Queen Anne's Revenge Shipwreck Project

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Brick and Tile from Shipwreck 31CR314 *Queen Anne's Revenge* Site

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Cover photo: Queen Anne coin weight for 1 guinea gold coin. Recovered from site Fall 2006

Introduction

Three brick or tile fragments (397.000, 891.000, and 917.000), and two possible brick/tile fragments (1293.000 and 886.000) have now been recovered from the 31CR314 wrecked vessel, also known as *Queen Anne's Revenge*. Generally the morphology of these fragments, being proportionately thinner than a standard brick, suggests that the term tile could aptly be used to describe them. The occurrence of the brick/tiles, found in the Forward Hold area of the wreck, one (397.000) found beneath the hull timbers, indicates the brick/tile elements could have served as insulation for the wooden ship from the cooking heat of the galley stove. Though only a few of these bricks/tiles have so far been recovered, it is likely subsequent work in this area of the wreck will yield additional examples. Several bricks, similar in size and shape to these specimens, were recovered from the shipwreck *Whydah* (dated 1717) and likely served the same function as a galley stove (as described in Hamilton 1992:403). Myles (1980) also describes the morphology of galley stoves (*Machault,* dated 1760) as being box-like features composed of four mortared brick walls that surrounded a large brass or cast iron cauldron with a firebox underneath and the entire supported by a wooden frame. The chimney or funnel-like exhaust, often made of wood impregnated with salt to keep it from catching fire, was extended through the deck above. Earlier stoves may have been built on top of ballast stone, and located in the bilge area. Wood was the main fuel source for firing the galley stove, typically used to prepare communal meals for the crew and passengers alike.

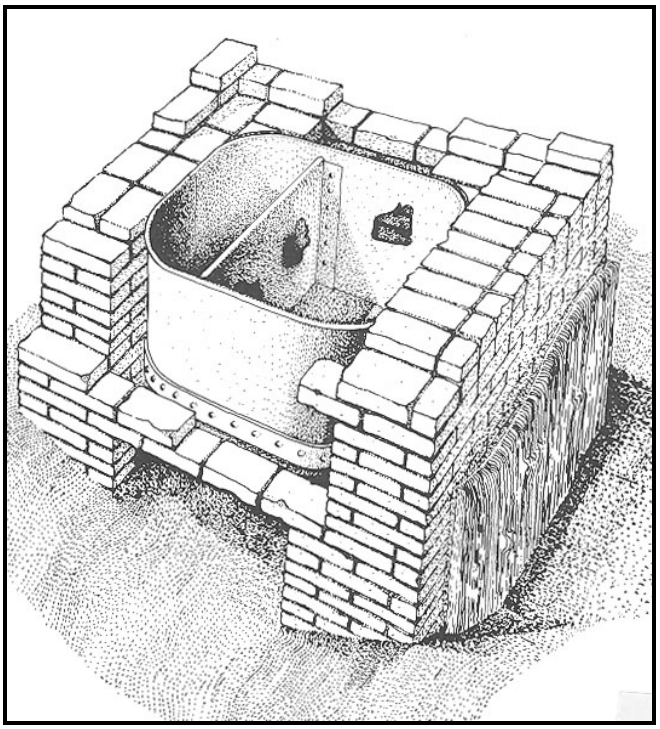

Figure 1 Brick Galley Stove

Bricks made during the sixteenth, seventeenth, and eighteenth centuries were formed by hand in wooden molds and fired in a kiln (or clamp). This process, sometimes referred to as the "place " method (Harrington 1950:30), is achieved by filling a rectangular wooden mold with clay, scraping or "striking" off the excess surface clay, and then inverting the mold to remove the brick for air-drying before kiln-firing. The earliest hand-made and kiln-fired bricks thus far recovered in America (north of Mexico) date to the 1566-1588 site of Santa Elena, located in present day South Carolina (South et al, 1988). Although these were Spanish colonists, early French and English colonists set about making bricks for their chimneys and houses as soon as suitable clays were discovered in settlement areas. Indeed, brick-making seems to have been one of the first European-style cottage industries established in the New World. In Spanish bricks are known as *ladrillos*, in French they are called *brique*.

Figure 2 QAR 397.000

Specimen Number:	397.000
Provenience:	Single find, under hull timbers, E90-100/N85-95
Location on Ship:	Forward Hold
Item:	Brick/tile, nearly whole specimen
Composition:	Unglazed coarse earthenware
Method of Manufacture:	Hand molded in wooden mold, with fingers ridges evident on one linear surface, fired in kiln.
Size:	
Length (partial)	6.25 inches (15.88 cm); broken at one end
Width	4.36 inches (11.07 cm)
Thickness	1.02 inches (2.59 cm)
Weight:	700.1 grams

Figure 3 QAR 891.000

Specimen Number:	891.000
Provenience:	90E/116N
Location on Ship:	Bow
Item:	Brick/tile, whole specimen
Composition:	Unglazed coarse earthenware, marbled and laminate clays, two colors, large quartz inclusions, four finished edges. Medium orange in color of paste, gray streaks.
Method of Manufacture:	Hand formed in wooden mold, smoothed top and bottom surfaces, fired in kiln.
Size:	
Length	8.25 inches (20.96 cm), complete with both ends
Width	4.13 inches (10.50 cm)
Thickness	0.75 inches (2.55 cm)
Weight:	780 grams

Specimen Number:	917.000
Provenience:	87E/69N
Location on Ship:	Midship
Item:	Brick/tile, fragment
Composition:	Unglazed coarse earthenware, dark orange in color, appears more vitrified, denser and homogeneous clay. Similar in color to 1293.000 specimen. Core appears darker from uneven firing.
Method of Manufacture:	Hand-formed in wooden mold, smoothed on top, base appears pitted from sand in the mold, slightly concave on top, convex on bottom.
Size:	
Length	unknown, only central part is 3.00 inches
Width	3.00 inches (8.30 cm)
Thickness	0.75 inches (2.55 cm)
Weight:	219.7 grams

Specimen Number:	1293.000
Provenience:	89E/136N
Location on Ship:	Bow
Item:	Brick/tile, fragment
Composition:	Unglazed coarse earthenware, homogeneous dark orange paste, similar to 917.000 specimen. Grog temper is visible, along with small voids left from grass or straw
Method of Manufacture:	Indeterminate; fragment is too small and has no diagnostic attributes other than paste.
Size:	
Length	unknown (1.50 inches)
Width	unknown (1.00 inches)
Thickness	unknown (.50 inches)
Weight:	10.10 grams

Specimen Number:	886.000
Provenience:	in concretion
Location on Ship:	
Item:	Brick/tile, fragment
Composition:	Unglazed coarse earthenware
Method of Manufacture:	Appears hand-formed, evidence of smoothing surface with fingers. No other diagnostic attributes visible now.
Size:	
Length	unknown, broken, too small
Width	unknown
Thickness	.75 inches (2.55 cm)
Weight:	unknown, still in concretion

Discussion

In composition, the brick/tile clays appear to contain sizable (> 2-3mm) inclusions of crushed quartz pebbles or gravel that may have been added to the clay for shrinkage control during initial firing, thus providing weight, strength and durability to the clay fabric. The specimens also appear to have some crushed fired clay (or grog) added to the paste for additional durability and thermal shock reduction. All specimens are generally red-orange in paste color and unglazed on all surfaces. On Specimen 397.000 three of the four surfaces of the brick appear to have been smoothed by an even form (or wooden mold) while one flat surface has been smoothed by dragging the fingers across the plane while the brick was in a wet formative stage (this represents the "striking off" phase as previously described). The finger-ridges are parallel to the longest axis of the brick. One narrow end exhibits iron or metallic staining from post-depositional encrustations, while the opposite broken end exhibits a linear "gap" in the clay matrix. This slight flaw suggests the wet clay was packed into the mold in two amounts or stages, then compressed and smoothed. Original length was undetermined due to the broken edge. Specimen 891.000 is the most complete brick/tile yet recovered and four

intact edges, as well as the top and bottom smoothed surfaces. This brick/tile also exhibits two colors of clay in the matrix that represent two or more clays being pressed into the mold. In addition the clay body was tempered with crushed quartz, shell and possible organics such as straw or grass which burned out during firing. Specimens 917.000 and 1293.000 are strikingly similar in paste color (darker orange), texture (homogeneous) and composition (grog and quartz inclusions) and are both considered brick/tile fragments, the former having at least two edges and two surfaces visible.

Brick sizes on early colonial terrestrial sites in America provide some useful comparative data. Stone (1974:207 & 208) discusses a series of 246 brickbats (partial bricks or fragments with one or two diagnostic surfaces remaining) recovered from the French and British military outpost known as Fort Michilimackinac (occupied 1715-1781). Since length was not available from the bats, he gives an average width of bricks as 10.8 cm or 4 ¼ inches or 48.0 French *ligne*. He notes that this dimension is highly consistent to within a standard deviation of 2.20 mm. The thickness measurements were less consistent and averaged 7.4 to 7.8 cm, or ca. 3 inches or 32.0- 43.0 French *ligne*. The *QAR* specimens favor comparably with the width measurements of French *ligne*, but also resemble the Spanish *ladrillos* that are longer (by several cms) but have similar width ratios (Deagan 1987:124-125). Waselkov (1999:17), on the other hand, in describing bricks excavated from Old Mobile (ca. 1700-1711), points out that French colonial bricks were much thinner than British colonial or modern American bricks, with an average length of 7.4 inches (18.79 cm), average width of 3.7 inches (9.39 cm), and average thickness of 1.3 inches (3.30 cm).

The most intact *QAR* specimen (891.000), then by comparison is slightly longer in length (8.25 inches) than British or American examples, slightly thinner in width than bricks from Michilimackinac (4.13 inches), and much thinner than British or French bricks (.75 inches). That said, caution is given in implying too much similarity in all dimensions to bricks found on terrestrial sites, as they were predominately created and used as structural, weight-bearing elements for houses, standing chimneys, and walkways. The *QAR* specimens most likely served as structural elements (as brick or tiles) of a galley stove and as such would have supported far less weight than a building [insert image of a typical galley stove, maybe Throckmorton?]. Both Harrington (1967:11) and South (1964b:67, 73) note that brick size is an unreliable chronological indicator because of non-temporal variations in brick dimensions produced during the manufacturing process, as reiterated by Stone (1974:209). Bricks, as general construction debris from some unknown source, may also have become part of the ship's ballast and ended up aboard this vessel. Until such time as additional brick are recovered from undisturbed contexts at this shipwreck site, not much more can be added to our interpretation and understanding of this item, its context, source, and function.

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