OCC Members Revolutionize the Canoe Ama

By Walter Guild

Editor's Note: Walter Guild, Past OCC President, Winged "O" and veteran waterman has been a part of the Club's canoe racing program for more than 40 years, paddling in his first race in 1971. He paddled on numerous HCRA and OHCRA championship crews and has won eight Molokai Hoe championships. He served on the OCC Canoe Racing Committee for many years, was head coach, and was active on OHCRA and HCRA race rules and canoe committees.

Walter sat down recently with Outrigger Editor Marilyn Kali to share his knowledge of the evolution of the ama, the float that turns an outrigger canoe hull into a catamaran. He explains how Outrigger members were directly responsible for the molded koa/fiberglass ama used by today's modern canoes.

Koa canoes were the standard before fiberglass boats were used. They weren't built very often. There were very few of them and they didn't change very much.

The traditional Hawaiian canoe had a calabash shape with a very round bottom. It was a shorter boat generally 36-38 feet long with a lot of banana rocker shape to it. When you think of what an outrigger canoe is, it's really a catamaran. The double hulled sailing canoe is a true catamaran but the Hawaiian outrigger canoe really needed two hulls. One was smaller than the other to make it more maneuverable and lighter and easier to move around.

The shape of the ama followed the contours of the hull because it needed to do what the hull could do to surf well, turn well and things like that. It wouldn't do any good to have this real curved surfable, maneuverable hull and then have this straight knife-like ama out there doing its own thing.

Over the years ama didn't change very much. They were very round and banana-shape. The other thing that made it difficult was that the canoes were made of koa and the ama was made of wiliwili.

The Hawaiian Canoe Racing Association rules stated that an ama had to be made out of Hawaiian wood. They didn't designate what indigenous Hawaiian wood but wiliwili was used most often. It made sense because it was the lightest; basically it is a cousin of balsa wood. You didn't need to build many ama. You'd build an ama out of wiliwili and use it for 20 years.

Wiliwili was hard to come by and the wood was very unstable. The bugs would eat it easily if you were trying to store it to get enough to build an ama. A lot of times you'd go back to your stash and it would all be dust. Building a wiliwili ama was a real hard thing to do.

In the late 1970s when the Tahitian boats started to influence design OCC's Tommy Conner got involved with building the first newer designed boats. He also designed some new ama that went with his boats. They followed the concept of the shape of the boat so they got narrower, longer and more square-shaped on the bottom.

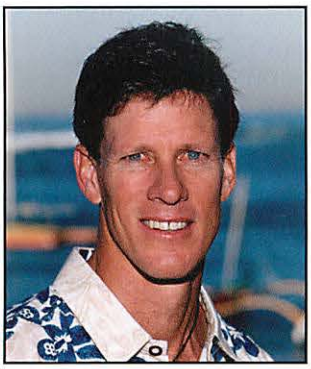
Tommy was the one who really started to play with shapes. He would shape the ama out of foam and since they weren't being used on koa boats they could be changed often if one broke or you wanted to try something new; it wasn't as dramatic as building a wiliwili ama and having to go through the whole process. Tommy could build it out of foam, shape it like you would a surfboard, and fiberglass it.

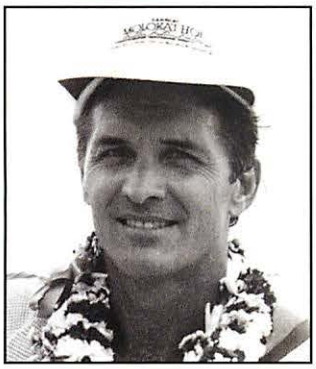
In the mid 1980s following the transition to the newer hulls, several OCC members (Jeff Kissell, Hank Lass, Bob Riley and Walter Guild) owned the Fiberglass Shop which manufactured fiberglass canoes. Lass commissioned OCC member Joe Quigg (builder of the *Kaoloa*) to shape an ama with Joe's interpretation of what a modern ama should be. It was similar to what Tommy had done but was a little more refined.

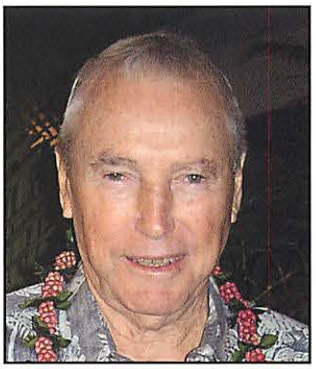
Joe's ama was named after an old wiliwili ama that the Club had, referred to as the Channel Master because we used it in the Molokai Channel. We used Joe's ama for a couple of years as a foam core ama. We asked Joe for permission to mold it and made it into a production ama so it could be used on the new outrigger canoes that were coming out, including the Hawaiian Class Racer.

It advanced certain things. Traditionally, when you

The ama for the *Kaoloa* is molded from koa and fiberglass.







LEFT: Walter Guild

MIDDLE: Tom Conner

RIGHT: Joe Quigg

lashed the ama to the 'iako, you wrapped the cord all around the ama and the strings on the bottom dragged in the water. We started putting holes in the ama for the cords to pass through, keeping the bottom of the ama clean.

We also straightened and lengthened the ama and in many cases made it squarer on the bottom. The designs began to optimize water line and buoyancy for speed and flotation. The squarer bottom created more lift and helped the ama stay up on the surface more than a round bottom.

The volume also increased because we were able to keep the ama light enough and on the surface enough that being bigger wasn't as much of a handicap. If you built a wiliwili ama bigger, it would be heavier and drag deeper in the water. We were able to get them light enough, and because of the shape, we could make them larger which created something very important: reserve buoyancy.

In the Molokai Channel on a trade wind day, the wind and swell is hitting from the right side of the boat and putting all the weight on the ama. So if the ama has volume where you can keep it on the surface the boat, rather than dragging the ama, will operate on the surface more like a catamaran.

The effect of an ama on a canoe is similar to skiing, if you were to keep the weight even on the two skis. If you put the weight on the downhill ski that ski will take over the turning of the unweighted ski and actually steer the ski. So if you're in a boat and the ama is compressed, rather than riding on the bottom of the ama, all its weight is on the side of the ama and it wants to push the boat to the right, causing the steersman to lose control. You want to keep it as level as possible and that's why we added volume to keep it more catamaran and more balanced.

In the late 1980s we had a great deal of trouble coming up with new ama. We had new hulls being built but we didn't have updated ama. The wiliwili building process was very difficult.

So we looked at the HCRA racing rules and they didn't specify that the ama be built out of wiliwili. The rules didn't specify that the ama had to be shaped, but they did allow for them to be covered with fiberglass. They also didn't state whether you had to build an ama from the inside out or the outside in. They didn't specify that you couldn't use a mold to shape the ama. The rules just said that the ama had to be made out of Hawaiian wood and could be covered with fiberglass.

So we did a prototype of a molded ama using the Channel Master mold. With a process of vacuuming we put fiberglass in, pressed koa veneer into the mold and put more fiberglass behind it and made the same shape ama that the fiberglass boats had; meeting the racing rules. And then we asked HCRA for its blessing which they gave us. Hence, most of the ama began to be molded ama instead of hand shaped. This was revolutionary for the koa canoes.

The first time we used the koa/fiberglass ama on the *Kaoloa* in a race, the race officials challenged us on its compliance with race rules. We told them they could drill anyplace they wanted to confirm that it was built with Hawaiian wood. They selected a spot and drilled and found the koa. We taped it up and used it the rest of the day. Afterward I patched the ama and put a red tape x over the place they drilled. We used the ama that way for a long time. There were no further challenges.

With HCRA's acceptance of our ama, designs have changed and new ones have come out. Now you can quickly get a koa version ama you can use on your koa boat, relatively inexpensively compared to a hand-shaped wiliwili ama. The new ama are much more durable, stronger and lighter.

When the Fiberglass Shop closed, its molds were taken to Windward canoe builder Karel Tresnak Sr. The OCC ama for the *Kaoloa* and *Kakina* that we're using now were built by Tresnak. Most canoe makers also make molded ama today based on those early Joe Quigg models.

One man canoes use a similar process for their ama. Instead of using wood they use a lighter weight core material that is more pervious; resin goes through it better to make them stronger.

There have been a lot of changes in canoes and racing in the last 50 years, but the acceptance of a molded ama was one of the most revolutionary.

Editor's Note: Walter Guild, Tom Conner and Joe Quigg were all honored for their contributions to the Hawaiian canoe and canoe racing by being elected to the prestigious Winged "O".