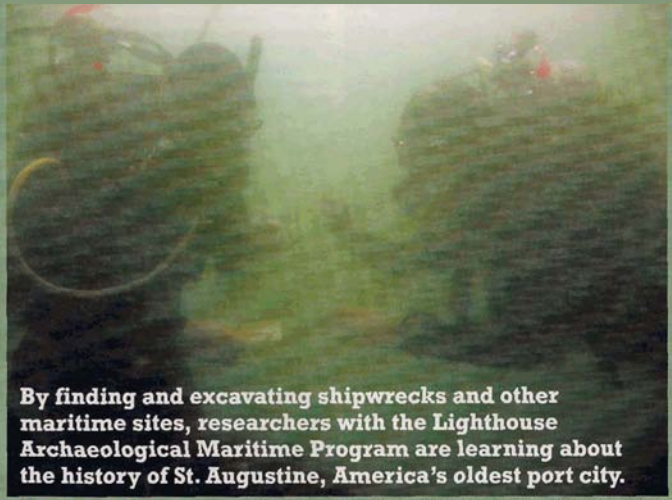
The Stories UNDER The Sea



By finding and excavating shipwrecks and other maritime sites, researchers with the Lighthouse Archaeological Maritime Program are learning about the history of St. Augustine, America's oldest port city.

By Amy Green

LAMP field school supervisor Rachel Horlings (right) communicates by hand signals with a student. Carrying a pencil and a plastic tablet, the student is able to write underwater.

The port in St. Augustine, Florida, was the most dangerous on the East Coast when Johann David Schoepf arrived in 1784. Schoepf, was a surgeon hired with German mercenaries to fight for the British in the restless American colonies. For him St. Augustine was a stopover on his voyage from Charleston, South Carolina, to the West Indies, which he wished to visit before returning to Europe. Throughout Schoepf's voyage to St. Augustine the skipper on his ship had worried about the bar before the port. A steersman, quite in the indifferent manner of an old seafarer, had told passengers one could not cross the bar without facing mortal danger.

The bar was shallow and exposed to the ocean's force. Channels across the bar were narrow and crooked, and the sand shifted with stormy weather. This meant seamen returning after long absences had to find a new course. Ships ran

This cannon was recovered from the Industry. It's now on display at the museum.

aground so often every time a vessel approached someone in the port rang a bell, and boats were unmoored in anticipation of yet another rescue. Happily, Schoepf's ship made it to the port safely.

A lone lighthouse on nearby Anastasia Island guided ships toward the port. Of the beach Schoepf wrote, "Without the least overstatement I daresay that every 100 paces, almost, the skeleton of a foundered ship, or its wreckage, may be seen. Who could pass this way without emotion—if one imagines to himself the terror so many souls must have suffered here, and the lives that have been here lost. The estimate is that every fortnight, or every month at least, a vessel is wrecked on this coast. I saw several of these skeletons far off from the water, at the highest part of the beach, and buried deep in the sand. A very little more, and they would be wholly covered. Should the sea withdraw after centuries, it would be an astounding thing to come upon the reliques of these ships."

Centuries later archaeologists are doing just that, investigating the remains that haunted Schoepf so. Today, St. Augustine is the nation's oldest port city: itself a relic of the Spanish colony that once thrived here. The sea plays a large role in the city's past, and to get a clearer picture of its role, the St. Augustine Lighthouse & Museum established the Lighthouse Archaeological Maritime Program (LAMP) in 1999.

LAMP is among the nation's few maritime archaeology research organizations that's not associated with a university or government agency. It operates on a $300,000 budget provided by the St. Augustine Lighthouse & Museum, grants, contracts, and private donations, and it's staffed by three archaeologists and an archaeological conservator, with the assistance of volunteers. Its offices are in the lighthouse, which was built in 1874. The lighthouse's 219 steps lead to a lovely view of the city and the miles of coastline where so many ships have been lost.

The organization is the first to undertake extensive excavations of St. Augustine's maritime archaeological sites. LAMP's archaeologists believe hundreds of shipwrecks litter the sea here, and they've discovered about a dozen sites so far. "Before we came along, (St. Augustine's maritime history) was really unappreciated," says Chuck Meide, LAMP's director. "Most historians or archeologists weren't really thinking about maritime issues at all." The Spanish settled here in 1565 because the port was easily defended. No other region in the nation saw regular shipping, and therefore so many shipwrecks, in the 16th century. "Nobody can touch us," says Sam Turner, LAMP's director of archaeology.

Maritime archaeologists face numerous challenges. They excavate items that are underwater or beneath the sea floor. Digging is difficult because the excavated sand often falls back into place. Exposing waterlogged artifacts to air places them at risk because, if they dry out, they quickly deteriorate. Consequently stringent

The bell of the Storm Wreck was covered with concretions prior to cleaning.

conservation measures are necessary.

LAMP's investigations began with researching historical accounts of shipwrecks. These accounts often give vague descriptions as to where the vessel went down, which is further complicated by the fact that the maritime landscape, due to both natural and manmade forces, has changed over the years. So the archaeologists also study maps and other documents to understand those landscape changes. "We know where the likely search area is" as a result of this research, Meide says.

Then the archaeologists, aboard one of their research vessels, survey the underwater landscape using sidescan sonar, which produces an image of the sea bottom, and a magnetometer, which detects iron and steel. Even though boats were made primarily of wood until the 1800s, "there's enough iron on any wooden sailing ship that you're going to get some kind of blip" using a magnetometer, he says.

In this fashion the researchers identify "targets" that can take the forms of objects, revealed by sonar, that could be part of, or related to, a shipwreck, or they can simply be a mysterious blip on the magnetometer's screen. There's often no way of knowing whether these targets represent historic shipwrecks or trash such as television sets or boat motors ("Most of the time it's modern junk, says Meide.") without examining each one, so divers are sent down to scrutinize them. It's a difficult area for diving because visibility is generally poor due to the waves stirring up sediment and muddy water from two rivers that flow into the harbor. In some cases, the divers plunge 10-foot probes into the sand in search of buried objects.

Chuck Meide and Sam Turner stand in front of the lighthouse, which was built in 1874.

The investigation of the *Industry*, a merchant ship that sank in 1764, is one of LAMP's most important projects. Discovered in 1997 by researchers with Southern Oceans Archaeological Research, Inc., it was the first colonial shipwreck to be found in northeast Florida waters. In 1763 the Spanish had ceded St. Augustine to the British, who were intent on turning it into a prosperous colony. The loss of the *Industry*, one of four sloops delivering much needed supplies to the colony, was a blow to the British, who eventually lost control of St. Augustine in 1783.

LAMP began excavating the wreck in 1999, and its archaeologists have discovered eight cast-iron cannons, a swivel gun, crates of iron shot, three mooring anchors, copper cookware, and boxes of tools such as axes, shovel blades, knives, trowels, files, and handsaws. Some of the artifacts are on display at the lighthouse museum. The wreck offers a glimpse of colonial life in St. Augustine, and the range and type of artifacts provide insight into the basic supplies the British thought necessary for a nascent colony.

Slightly north of the *Industry* site are the remains of a 19th-century wooden-hulled steamship that was found in 1995. The exposed wreckage includes a boiler, a single-cylinder inverted engine, a condenser, two bilge pumps, an air pump, and a propeller. It also appears to have a broken keel, and consequently Meide thinks the steamship could be the *Cricket*, which, according to historical documents, sailed out of Key West headed for New York in 1869. "She was so low on fuel," he says, "the only thing she had to burn was the bacon from her kitchen stores." The *Cricket's* crew tried to make an emergency landing at St. Augustine and the ship's keel was broken when it ran aground while trying to enter the port.

LAMP's archaeologists, who also excavated the site in 2007 and 2009, uncovered a ballast that leads them to suspect there are two shipwrecks there. The ballast is telling because steamships, with all of their heavy equipment, generally didn't need ballast for stability. Sailing ships did, and the location of the site led the archaeologists to surmise that the second wreck could be the *Jefferson Davis*, a notorious Confederate privateer (a privately-owned vessel that saw combat during the Civil War) that had also served as a slave ship. But so far they've found no evidence that confirms this.

An entry in the St. Augustine Light Station Keepers' Log informed LAMP's researchers of the wreck of the *Florida*, an early 20th-century dredge vessel they discovered in 2002.

When the *Florula* launched in 1909, a local newspaper declared it to be the most technologically advanced vessel of the time. Dredge vessels cleared and deepened channels, making them navigable for the steam-powered riverboats that plied those waters. The *Florida* maintained channels throughout the state before sinking during a storm in 1918.

The archaeologists discovered a collapsed A-frame assembly at the bow, a clamshell bucket dredge, a partially collapsed paddlewheel at the stern, and piles of staved dredge pipe. The *Florida* is an example of America's emphasis on maritime infrastructure during that period. The vessel "was on the cutting edge of technology at the time," Meide says. "It was a pretty important piece of history to be more or less forgotten."

During the final week of LAMP's 2009 summer field season, Meide was diving at a target off St. Augustine's shore. Underwater, visibility was zero. He was only able to feel his way around the sea bottom, doing what he calls "archaeology by Braille." Meide plunged a probe into the sand and felt it clunk into something a foot and a half down.

"Using one arm as best I can to steady the top-heavy probe I eagerly reached into the hole with my other hand. My fingers slid down the pipe into the swirl of jetting water. Wood!" he wrote in *Spyglass*, a publication of the St. Augustine Lighthouse and Museum. He groped along the sea bottom, discovering a plank and ballast stone. "My heart and mind raced as I continued to erase centuries of sand below my grasping, greedy fingers. There is another ballast stone, this one stuck to a plank by a growth of concretion. Concretions are concrete-like encrustations that form on and around iron, another good sign that this was a shipwreck."

The site Meide discovered is believed to be more extensive than that of the *Industry*. Unable to identify the wreck, the LAMP team named it the *Storm Wreck*. Meide brought up a ballast stone and two concretions in 2009. The archaeologists returned to the site last year and found the ship's bell, which they raised, and four cannons that remain under the sea. They also sucked up sand and debris using a dredge, filling a bag onboard the boat above. Sifting through this sand, the researchers discovered thousands of pea-sized lead shot, the base of a wine glass, and a belt buckle.

This cauldron—one of three recovered from the Storm Wreck—is covered with concretions.

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The cannons are a type known as carronades, and ships weren't equipped with these guns until around the 1780s. It was determined that the lead shot were manufactured as early as 1665, and similar shot have been found on 17th and 18th century shipwrecks. The size, shape, and impurities of the wine glass base match those of wine glasses dating to the 18th century. The team believes the belt buckle is brass or a copper alloy and similar to 18th-century belt buckles. The archaeologists also found three cauldrons of different sizes, one of which is very large. Concretions cover the cauldrons, and the archaeologists will glean more information as they

Archaeologists also found thousands of pea-sized lead shot at the Storm Wreck site.

AMY GREGSON

Starr Cox, LAMPS's archaeological conservator, places an item covered with concretions in a CAT scan machine. The CAT scan x-rays the item, revealing what's beneath the concretion. (Top right) The Storm Wreck pistol is encased in concretion. (Bottom right) The CAT scan image reveals the pistol.

remove them, but their oval shape and the design of their handles suggest they were made between 1740 and 1780.

The LAMP team identified about 30 different concretions at the site. One concretion contains a pistol with a barrel that could be bronze and a handle that likely is wood. It's smaller than military pistols of that time, and Meide describes it as a gentleman's pocket pistol that was probably owned by an officer or merchant on board. The concretion also contains lead shot, an iron spike, a loop that possibly was part of the ship's rigging, and a circular object that could be a coin. A coin, with its precise minting date, would be an important find because the researchers would then know the vessel sank sometime after that date.

About three-quarters of the bell's surface has been cleaned, but no markings speaking to the age or identity of the vessel have been found. The remaining area is covered with an iron concretion. There is always the possibility of damaging an artifact when cleaning it, and removing the concretion from the bell will require significant force. So the researchers have decided to take it to a local hospital for a CAT scan, a type of x-ray that will reveal if there are any artifacts trapped in the concretion that could be damaged by its removal.

Sometimes shipwreck debris can scatter, leaving a trail that is spread by storms. At first Meide thought the site could be part of a debris trail left by the *Industry*, but he no longer suspects that because some of the *Storm Wreck's* artifacts, like the carronades, appear to postdate the *Industry*. "Our current belief is that this wreck went down sometime between the start of the American Revolution and the end of the War of 1812," says Meide. Depending on when the ship sank, St. Augustine could have been under British or Spanish control.

"My guess is this is a merchant ship," he says. "These were items that were needed for every day use" in St. Augustine. "If this was a British ship, this may have been a ship from Charleston. That was a big trading partner, we know. If it was a Spanish ship, it would have likely been coming from Havana."

Perhaps the ship was among those Schoepf saw on the beach, its skeletal remains nearly buried before disappearing from view for centuries. Until now.

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