

THE TUVALU VAKA PROJECT

by

Steven A. Brown
Save The Children
Funafuti, Tuvalu

Small sailing canoes are a common sight on the lagoon islands of Tuvalu. However, the wooden logs used in carving the dugout hulls are becoming increasingly scarce.

The "Vaka" Project, funded by Save The Children, began in April 1983, after 2 years of planning by Jack Lockett, Tuvalu Field Director for Save The Children, and Windworkboat consultant Jim Brown. This pilot project is intended to train Tuvaluans in the construction of efficient sailing craft needed for intra-lagoon trolling and transportation. The need arose as an alternative means of transporting people and harvesting coconuts out on the uninhabited motus dotting the large lagoon. In Funafuti, where petrol costs A\$4 per gallon, transportation is an expensive problem, especially when, because of a dry-docked supply ship, fuel is not available.

Now, in Funafuti at least, tall sails can be seen crossing the lagoon. The boats are built using pre-laminated wooden panels formed in a curved, boat-like shape. After joining two 16 foot panels together with epoxy and a panel buttblock, the wooden sheet is trimmed with a power saw to a predetermined shape. A thin fibreglass template is made using the panel as a mould, then popped inside out to mark the mating half of the hull. Sheer stiffeners are glued on, wood sealed with clear epoxy, and now the halves are ready to be wired together down the keel and stems. Once the beam measurement has been determined, the overturned hull is set rigid with fibreglass "bandaids" every 3 feet. The glue becomes hard in half an hour, and the hull is turned upright. An epoxy-filler keel is then trowelled into the apex of the hull and fibreglass cloth tape laid in for strength. After this sets, the wire is removed, keel sanded and glassed, and a hardwood "reefcruncher" screwed in place. The advantages of this frameless hull are: reduced construction time (one 32 foot hull can be completed in 2 days with 3 trainees); epoxy coated and glued hulls are rot free; and also the ability to construct a variety of different boat sizes and shapes from the same material without the training complications of lofting, moulds, or frames. A major disadvantage however is the high cost of shipping from overseas to Funafuti. This drawback, common with most development projects is justified by the durability and longevity of the boats.

Our first prototype, built in 4 and a half weeks, is a 32 foot Windward Outrigger "Vaka" based on local designs. Isave (flying fish) as she is called, is modified with 2 daggerboards to increase windward performance. She also sports a sock sail (the cloth is sewn around the spar to form a wing shape) which enhances wind flow. In trials this craft proved very fast yet became hard to manoeuvre under steering paddle alone, due in part to her high prismatic underbody and also because of the local method of shifting the sail from one end to another to change directions. This problem was somewhat corrected by the twin daggerboards. Isave is fun to sail, and has now been

donated to the island of Nukufetau where the local sailors are skilled in handling this type of craft.

The second project, a catamaran, was originally designed as a fishing vessel. After close scrutiny it was decided that Funafuti really needed a sailing lagoon taxi capable of carrying many people and coconuts. This 33 foot cat has kick-up rudders and boards for beach landing and boarding of passengers, and two enclosed cabins with two berths each to provide shelter during the frequent rain squalls. She is equipped with 2 head sails, a light-air's genoa and a storm jib, companioned by a large main. All sails were sewn locally. In times of no wind, a 22 h.p. Volvo outboard helps meet a busy charter schedule. Groups embark early in the morning for a full day of sailing, fishing and coconut hauling. The other day, a local captain and crew sailed 30 people 4 miles to Funafala and returned with 35 gunnysacks full of coconuts. As the sun fell, everyone sang and slept while the cat loped along at 6 knots.



(Photo: L.B. Chapman)

The second boat built by the project, a 33-foot motor-sailing catamaran.

While building these two boats, local fishermen kept insisting they would buy smaller paddling canoes. So again, after a few prototypes, we settled on 2 styles. Flat bottom and rounded V bottom. The flat bottom model is built with 3/16" plywood throughout, with an 8" wide dory-like bottom. These 16 footers are all made from 2 sheets of plywood. The completed canoe, frameless, weighs around 40 lbs. Some fishermen appreciate being able to stand on the bottom, which makes hauling fish easier. The rounded V bottom is built using 1/8" plywood. Two halves are wired down the keel and spread open at a wide angle. An epoxy-filler keel is buttered in and left to set at this angle. Then the sides are bent up or "tortured". The stems are glued, the wire clipped off, and the thin rounded hull is glazed with 7 and a half oz. cloth. This makes a very light, aesthetically pleasing canoe.

This has become the most successful side of the project so far. Of the 7 canoes built, most have been sold. Over a period of 7 months our crew of 4 trainees have become proficient in running power tools, handling epoxy fibreglassing, but most of all, naturally, sailing.



The author with one of the projects popular canoes.

Our most recent project, a 24-foot cat, is being built for an egg producer who lives on Falefeke, a motu 5 miles from market. This craft, near completion, required little supervision. All profits are reinvested into materials and maintenance.

The goal here is to provide a service that is self perpetuating and self reliant, offering Tuvalu people an option beyond petrol dependant transport. The sea-borne culture of Tuvalu, given their ancestral heritage, seems well suited to absorbing their old principles of sail combined with the new methods of sail technology. This is apparent by the gratification beaming from the Polynesian builder's face as his sleek creation hits the water at launching or when sailing over steep swells, the exhilarating ride inspiring passengers to sing and shout while schools of dolphin guide them home.