The Centerboard Schooner Wreck

This Centerboard Schooner Wreck was initially located during the 1995 survey offshore St. Augustine conducted by Southern Oceans Archaeological Research (SOAR) (Franklin and Morris 1996). At the time it was reported to the State of Florida as site 8SJ3309 and was named the “Seafood Wreck.” As this vessel was a clearly a cargo carrier, in 2007 researchers opted for the more appropriate name “Centerboard Schooner Wreck,” to distinguish it from several other local shipwrecks associated with St. Augustine’s historical commercial seafood industry. This shipwreck is located offshore St. Augustine in around 18 feet of water, and is believed to date to the second half of the 1800s.

The site is characterized by two massive mounds of cargo, with an area clear of cargo between the two piles, which would have facilitated operation of the centerboard. None of the wooden superstructure of the wreck has survived, though the lowermost hull timbers remain preserved buried beneath the sand. Upon initial inspection, researchers believed the cargo mounds to be comprised mainly of cut stone (Morris et al. 1998:49), but it was soon realized that the cylindrical objects forming the bulk of the cargo were in fact barrels of cement which
had solidified upon submersion. Virtually all wooden barrel components are no longer extant, though in many cases the impressions of staves and headpieces can be seen preserved in the cement. A concreted mass of what appears to be iron pipes and chain is also present at the smaller of the two mounds. Other iron objects include what have been interpreted as a windlass or warping drum, several large iron boxes, hollow iron frames, and a large wheel which might represent a pump or another windlass component.

After preliminary investigations by SOAR and LAMP carried out sporadically between 1995 and 2002 (Franklin and Morris 1996:26-27; Morris et al. 1998:49-51; Morris et al. 2003: 73-77), LAMP focused on documenting the site in detail in 2003 (Morris et al. 2006: 62-68). This study included side-scan sonar recording of the wreck, recording of the cargo mounds, and documentation of hull remains, including the centerboard, which had recently been exposed by scouring. LAMP researchers also placed graduated scour poles at four points around the wreck to assess sand movement, though the results of this effort are unclear, and the poles do not appear to be in place at present. LAMP researchers returned to the site in 2008 to conduct further investigations, including test excavation, though diving operations were suspended in mid-season due to a serious injury. LAMP archaeologists continue to monitor this shipwreck by regular diving visits and the use of side-scan sonar.

Site Description and Interpretation

This following description is based largely on the results of the 2003 fieldwork (Morris et al. 2006: 62-68). As seen in the site plan below, the most prominent features of the site are two large cargo piles, one significantly larger than the other. The larger pile is comprised of hardened cement originally stored in barrels or casks. The smaller pile contains more cement barrels but also large masses of iron concretion which appear to contain pipes and chain. The hull is buried beneath these piles, lying at an angle of about 30°. Some wooden hull remains, including the centerboard, centerboard trunk, and some frames, were exposed during the 2003 investigation and can be seen in the site plan below.

Overall site length, determined through hydraulic probing, is 39.55 m (129 ft. 9 in.). The westernmost cargo pile is 8.79 m (28 ft. 10 in.) in width and 12.95 m (42 ft. 6 in.) long. There is a 4.88 m (16 ft.) space between the western pile and the eastern pile. The eastern pile is 5.64 (18 ft. 6 in.) in width and 9.60 m (31 ft. 6 in.) long. Elevation of the two piles varies greatly but was 1.83 m (6 ft.) above the sediment at its highest point in 2003.
Hull Remains

Three distinct portions of the articulated vessel fabric were exposed due to scouring in 2002-2003 and recorded in detail. These sections are extant along the vessel’s centerline and include mid-ships framing and centerboard components and a section of the stern assembly. Since the current LAMP administration has been monitoring the site regularly starting in 2006, all of these hull remains have remained buried.

Exposed remains between the two cargo piles in 2003 consisted of four paired frames, two first futtocks, fragments of the heels of half frames butted against the trunk structure, fragments of the keelson, a section of the keel, the centerboard, and the centerboard trunk assembly.

Frames were sided consistently at 8 in. (20.3 cm). There is no space between paired frames, and an 8 in. space between these two frames and the third (16 in. [40.6 cm] room and 8 in. space). Frames are placed on 24 in. (61 cm) centers and are horizontally pinned together. There are also vertically placed drift pins located along the vessel’s centerline to secure the frames. The first futtocks butt on or near the centerline.

Although the centerboard trunk was badly eroded the longitudinal components were measured at 7 in. (17.8 cm) sided. These components extend for over 18 ft. 8 in. (5.69 m) before disappearing under the western cargo assemblage. The centerboard itself is sided at 6 ½ in. (16.5 cm) and runs under the cargo pile. The overall sided value for the extant centerline assembly is 3 ft. 4 in. (1.02 m) The centerboard trunk is fayed to the upper
molded surface of these components and steps down to create a step or shelf that accepts the heels of the timbers that are either half frames or buttresses. The single exposed centerline component visible aft of the three frames is the keel, which is 15 in. (38.1 cm) sided. The centerboard is offset to starboard of the keel timber (see the figure below).

A section of the stern was exposed within the eastern cargo pile and consisted of half frames mortised into deadwood, one full frame, and fragments of the keelson (see the figure below). Half frame members are sided at 6 in. (15.2 cm). There is only 1 ½ in. (3.8 cm) between frames making a room and space value of 13 ½ in. (34.3 cm). The half frames are mortised into the upper molded surface of the deadwood and are placed on 14 in. (35.6 cm) centers. The deadwood is sided at 12 in. (30.5 cm).
The full frame that is exposed in this area is identical in size to the frames in the run of the hull, with a slight gap of 1 ½ in. (3.8 cm) between floors and first futtocks. First futtock heels butt at the centerline.

Cargo Piles and Hardware

The barrels constituting the bulk of the cargo are primarily of two sizes. The majority of solidified cement barrels remains are 24 in. to 27 in. (61 to 69 cm) in length with a 16 in. (40.6 cm) diameter. The second barrel size is 18 in. (45.7 cm) in length with a 12 in. (30.5 cm) diameter. Cement preservation is excellent and it is possible to discern cask seam and sometimes wood grain impressions left by the now decomposed wood. Subsequent laboratory analysis indicated it was Portland cement. In addition to delineating the extent of both cargo piles, 2003 researchers also clearly identified several large iron boxes, hollow iron frames, a probable kedge anchor, iron pipes, a large iron wheel, and a large concreted massed of iron chain. No artifacts were recovered, though a sample of cement was collected for analysis.

Interpretation

The site was interpreted as the remains of a centerboard vessel, heavily laden with cargo, measuring probably between 100 to 120 ft. (30.5 to 36.6 m) in length. The offset of the centerboard to starboard of the centerline would have maintained the vessel’s centerline integrity and strength. Although several types of ships were configured with centerboards, the vast majority were schooners involved in coastal trade, the most likely candidate for this wreck. The position of the first futtocks relative to floors, and the butts between them suggest a date range spanning the latter half of the 19th century (Morris et al. 2006:68). As such, this site is significant not only to the region’s maritime history but also within the context of national and international commerce during this period and is probably National Register eligible.

Wealthy industrialist Henry Flagler built the Hotel Ponce de Leon and other architectural wonders in downtown St. Augustine in the 1880s. These were constructed from blocks of poured cement, initially brought in by barrels on board ships like the wrecked Centerboard Schooner offshore.
prominently featured the use of cast cement masonry blocks.

Schooners as a vessel type can be traced to the late 17th century, but the centerboard’s introduction dates to 1774 when Royal Navy Master’s Mate John Schrank fitted a boat with a sliding keel in Boston (Marqhardt 2003:121). The pivoting centerboard, which was derived from this design, was originated in 1809 by another Royal Navy officer named Shuldham. An American patent for this same design was issued in 1811 to Joshua Jacobs and Henry Swain from New Jersey (Marqhardt 2003:121). The first draught known to exist for a vessel with a pivoting centerboard dates to 1833. This schooner, named the Santiago, was built in New York by William Webb for a New Orleans sugar merchant (Marqhardt 2003:126).

As Howard Chapelle (1993:83) has noted, the “introduction of the centerboard had a great effect upon the American commercial sailing vessels.” The design’s versatility enabled large centerboard vessels to engage in international commerce on the open ocean and to navigate shallow or shoal ridden coastal environments like St. Augustine. This design feature, when coupled with the simple fore and aft rig of the schooner, produced a very efficient, economical trading vessel. Cargoes carried from abroad or over long distances no longer had to go only to deep-water ports or be lightered ashore by shoal draft boats. The success of this design is reflected in its longevity, with centerboard sailing vessels operating well into the 20th century.

Continue to scroll to learn about the 2008 field investigation.
Investigations with test excavation were planned at this site for the 2008 First Coast Maritime Archaeology Project field season. The basic objective was to attempt to narrow the estimated date range for this vessel and learn more about its construction, cargo, and physical condition. Researchers planned to excavate up to 12 square meters in 2 by 2 m and/or 1 by 1 m units in the immediate vicinity of the exposed wreckage. One or more of these were be placed just to the west of what has been identified as the stern where wave energy and direction may have deposited small items during the breakup of the wreck. LAMP also proposed raising for conservation and eventual display one or more of the cement barrels.

Work on the site commenced in June 2008 in conjunction with the LAMP 2008 field school, accredited through Plymouth State University. The first two weeks were spent familiarizing divers with the wreck site, and establishing a 50 m baseline to serve as a frame of reference for mapping and for placing excavation units. Diving operations were slowed by zero to low visibility conditions. Once the baseline was fixed to the seafloor, running roughly parallel with the shipwreck southeast of its exposed remains, divers were able to tie in its position to the 2003 site plan by measuring from specific points on the baseline to identifiable features on the site plan, such as the concreted wheel located on the eastern edge of the western or larger cargo pile. Before excavations could commence, however, one of the principal investigators who also serves as LAMP’s Diving Officer suffered a dislocated shoulder on the surface before the first dive of the day, necessitating an emergency evacuation. Without the presence of the Diving Officer all
diving was suspended, and LAMP’s research focus for the rest of the season shifted towards terrestrial excavations at the Tolomato Bar Anchorage Site, along the Tolomato River north of St. Augustine.

**Site Monitoring**

Project archaeologists have been conducting monitoring dives on the Centerboard Schooner Wreck regularly since 2006. A total of 33 individual dives for an aggregate 1,205 minutes of underwater time were completed on this site between 2007-2009, including the investigation activity described above. Throughout the course of these dives, researchers have witnessed periods where sand has been scoured away, exposing more wreckage, and periods when sand has accumulated. In general, no exposed hull remains have been observed as depicted in the 2003 site plan, so it is believed that sand levels are relatively greater than at that time. No signs of the “scour poles” placed in 2003 have been witnessed, and it is believed that these markers unfortunately do not hold up well over years in this dynamic environment.

The Centerboard Schooner Wreck was monitored using a sidescan sonar a total of three times between 6 June 2008 and 28 August 2008, and again on several occasions in June and July 2009. The two images below depict the disposition of the wreck and its condition before and after the impact of Tropical Storm Fay, a severe weather event which made landfall just south of St. Augustine on 21 August 2008 and pummeled St. Augustine for three days with prodigious amounts of rain and damaging winds only somewhat less intense than hurricane force (peaking at 110 km/h or 70 mph several days before landfall). Unlike the *Industry* wreck site located only a short distance away, which suffered erosion and greater exposure, the storm appears to have accreted sediments over the Centerboard Schooner Wreck.

Left: Sonar image of the Centerboard Schooner Wreck recorded on 6 June 2008, two months prior to Tropical Storm Fay. Note the clarity of the edge of the wreck and lack of loose sediments around the base of the cargo of cement.

Below: Sonar image of the Centerboard Schooner Wreck recorded on 28 August 2008, seven days after the storm struck 48 km (30 mi.) south of St.
Augustine. Note the dark halo around the site, a result of sediment deposition after floating particulates fall out of suspension in turbulence caused by the site’s profile.

LAMP continues to monitor this site using sidescan sonar. Imagery generated of the site in 2010 and 2011 have revealed the site maintains a similar appearance as it did in 2008, with no significant site burial or exposure due to shifting sands.

**Recommendations for Further Research**

This remains a significant shipwreck site, and one worthy of further study. The proposed research program that was cut short in 2008 should be implemented in a future season, to learn more about the physical structure of the vessel and its cargo and better define a date range through the recovery and analysis of diagnostic artifacts. LAMP will also continue to monitor the site through sonar and diver visits.