

# A Voyaging Canoe for Tikopia

A project to build a sailing double canoe for Tikopia

The only transport vessel met by outrigger canoes



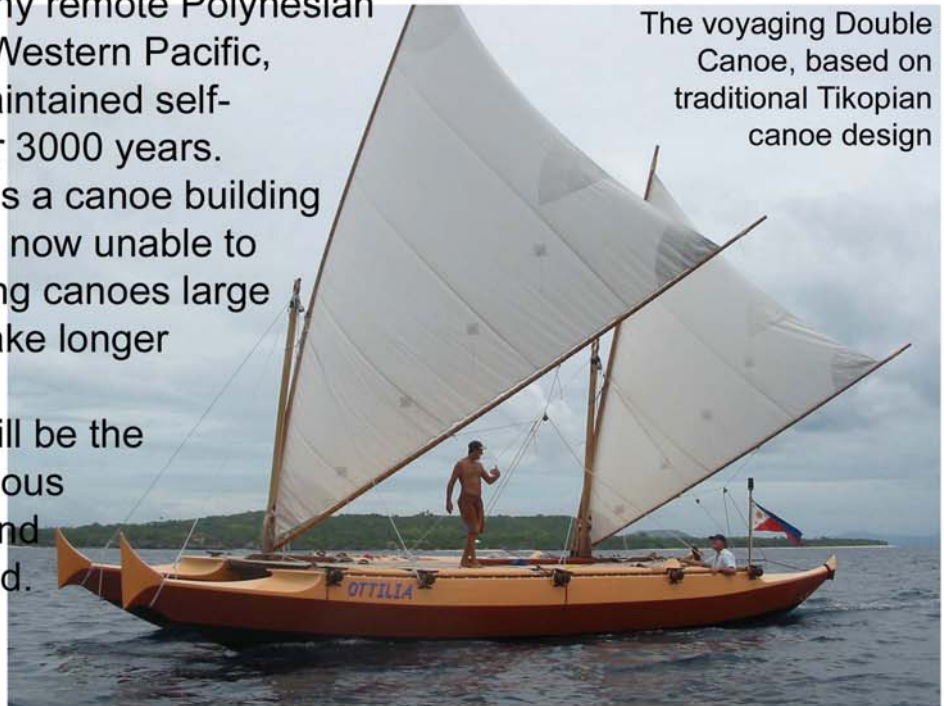
Tikopia at sunrise

Tikopia is a tiny remote Polynesian island in the Western Pacific, which has maintained self-sufficiency for 3000 years.

The island has a canoe building culture, but is now unable to make seagoing canoes large enough to make longer passages.

This canoe will be the only autonomous transport to and from the island.

The voyaging Double Canoe, based on traditional Tikopian canoe design



Colour covers donated by Design Bureau, Truro



100 year old Sacred Tikopia Canoe in Auckland Museum

# A Voyaging Canoe for Tikopia

An idea conceived by Hanneke Boon of James Wharram Designs

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This is a proposal for a project to give the people of the tiny Pacific island of Tikopia back independent sea transport, in the form of a seagoing sailing double canoe.

At present the **only** transport to and from the island of Tikopia is by an old Solomon Islands Government controlled ship (see front cover), which calls at the island about every 3 months. Islanders that leave the island on the ship have to wait for its return before being able to go home. Tikopians living on other islands have to take 6 months leave to visit their home island and family. The ship is also the only means of bringing in outside supplies. Occasionally passing yachts visit the island, via which messages and letters can be sent.

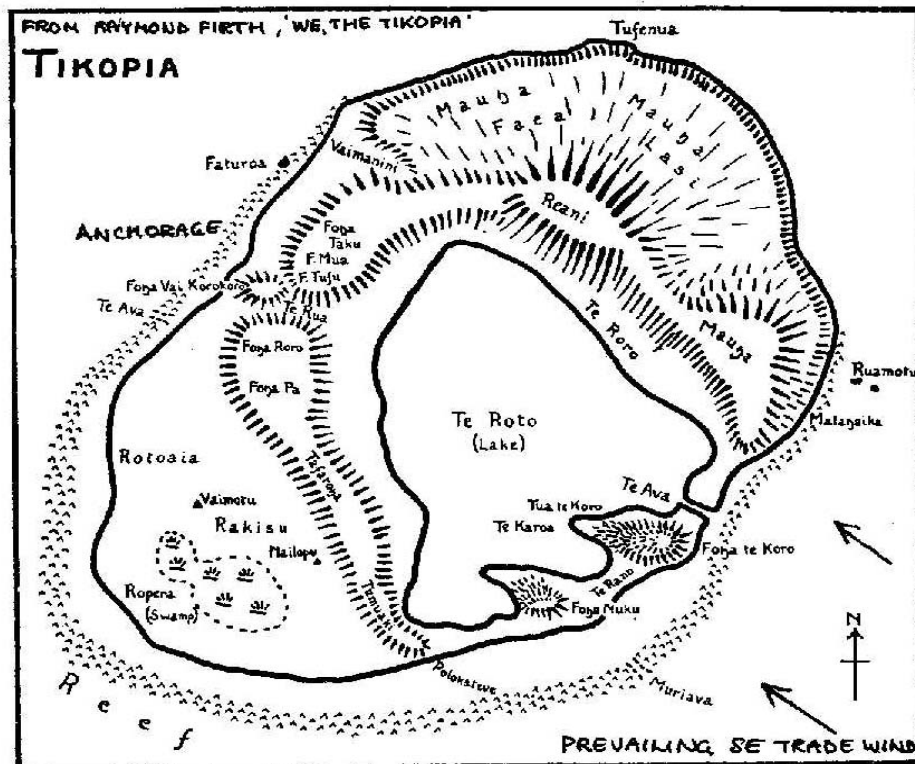
The only craft on the island are small outrigger canoes, used for fishing and too small for longer sea voyages. There are **no** other watercraft, **no** outboard motors and **no** fuel. There is **no** airstrip and it is too far for a helicopter to reach.

A new seagoing canoe will give back Tikopia the independence it had in her long past as a totally self-sufficient, self-sustaining island, with its own canoes fit for ocean travel. The Polynesian island of Tikopia has been unique in this way for 3000 years and needs to be able to continue be so.

## Tikopia

Inspiration for this project came when I read the chapter on Tikopia in a new book by Jared Diamond (author of *'Guns, Germs and Steel'* and other books) called *'Collapse, How Societies choose to Fail or Survive'* in which he describes how societies/cultures all round the world have either survived or collapsed and the reasons why. Reading about the culture/society that survived for 3000 years on Tikopia, an island we visited in 1996, and realising how unique and important this tiny island is, gave me the inspiration for the project proposed here.

To sum up Jared Diamond's description of the uniqueness of the island of Tikopia: Tikopia is a tiny tropical island (see front cover) of just 1.8 square miles situated in the SW Pacific, at the Eastern end of the Solomon - Santa Cruz islands, supporting a population of approx. 1200 people of Polynesian descent. This island has been self supporting/self sufficient for the last 3000 years using stone age technology. The nearest island (85 miles distant) is the even tinier sister island of Anuta (population 170). Other slightly larger islands in Vanuatu and the Solomons are between 100 and 140 miles distant.



In the words of the anthropologist Raymond Firth, who lived on Tikopia for a year in 1928- 29 and returned for subsequent visits: "It's hard for anyone who has not actually lived on the island to realise its isolation from the rest of the world. It is so small that one is rarely out of sight or sound of the sea. [The maximum distance from the centre of the island to the coast is three-quarters of a mile.] The native concept of space bears a distinct relation to this. They find it almost impossible to conceive of any really large land mass.... I was once asked seriously by a group of them, 'Friend, is there any land where the sound of the sea is not heard?'"

Due to the impossibility to import food stuffs of sufficient quantity by the only transport available to the people, i.e. their outrigger canoes, the question has always been, how could a food supply sufficient for 1,200 people be produced reliably? And how could the population be prevented from increasing to a higher level that would be impossible to sustain?

These two problems were solved in Tikopia by:

- 1) Developing a form of agriculture that mimicked the natural grows of tropical jungle, but where every tree, bush and plant was of an edible nature, thereby optimising the productivity of every part of the island.
- 2) Following a policy of Zero Population Grows, which in the days before Christianity was achieved through birth control in the form of coitus interruptus, abortion and infanticide of new-born babies. Adults also would sometimes, in times of shortages, resort to suicide or to 'virtual suicide' in the form of going out to sea in a small canoe on a dangerous voyage with the likely result of never returning.

There is only one occasion on record when the people resorted to warfare as a result of food shortages about 300 years ago. At this time 1 clan was exterminated and sometime later another clan was driven off the island on canoes, never to return.

The system of self sufficiency on Tikopia has evolved over the 3000 years the island has been lived on. The first people on Tikopia were part of the 'Lapita Migrations' of early Polynesians from the west. Their agricultural methods were based on the slash-and-burn techniques, they also made quite a heavy impact on the bird and sealife populations, which has been verified archaeologically. With time the food growing techniques seen today were evolved. Around 1200 AD a new influx of Polynesians came from islands to the East, these people are the ancestors of the present day population.

An important event happened around 1600 when the decision was made to kill every pig on the island and from then on rely on seafood for protein. It was judged that pigs were too destructive to the agriculture and that they were an inefficient source of protein. There are now 4 tribes on the island each with a hereditary chief (Ariki), though the chiefs do not have a very superior place in society and have to grow their own food same as anyone else. The chiefs are overlords of clan lands and canoes. Decisions for the island's welfare and distribution of resources are made jointly by the 4 chiefs.

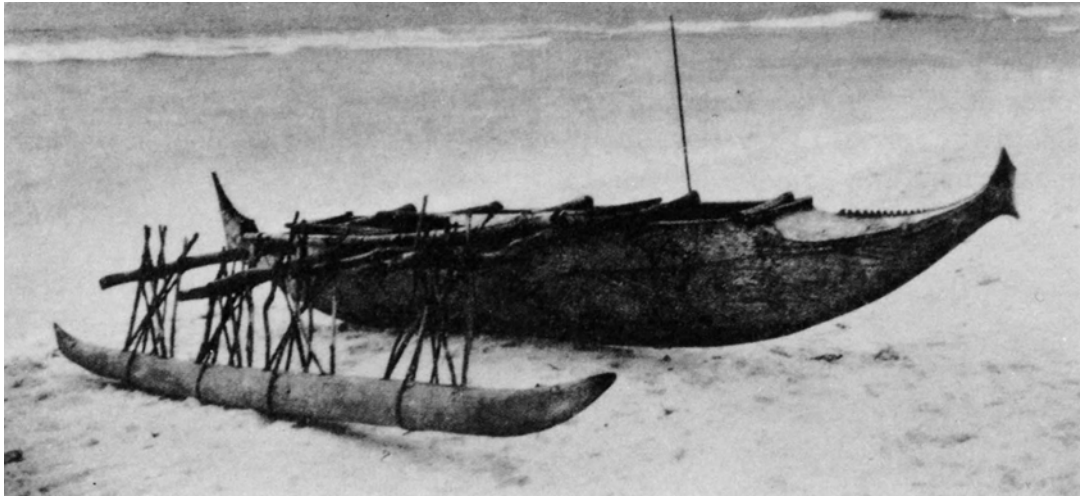
### **Tikopia in the 20th Century**

Since Raymond Firth's anthropological studies in Tikopia in 1928/9 the island has slowly been absorbing influences of the 20th century and the rest of the world. At the beginning of the 20th Century the islanders accepted the Christian religion, but when this decision was made, the chiefs decided that they would only welcome one sect of the Christian church. Their choice was the Anglican church, probably a very sensible choice as it hasn't been trying to dominate the island and wipe out all it's traditions. We have heard that on the side of the island that receives least visitors (the East side furthest from the anchorage) there are still older Polynesian beliefs and cultural traditions practised.

### **The Tikopian Canoes**

The people of Tikopia and her sister island Anuta have built canoes of a very distinctive design for hundreds of years. This canoe design is probably the only Polynesian ocean going sailing hull design to have survived the total destruction of the Polynesian ocean voyaging culture since the arrival of Western Sailors and later missionaries in the Pacific.





Photos above: Illustrations from Haddon and Hornell, *Canoes of Oceania*

Due to Tikopia's isolation and position surrounded by 100s of miles of open ocean her canoes always had to be seaworthy, even the small ones. In 1828/9 Admiral Paris, an eminent and very knowledgeable French seaman, meticulously recorded some of the few surviving Polynesian canoe designs he found still in use in the Pacific. One of these was the voyaging double canoe of the Tuamotu islands, one of the few remaining places in the Pacific where at that time the population still had a tradition of making longer ocean voyages. A beautiful lines drawing and model of this type of boat is kept in the Louvre museum in Paris. The other canoe hull he recorded in writing was the Tikopian canoe shape (*Haddon & Hornell*). His description of this canoe closely matches the still existing Tikopian canoes built between approx. 1880 and the 1970s.

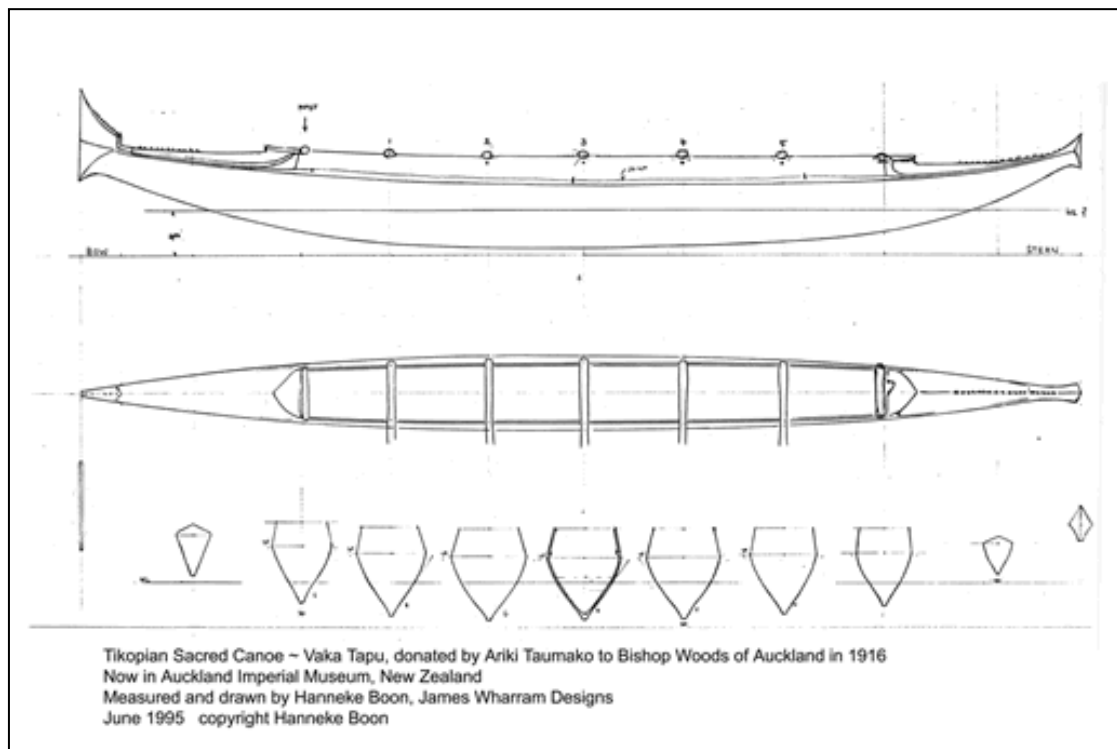
As Tikopia had hardly been touched by Western man in the 1820s, it can be true to say their canoe design was also untouched by Western influence and is therefore a unique example of a seagoing canoe hull design that has its origins maybe as far back as 1000 years or more.

The Tikopians and Anutans kept their canoe building tradition well into the 20th century, but by 1996, when we visited the island on our 63' double canoe 'Spirit of Gaia' no one was building canoes on Tikopia. Some of the canoes they were using were built on Vanikoro, where Tikopian canoe builders still practised.

The canoe building tradition has lasted longer on Anuta. Richard Feinberg, Professor of Anthropology at Kent State University, made a study of canoe building and navigation on Anuta in 1972/3, which he describes in detail in his book '*Polynesian Seafaring and Navigation - Ocean Travel in Anutan Culture and Society*', canoes are still being built on Anuta, but many canoes produced these days are small and lack some of the distinctive Tikopian hull features.

When Tikopia officially adopted the Christian religion, the island owned a 9m 'Sacred Canoe ~ Vaka Tapu'. At this point there was debate that this canoe should be destroyed as it represented the old religion, but fortunately the (great?) Grandfather of Chief Taumako had the clever thought of donating the Sacred Canoe to Bishop Woods of Auckland. This means that now this beautiful canoe still exists and is displayed in the Auckland Imperial Museum in perfect condition since its donation in 1916 (see front cover).





Tikopian Sacred Canoe ~ Vaka Tapu, donated by Ariki Taumako to Bishop Woods of Auckland in 1916. Now in Auckland Imperial Museum, New Zealand. Measured and drawn by Hanneke Boon, James Wharram Designs, June 1995.

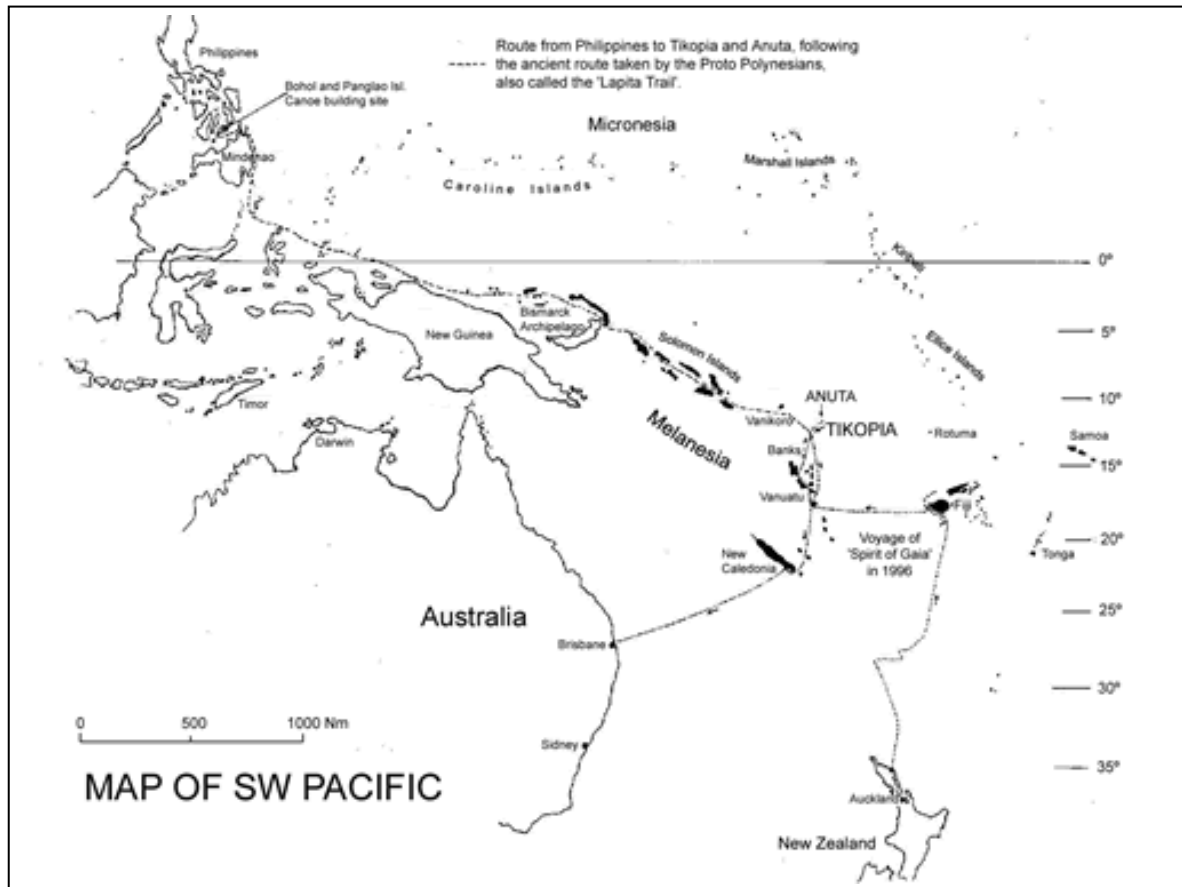
### Extract from the 'Lonely Planet Guide' about Tikopia:

#### *Inter-Island Voyaging*

*In the past, there was frequent trade between Tikopia and the Banks Islands. The ariki kafika has an ancestral claim to a small islet there, called Ravenga. It's just off Vanua Lava, 204 km to Tikopia's south-west. In 1891, a missionary called Coddington reported that as many as 11 large Tikopian trading canoes used to visit Vanua Lava at a time. However, there have been few successful Tikopian voyages to the Banks since WWII, and none since Independence.*

*Anuta is Tikopia's closest neighbour, 150 km distant. The two islands are close enough for the people of both to regard each other as wantoks, each family having a parallel family on the other island to which they belong. Regular canoe visits used to be made to Anuta, with Tikopian canoeists sometimes diverting to desolate Fatutaka for sea-birds' eggs. Another classic trade route was to Vanikolo, where Tikopian mats were traded for Vanikolan arrows. On very rare occasions, voyagers went as far as Rennell, over 1000 km away.*

*The omnipresent ocean permeates every aspect of the islanders' lives. Wild seas and shipwreck seldom deter them. Such a death is called sweet burial. Tikopians do not say left or right - only inland or seawards.*



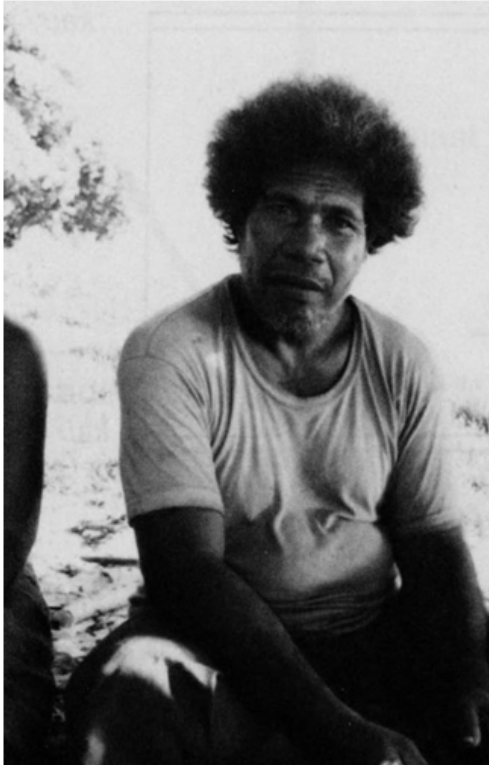
### The Tikopian Canoe rediscovered

In 1995 we were sailing the Pacific on a round-the-world voyage on 'Spirit of Gaia'. Spirit of Gaia is a 63' double canoe designed and built, in plywood/glass/epoxy by ourselves (James Wharram and Hanneke Boon) based on our studies of Pacific craft. She is our interpretation of what a true voyaging canoe would have been like, with only minimal Western adaptations. We have been designing Polynesian style double canoes/catamarans for 50 years.

When we arrived in Auckland in May 1995 we first saw a small Anutan canoe displayed in the Maritime Museum. This little craft intrigued us as it was the first V-ee'd Polynesian hull shape we had actually seen. This being a small paddling canoe the Vee shape was fairly wide and therefore different from the V-ee'd hulls we had been designing for years. However when we visited the Imperial Museum and discovered the 'Sacred Canoe', we were bowled over, as here was a canoe hull that was so similar to the hull shapes we had been designing that it made the hair on our arms stand up. James first drew a V-ee'd hull shape like this in 1957, convinced that this was what a true voyaging double canoe should look like, even though all Western thought at that time was that the Polynesians did not use V-ee'd hulls and their boats could not sail properly to windward. (See *Two Girls Two Catamarans* by James Wharram).

We were given permission to measure and photograph the Sacred Canoe (see front cover). When we drew these lines to scale and superimposed them on the lines of Spirit of Gaia, the similarity was uncanny. What it did prove was that the Tikopian canoe was a very seaworthy hull shape, capable of sailing close to the wind. This we had proven with our sailing of Spirit of Gaia.

The following year (1996) we sailed Spirit of Gaia into Melanesia and from Espirito Santo in Northern Vanuatu we headed for Tikopia. We spent 5 days on the island, met the Chiefs and showed our large voyaging double canoe to Chief Tafua and his family. We also had discussions with Chief Taumako, who's ancestor had given the Sacred Canoe to the Bishop. We studied, measured and photographed all the canoes on the island and we realised that canoe building was no longer practised and the people were losing an affinity with seafaring. This visit made a deep impression on us.



Photos (1973) from Richard Feinberg, Polynesian Seafaring and Navigation, Ocean Travel in Anutan Culture and Society.

Our studies of canoes in the Pacific and later in Indonesia and the Indian Ocean led us to get more and more involved with experimental Marine Archaeology. In 1997, inspired by the many small canoes we had studied in Melanesia, we designed and built a small/simple 16' outrigger canoe built for under £200 from 2 sheets of plywood and tested on her the Polynesian Crabclaw rig and steering paddle. Nearly 600 of these 'Melanesia' designs have now been sold all over the world and little outrigger canoes are now sailing in many remote parts of the world and people are rediscovering their sailing abilities. In 2000 we built a 21' version, which we sailed both as an Outrigger Canoe and a Double Canoe. This possibility to take two outrigger canoe hulls and turn them into a double canoe is something we think was done in many Pacific islands. We believe that the more economical to build (in materials and labour time) outrigger canoes were used for voyages of exploration and adventure, but that when a migration was planned the canoes were turned into double canoes with greater deck area and better stability.

### **A reborn Tikopian double canoe**

In 2003 we were asked by an idealistic American, Glen Tieman, who in the early 80s had built one of our 26' Pahi designs and roamed all round the Pacific on her, to design a very simple Ethnic double canoe of around 35', with just enough room in the hulls for someone to sit, cook and sleep. A sort of stretched out version of his previous boat and even more truly Polynesian. This request led to the designing of the *Child of the Sea ~ Tama Moana*.



When drawing her we 'knew' we had to use the beautiful Tikopian hull shape, this being the only original Polynesian hull shape capable of efficiently sailing to windward, and tried to keep within the Tikopian proportions and design parameters. She turned out at nearly 38' long, with just sitting headroom in the hulls. The only change from the original design is that she is fully decked over the hulls, instead of just the bow and stern areas. This makes the boat a lot safer and dryer and we felt was a concession that could be made. Also she is a double canoe, though one of her hulls can be sailed as an outrigger. As a double canoe she is capable of making long ocean voyages. For full details of the design of *Tama Moana* see the Study plan (available from James Wharram Designs).

The first *Child of the Sea* has now been built and is undergoing sailing trials in the Philippines (see front cover). The second one, being built by Glen Tieman, is nearing completion. A third one has started building in Australia.

### **The project**

Having seen the beauty and sailing qualities of the first sailing *Child of the Sea* we strongly feel that this boat should now be returned to the people who inspired her, i.e. the Tikopians. This boat will make an ideal communication vessel between Tikopia, Anuta, Vanikoro, the Banks and the Solomon Islands, she can even be sailed to Fiji where many young Tikopians go to study. She is driven by sails and paddles (when necessary), requiring no fuel, though a small outboard motor could be fitted for emergencies. The rig is the traditional Tikopian/Polynesian 'Crabclaw' rig that can be hand stitched (from low cost fabric, as done in Indonesia) by the locals. Crossbeams, spars, centre decking and steering paddles can be made of locally grown timber.

The hulls are not made the traditional way out of a dugout log. Such logs are now very scarce and mostly not large enough to make a seagoing canoe. We therefore designed the hulls to be built out of strip planking over a plywood framework of backbone and bulkheads, which accurately determines the shape of the hull. All the wood is glued and sealed with epoxy resin and glass cloth, this makes the hulls very durable so that with some minor maintenance and painting they can last 25 years plus. Strip planking gives a result and shape closest to a dugout hull and we can replicate the subtle carving of the hull, bow and stern details accurately.

### **The building of the Canoe for Tikopia**

Building this boat in Tikopia or Anuta would not be practical, as all materials would have to be imported and the people at present lack skills in building with these type of modern materials. We therefore propose that the hulls be built by our professional builder in the Southern Philippines (near Bohol) and his team of Filipino workers, who have already built the first *Child of the Sea* sailing. We would like to have a few selected Tikopians/Anutans participate in the building process, alongside the trained Filipino builders, if they can get permission from the Solomon Islands government to spend time in the Philippines. We would suggest some young enthusiasts, male and female, as well as one or two older men with knowledge of past canoe building or wood working/carving skills. They could bring some local timber with them to make the steering paddles, which they should carve themselves to give them Mana. They would also be responsible for sewing the sails and rigging her, with our help if necessary.

### **Participation by all the people on the islands of Tikopia and Anuta**

It would be good if the people on the islands, particularly the schoolchildren, the new generation that will be sailing the boat, can be involved in the project. At its most basic there could be a regular radio broadcast from the Philippines. A satellite link with a computer on the island would be even more interesting, though we mustn't corrupt the sustainability of Tikopian society by bringing in high tech 21st Century equipment and all the paraphernalia

needed to run it. Until now the most high tech piece of equipment on Tikopia is the battery powered transistor radio.

### **The voyage to Tikopia**

Once the canoe is finished and had sailing trials she is ready to make the voyage to Tikopia. The route of this voyage is the same as the Polynesian ancestors made 3000 years ago and follows the 'Lapita Trail'. This sailing voyage in its own right is of enormous interest to experimental archaeology.

### **Arrival on the island and future care and use of the canoe**

The islanders should prepare safe mooring for the boat. A permanent strong mooring block in the existing anchorage would be a good idea, as anchoring there in 20m depth is quite hazardous in the changing weather conditions and strong wind gusts that whip round the island, as we ourselves experienced during our stay there. A sheltered place on the land (cave?) should also be prepared into which the boat can be carried during the cyclone season. The Anutans, according to Feinberg, had an elaborate way of protecting their precious canoe hulls when kept ashore, by parcelling them in several layers of palm leaves, so the wood would not dry out and split. The new boat should be similarly cared for, so she can last for as long as possible. All the loose parts, like crossbeams, centre decking, steering paddles, spars and sails, should also be stored safely, each piece of equipment can have its own family caring for it, a tradition that was practised on many Polynesian islands in the past. Over time these loose items can be replaced by new ones made on the island from locally grown trees.

Sailing this canoe will also require the people to relearn navigation and sailing skills. We hope there are still existing traditions that can be tapped into for this (they were still there on Anuta in 1972/3 according to Feinberg), otherwise new/old ways can be taught by either ourselves and/or by one of the rare remaining Pacific navigators.

### **Funding & Publicity**

The project will be launched on our web site [www.wharram.com](http://www.wharram.com), which receives nearly a million hits a month and is visited by all the type of sailors and enthusiasts that would like to see such a project happen. We think we can raise the required money (approx. \$US 48.000 - £27,000 for one boat including sails, plus finance to bring several Tikopians to the Philippines) by appealing to these people, as well as through press releases to yacht magazines, Marine Archaeological Societies and private appeals to selected interested persons. The web site will maintain a continuous coverage of the progress of building and sailing and of how much money has been raised and is still needed. If a lot of money is donated, a second boat could be a possibility, which would mean that Anuta could also have its own canoe. The project should of course apply for some form of charitable status to avoid having to pay taxes and so all the money can be used to cover the expenses of the project.

### **Documenting the project**

A sympathetic small film team/camera person should cover the building and sailing of the canoe, footage that can be made into a TV documentary. We feel this film making must at no time dictate the project or intrude into its natural progress.

### **Who is involved?**

James Wharram Designs, as the designers of the canoe are the initiators of the project, but a number of people with connections to and an interest in the welfare of Tikopia are also keen to be involved. The first of these is Klaus Hympendahl, who has visited and lived on the island of Tikopia on a number of occasions. His first visit was on a round-the-world sailing voyage in 1989, when he spent several weeks anchored off Tikopia and got to know the

island's people and customs. He was responsible for setting up an appeal for donations after the January 2003 cyclone 'Zoe' devastated the islands of Tikopia and Anuta. These donations have paid for a cyclone proof medical centre on Tikopia. Two years after this cyclone, the islands are still in the process of recovering from its disastrous destruction. The prospect of having their own seagoing canoe will hopefully give them renewed energy to get their island functioning self sufficiently again. Without such a boost the island could slip into becoming a society permanently dependent on outside help. When the idea of building this canoe for the Island of Tikopia was recently presented to the Chiefs, they responded with great enthusiasm, so we must make the project a reality.

### **Full Circle in 50 years**

50 years ago James Wharram, with the help of two German girls (Jutta Shultze-Rohnhof and Ruth Merseburger, who is still part of the James Wharram Designs team), sailed across the Atlantic in a tiny 23'6" double canoe he designed and built himself after long studies into the records of boats of the Pacific in the libraries and museums of Britain. No scholars in the Western world at this time believed that the Polynesians had boats capable of directed ocean voyages. James believed otherwise and set out to prove it by doing it himself. He followed this first Atlantic crossing by building a 40', V-ee'd hull double canoe in Trinidad in 1957/8 and sailing her across the North Atlantic in 1959 from New York to Ireland, a voyage that had never been done on a 'catamaran' before. In the next 50 years James, over the last 30 years assisted by his co-designer Hanneke Boon, has worked, by designing Polynesian style catamarans for people to build themselves, to bring the concept of seaworthy, ocean going double canoes to the Western yachting public, meeting a lot of resistance from the British yachting establishment on the way, particularly in the early years, when people still could not accept that a 'native' boat could be as good or better a sailing ship than a Western type yacht, particularly when such a craft was self-built by an 'amateur'. After 50 years they are now an accepted feature in the world of yachting/ocean sailing and can be seen in most harbours of the world.



Above right: James, Ruth and Jutta aboard the 23'6" Tangaroa in Falmouth in 1955, waiting to set off across the Bay of Biscay

Above left: 40' Rongo, built in Trinidad in 1958, first catamaran to cross the North Atlantic.



63' Spirit of Gaia, moored in Auckland Maritime Museum in 1996, during her round-the-world voyage.

The building and sailing of a voyaging double canoe for Tikopia and to reintroduce seafaring to the islands of Tikopia and Anuta would be the best possible way to celebrate the 50th anniversary of James' first Atlantic crossing by double canoe and his lifelong devotion to the Polynesian double canoe concept.

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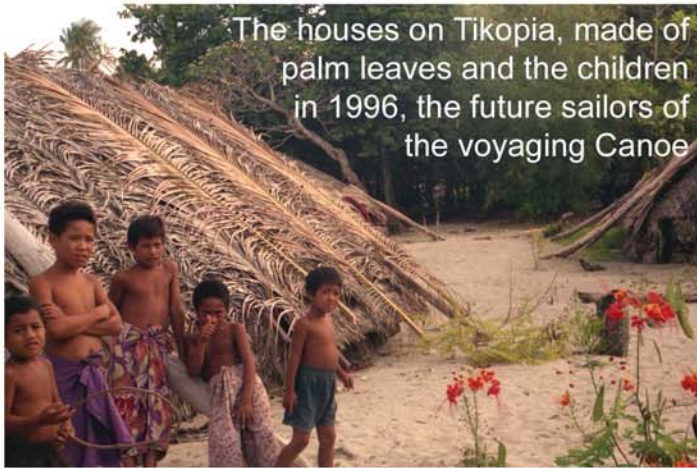
### Photos:

*pages 4 and 5* Illustrations from Haddon & Hornell, *Canoes of Oceania*

*page 8* (1973) from Richard Feinberg, *Polynesian Seafaring and Navigation, Ocean travel in Anutan Culture and Society*

*pages 11 and 12* James, Ruth and Jutta aboard 23'6" Tangaroa in Falmouth 1955, waiting to set off across the Bay of Biscay 40' Rongo, built in Trinidad in 1958, the first catamaran to cross the North Atlantic. 63' Spirit of Gaia, moored in the Auckland Maritime Museum in 1996, during her round the world voyage.





The houses on Tikopia, made of palm leaves and the children in 1996, the future sailors of the voyaging Canoe



James Wharram and Hanneke Boon in Tikopian Tapa dress presented by the Chief



Ariki Taumako whose ancestor donated the sacred canoe to Auckland Museum



Old Ariki Tafua aboard 'Spirit of Gaia' in 1996 and his son Edward, who now carries the title Ariki Tafua since his father's death



Klaus Hympehdahl paddling a small Tikopia canoe