

THE HAWAIIAN CANOE BY TOMMY HOLMES

Float (Ama)

“When a man found the wiliwili for his floater, he cared for it as he would his own child,” observed Kalokuokamaile. He goes on to note that “other woods were not desired in the olden days for the longitudinal stick (ama) of a canoe, only the wiliwili... [for] no matter how much the wind blew it never sunk but kept afloat just as the canoe kept afloat.” Indeed, wiliwili, with its lightness and tremendous buoyancy, was overwhelmingly favored for making the ama; hau or drift timber was used if wiliwili was not available.

Although wiliwili is relatively plentiful in certain areas today, such was apparently not always the case. Judging from various sources, good quality wiliwili trees in old Hawaii, if not scarce, were at least highly prized. All ama made in pre-contact Hawai‘i, it must be remembered, reported to be of one piece, unlike today’s generally composite models. Kamehameha V’s thirty-five-foot-long canoe Nihoa in the Bishop Museum has an ama almost twenty feet long, being somewhat longer than a typical ama on a similar-sized canoe today. It can only be imagined how large an ama was needed for some of the 60- to 70-foot canoes reported, or for the 108-foot hulk seen rotting at South Point.

Emory was told by an informant on Maui that “wiliwili trees were trimmed to grow straight to produce suitable timber for floats.” With the need for tall, straight trunked wiliwili and the tree’s strong tendency to begin branching at a low height, such a practice would certainly have made sense. According to Kamakau, ama were shaped with adzes made of the extremely hard alahe‘e wood. This work, like that of sennit making, may have been done by a separate guild of craftsmen. An anonymous Hawaiian, writing sometime in the mid-1800’s, said that in old Hawai‘i, “different people hewed out the floats and these were much traded for in the olden days.” Accounts of canoe building conspicuously omit ama making as one of the canoe maker’s duties, which supports the belief that it was a were separate craft.

Its curved shape and unique fore-end made the ama, like the canoe, a form peculiar to Hawai‘i. Not unexpectedly, the design appears to be a highly evolved and ingenious answer to the rowdy and unpredictable waters of Hawai‘i. The form of the float was generally a simple convex curve from the rear tip to a point somewhere in front of the point of attachment of the forward boom to the float. This assured that both ends of the ama were above the surface of the water. The shaped fore-end of the ama was called the lupe, and for some unknown reason, left in its natural state and not painted with pa‘ele like the rest of the float. Buck astutely notes that the fore-end of the float generally “had the sides cut away to form a thin vertical board” acting as a “cutwater to lessen water resistance when the fore-end was submerged.” The sharp entry seen in the fore-end of ama in many old canoes seems very functional in its ability to cleave through water, in many cases more functional than the blunt, rounded fore-end seen on most contemporary ama. Any rough-water canoeist can attest to how much time the front of the ama takes in trying to break its way into or out of a contrary sea. The main carved body of the ama was generally either rounded or square with very rounded edges. Old models and photographs indicate that the portion of the ama from just behind the forward *iako to roughly halfway back to

the aft 'iako was thicker than the last half of the ama, a feature providing maximum buoyancy at its most critical point of water contact. The portion aft of the rear 'iako, the kanaka, most often tapered to a sharp horizontal edge. On other craft it tapered to a small diameter, or was kept fairly uniform diameter and abruptly terminated.

The curvature of the ama varied according to the sea conditions expected and the intended use of the canoe. In flatter waters little curvature was needed, while in rough waters a quite pronounced curvature was preferred. The latter ama was called an ama kaka. Wally Froiseth remembers being shown such an ama in Kona in 1950. He was told by the owner that it was only employed when very rough water or high seas were anticipated.

The ama figured in an 1804 drawing by naturalist George Langsdorff, and in Admiral Edmond Paris' well-known drawing (1839) are markedly curved, as are many of those seen in old models. Paris made an insightful observation on how the curvature of the ama worked when he noted that the presence of a "rather pronounced curvature recognizes a sort of compensating principle in its action since on entering or leaving the water progressively it did not weight down or resist as suddenly as with a straight outrigger." Again, many rough-water canoeists have seen the remarkable way an ama disengages itself by degrees, always contacting the irregular surface or swell at some point along its curvature. This minimizes the tendency for an ama to break completely free of the water, which might possibly flip the canoe.

For some unknown reason the curve in many post-contact ama was absent. In many of the photographs of the 1800's and early 1900's there with just the barest hint of curvature. Ironically, many of these ama pictured were rigged on canoes used for surfing, a situation for which a curved ama is tailor-made. In a number of the photographs the fore-end of the ama can be seen dangerously digging into the water—a situation easily avoided by using a well-curved ama. In the late 1950's, with open ocean canoe racing becoming popular, there was a move back to the older form of ama with pronounced curve. This design has essentially remained the norm to the present.

Other seemingly sensible design features of old style ama have not been followed, such as the fine entry, the tapering exit and the greatest volume located just forward of center. In 1924 Emory said of canoes he observed in west Hawai'i that "the lupe [fore-end] of the ama is nearer the canoe body in properly fixed canoes." This "toeing in" that Emory observed is still commonly seen today. It compensates for the drag the ama creates on the left side of the canoe and the resulting pull to the left. The amount the ama is toed in will vary for many reasons, the most important being the distance the ama is rigged from the canoe. The front of the ama is generally toed in an inch or two. Although not seen in canoes today, a number of old ama had holes bored transversely through them at a point a couple of inches below where the 'iako attaches so that the lashing could be passed through the holes instead of around the whole ama. Though this may not have been quite as strong, a certain amount of drag was eliminated by not having the lashings around the outside of the ama.