

**The Martinak Boat (CAR-254, 18CA54)
Caroline County, Maryland**



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**Maryland Historical Trust
Maryland Department of Natural Resources
Martinak State Park
Chesapeake Bay Maritime Museum
Maritime Archaeological and Historical Society**

*The cover photo shows the entrance to Watts Creek where the Martinak Boat was discovered just to the right of the ramp http://www.riverheritage.org/riverguide/Sites/html/watts_creek.html (accessed December 10, 2004).

Executive Summary

The 1960s discovery and recovery of wooden shipwreck remains from Watt's Creek, Caroline County induced three decades of discussion, study and documentation to determine the wreck's true place within the region's history. Early interpretations of the wreck timbers claimed the vessel was an example of a Pungy (generally accepted to have been built ca. 1840 – 1920, perhaps as early as 1820), with "...full flaring bow, long lean run, sharp floors, flush deck...and a raking stem post and stern post" (Burgess, 1975:58). However, the closer inspection described in this report found that the floors are flatter and the stem post and stern post display a much longer run (not so raking as first thought). Additional factors, such as fastener types, construction details and tool marks offer evidence for a vessel built earlier than 1820, possibly a link between the late 18th-century shipbuilding tradition and the 19th-century Pungy form.

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Introduction

In November, 1989 Maryland Maritime Archeology Program (MMAP) staff met with Richard Dodds, then curator of the Chesapeake Bay Maritime Museum (CBMM), and Norman H. Plummer, CBMM librarian, at the Martinak State Park near Denton, Maryland (Figure 1) (Maryland Archeological Research Unit Number 4). Situated under a pavilion was the 4m 40cm long (14.4ft) stern portion of the “Martinak Boat” (CAR-154, 18CA54) that was discovered in 1964 along with the remaining longer 12m 61cm (41.4ft) mid-section and stem uncovered in 1969. Several early visitors to the remains described the boat as the wooden remains of a 19th-century Pungy schooner (*County Record*, 1969 and 1974), a vessel type whose introduction is generally accepted to have been some time around 1840, possibly as early as 1820. Without corroborating diagnostic evidence (no artifacts were found on or near the wreck site) the exact date range for this boat is difficult to ascertain, however, there are certain hull form features, construction details, tool marks and fastener types that indicate the vessel may pre-date the Pungy.

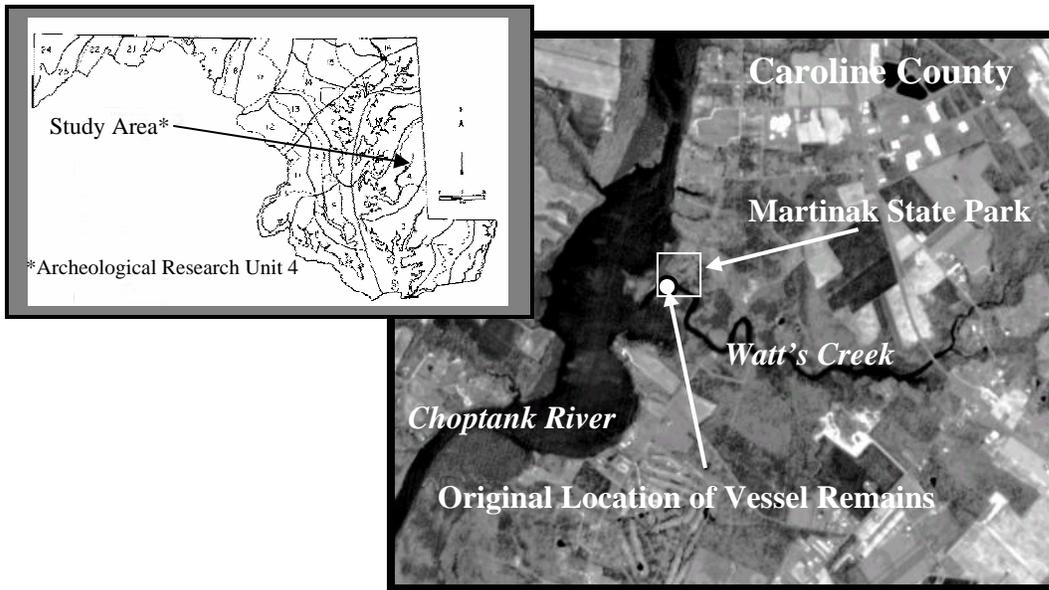


Figure 1: Map illustrating the original location of the Martinak Boat hull remains. The aerial photograph is adapted from the Maryland Department of Natural Resource's (DNR), Maryland's Environmental Resources and Land Information Network (Md. Merlin) (accessed December, 2003).

This article begins with a brief examination of the study area's pertinent historical setting, followed by a review of the wreck's discovery and ensuing archeological activities. Measurements and construction details are highlighted in a third section, followed by a summary, which offers potential reasons for the vessel's sinking, its probable date of use and its significance. Report organization follows standards provided in the current version of MHT's Technical Report No. 2 *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole, 1994). All work conforms to the Secretary of

the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (Federal Register Vol. 48, No. 190, Part IV: 44716-44742).

Historical Setting

The Martinak Boat was originally discovered near the mouth of Watt's Creek, today "...no longer navigable even for small boats..." and which, according to local custom, "once provided a refuge for Captain Kidd, whose buried treasure has been sought in its banks..." (Earle, 1916:178). The creek's winding, marshy-sided channel feeds into the Choptank River (probably from the Algonquian *kehtci-* "big," *-api-* "back again" and *-ehtan* "current, flow, it flows back strongly:" Kenny, 1984) (Figure 2), the most dynamic of the Eastern Shore waterways. Due to the Choptank River's size and its numerous tributaries the region has always been an active waterway, transporting goods and people throughout the region.

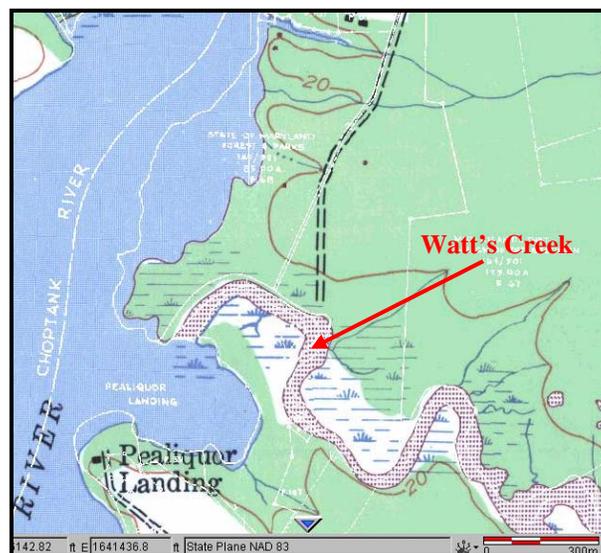


Figure 2: This map illustrates the broad flats of marsh that surround Watt's Creek's shallow channel, <http://historical.maptech.com/statemap.cfm?stateabr=MD> (accessed August, 2005).

Archaic and Woodland Period sites have been recorded along the shores from the headwaters to the mouth of the river and throughout Caroline County (Lowery, 1996; Thompson, 2000). Although there are no extant examples of indigenous watercraft in the study area, descriptions of those early dugout canoes can be found in the writings of Thomas Hariot (1588) and the journals of Captain John Smith (1605) (Brewington, 1963). Brewington cites Smith's account, "...These [canoes] they make of one tree, by burning and scratching away the coles with stones and shells till they have made it in forme of a Trough..." Colonists would eventually adopt the local inhabitants' simple boat design (Figure 3), and with time alter its shape by adding planks to extend the gunwales.

Over time, Chesapeake watercraft evolved from the simple three-log and five-log canoes into schooners, sloops, pilot boats, barges, pungys, clippers, bugeyes and skipjacks. Many of the changes to hull forms and



Figure 3: The LaTrappe Canoe (18TA303 ca. 1780-1840) was excavated at the mouth of LaTrappe Creek (a tributary of the Choptank River south of the present study area) by MMAP staff and volunteers in December 1993. It is shown here during reconstruction at the Maryland Archaeological Conservation Laboratory. Photograph by Chris Maple.

sail plans were the result of technological advances, tool improvements and the availability of hardware. The shipbuilding traditions brought over to America in the 17th and 18th-centuries were slowly evolving throughout the eastern seaboard. In the Chesapeake region trade, fishing and war accelerated this design evolution resulting in the truly unique vernacular craft of the 19th and 20th-centuries.

The earliest indication for European settlement within the study area was found at Kingston Landing (18TA302) downriver from Martinak State Park; late 17th-century material from this site included several European ceramic types: brown Rhenish stoneware sherds, blue and grey Rhenish and redware (Thompson, 2000). One reason for the slow development of the upper reaches of the Choptank might have been the ongoing attacks by Nanticoke Indians upon both settlers and the indigenous Choptank Indians. Reservations for the “...recalcitrant tribe...” (Weeks, 1984) were finally established in 1704, thereby exposing more of the river to settlement.

Although there are some archival indications for 17th-century sites along the river, it would not be until the late 18th-century that populations and trade would increase along its shores. Established in 1774, Caroline County (named for Caroline Calvert, sister of Frederick, the last Lord Baltimore) was parceled from, and today is bordered by, Queen Anne’s County, Talbot County, Dorchester County and the state of Delaware (Cochrane et al., 1971). Another Congressional Act soon followed that organized the new county into geographic “hundreds” (governmental districts whose chief executive was the constable (Cochrane et al., 1971:18)) – Watt’s Creek fell within the Bridgetown Hundred.

Local county residents would serve in the American Revolution, the War of 1812 and all future wars faced by America. Commanded by Colonel William Richardson (one of the two representatives who presented the bill which created Caroline County as noted earlier) (Earle, 1916), the militiamen who signed on for the War of Independence valiantly served at Harlem Heights, New Jersey, where they routed the British into the woods, and the lower Eastern Shore of Maryland, where they suppressed Tory rebellions (Cochrane et al., 1971). During the war, non-combatants (primarily Quakers and Methodists) continued to farm tobacco and grains, while being discouraged from killing lambs and encouraged to produce linen and cotton to supply the war efforts (Cochrane et al., 1971: 63). Post war life included spinning, weaving, fox hunting, and horse racing – the area was plentiful with wild game, fish, crabs, oysters, peaches, apples and brandy (Cochrane et. al., 1971:91). These activities and their associated products would dictate the types of watercraft constructed and utilized during the 19th and 20th-centuries.

After the War of 1812, in which locals once again provided militia forces, the economic landscape of the region slowly began to thrive - mills, factories and wharfs were visited by wide paddle-wheel steamboats and large schooners that traveled easily up to the headwaters of the Choptank. Pungys, schooners (Figure 4) and bugeyes docked along side of the canneries, fisheries and fertilizer warehouses that peppered the landscape. County records indicate that Parcel 4, just across from where the Martinak boat was found, was “...known as the Cedar Island Fishery...” and “...as late as 1961, this land, adjacent to Cedar Island, was

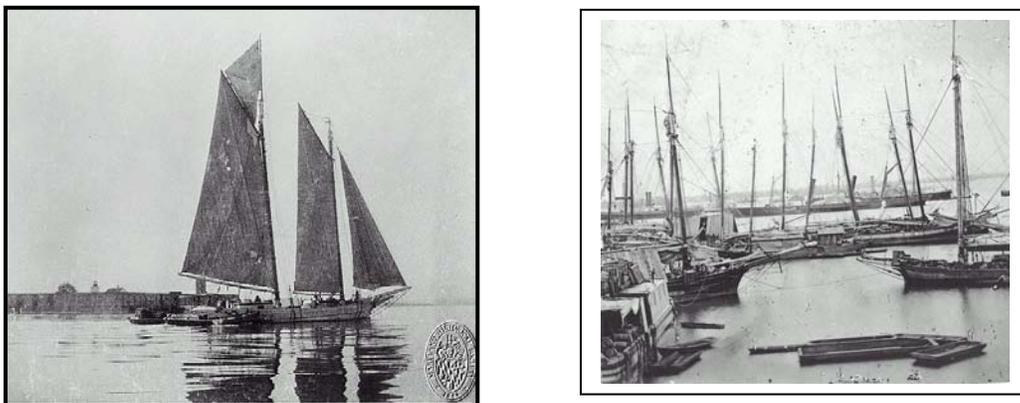


Figure 4: Photograph of the pungy *Wave* by Mellon (courtesy Maryland Historical Society) and several schooners docked at City Point, Virginia circa 1864-1865 (courtesy of the Naval Historical Center, Photo #: NH 1753).

still referred to as the Fishery...(Plummer, 1990).” According to Plummer the “...repeated mention of fisheries and wharfs [in the records from 1842 onward] certainly suggests that fishing was an active industry in the area in the mid 19th-century...” (Plummer, 1990). Other less appealing 19th-century trades were also conducted along the river with impunity, slave trading and kidnapping. Notorious among these brokers of humanity were Patty Cannon, Joe Johnson and Massy Fountain, all of whom were known to either buy or kidnap their victims and ship them to South Carolina and Georgia (Cochrane et. al., 1971:149-151) to be sold to southern plantation owners.

Throughout the 19th-century plantation owners and merchants along the river utilized ferries and barges to move products up and down the river while tradesmen established shops at major population centers. An excellent review of tradesmen, merchants, etc. and their business locations during 1878 can be found in the “Caroline County, Maryland, Directory – 1878” (Caroline County, Maryland Directory - 1878, accessed August, 2005). With the exception of the introduction of gasoline propelled watercraft in the early 20th-century, there were very few changes along the Choptank and its tributaries. Skipjacks continued to fish and crab up to the latter part of the century and today there are several efforts underway to preserve and replicate 19th-century life along the river (e.g. *Choptank River Heritage Center* <http://www.riverheritage.org/> and the CBMM programs at St. Michael’s). Archeological surveys have identified six shipwrecks (Thompson 2000) in and along the Choptank river system (Table 1).

Table 1: Shipwrecks recorded during the 1994 MMAP survey.

Tuckahoe Wreck Site	18TA349	Barge	1780-1860
Black Dog Marina Wreck	18CA90	Steam Workboat	1820-1930
<i>Vespers/Fire Ox</i>	18CA92	Sail/Freighter	1860-1930
Wayman’s Wharf Barge #1	18CA104	Ferry/Lighter	1860-1900
Wayman’s Wharf Barge #2	18CA105	Ferry/Lighter	1860-1900
Warwick Wreck	18DO219	Workboat	1820-1900

Discovery, Recovery and Documentation

The Martinak boat’s stern section was pulled out of the Watt’s Creek mud in 1964 and in January 1969 the longer forward portion of the wreck was recovered (Figure 5). That prompted the February 5, 1969 *County Record* article titled “Remains of 100-year-old Pungy Recovered off Martinak State Park” (*County Record*, 1969). The article explained how workmen, dredging to construct a launching ramp, came upon the remains. W.A. Stewart Wright, Denton attorney and “...student of Chesapeake Bay craft...”

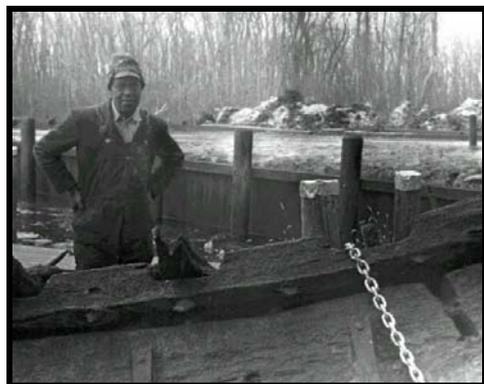


Figure 5: The forward section of the hull being hauled out of the waters of Watt’s Creek in January, 1969. Photographs were provided by Richard Dodds, CBMM.

(*County Record*, 1969) was at the recovery and was the first to speculate that the remains were those of a pungy. Mr. Wright eventually sent photographs of the wreck to Howard Chapelle of the Smithsonian Institute, who was and is considered the authority on Chesapeake water-craft.

A second *County Record* article “Old Pungy Identified” appeared on January 16, 1974 (*County Record*, 1974). The article described the January 13, 1974 on-site meeting of experts that included “James Richardson, a boat builder from Cambridge and one of the foremost authorities on Chesapeake Bay sailing vessels; Dr. Ferdinand Shatard, maritime curator for the Maryland Historical Society; Bob Taylor, Superintendent of the Martinak State Park; Stewart Wright Sr.; and Stewart Wright Jr., County Planner.” Dr. Shatard “...hailed the displayed pieces of wood as a significant discovery for Caroline County...” and Mr. Richardson said “...to his knowledge the pungy at Martinak is the only one in existence...” Shatard went on to say that the timbers should be “...measured and sketched so that the information can properly be recorded in history books...” and a proper shelter should be constructed to protect the remains.

Regrettably, Howard Chapelle was unable to attend the above meeting and there is no indication that he ever saw the wreck remains. Chapelle would eventually concur with ‘the experts’ based on available evidence (CBMM Library, Martinak folder). In the enthusiasm to determine the wreck remains worthy of an historical marker the pungy conclusion was all but sealed. In 1978-79, roughly four years later, John D. Hnedak of the Maryland Historical Trust submitted an Inventory Form for the State Historic Sites Survey that declares the boat to be a pungy and provides a long list of experts who have reported on the wreck. Since that time, most descriptions (for instance Eshelman and Scheffel, 2001) of the Martinak “Pungy” have either directly or indirectly been reflective of Mr. Hnedak’s description and significance summary (CAR-254, MHT). The exception to this is Michael Bourne’s description in the MHT publication *Inventory of Historic Sites in Caroline County* (Bourne, 1980:43), which details the evolution of ship form that eventually became the pungy rather than generalizations about Pungy characteristics.

In December 1985, Richard Dodds and Joe Lierner (a CBMM volunteer) visited the site. After taking several photographs and some measurements, Mr. Dodds provided a letter to the CBMM file that stated the following: “...70’ long, estimated 25’ beam, 50’ keel length, two masts, found with no ballast, worm shoe, frames and planks oak, fine lines at stern, raking transom, planking approximately 1 ½” – a characteristic of English builders...” (RJD 1/86, CAR-254, CBMM Library).

Tammy F. McCorkle, Martinak Park Manager sent wood samples to the U.S. Dept. of Agriculture on October 18, 1988 and received a reply the following December. The laboratory determined the wood to be White Oak (*Quercus alba*) which could be from either an American or European group but no date range was advanced (copy of correspondence on file at MHT, 1988). Ms. McCorkle later sent a copy of the letter and a note to Sheli Smith, MMAP staff, and indicated that samples of the wood would now be sent for Carbon 14 dating. No record of that test has been found to date. On October 24, 1988 Richard Dodds sent copies of photographs and news articles to MMAP staff for their evaluation, but it was not until

November 10, 1989 that MMAP staff members Paul Hundley and the author had an opportunity to visit Martinak State Park to view the wreck remains. It was decided that MMAP would be responsible for measuring and sketching the timbers as time permitted and that eventually a report and wreck plan would be produced for publication.

On January 15, 1990 Thomas C. Gilmer of Naval Architect Inc. visited the Martinak Boat remains and the next day provided a letter of his findings to Mr. Dodds. Mr. Gilmer compared the Martinak boat's dimensions and form with three punygs: the *Amanda Lewis*, built in 1884; the *Elizabeth J....*, built in 1885; and, the replica *Lady Baltimore*, built in 1986. He concluded that "...that the wreck's backbone and timbers are from a puny schooner..." and added that "...the regularity of frame spacing, the location of stem scarf, the use of square boat nails (of bronze) for plank fastening as well as the condition of the wood are strongly suggestive of mid 19th-century construction...(CBMM, letters to the file)."

Norman Plummer's research into Caroline County Land Records on January 23, 1990 revealed a long history of fishing activities in the study area. Mr. Plummer's work was followed by two weekend field dates January 27/28 and February 3/4, 1990 that allowed MMAP staff and volunteers from the CBMM to begin 1:10 scale drawings of the keel as well as 1:1 scale drawing of the frames, keelson and planks. MMAP staff returned on March 26, 1990 to complete keel drawings. On May 1, 1990 MMAP staff participated in the 18th Annual Martinak Day and gave tours of the vessel to interested attendees. On July 11, 1991 MMAP staff and Maritime Archaeological and Historical Society (MAHS) volunteers experimented with reconstructing frame locations on the vessel for the first time. MMAP staff and volunteers displayed 18th-century shipbuilding skills at another Martinak Days event on April 26, 1998.

In January 29/30, 2001 MMAP staff, volunteers and park rangers moved the wreck remains to their present location under the newly constructed pavilion. The following day the small team relocated positions for frames, half-frames and keelsons and reconstructed the wreck remains (Figure 6). After some final measurements and photographs on March 03 and 13, 2001, the author completed pencil drawings of the reconstructed wreck remains.



Figure 6: MMAP staff, volunteers and Martinak State Park staff after reconstructing wreck timbers. Photograph by Chris Maple.

Hull Remains

The wreck remains exhibit an extant length between uprights (stern post to stem post) of 17m 34cm (56.89ft), an estimated maximum beam amidships of 6m 62cm (21.7ft), an estimated depth of hold amidships of 1m 45cm (4.76ft) and a length to beam ratio of 2.6:1 (Figure 7). When originally discovered the wreck was heeled over to port as indicated by the amount of deterioration on the starboard frame ends relative to the port frame ends.

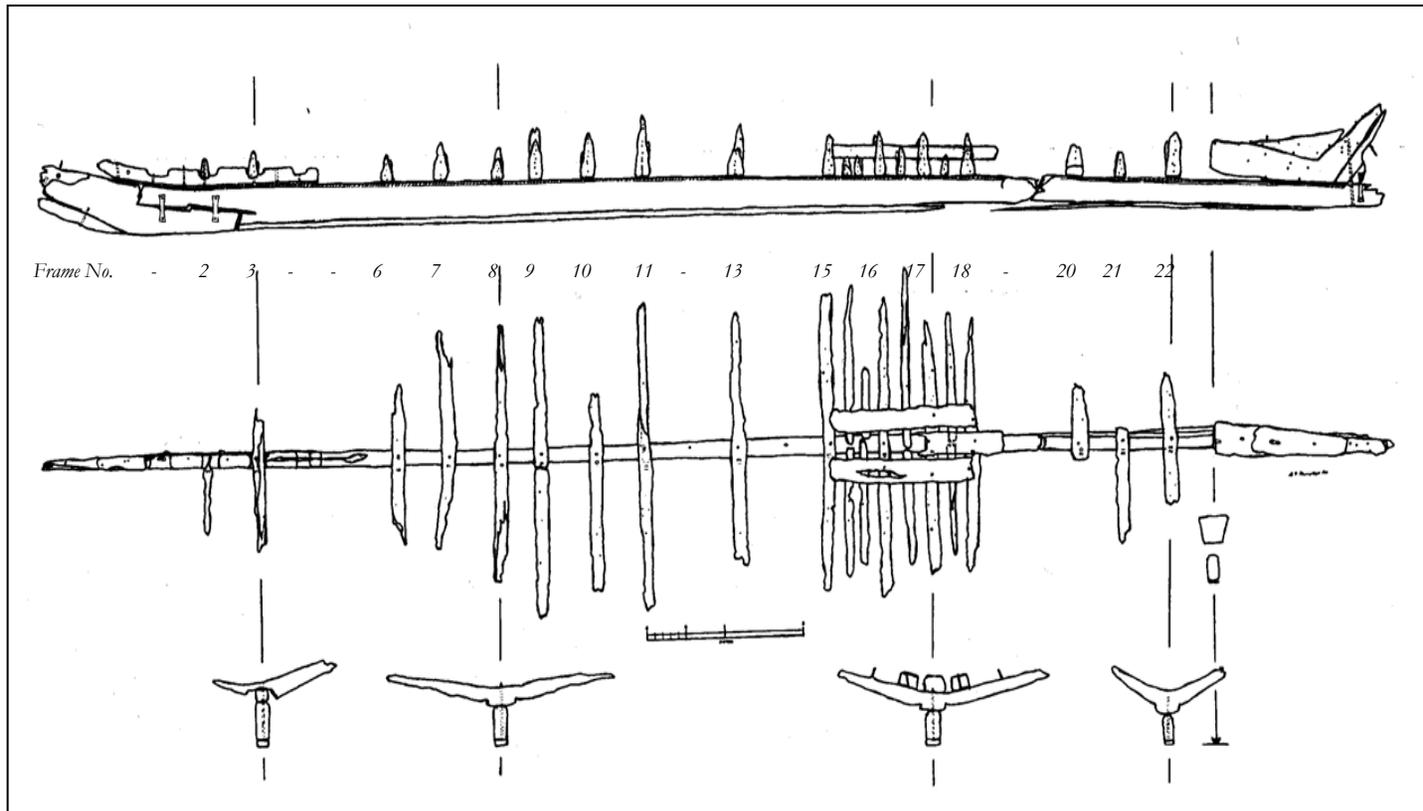


Figure 7: Reconstructed wreck plan of hull remains (scale 1cm = 1.5m). Drawing is by the author.

Keel and Shoe (False Keel)

Initially a single timber (overall length 17m 1cm (55.8ft)) the keel was broken into two sections when the vessel was extracted from the marsh. The forward section of the keel (Figure 8) is 12m 8cm (39.6ft) long and the stern-most section is 4m 3cm (13.22ft). Sided and molded measurements vary over the length of the keel. Sided measurements for the keel are: Frame (Fr) 3 is 44cm (17.32in); Fr 8, 39cm (15.35in); Fr 17, 32cm (12.60in); and, Fr 22, 29cm (11.42in). Molded dimensions along the keel are: Fr 3 is 16cm (6.3in); Fr 8, 16cm (6.3 in); Fr 17, 19cm (7.48in); and, Fr 22, 14cm (5.5in).

A 1m 30cm (4.27ft) long keyed hook scarf (the key has not been located) was utilized to fasten the keel to the stem post. The keyed hook scarf is clamped by four copper alloy fishplates (two on either side of the keel and stem post) and further fastened by four copper alloy pins. The stern end of the keel has suffered damage to its outer surfaces. A 5cm (1.97in) wide rabbet runs the length of the keel's upper surface from the stem post to the sternpost (on both the port and starboard).

Two individual extant shoes or false keels (with rounded base surfaces on the outside edges) appear to have been attached by the same drift pins that secure the frames to the keel. The forward most shoe is 9m 8cm (29.79ft) long, between 14cm (5.5in) and 19cm (7.48in) wide (similar to the keel's molded measurements at Frame's 3, 8, and 17), and 10cm (3.94 in) thick. The stern-most shoe is 4m 19cm (13.75ft) long, 14cm (5.5in) wide (at Fr 22), and 6cm (2.36in) thick.



Figure 8: Martinack State Park staff moving the forward section of the keel to its final display area. Photograph by John Lewis.

Stem post and Forefoot

The stem post is composed of two timbers, the stem post itself and a forefoot (Figure 9). The stem post is 2m 57cm (8.43ft) long, with a maximum sided measurement of 56cm (22.05in) and a molded measurement of 12cm (4.72in). At the scarf face the stem post is sided 23cm (9.06in). A 38cm (14.96in) long chamfered rabbet runs along the top (on both sides of the stem post) and is 5cm (1.97in) wide. A 3cm (.8in) diameter

wrought iron drift bolt attaches the forefoot to the molded side of the stem post. The forefoot (sometimes referred to as the outer stem post) is 2m 22cm (7.28ft) long, with a molded dimension of 12cm (4.72in) and a sided of 14cm (5.51in). The outside edge of the forefoot is rounded. Together the taper of the stem post and forefoot indicate a raking bow rather than a blunt vertical bow. A 3.2cm (1.26in) diameter plugged stop water with dowel in-situ (the dowel is split and has a wedge through its center) runs perpendicular to the axis of the keel between the keel and stem post at the forward face of the scarf.

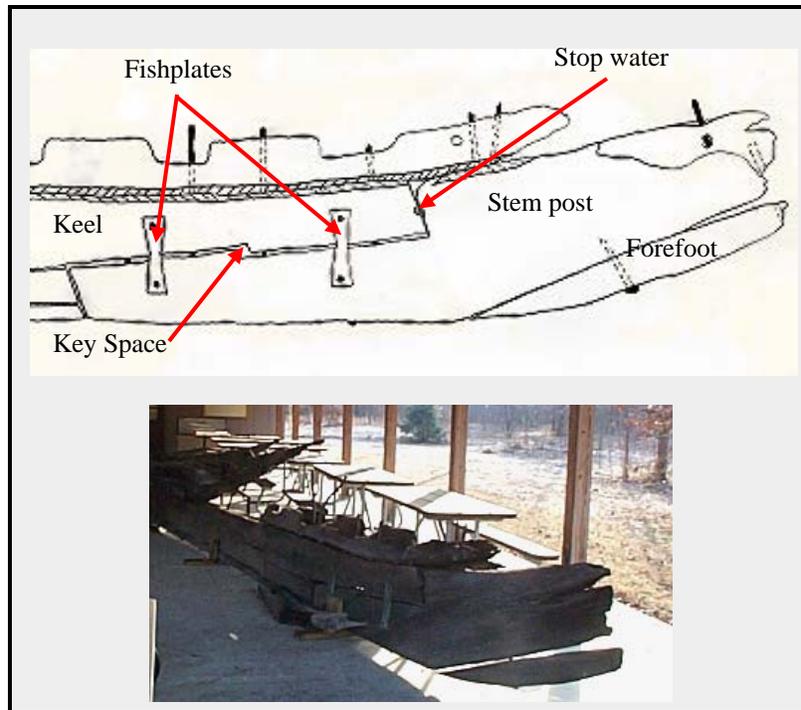


Figure 9: Very little of the stem post is extant but the forefoot is almost complete. Sketch by author and photograph by John Lewis.

Sternpost, Inner Sternpost, Deadwood Knee and Deadwood

The stern components consist of a sternpost, an inner sternpost, a deadwood knee and a deadwood timber (Figure 10). A small portion of the sternpost is extant and measures 24.1cm (9.5in) long, 10.4cm (4.1in) wide and 12cm (4.7in) thick. The piece is fastened to the keel by means of two copper alloy fishplates, one on either side and attached by two copper alloy bolts that have been preened on both sides. One-half of a fishplate is extant on the starboard side with only fishplate impressions on the port.

Associated with this timber is an inner sternpost measuring 106cm (41.7in) long, 15cm (5.9in) at its maximum width and 18cm (7.09in) at its maximum thickness. A 4cm (1.57in) diameter stop water (without dowel) is located between the inner sternpost, the sternpost and the keel. A 2cm (0.79in) diameter bolt hole runs through the deadwood knee, the inner sternpost, sternpost and keel. A 45cm (17.72in) - long,

2cm (0.79in) - diameter iron bolt runs through the deadwood knee and inner sternpost. Two iron spike shafts protrude from the upper surface - above the iron bolt. Looking from the stem to the stern, the shape of the deadwood knee is trapezoidal (see Figure 10, bottom right), beveled on two sides with a maximum width of 32cm (12.6in), minimum width of 20cm (7.87in) and overall length is 2m 22cm (7ft 2in) with square nail holes on the outer surfaces.

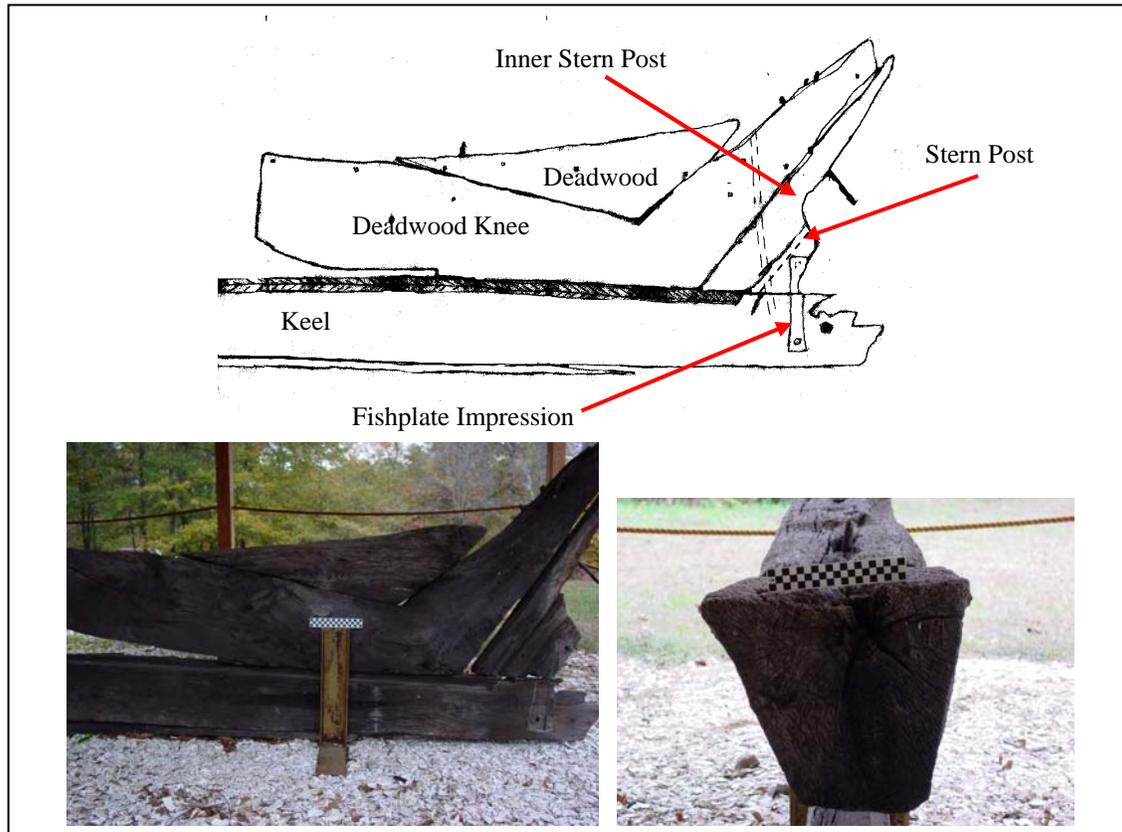


Figure 10: Field sketch and photographs of the stern components. Note that the sternpost and inner sternpost have been properly aligned in the sketch. The deadwood knee's face is trapezoidal in shape (bottom right). The field sketch is by the author and the photographs are by Chris Maple.

The deadwood is a triangular shape fastened to the inner sternpost, sternpost and keel by an 84cm (33.07in) iron drift pin 2.0cm (.8in) in diameter. The maximum length is 121cm (47.64in) along the upper surface with a maximum width of 37cm (14.57in). The lower surface has a maximum width of 25cm (9.84in) and the two side surfaces display square nail holes.

Floor Frames

All of the sixteen extant floor frames (Table 2 and Figure 11) have two limber holes notched out along their bases. Nail patterns along the upper surfaces indicate the one-time presence of ceiling planking. Frames 15, 16, 17 and 18 each have two iron drift pins of 2.0cm (.8in) diameter to accept the sister keelson. Frame 17 includes two bronze drift pins of 2.0cm (.8in) diameter each that may have held additional cross timbers.

Table 2: Length, moulded and sided measurements are from select frames on the Martinak Boat.

Floor Frame Number	Length	Molded (at keel)	Sided (at keel)
2	88cm (34.65 in)	12cm (4.7in)	
3	1m 60cm (5.25ft)	15cm (5.9in)	10 cm (3.9in)
6	1m 80cm (5.9ft)	15cm (5.9in)	
7	2m 44cm (8.0ft)	17cm (6.7in)	
8	2m 88cm (9.5ft)	16cm (6.3in)	21 cm (8.3in)
9	3m 35cm (11.0ft)	17cm (6.7in)	
10	2m 22cm (7.3ft)	17cm (6.7in)	
11	3m 43cm (12.0ft)	15cm (5.9in)	
13	2m 84cm (9.3ft)	19cm (7.5in)	
15	3m 33cm (10.9ft)	18cm (7.1in)	
16	3m 34cm (11.0ft)	12cm (4.7in)	
17	2m 82cm (9.3ft)	18cm (7.1in)	20 cm (7.9in)
18	2m 84cm (9.3ft)	17cm (6.7in)	
20	85cm 2.8ft)	21cm (8.3in)	
21	1m 29cm (4.2ft)	15cm (5.9in)	
22	1m 45cm 4.8ft)	18cm (7.1in)	26 cm (10.2in)

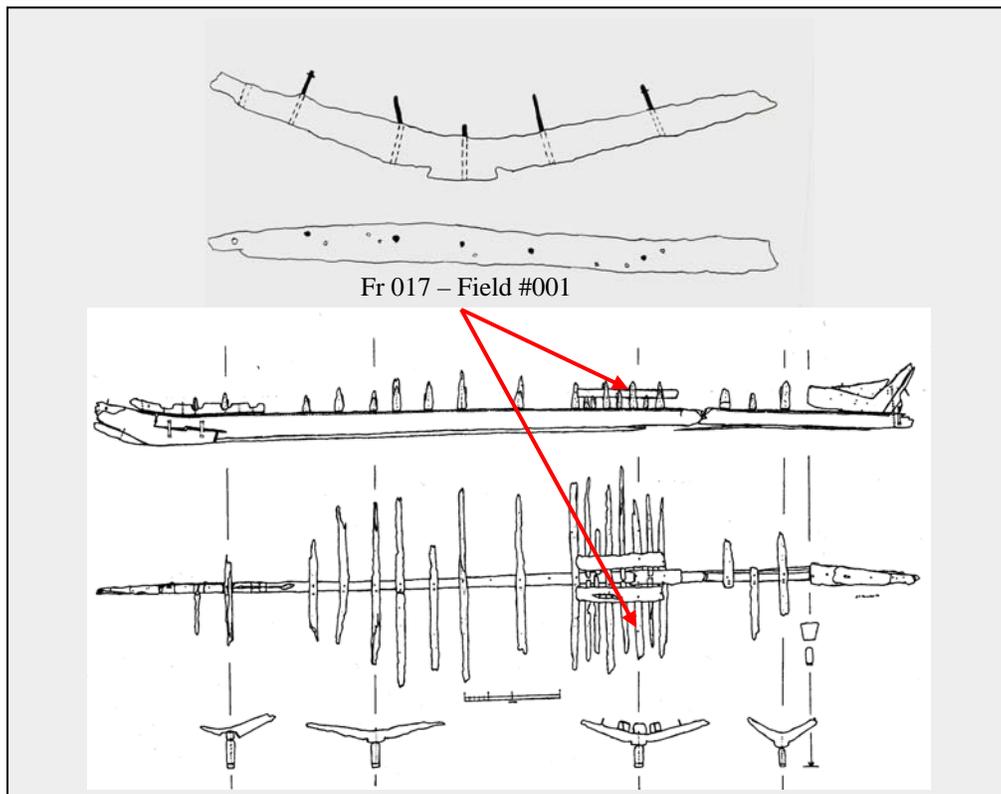


Figure 11: Looking from the stern to the bow the floor frames exhibit a relatively flat amidships. Drawings are by the author.

Half Frames

There are eight extant half frames with varying lengths, ranging from a minimum of 80cm (2.6ft) to a maximum of 1m 79cm (5.9ft). Their average molded dimension is 10cm (4.0in) and average sided measurement is 10cm (3.9in) at the keel. The two half frames between frames 15 and 6 on the port side display roughly cut notches – possibly for a bilge pump. Square nail holes on the upper and lower surfaces are similar to those on the floor frames.

Keelson, Step and Sister Keelsons

A small portion of the keelson is extant at 1m 14cm (3.7ft) in length, 26cm (10.2in) molded and 18cm (7.1in) sided. Similarly, a small portion of the step mortise (for the mast) is extant, with a length of 17cm (6.7in), width of 15cm (5.9in) and depth of 18cm (7.1in). Iron drift pins fasten the keelson to frames 17 and 18. Two sister-keelsons (Figure 12) have been recorded (their undersides are both very worn where they rested over frames 15, 16, 17 and 18 - and the eight half frames) with a maximum length of 1m 81cm (5.9ft), maximum width 28cm (11.0in) and maximum thickness 15cm (5.9cm).

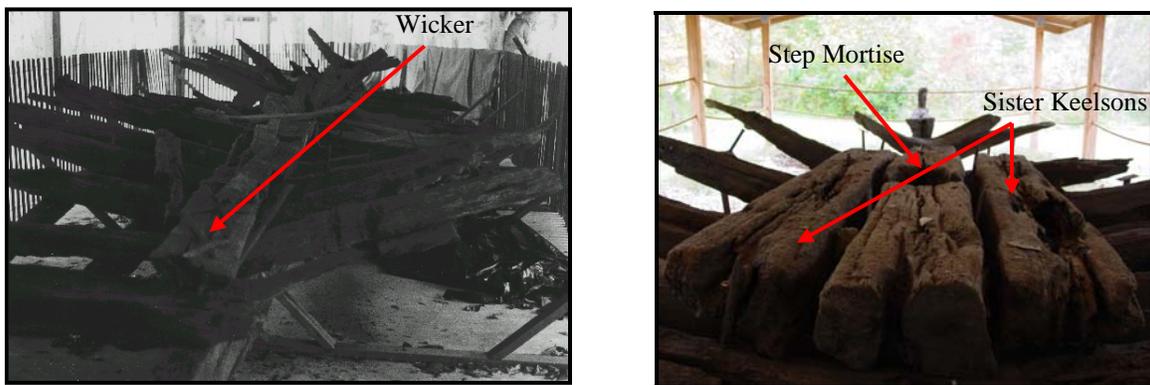


Figure 12: The keelson has very little of its original length, however the sister keelsons appear to be intact. In the photograph on the left (1960s) there appears to be substantial keelson remains. Also note the wicker cross-pattern on the upper surface of the keelson. The left photograph is courtesy of Richard Dodds and the right photograph is by Chris Maple.

Stemson

The stemson is 2m 82cm (9.3ft) in length, with a molded dimension of 17cm (6.7in) and sided measure of 22cm (8.7in). A 5cm (2.0in) - wide rabbet runs the length of the stemson's base on both the port and starboard (Figure 13). Four notches are noted along the upper surface to accept frames 1, 2, 3 and 4 (average 23cm (9.1in) length, and 10cm (3.9in) depth). The stemson is fastened to the keel and stem post by eight 2.0cm (.8in) - diameter drift pins one in each frame slot, two toward the stem, one between frames 1 and 2, and, one between frames 3 and 4. A 5.0cm (2.0in) - diameter hole is drilled across the axis of the stemson in the forward portion of the stemson. The exact function of this feature is unknown.

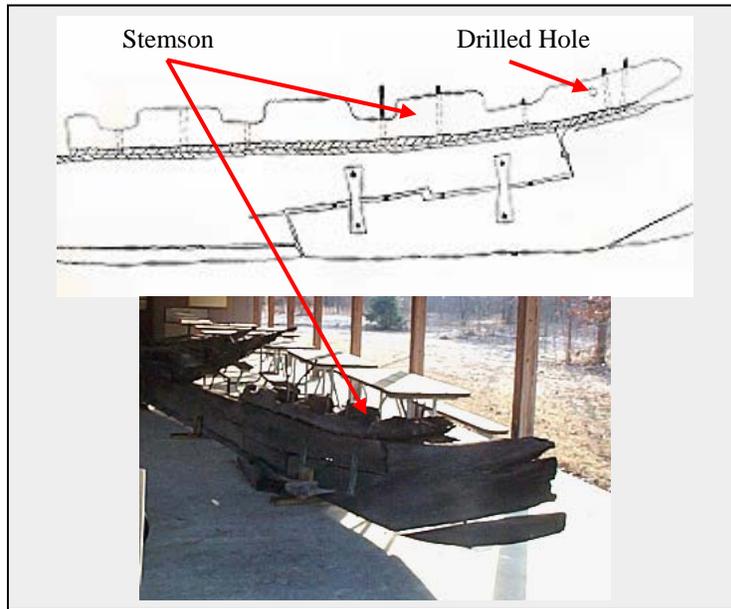


Figure 13: Starboard view of the stemson. Sketch (mirrored) by author and photograph by John Lewis.

Hull planking

There are ten disarticulated outer planks (Figure 14) and one in-situ piece of a garboard strake attached

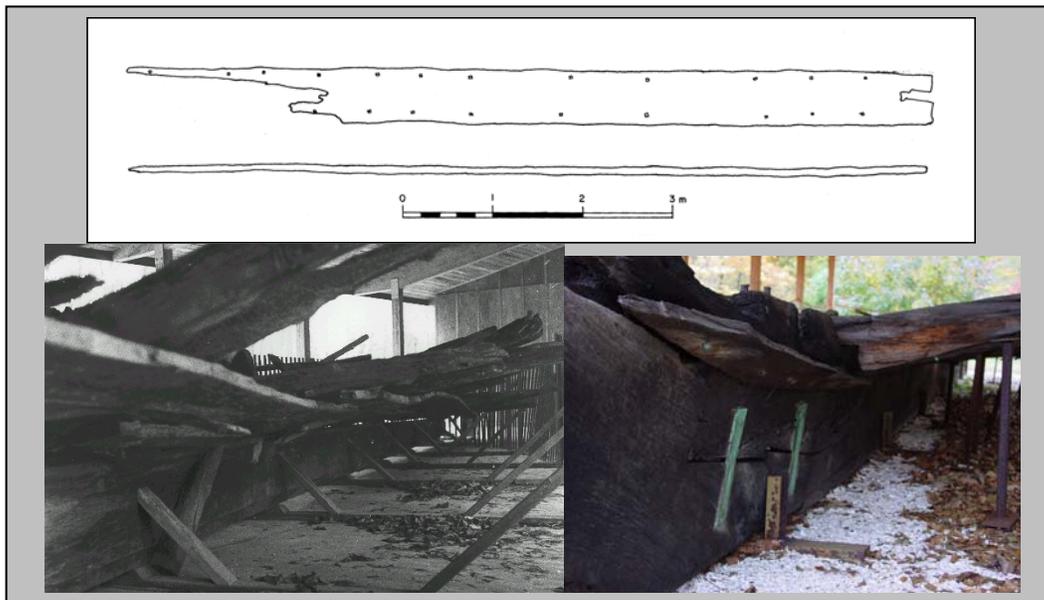


Figure 14: When the hull remains were first placed under protective covering in the 1970s some outer planking was still fastened to the frames (left). When MMAP staff visited the site in 1989 the planking and frames had been removed and only a small portion of a garboard strake (right) was noted in the bow area. Plank 003 is representative of all ten extant outer planks. Drawing is by the author, the photograph on the left was provided by Richard Dodds and the photograph on the right was taken by Chris Maple.

to the stemson on the port. The average length of the outer planks is 9m (29.5ft), average width is 54cm (1.8ft) and average thickness is 3.8cm (1.5in). Nail-hole pairs (with slight offset) are evenly patterned down the length of each plank's width and the average space between hole-pairs is 40cm (1.3ft). All planks were drawn at 1:1 ratio.

Fasteners

A wide variety of fasteners are used to connect the various timbers and planks. Large timbers are primarily fastened with 2.0cm (.8in) diameter iron drift pins (Figure 15 top) of varying lengths. The half frames and frames that support the keelson-set have four copper alloy 2.0cm (.8in) diameter drift pins, all have been peened over and two have 3.0cm (1.2in) diameter washers under the peened end. Several 2.8cm (1.1in) – diameter wooden treenails are noted in several frames. Both iron square-shank spikes and copper alloy square-shank spikes have been recorded, mostly for the attachment of planks.

The butterfly-shaped fishplates are 30cm (11.8in) in length, 9.0cm (3.5in) at the widest part of the “wing” and 6.0cm (2.4in) at the “waist.” The copper alloyed plates (average thickness is 1.2cm (.5in) are paired and fastened by 2.0cm (.8in) diameter copper alloy drift pins (Figure 15 bottom left and right) that have been peened on each end.



Figure 15: Iron drift pins (top) are used throughout to fasten large timbers such as frames, keelson, stern structure, stem structure and keel. A keyed hook scarf near the bow (bottom left) is further strengthened by a pair of copper alloy fishplates (one pair per side) and bolted by copper alloy drift pins. A partial fishplate is noted for the port of the stern (bottom right). Photographs are by Chris Maple.

Artifacts

No diagnostic artifacts (collected either archeologically or otherwise) have been recorded for this site.

Conclusions and Recommendations

This article considers the information gathered as it relates to several questions about the site's relation to Maryland maritime history and to criteria for the site's inclusion on the National Register. Why and how did it happen to sink at this location? What type of ship is it? Is it a type yet to be archeologically recorded in Maryland? To answer these questions one must review the condition of the wreck remains and conduct a comparative analysis against other archeologically documented ship wrecks. The results of this enquiry assist in determining the significance of and preservation requirements for the Martinak boat.

Reason for Sinking

Frames on the starboard side of the vessel exhibit more decomposition than their counterparts on the port side. The deterioration can be seen for approximately two-thirds of the length of the frames (from the frame tips toward the keel), indicating that the wreck lay on its port side and buried under the mud with the starboard side exposed to the elements. Due to the anaerobic environment produced by the mud, the majority of the port side timbers had survived in good condition. When the wreck remains were hauled out of the water, the mud remained on the timbers indicating that the wreck had been in place for several years. It is presumed that the vessel had been abandoned as this was one traditional means of disposing of unwanted vessels and no evidence to the contrary has been recovered. Without artifacts and/or cargo to substantiate the vessel's date range with any accuracy, one must depend on historically documented changes to hull form, constructional features, tool marks and fasteners to place the wreck remains into their proper historical context.

Dating the Wreck

The Martinak boat's overall form (shape) shares characteristics with both 18th-century and 19th-century hull forms that plied the Chesapeake waterways. Some of these characteristics include the shape of the bow and stern, her profile amidships and mast locations. The slow rise of the stem post is very similar to the Virginia pilot schooner and/or sloop of the late 18th-century; and the angle of the stern post is comparable to the *Eagle*, an 1812 wreck excavated in Lake Champlain. Neither the bow nor stern angles are as acute as that of the later pungy-shaped vessels, to date the generally accepted form that experts have proposed for the Martinak boat.

The earliest mention of a Pungy comes from a 1918 publication about the life of Charles Carroll, in which a vessel belonging to Carroll in the 1820s is referred to as "Mr. Carroll's pungy" (Leonard, 1918: 253). According to the *Lady Maryland* website "...the name pungy may originate from the place where some of the first pungys were built - the Pungoteague Creek on Maryland's Eastern Shore. Pungys, which were

considered fast sailing vessels in the 1800s, were primarily used as workboats...” (Living Classrooms, <http://www.livingclassrooms.org/Facilities/LadyMD.html>, accessed September, 2005). A further dissimilarity between the Martinak Boat and a pungy is the profile amidships (see Figures 16, 17 and 18). The flat profile lines (amidships) of the late 18th - century Little Landing wreck (sloop) are very close to those of the Martinak boat, as is the long rake of the stem post. Lastly, mast locations analogous to the Martinak boat (one in the stern and probably one in the forward area) can be found in many archeological examples of both 18th- and 19th-century vessel remains (*Boscawen, Eagle, Bungay Creek Pungy* etc).

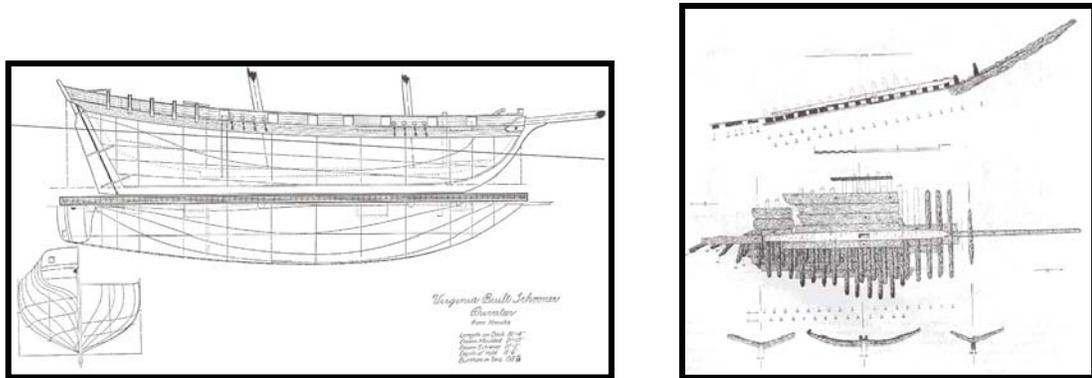


Figure 16: Two examples of late 18th century ships. The one on the left is a Virginia Pilot Boat possibly the predecessor to the Pungy. The example on the right is the Little Landing Wreck (LL1) (Thompson, 1991), an archeologically excavated sloop on the Cooper River, South Carolina. Drawing on the left is from Chapelle (Chapelle, 1973) and the drawing on the right is by the author.

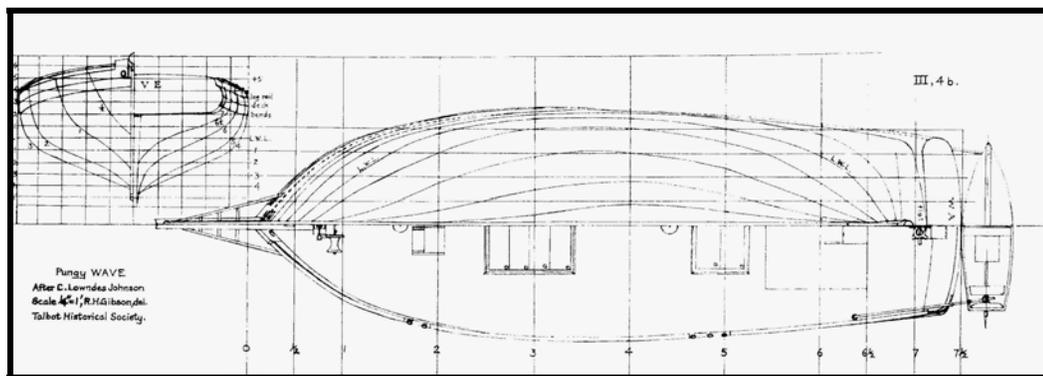


Figure 17: Lines drawing of the Pungy Wave. Drawing provided by the Talbot County Historical Society after C. Lowndes Johnson.

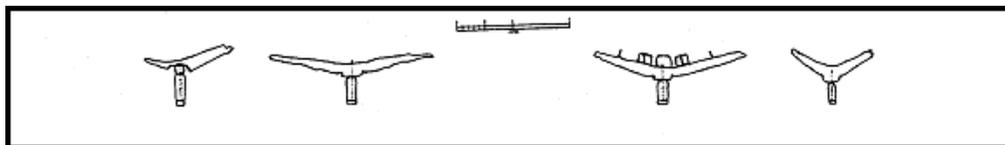


Figure 18: When one compares the Martinak Boat's frame shapes to Figures 16 and 17 the closest match appears to be the Little Landing Wreck.

Although the layout and shape of the deadwood (in the stern) on the *Eagle* (Figure 19) is different from that of the Martinak boat the remaining stern structure is attached by fishplates and the stern post angle is very similar. The timbers that make-up the bow section (Figure 19) of the *Eagle* is very analogous. The forefoot (outer stem post) is attached by iron drift pins, the stem post is scarfed to the keel with fishplates and the stemson (apron) is notched for frames and attached to the keel, stem post and forefoot by iron drift pins.

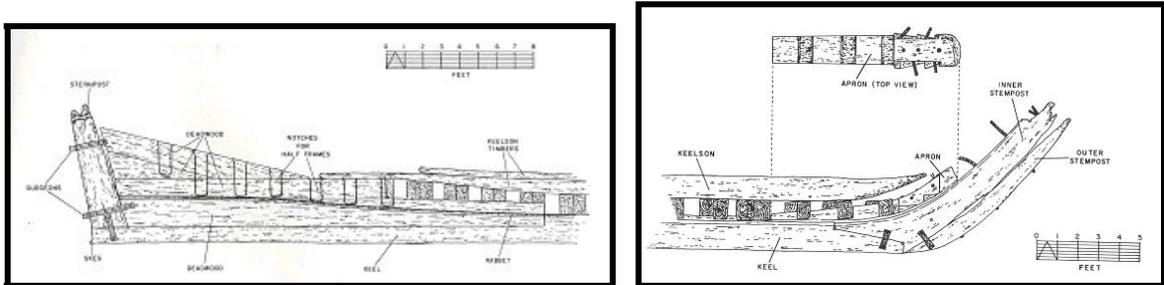


Figure 19: Stern and stem features on the *Eagle*, built in 1814, are very analogous of those recorded for the Martinak boat. Drawings are by Kevin Crisman (Steffy, 1994).

The following tool marks, noted during the recording phase: adze, pit saw, auger, axe, chisel and hammer. For the most part all of these tools were in use in Maryland shipyards during the 18th and early 19th-centuries. However, soon after the introduction of circular saws the labor intensive pit saws quickly disappeared. No circular saw marks were found on the timbers from the Martinak Boat. This may indicate a pre-1813 construction date. It is not certain how soon circular saws became widely accessible in America but the first recorded use in a saw mill is in 1813 when “...Shaker-Sister, Tabitha Babbitt (1784-1854) invented the first circular saw used in a saw mill. Babbitt was working in the spinning house at the Harvard Shaker community in Massachusetts, when she decided to invent an improvement to the two-man pit saws that were being used for lumber production...” (Inventors, 2005).

Iron spikes, wooden dowels (treenails) and iron drift pins have been found on wrecks from as early as Roman times through well into the late 19th-century. However, three exceptions to this broad life-span of fastener use are copper alloy spikes (to nail planking to the frames), copper alloy fishplates (to secure large timbers) and ‘royal iron’. The earliest recorded use of copper spikes for planking can be found on the *Constitution*, launched in 1798. In describing the construction of the *Constitution* it was noted that “...Paul Revere forged the copper spikes that held the planks in place...” (Ramsdell, 2005). Archeologically recorded examples (18th- and 19th-centuries) for the use of copper alloy fishplates on the bow and stern of boats span fifty-five years (Table 3). The median date range for these examples is 1786. The size and number of copper fishplates utilized on a particular vessel may vary but all of the examples listed below secured the keel to the stem and stern posts by means of one or two pairs of what appears to be cast bronze or copper alloy fishplates.

According to Hnedak, "...analysis of trace elements in the iron used in the scarfing (patch repair) identified it as "royal" iron, produced in Britain c. 1820, opening the possibility that the ship was repaired in a British port about that time..." (Hnedak, 1980). This and the thickness of the outer planking (1.5in, according to Lerner a characteristic of English builders (RJD 1/86, CAR-254, CBMM Library)) offer a possibility of British affiliation rather a vernacular one.

Table 3: Examples of shipwrecks (archeologically excavated) that exhibited copper alloy fishplates in their construction.

<i>Boscawen</i>	built 1759
<i>Defense</i>	sunk 1779
<i>Yorktown</i>	sunk 1781
<i>Ticonderoga</i>	sunk 1814
<i>Eagle</i>	sunk 1814
<i>Jefferson</i>	sunk 1814
St. Leonard's Creek Wreck D1	sunk 1814

Given the mean dates for form - 1794, construction features - 1813, tool marks – pre 1813 and fasteners – 1800, it is possible that the Martinak boat's date range for use and/or construction is between 1794 and 1813 (this latter date might be extended to 1814 or even 1815 due to the span between the invention and local use of the circular saw). If Mr. Charles Carroll's pungy (Leonard, 1918: 253) was built as late as 1815 it is reasonable to assume that major aspects of 18th-century shipbuilding and the birth of the pungy are overlapped within the Martinak boat design.

Eligibility and Recommendations

This discussion considers the information gathered as it relates to criteria for the site's inclusion on the National Register and how the site might best be preserved in the future. The results of MMAP's documentation efforts and archival research demonstrate that this site may be eligible for inclusion on the National Register under Criteria C and D (Table 4). The vessel was constructed with wooden treenails, brass

Table 4: A site must meet one or more criteria to be included on the National Register for Historic Sites List.

<p>One or more of the following criteria must apply in order to qualify the property for National Register listing:</p> <p>A - Property is associated with events that have made a significant contribution to the broad patterns of our history.</p> <p>B - Property is associated with the lives of persons significant in our past.</p> <p>C - Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.</p> <p>D - Property has yielded, or is likely to yield information important in prehistory or history.</p>
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spikes in the rudder area and iron nails, iron drift pins and copper alloy drift pins throughout. Tool marks include adze marks and pit saw cuts. Construction features are indicative of vessels built in the late 18th- and early 19th-centuries. Frame patterns amidships are consistent with a small schooner or sloop. This wreck site offers an excellent opportunity to discover how and why this craft evolved from the colonial antecedent to its 19th-century counterpart.

The timbers have been exposed to the elements for three decades so there are no conservation techniques to recommend at this time. Department of Natural Resources staff has constructed a dedicated pavilion which protects the Martinak Boat from the direct effects of the weather and they have roped off the area to reduce destruction by visiting youngsters (a major problem at its original location under the nature study pavilion). The vessel should be monitored annually by an archeologist to insure that the timbers are stable and the wreck is intact. Lastly, it is highly recommended that educational signage be developed and constructed to highlight this important wreck's place in Maryland's maritime history

Acknowledgements

As with all MMAP projects conducted in Maryland there are many people and organizations to thank for their interest, support and time. Employees, staff and volunteers of Department of Natural Resources, Martinak State Park, Chesapeake Bay Maritime Museum, Maritime Archaeological and Historical Society and the Maryland Maritime Archeological Program have dedicated more than their hours to the successful study and preservation of the Martinak boat.

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