2008. ⚓

Nautical Graffiti in the Chapel of the Casa da Torre, Bahia, Brazil

by Beatriz Bandeira and Paulo Fernando Bava-de-Camargo

The Casa da Torre (Tower House), also called the Castle, is located in Praia do Forte, on the coast of Brazil in the State of Bahia. The Castle was built in the 16th century by Garcia de Sousa d'Ávila, son of the first governor-general of Brazil, and was designed to serve as headquarters for one of the most powerful families in colonial Bahia. An assortment of boat and ship images are engraved or drawn on the walls of one of the chapels of the Castle. These graffiti are believed to be either an attempt to represent nautical traffic along the coast or a manifestation of a religious nature, such as an ex-voto offering.

There are two types of graffiti in terms of elaboration, execution, and theme: those that represent more robust and older vessels, which are engraved; and possibly more recent graffiti that were drawn with charcoal and depict smaller boats and whale hunting scenes.

The Castle of Garcia D'Ávila represents the home of an important Luso-Brazilian family between the 16th and 19th centuries that was directly involved in colonial administration and territorial conquest, accumulating vast lands during the period. The family's wealth and prestige resulted from wars against enslaved Indians, the search for silver mines, and the use of the Tower House as an important headquarters for military forces.

The strategic, military function of *Casa da Torre* has its expression in the architectural ensemble consisting of the ruins of a watchtower, stable, chapel (restored), and a huge residence, which over the centuries has had its facilities renovated and expanded. The chapel was built by Garcia d'Avila the Elder in the mid-16th century, in a Renaissance style but of medieval spirit. The building has three doors and its roof houses hexagonal vaults.

A brief survey of iconographic sources on sailing vessels of the 17th century and of historical sources regarding *Casa da Torre* during the same period has led us to the possible origin of some of the incised graffiti.

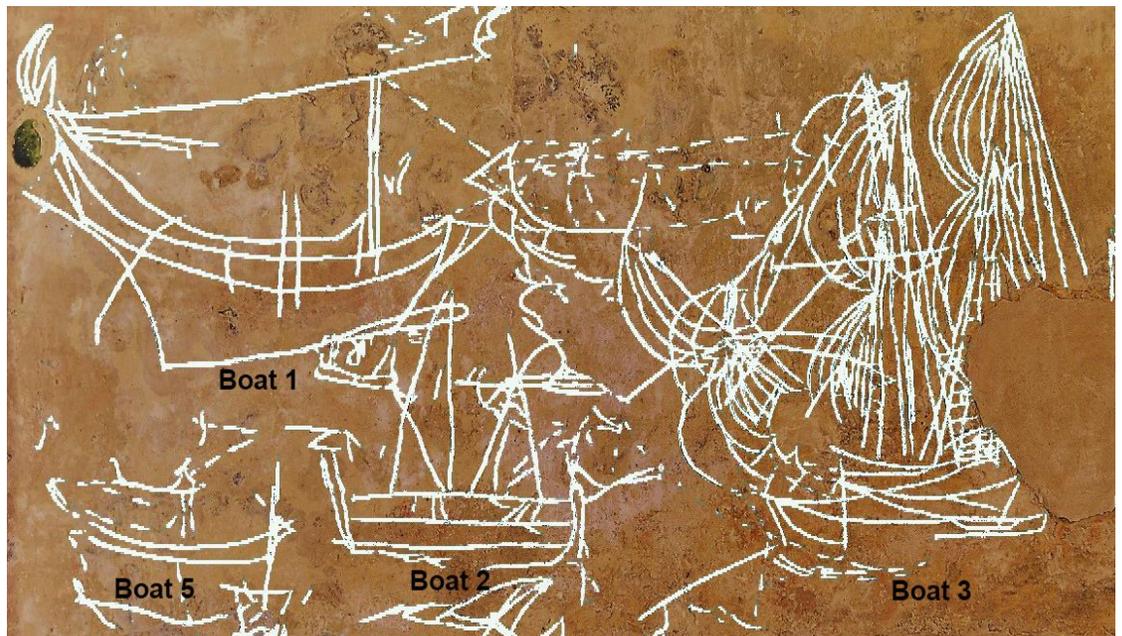


The Garcia d'Avila Tower House containing nautical graffiti. All images by the authors, unless noted.

For example, certain details observed on Boat 12, such as the ship's sterncastle and decks, the round and Latin sails, and the detail of the bowsprit spar, indicate that the vessel could be a 17th-century man-of-war.

Treatises on naval architecture in the late 16th century reveal that there was a tendency for an increase in the size of commercial and warships designed to sail to the Atlantic Ocean and Indian Ocean. Removal of the bow castle allowed for better use of bowsprit sails, resulting in greater speed and allowing the vessel to maneuver better in confined spaces.

Our research, focused on Dutch, Iberian and English representations of war vessels from the first half of the 17th century, led us to a painting by Hendrick Cornelisz Vroom (1562-1640) depicting a Franco-Dutch naval battle sometime between 1626-1632. The painting shows a ship with a sterncastle, a bowsprit sail extending



Part of a group of 10 boats engraved in several sizes and perspectives (enhanced for clarity).



Boat 12. The graffiti (enhanced for clarity) indicate that the artist had a good knowledge of a 17th-century warship. Photo by P. Bava-de-Camargo.

from the end of the deck, and no bow castle, all characteristics similar to the drawing of Boat 12. As confirmation of our observations, Professor Filipe Castro, of Texas A&M University, noted that the detail of the bowsprit spar would most likely be related to developments in the first half of the 17th century, while the Latin sail would typically be Dutch.

The identification of the architectural signatures of Boat 12 have led us to investigate the period of Dutch invasions of the Northeast between 1624-1654. Dutch



A whale hunting scene, with what appear to be whaling vessels and possibly saveiros (locally made boats). The sketches may have been made by artists or architects who visited the building in the beginning of 20th century, as suggested by a date in the top right.



Side and rear views of ships similar in design to Boat 12. Painting by Jacob Gerritz Loef, Rijksmuseum, Amsterdam.

and Portuguese historical reports tell us that during the second Dutch invasion (1630-1654), Francisco Dias d'Ávila II (c. 1621-1645), heir to Garcia de Souza D'Ávila, temporarily housed the Count of Bagnuolo, an Italian noble who captained the Iberian military forces after the disaster at the battle of Mata Redonda. On this occasion, the Tower House served as a military base and as a prison for Dutch captured in battle. Integrating this historical information about the Tower House with the data regarding the development of Dutch war vessels, we suggest that a Dutch prisoner may have been responsible for at least some of the Tower House graffiti.

The graffiti drawn in charcoal mainly correspond to smaller boats, possibly whaling boats or local traditional boats known as *saveiros*. The scenes may thus depict whale hunting. The drawings are probably newer than the engravings, a hypothesis supported by a date inscribed on the sacristy's wall: 1902.

The next step in our research will be to compare these archaeological remains with other, similar contexts to better interpret their meaning. In addition, continuing to publish the research results will be a significant part of the effort. A fuller understanding of these graffiti can contribute to themes that are still little explored or unknown in regional archaeology, such as Dutch invasions in Brazil, Dutch naval architecture, and the practice of whaling, as part of the wider universe of maritime archaeology.

Special thanks to Filipe Castro, Director of ShipLab at Texas A&M University, who encouraged us to research these Graffiti; Thaise Costa Pinto, Director of Fundação Garcia D'Ávila; and Rai Santiago Guimarães, who guided us in our search of the walls of the chapel.

Beatriz Brito Bandeira is a researcher at the Laboratory of Aquatic Environment Archaeology /Federal University of Sergipe, Brazil. Paulo Fernando Bava-de-Camargo is a professor at the University. ⚓

Anaconda's Tail: The Civil War on the Potomac Frontier, 1861-1865

by Donald Grady Shomette (Millstone Publishing 2020)

reviewed by Dennis Knepper

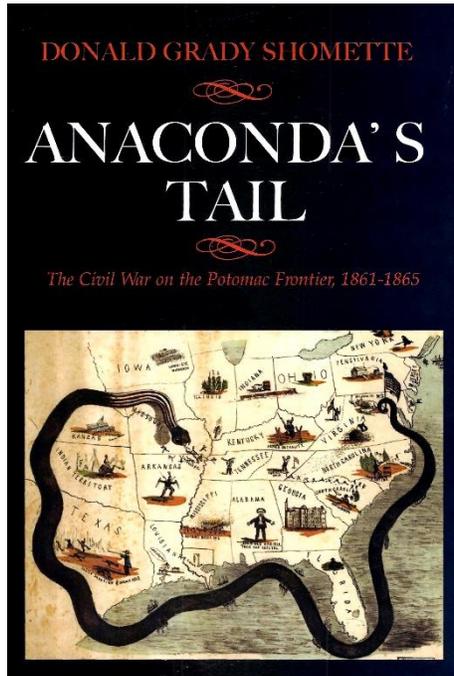
At the start of the American Civil War, Union Army Lieutenant General Winfield Scott proposed a naval blockade of the Confederacy that would stretch along the Gulf of Mexico and the Atlantic coast, from Texas to Washington, D.C. The plan proposed to cut shipping to the South, denying the rebellion trade and transportation, thereby forcing its leaders to capitulate with less bloodshed than could be expected from direct assaults. The strategy was dubbed the Anaconda Plan, somewhat mockingly by more aggressive Union generals and the Northern press, who likened it to a vast snake strangling its victim. The Potomac River, being the northern-most dividing line between the North and South, was the anchor of the blockade on the Atlantic seaboard and itself became known as the

Anaconda's Tail. A new book by that name has been released by Millstone Publishing, of Dunkirk, Maryland. Subtitled *The Civil War on the Potomac Frontier, 1861-1865*, it is the latest work by historian Donald Shomette.

While colorful, the giant snake image was only partly appropriate. Scott's plan was actually multi-part, including the blockade, a strong military defense of Washington, and a massive land and naval attack of key fortifications along the Mississippi River. With the river controlled by the Union, the Confederacy would be split, and the rebellion would soon be put to rest.

The focus of Shomette's book is Southern Maryland, the area between the Potomac River and the Chesapeake Bay, including the modern counties of Calvert, Charles, and St. Mary's, along with the southern portions of Anne Arundel and Prince George's counties. Shomette does retell the John Wilkes Booth story in detail, an account often thought of as Southern Maryland's major contribution to Civil War history. The story is, however, only part of a much larger narrative. "This is an important region which has never really been addressed," Shomette commented in a recent interview for the regional news outlet, *The Calvert Recorder*.

Southern Maryland was pro-Confederate and a major conduit for contraband. It was also considered dangerous ground, lying so close to the Union capital.



George McClellan, who took command of the Union Division of the Potomac from Irvin McDowell in 1861, was fearful that he would be unable to protect Washington from forces to the south. He saw enemies on both sides of the river, perceiving Marylanders on the northern banks of the lower Potomac as even more hostile to the Union than the rebels on the Virginia shore.

In response to the southern threat, the Union command created the so-called Potomac Flotilla early in the war to patrol the waterway separating the two states. Beginning as a small fleet made up of a few steamers and schooners, the flotilla gradually grew in strength to as many as 25 vessels. One of its initial actions was against the first Confederate defensive works on the river, which was situated below

Washington at Aquia Creek. The engagement was indecisive, with both sides claiming the advantage, but it signaled clashes along the river that would continue throughout the war.

A seemingly minor occurrence at the time was the first use of floating mines in the conflict. Referred to as "explosive machines" and "infernal machines," only two mines were deployed at Aquia Creek. Both were recovered without incident by Union vessels: one sank harmlessly to the bottom of the river; the other was towed safely to downstream to Nanjemoy. They were, however, harbingers of weapons that would eventually exact a toll on Union shipping.

The writing in *Anaconda's Tail* is clear and concise, at times visual in its effect, perhaps reflecting the author's journalistic background. Shomette began work as a graphic designer for the *Wall Street Journal*, Grolier Publishing in New York City, and the *Washington Post*. For two decades he served on the staff of the Library of Congress. The author of 18 books at last count, and of a variety of other publications on maritime history, Shomette is a three-time winner of the prestigious John Lyman Book Award for Best American Maritime History and has twice received the Marion V. Brewington Book Award for maritime history related to the Chesapeake Bay or the nation—the second Brewington Award was recently conferred for

Anaconda's Tail. Now a cultural resource management consultant, he is, in full disclosure, a long-time supporter of MAHS who was among those instrumental in developing the organization and its educational outreach efforts in the late 1980s.

Typical of many of Shomette's previous works, *Anaconda's Tail* is a richly detailed study, drawing on extensive primary and secondary documents that range from Official Records of the Union and Confederate Armies and Navies, to contemporary newspapers, diaries and journals, in addition to a variety of historical and modern books and articles. *Anaconda's Tail* will be valuable to historians and general readers alike. It is a well-researched historical study that examines the tactical military engagements and as well as the strategies that directed them. And it is an interesting and compelling narrative of events and the individuals behind them, with tales full of adventure and intrigue. Above all, it is a story about people, not merely historical events. To be sure, the history is there but the drive of the narrative is the people who made and lived the events.

Olivia Floyd, sister of a Confederate officer whose estate near Port Tobacco was often required to billet Union officers, was one such story. While playing the southern belle and entertaining her antagonists, Floyd served as a link between rebel agents in the North and command centers in the South. In one instance she was a critical stop for papers being funneled to Canada that verified the commissions of Confederate officers and soldiers who had fled there after a raid in Vermont. She temporarily hid the paperwork in andirons by the fire that warmed a group of Union officers before being able to send the documents on to Canadian authorities. The Canadians recognized the raiders as combatants, and Floyd thus helped save them from extradition to the U.S. and being hung as mere criminals.

Smuggling across the river was of major concern for the Union forces, stopping the flow of supplies and other matériel being a major part of the rationale behind the Anaconda Plan. Blockade runners were crucial to Confederate efforts to keep the flow open, even in the

dead of winter. At one point as ice jams began to dam up the river, a small, wooden cargo steamer sheathed in sheet iron was hauled 20 miles overland from the Rappahannock River to a small tributary of the Potomac to be deployed there.

The Potomac Flotilla, the main weapon in the Union's arsenal, faced a daunting task. This small naval force patrolled 100 miles of navigable river, and keeping the flotilla supplied was a constant struggle. Its steamers were sometimes forced to commandeer coal from merchant shipping. Supply vessels often had to embark from the Washington waterfront and came under regular fire from rebel batteries. The flotilla relied heavily on intelligence to engage in successful intervention of smuggling. Some of the best information on contraband operations often came from local black populations, many of whom were also used as trustees by the smugglers.

Another potentially valuable source of information came from manned airborne reconnaissance balloons. The newly created Aeronautics Corps of the United States Army was headed by Professor Thaddeus Lowe, one of the era's foremost builders and promoters of ballooning. The balloon he deployed on the Potomac was known as the *Constitution*, a large "air ship" that was tethered to a naval barge, *George Washington Parke Custis*, that was itself towed by a small, side-wheel gunboat. Lowe designed a portable hydrogen gas generator, which was critical in allowing the balloon to be transported and inflated on site. In the end, however, balloons were used more effectively to estimate rebel troop strengths, map defensive positions, and report the effects of Union artillery fire than in slowing the movement of contraband to the South.

Anaconda's Tail is published in a softcover edition only. It contains an assortment of illustrations that include standard photographic portraits of military leaders and illustrations from contemporary magazines and newspapers, many of which are familiar to those who peruse online collections of the Library of Congress. A large, computer-generated index based on names is minimally useful. †

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Ghost Fleet Awakened: Lake George's Sunken Bateaux of 1758

by Joseph W. Zarzynski (State University of New York Press 2019)

reviewed by Dennis Knepper

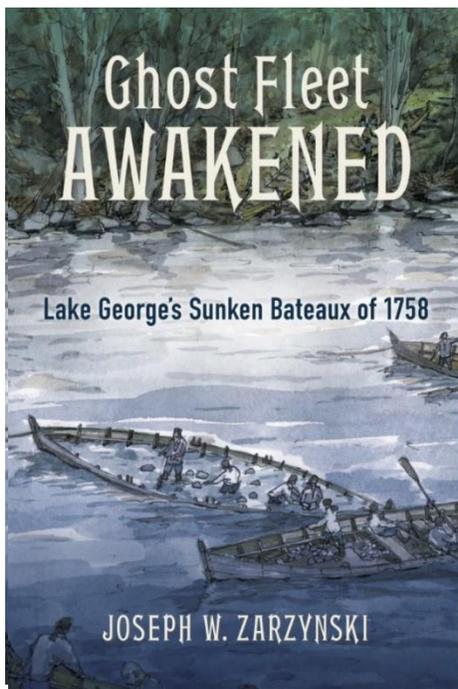
A series of lakes in eastern New York state form a corridor connecting Canada with the Hudson River and southern New York. This corridor, which includes Lake Champlain and Lake George, along with the tributaries flowing into them were important arteries in an era before road networks were well developed and ground transport was still difficult and often not practical. Inland waterways were a principal means of travel and communication in British Colonial America and as such they became strategically important in the wars of the period. During the French and Indian War (1755-1763), controlling the New York corridor was seen by the French as a means of splitting British territories and isolating the Ohio River Valley, which they sought to exploit and into which they were expanding.

One of the common and most important means of transport on inland waterways at that time was a modest, flat-bottomed boat known as the bateau. A double-ended, chine-built craft with shallow draft, the bateau was ideal for maneuvering in the sheltered waters. The term bateau derives from the French for boat, a simple term suggesting the simplicity of the vessels. Either poled or oared, they were a vernacular craft that could be used to transport troops, carry supplies, and when rafted together could even serve as a platform for mortars or small cannon.

Early in the war, a fleet of more than 250 bateaux used by the British on Lake George was deliberately sunk in the lake's cold waters as a form of wet storage, protecting them from French capture. The boats were filled with stones, buoyed for later recovery and sent to the bottom. Many were eventually raised, but some were left behind.

In *Ghost Fleet Awakened: Lake George's Sunken Bateaux of 1758*, New York archaeologist Joseph Zarzynski tells the story of the remains of the fleet, its re-discovery by divers in 1960, and the archaeological research into the boats that has continued since that time and has brought insights into the construction and use of the vessels and, ultimately, into the conduct of the war.

This is a complete archaeological study that examines the general history of the bateau, its historical



place in wars of the period and the French and Indian War in particular, the modern discovery of the boats in the lake, and the painstaking archival research conducted. It continues with details of the underwater archaeological investigations and concludes with conservation efforts and outreach programs designed to engage the wider public in the research and its benefits. The underwater investigations have included many hours of in-water diver investigation, sonar surveys, and the use of ROVs and AUVs for photography and video.

As Zarzynski points out, these small and seemingly unassuming boats are an important part of the history of the founding of the modern nation. Used in earlier regional conflicts such as Queen Anne's War (1702-1713), they were later employed extensively in

the Revolutionary War and the War of 1812. The author quotes John Gardner, a prominent naval architect and authority on small watercraft design, who wrote about the place of the bateau in the French and Indian War: "This war was won in boats, and for the greater part, in a particular kind of boat, the bateau." The efforts to record and manage the preservation of the remainder of the Lake George bateau fleet are well documented by Zarzynski and do justice to the historical significance of the archaeological sites and the vessels they contain.

The research and preservation programs have been coordinated by an organization known as Bateau Below, Inc. Originally formed in 1987 as the Lake George Bateaux Research Team, the group was reorganized under its current name in 1990 as a non-profit, working to preserve the sunken bateaux and other shipwreck sites in the lake. Volunteers monitor sites and engage in a variety of public outreach programs.

The vessels in Lake George range from 25-36 feet in length. At least three were raised in the early 1960s and have been conserved, disassembled, and are reportedly stored at the New York State Museum storage facility near Rotterdam. The Wiawaka site contained a group of seven boats scattered along a sloping bottom in 20-40 feet of water. Recorded extensively in the late 1980s, the vessels, which remain on the lakebed, were listed in the National Register of Historic Places in 1992, the only examples among the more than 40 known

bateaux-class wrecks in the lake so recognized.

The later chapters of the book describe preservation and resource management programs that have been undertaken. The latter include student involvement and documentary filming, both subjects close to the author's heart. He is a retired educator and filmmaker and has published a text for archaeologists on documentary filming (reviewed in *MAHSNEWS* 24:1 2013). From 1987 to 2011 he was executive director of Bateaux Below, and has worked on maritime sites in Massachusetts, Rhode Island, and the Florida Keys, and reported on the recovery of a World War II bomber from Loch Ness, Scotland, in 1985. His current book *Ghost Fleet Awakened*, is an expansion of his 2001 MA thesis submitted to the University of Leicester.

Ghost Fleet Awakened is published in softcover. It is illustrated primarily with grayscale photographs and watercolor reproductions accompanied by sketches and line drawings by a variety of project participants. Several short appendixes include recollections of one of the early researchers, Terry Crandall, from the Adirondack Museum, who conducted the museum's work on the vessels in the early 1960s. Another appendix contains a description of constructing a replica bateau by Mark Peckham, from the New York State Office of Parks, Recreation and Historic Preservation leading a troop of Boy Scouts. Lastly, a list of dive teams that have worked on the wrecks is presented. The end matter is rounded out by a limited but useful glossary, endnotes and a bibliography and index. ⚓

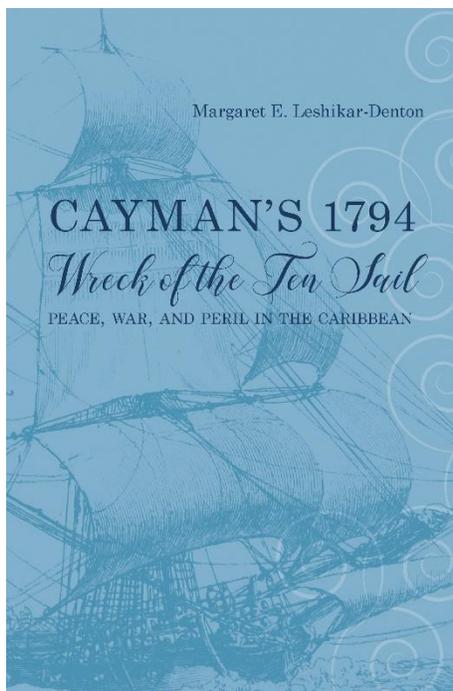
Cayman's 1794 Wreck of the Ten Sail

by Margaret Leshikar-Denton (The University of Alabama Press 2020)

reviewed by *Dennis Knepper*

Some historical events develop an outsized, even legendary character with time. When fact and fantasy become conflated, they may even border on myth. As accounts grow disconnected from facts, the resulting story may become not necessarily false but containing added dimensions that expand or exaggerate what actually occurred. Such an incident was the so-called Wreck of the Ten Sail in the Cayman Islands in 1794. It is the subject of a recent volume by Margaret Leshikar-Denton and published by the University of Alabama Press. The book, *Cayman's 1794 Wreck of the Ten Sail*, details the historical background and modern archaeological study of the loss of a convoy of merchant ships on shoals surrounding the Caribbean island of Grand Cayman at the end of the 18th century.

While not in this instance reaching the level of myth, the tale has become legendary in the folklore of the island. The facts, as Leshikar-Denton's research reveals, are that a British naval frigate, the former *L'Inconstante*, recently captured from the French and renamed HMS *Convert*, escorted a convoy of 55 merchant vessels from Jamaica bound for Britain. Rounding the east end of Grand Cayman at night, one of



the vessels ran ahead of the group and struck a shoal. Naval cannon that were fired to warn away the rest of the convoy were mistaken as a distress signal and a call for aid. In the confusion that followed, with ships crowding the scene, *Convert* was pushed onto the reef as well. The escort and nine of the merchant ships were eventually lost in the mayhem. Most of the cargoes were lost, although most of the crews were rescued and, in the end, there were only eight casualties. The islanders assisted in the salvage and in saving survivors and sheltering them in the aftermath.

These are the bare bones of the incident, as recorded in Admiralty Records of the court martial following the event. *Convert's* captain and his officers and crew were acquitted, held not responsible for the losses.

Leshikar-Denton takes these facts and expertly fills out the story merging archival history, oral interviews, and archaeology into an informative, accessible, and thought-provoking narrative, thought-provoking in that it examines how stories such as these can become part of the collective identity of a population.

The author's aim, as she herself states, is "to bring the fascinating archival and archaeological discoveries together for a wide audience and excite the next

generation of researchers to take it further.” The book begins with a thorough presentation of background information, which serves as the context of the catastrophe. The author describes the geographic setting and the history Cayman’s colonization, details the French/British conflicts that marked European colonization, describes the design and construction of the French frigate and its loss to the British, and finishes with a survey of the vessels in the convoy and the economics behind their individual journeys.

With this background in hand, the reader is taken through an in-depth account of archaeological investigations that have been conducted of the incident. It is not a single wreck site, however. The first formal archaeological work on the wrecks was undertaken in 1979 and 1980 by the Institute of Nautical Archaeology as part of their wider Cayman Islands Project. They documented 24 wrecks in a six-mile stretch on the east end of Grand Cayman, several of which they concluded were the remains of vessels from the Ten Sail convoy. In the mid-1980s, Indiana University conducted several short surveys that included sites presumed to be wrecks associated with the convoy.

In 1991, the author and local avocational archaeology volunteers continued the search for *Convert* and the convoy, under the auspices of the Cayman Islands National Museum. Part of the project included an assessment of site formation processes, or how an archaeological site develops over time. The author discusses natural and cultural transformations that may have affected the shoals on which the wrecks were located, assessing both historical and modern sources of disturbance. Channel modifications that included “blowing a passage through the reef” were documented at the turn of the 20th century and later. Tidal currents strengthened by natural and artificial cuts have transported shipwreck debris across the area. In just the last few decades three major hurricanes—Allen, in 1980, Gilbert, in 1988, and Ivan, in 2004—have struck the island affecting the reefs and seabed, further scrambling evidence from individual wreck sites. These processes demonstrate the difficulties in pinpointing the locations of specific wrecks and thus the need for detailed and painstaking research, both in and out of the water.

Margaret Leshikar-Denton is director of the Cayman Islands National Museum, George Town. She is former chair of the Society for Historical Archaeology UNESCO Committee and served on the ICOMOS delegation during development of the 2001 UNESCO Convention on the Protection of Underwater Cultural Heritage. She has written extensively on the management of maritime cultural heritage in Cayman in particular, co-edited a volume on underwater archaeology in the Caribbean, and developed a

shipwreck trail around the island, the Maritime Heritage Trail. *Cayman’s 1794 Wreck of the Ten Sail* is based on her 1993 dissertation Texas A&M University, which examined the historical and archaeological evidence of the incident.

Some of the legendary nature of the Ten Sail episode in the Cayman Islands is explained in the extensive research behind the book. Yet, the author notes, the importance of the incident is underscored by the persistence of the tale as part of the oral history of the island across more than two centuries.

As she observes, “It matters little that the stories are inconsistent with the historical and archaeological record...they demonstrate the lasting effect of the shipwrecks on the people of the Cayman Islands.” The fact that they are remembered vividly speaks to their significance in the island’s local, maritime culture. There are many and often imaginative versions of the event. While none are first-hand accounts, and no one interviewed in the study had seen the wrecks, some people knew others who had. One colorful story told that the ships were chasing pirates. In several versions, the number of survivors who stayed to live on the island differs, while the names of the wrecks vary with the telling and are often confused with later wrecked vessels.

One story describes how the efforts of local folk to save and shelter the survivors were rewarded by King George, who said the islanders would never again be taxed nor subject to impressment, “forced to go to war.” A poem, written by Miss Phoebe Spence, an islander born in 1907, memorialized this part of the tale:

Only one life was lost of all
This is a great story to recall,
And has left on our mind
That our Cayman sailors are some of the greatest
That sail the brine.

All the good they have done
Comes down to the people as one.
The King said, “For this from Tax you’re all free.”
Then all the Caymanians went on a spree.

Appendixes include a detailed appraisal of *L’Inconstante*; a transcription of the formal condemnation of the ship; a short biographical sketch of John Lawford, captain of *Convert* when it sank; the muster table of *Convert*, listing crew, supernumeraries, and others; a list of ships in the convoy; and a salvage account, an inventory of stores recovered from *Convert*.

This is a valuable account of a maritime disaster, detailed in the research it represents, clear in the telling, notable in the way it weaves folklore with facts in highlighting the development of the island’s traditions and identity. ⚓

Engines of Rebellion, Confederate Ironclads and Steam Engineering in the American Civil War

by **Saxon T. Bisbee** (The University of Alabama Press 2020)

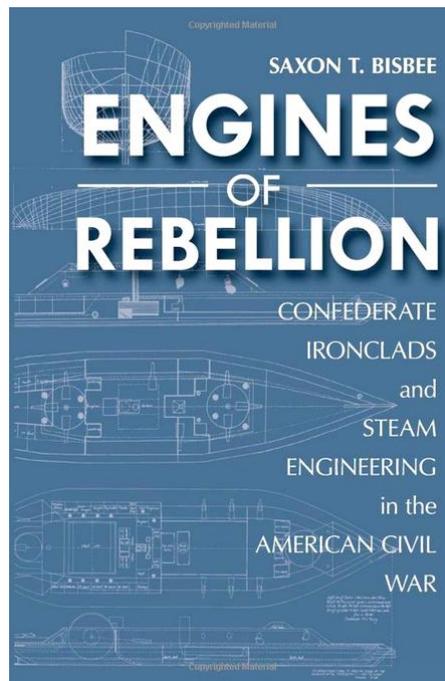
reviewed by *James A. Smailes*

The development of the steam engine in the 19th century provided a more powerful and reliable means of propulsion for both commercial vessels and warships. Combined with advances in iron production, armor, large smoothbore and, later, rifled artillery, and eventually even more effective steam machinery, the result was a technological revolution in warship design during the 1850s and 1860s. Metal-plated warships, or ironclads, were first built in Great Britain and France, using auxiliary steam propulsion to supplement sails. It was during the American Civil War that ironclad design would be revolutionized by the construction of large numbers of ironclads powered purely by steam.

Historians have recounted in great detail the military campaigns of the Civil War, called by many historians the first modern war. But little attention has been paid to the engineering of Confederate ironclads. This is the subject undertaken by maritime archaeologist and historian Saxon T. Bisbee in his book *Engines of Rebellion: Confederate Ironclads and Steam Engineering in the American Civil War*. Although construction began on approximately 50 ironclads of various types, only 25 saw active service. Bisbee's work focuses on those vessels with American-built machinery and offers a detailed look at marine steam-engineering practice.

Twenty-seven vessels are discussed: 23 completed and four nearly completed ironclads, each chosen for the high quality of their late-war hull designs and machinery. First-hand engineering accounts from Confederate officers are quite rare and represent commentary on only a handful of ironclads, but with their inclusion they offer an invaluable insight into the lives and dedication of these early steam pioneers.

The book begins with an explanation of marine steam-engine operations in the mid-19th century, technical developments from mud docks to compressors and other equipment, and the formation of the Confederate navy. Starting with only a few privately



owned or abandoned federal vessels, with limited resources in iron, machinery and artillery production, and a lack of skilled labor, the Confederacy would prove quite creative in converting existing vessels to ironclads and in salvaging what they could from the vessels abandoned by Union forces. Bisbee uses numerous engineering drawings and ship plans, some rare and never before published, to illustrate detailed explanations of how the engines, boilers, and other equipment worked. Unfortunately, a few of the drawings are small and difficult to read and would benefit from being larger illustrations. The author also includes the results of maritime archaeological research, and artifacts from shipwrecks to confirm details of how the Confederate ironclads were built.

The first Civil War ironclads were conversions, the most famous of which is the CSS *Virginia*, built on the burned-out remains of the USS *Merrimack*. The *Merrimack* had been the first auxiliary steam-powered propeller-driven frigate in the world, but her engines were underpowered and would prove insufficient to move the new *Virginia* with her heavy timbered structure needed to support the iron armor.

The conversion of existing vessels was sufficient at the beginning of the Civil War, but scavenged engines from tugboats, lightships, and other craft were generally unsuitable, as demonstrated by the failures of the earlier ironclads. The engines were not powerful enough to move the bigger and much heavier ironclads. As Southern industry mobilized, it was realized that better, purpose-built vessels with more powerful engines would be needed.

The non-standard designs that followed would take cues from the *Virginia*, with 45-degree angled casemates showing above the water and with propulsion a mix of screw propellers and paddlewheels. But these designs and their machinery were largely unsuccessful, notably due to drafts too deep for many of the southern harbors they were supposed to protect. This led to the development of several classes of standardized ironclad models, as well as some experimental designs.

continued from page 17

The new ironclads maintained the sloped casemates of previous designs but employed longer hulls with shallower drafts and newly designed machinery which ensured better handling. The lack of manufacturing capability and the high demand for both materials and technical know-how eventually doomed the Confederate ironclad effort. Despite these obstacles, the Confederate Navy was responsible for many new technical developments in nautical construction and built some of the most formidable warships of the Civil War.

Meticulous in the detail presented, *Engines of Rebellion* brings together a wide assortment of engineering and wartime service documentation in a comprehensive study of the innovation and resourcefulness that characterized the Southern war effort. Bisbee's text is supplemented by an appendix listing detailed steam machinery specifications for all 27 of the Confederate ironclads presented in the book. There are 32-pages of detailed notes followed by an extensive glossary of ironclad and steam machinery terms, a lengthy bibliography, illustration credits and a 16-page index. ⚓

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implementation of the UNESCO Convention on the Protection of the Underwater Cultural Heritage which was adopted in 2001 and signed that same year by Mexico.

We also learned that Roger C. Smith, who retired after serving as Florida's underwater archaeologist for almost 30 years, died of cancer in February. Roger was one of the earliest members of the MAHS Board of Advisors and continued to proudly note his affiliation with MAHS in his many publications. Roger received his doctorate at Texas A&M University and taught several undergraduate and graduate courses at Florida State University and the University of West Florida. He directed a number of surveys and excavations throughout Florida, the Caribbean, Mexico, the Bahamas, Bermuda and Africa. He also published widely. After retirement he edited a book on the Emanuel Point shipwreck in Pensacola Bay in which he noted his longstanding MAHS affiliation. We remain forever indebted to Roger for his vision and support for public participation in underwater archaeology.

Richard (Dick) A. Gould, another long-standing member of the MAHS Board of Advisors, died of cancer on March 13, 2020. Dick was a Research Associate with the American Museum of Natural History since 1971 and Professor of Anthropology at Brown University since 1981. In 2018, while reflecting on his long association with MAHS, Dick wrote "MAHS is one of the best volunteer archaeological programs I know" and that he was "pleased and honored to serve on the Advisory Board." We will miss Dick and Roger and will always be grateful to them for their guidance and support over these many years.

Moving on to a lighter note, in early January Jim Smailes and I attended the annual conference of the Society for Historical Archaeology in Boston. I attended the annual board meeting of the Directors of the Advisory Council for Underwater Archaeology

(ACUA) on January 7. It was good to catch up with folks that I have worked with for so many years, and I made good use of this opportunity to meet the newly elected members of the ACUA Board. Jim Smailes attended the second ACUA Board meeting on January 10 and reported to the MAHS Board of Directors about the various conference presentations that he attended.

In closing, I would like to address the Coronavirus Covid-19 pandemic and its uncontrolled spread throughout the world. To paraphrase the United Nations Development Programme, this is the defining global health crisis of our time and the greatest challenge we have faced since World War II. It is not only a health crisis but has the potential to create devastating social, economic and political crises that will leave deep scars. I think of the children too and its effect on their education and the decimation of their social and extracurricular activities while we wait for someone somewhere to find the elusive cure.

Despite the unknowns and uncertainties, time marches on and waits for no one. The newspapers reported today that the stock market is gaining renewed strength, the government's Stay-at-Home orders are beginning to be lifted, traffic is increasing, and folks are slowly returning to their jobs. Spring is a time of rebirth and renewal and though we will certainly have many faulty steps in front of us, our communities, our country and the world will begin moving forward again even if we must accept the conditions of a "new normal."

For that reason, I am eagerly looking forward to the Fall and the prospect of diving again. After all, the circling tunas and the schools of yellow stripers are beckoning us. I can hear them now: "Hey! There is no social distancing down here and life is still calm, peaceful and normal."

See you on the water,

Steven Anthony



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
- 3. 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. You may also submit dues via our website at <http://www.mahsnet.org/membership.php>.

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:

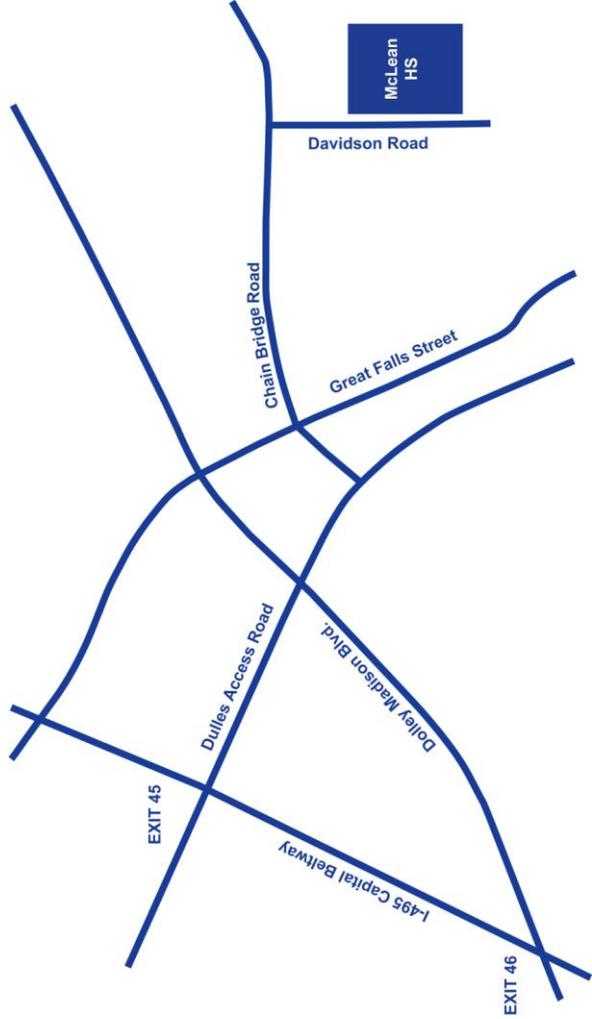
General membership meetings of the Maritime Archaeological and Historical Society are held on a bi-monthly basis, the second Tuesday of each month. Meetings are held at 7:30 p.m. at McLean High School, in McLean, Virginia, except in August and December. Meetings in August and December are held at other 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 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! Thank you!



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ADDRESS SERVICE REQUESTED