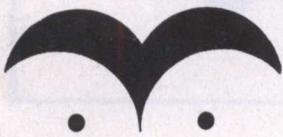
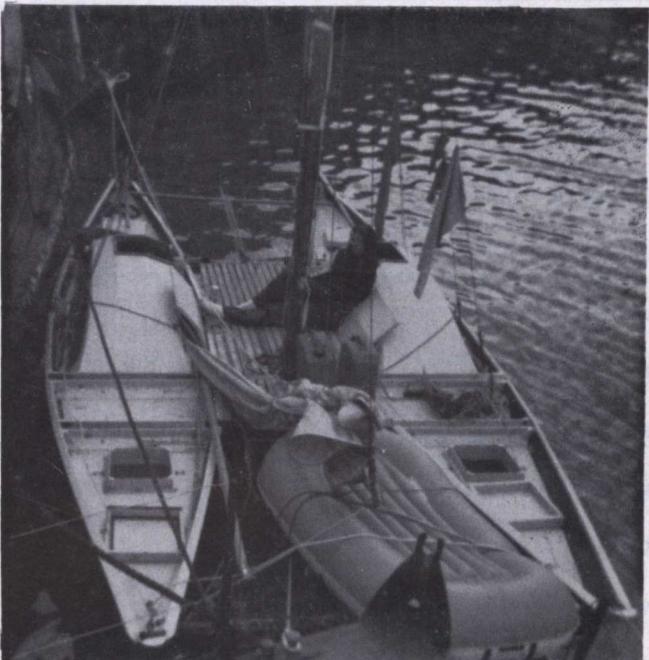
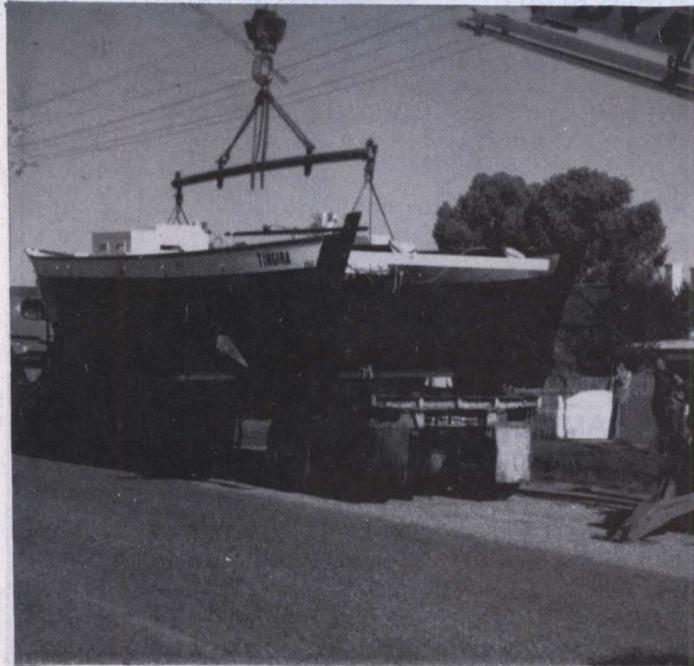


THE

SAILORMAN

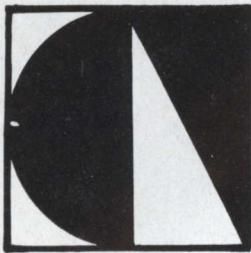


THE POLYCHROME DATAVAN ASSOCIATION

SAILORMAN

A magazine for sailors and their families

DEC 1977



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Gone with the wind

Over which Horizon did you sail

COVER PHOTO:

top left

Tangaroa TINGIRA heading for the water, from Ian Bruce, Sale, Victoria, Australia

top right

Hina HUAHEINE at speed on Lake Ontario, from Roland Huebsch, Toronto, Canada

lower left

Hinemoa SILVERHEELS on the Clyde, Scotland, from Sam Nelson, Troon, Scotland
(featured in this issue)

lower right

Hinemoa SURF SONG at Ramsgate, Kent returning from Holland, from Richard Bumpus,
Teynham, Kent. (featured in this issue)

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THE SAILORMAN



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The Boat Show is to be held from 5th to 15th January 1978. James Wharram Associates will have the same Stand again.

A word in your ear

The PCA AGM is to be held at Richmond Community Centre, 4 Sheen Road, Richmond, Surrey on January 7th. As before the premises will be available from about 2.00 p.m. onwards. The meeting itself will start at 6.00 p.m. Bar and buffet facilities will be provided.

There are one or two books concerned with multihull seamanship and heavy weather sailing, which I know are of interest to Polycat sailors who sail offshore, and those writings have been the basis for planning their storm tactics. Polynesian catamarans are no newcomers to bad weather. Gradually we are collecting some very useful information on the handling of Polycats specifically in bad weather.

We started in no small way with TWO RABBITS (Hinemoa) in the Atlantic between Bermuda and the USA and KM (Tangaroa, Sailorman June 1976) in the Tasman. In this issue we continued with RAKA in the Atlantic on her way back from the Azores race to the UK, TANGAROA (Tangaroa Mk. IV, photofeature of front cover Sailorman Dec. 1976) en route from the Canaries to the West Indies, and SILVERHEELS (Hinemoa) in the Irish Sea. There are other examples, too.

This is all good stuff because it deals with boats of similar design but of differing size, all of which is very relevant to anyone who sails a Polycat offshore or ocean. Any other hardened shell backs with valuable information from voyaging Polycats are invited to air their views.

The columns of the Sailorman are slowly amassing information on sprit rigs for small boats. It is refreshing to see a few of these old rigs sailing about very successfully and opening the eyes of a few bermudan rigged sailors around the coast.

Good sailing in '78,

Richard Bumpus

The journal of

THE POLYNESIAN CATAMARAN ASSOCIATION





Jim's Column

This 'Jim's Column' is being written in the cottage of our new Irish Base/Design Centre. We now have one third of a mile of river frontage on the lovely River Barr Barrow, (Waterford estuary), an old Viking dominated river. We can sail up and down; welcome the boats of our friends and builders, (as long as Jim gets some work done! — Maggie), without worrying about National Parks Planning regulations and Planning Officers as we did in Sandy Haven, Wales.

It has been a hard year, transporting the office equipment and workshop tools from Wales by Container and/or on Tehini's deck to Ireland; making the cottage, which has not been lived in for 30 years, habitable; building the 34ft. G.R.P. Foam Sandwich Areoi, (G.R.P. foam sandwich construction *done correctly* is hard work).

Life has not been helped by the (ex-) North American agents holding on to a year's income, selling their business and disappearing with the "loot".

Indeed, our problems have been those of our builders; moving from one lifestyle to another, worrying over money, feeling that a great amount of work has *just not been done*, worrying over boat completion dates.

The future does seem hopeful; the Irish are backing us all the way, no planning problems, assistance to build offices and workshops, and a new office manager!!

For the last two years, Maggie has been chewing the paperwork in frustration, for officework has prevented her sailing. James Wharram Associates are primarily sailing people. Unless we can sail a considerable amount of time a year, we feel as if our "life energy" is ebbing away. The new office manager, Patricia Warren, (no relation), was carefully allowed to get seasick on an Ireland-Wales Tehini sailing trip, so she will not be so eager to rush off voyaging. With her background of running an engineering draughting office, we should be able to give better service to our builders and friends. She will be at the London Boat Show to meet builders.

Ruth Wharram has kept up her sailing "life energy". Last year she sailed the Tasman Sea, this year she was co-navigator with Tom Jones on Geroge Payne's "Raka", on the MOCRA Azores Race. "Raka" came in 4th on this 1300 mile race; 3 days, 15 hours, 33 minutes after the first boat home, the 53ft racing trimaran, "3 Legs of Mann". I think that this was a very creditable performance. "Raka" is 7 years old, with 7-year old sails, (the

mainsail split on the way). George had her loaded up for cruising complete with a comfortable dinghy for harbour use. The other multihull to beat "Raka" was "Day Tripper", (by 2 days, 7 hours, 3 minutes), which has the same waterline dimensions, but is a completely stripped-out racing trimaran. Had "Raka" been fitted out with new sails, and the excess weight cut down, she could have done even better. Had there been a rating rule based on stability and cabin space she could have won!

Racing is a subject inevitably being discussed in Polynesian Catamaran circles. It must not become a bore to the majority of cruising sailors. Still, no cruising multi-hull sailor, and no Polynesian Catamaran sailor can shut his/her mind to racing for the following reasons.

The basic design concepts of the Polynesian Cata- maran design; open decks, accommodation layout, etc., are now being copied by other designers all over the world for racing multihull designs, but the boats are being built lighter, (thus weaker), causing structural breakup, and sail areas are doubled to achieve more speed.

Some of the basic design concepts first put forward in Polynesian Catamarans have been adopted by the designers of the modern double outrigger racing tri- maran. They can capsize by wave action alone, (see my article, "The Stable Multihull", published in September 2nd issue of the English magazine, "Yachts and Yachting", and to be published in the American magazine "Cruising World").

The widely publicised capsizes of the racing few are reflecting badly on all multihulls.

Cruising multihullers, wishing to protect their investment of money and labour in their boats, will have to be the first to identify and isolate these dangerous types to the yachting public, rather than leave it to monohull sailors, or even worse, to those racing multihull sailors who will imply that these characteristics are common to all multihulls.

If all cruising multihullers will stand up together and knock at the arrogance and shortsightedness of those who think they are superior to all other sailors (including monohullers), because they sail an easily capsizable multihull a few knots faster, "capsize" will cease to be an automatic remark when talking to non-multihull sailors.

★ ★ ★ ★ ★ ★

Association News

PCA

We had a letter from Sam Nelson of 59 Beach Road, Barassie, Troon on the Firth of Clyde to say that he had sold his Hinemoa SILVERHEELS and is now building a Tangaroa Mk. IV to be called EMANCIPATOR. If all goes well Sam will be entering the 1980 OSTAR. He has a shed with everything laid on including barred windows to keep him in during the latter stages as he says! If all is well launching of the T4 could be next June. Good luck Sam. More about SILVERHEELS later.

In the June 1977 Sailorman, Ted Berry wrote about his Ariki and mentioned, "In Whitanga I saw a splendid Narai Mk. IV being built. Her owner Keith Morcom, had raised the decks so that the beams were flush with the decks and slats. This is a vast improvement and to be recommended. Ruth Wharram writes to say that this improvement is in fact the improvement of the Narai and Tangaroa Mk. IV designs, and thus already on the plans of these designs.

New Zealand members — from John McCartney, area rep. via Ruth, news that Ron Malatios of Auckland should have his Ariki sailing by Christmas; Ted Berry is teaching in Southland but hopes to be back to Auckland to prepare his Ariki for an overseas trip in late 1978; George Freeguard has launched his Narai at Auckland and should be sailing by now, while John McCartney also from Auckland has been sailing for the last year and is preparing her for a big trip, which he hopes will include a visit to Ireland.

Paul Thompson of East 55th St., Vancouver, BC, Canada, writes about his Oro named AOTEA, which was launched in August 1976 after three years work. Earlier this year OATEA underwent engine trials along with rigging and interior completion. Plans included a cruise along the Pacific Northwest this last summer. AOTEA features six cabins with standing headroom, an inboard 10 hp diesel using a CHEETAH drive system (please write and tell us about this Paul!). The cat. is cutter rigged, with wheel and tiller steering and she is registered as a Canadian vessel.

Mr. K. L. Stanley working on contract in Indonesia for B.I.C.C. is missing his Tangaroa (which is on loan to his UK boss) so much that he is building a Hina in Jakarta! You can't stop these P.C.A. people no matter where you send them!

Ian Bruce of Sale, Victoria, Australia sent us 2 great photographs of his newly built Tangaroa — many thanks. He also enclosed a newspaper cutting from the Gippsland Times showing his family with TINGIRA. Good luck and good cruising.

From Gerhard Bobretzky of Vienna, Austria we hear that Polycats are increasing considerably. There are now 2 Surfcats, 1 Maui, 2 Hinias, 5 Hinemoas, 2 Tane, 3 Taneui's, 1 Tangaroa Mk. I, 1 Tangaroa Mk. IV, 2 Narai Mk. IV, and 3 Oro's. Gerhard mentions that he and his wife had 3 weeks leisurely cruising from Zadar to Dubrovnik (270 miles). In Germany Gerhard tells us that there are 6 Surfcats, 1 Maui, 1 Hina, 2 Hinemoas, 1 Tanenui, 6 Tangaroas, 2 Narai Mk. IV, 1 Ariki and 3 Tehinis.

The P.C.A. wish to extend sincere sympathy to relations and friends of Barry Williams of the Teeside area in the N.E. area, who died so tragically recently.

Thanks to Terry Johnson of 37 Calle 5, Santa Isidra II, Fajardo, Puerto Rico for the 2 photographs of his Tangaroa, which has still to be launched and rigged.

SAIL TRAINING FACILITY

Following the success of 1977 as an experimental year, the S.T.F. intends to offer the following services in 1978:

1. *Training Courses:* Details for these may be
 - a) found in 1977 March A.G.M. Mini Sailorman
 - b) obtained at the 1978 Boat Show at the James Wharram Associates Stand

c) obtained by writing to John Corke, 140 Somerset Road, Southall, Middlesex (send SAE), telephone 01-578-1520.

To ensure a Course in 1978 please apply as soon as possible, to give us time to find you the best combination of instructor, boat, venue, time. BOOK NOW or at the BOAT SHOW!

2. *Work-up Weekends* — These are held at least twice a year, and by arrangement locally, and are designed as a hard working two days for those *with previous multihull experience* to meet *as equals* and hammer out by discussion and practice some of the finer points of multihull seamanship, with a view both to publication of any findings in the SAILORMAN and use of experience gained in instruction on the Training Courses. Dates and venues for these will be fixed at the A.G.M. and published in the 1978 A.G.M. Newsletter. Those wishing to attend are asked to contact Michael Briggs, Bosmere House, Nile Street, Emsworth, Hants, in good time sending S.A.E. (Tel. Emsworth 3440).

Finally, will anyone interested in the S.T.F. who intends to come to the A.G.M. be kind enough to arrive *one hour early*, in time for an informal discussion and planning session of the S.T.F.'s activities in 1978.

Subscriptions for 1978 are due on 1st April 1978 and should be sent to the *Secretary*, address as given at the front of the magazine and made out to *POLYNESIAN CATAMARAN ASSOCIATION*. Subscription rates are as follows:

Basic Subscription	£3.00
Entry fee (on joining)	.50
Extra re overseas postage (non-European)	£1.00

Non-UK Cheques to include bank charges and extra postage where appropriate are as follows:

US \$ dollars, Canada 9.00 dollars, Dutch G.15, Germany DM.15, France F.30. For other countries please add 50p to the sterling equivalent subscription (and £1 overseas postage) to cover the exchange fees if paying by non-sterling cheque (or Eurocheque).

REPORT ON THE PLYMOUTH MEETING DURING AUGUST BANK HOLIDAY — Organised by Steve Turner

About 50 members and visitors attended the meeting over the weekend, and although there were only 3 boats most people seem to have got some sailing in with two local Tangaroa owners Peter Greenwood and 'Dolphin' and Ted Chapman in 'Fatty Patty' while John and Margaret Warrick of Teignmouth, with their black and yellow Tane, were best amateur built boat and also travelled furthest to the meeting. Although support from local members was disappointing, we hope to repeat the event in 1978.

REPORT ON THE QUEENBOROUGH MEETING DURING WHITSUN — Organised by Ted Johnson

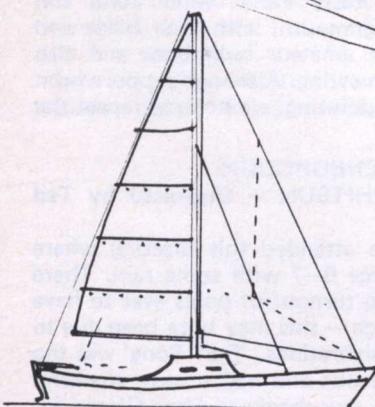
About 30 to 40 people attended this meeting where there were winds of force 5–7 with some rain. There was a most disappointing turnout of boats ever to have occurred at Queenborough — this may have been due to clashing with Jubilee Celebrations. 'Surf Song' was the only boat taking people out and had a busy weekend making many short trips. Our thanks to Chris Giecco for organising the barbecue and to Ted Johnson for organising the bar. We were grateful for the use of the Church Hall again. Ted hopes that next year the meeting will be far better supported with a number of boats attending.

The Sailorman



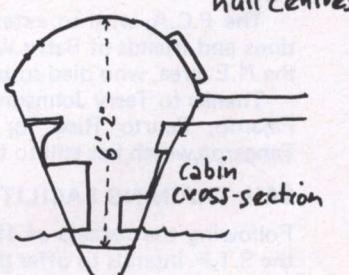
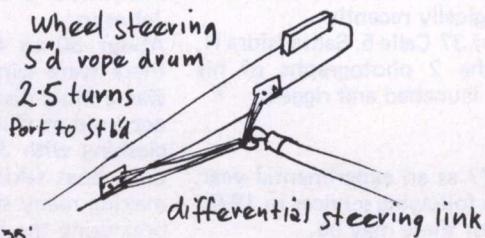
The Boatyard

from Caryl Plant & Neville Lloyd,
3 Drysdale Road, Warrendale,
Melbourne, Australia 3113.



The rig: Main 217" Mast 36'
Jib 22.1" Small yankee 112"
Stays'l 70" Reacher 500"

LOA 35'
BOA 18' 6"
Disp 5,000 lb plus



12'-6" between
hull centres.



The Boatyard

BUILDING A GLASS FIBRE NARAI

By R.K. Lucas, 4 Little Warton Road,
Nr. Tamworth, Staffs.

I enclose notes for the construction of a 'poly-cat' which can be built in an unusual manner. The basic idea is borrowed from a P.B.O. article of many months ago and upon thinking about it, could be useful to any would-be builder.

Approximately two years ago I started constructing a matching hull for a wrecked 'NARAI' which had seen better days. Measurements were taken from the good hull and a rudimentary sketch built up with accompanying notes on construction. The problem then was where to build so I purchased a house with a suitable side access to the medium sized rear garden.

Work was commenced last Summer during the heat wave and one hull was stringered up using best pirana pine and brass screws, so far so good. Looking at the apparently good hull I found extensive rot under the polyester sheathing caused by delamination from the hull plywood. At this point work came to a full stop partly due to a shortage of cash and deciding what to cover my hull with.

Meanwhile, I obtained as much information as possible from other sources, e.g. people building boats and glass fibre suppliers plus the local boat yard. I came to the conclusion that a pure amateur could not guarantee that the sheathing would not part from the hull.

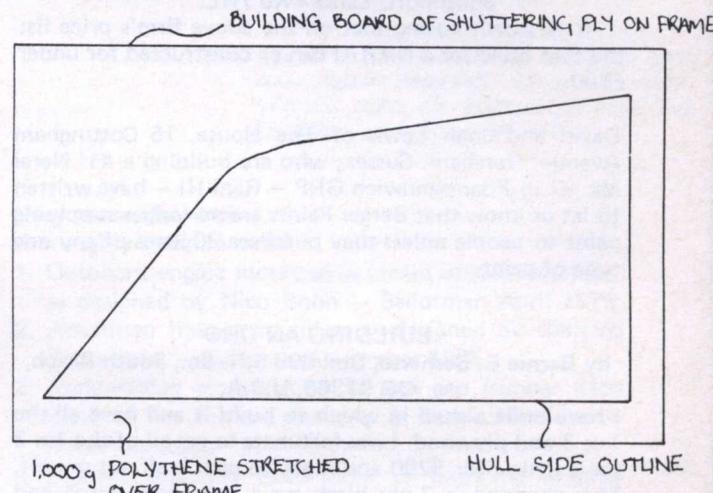
Reading Practical Boat owner at this particular time I noticed an article on how to build a fibre-glass boat without a mould, the author, however, was only building a 14 footer. The idea sounded interesting, so after much thought I came to the decision to try it out.

The basic programme for building is this: Form a flat surface of shutting plywood on a staunch framework, ensure that all cracks are filled and a smooth surface is obtained. The size of surface depends upon the size of 'cat' in my case 20 feet x 9 feet. Next refer back to the completed hull frame and take measurements for the sides, sketch out the side being done on the plywood surface, 9 in my case, it being done in four parts.) Stretch 1000g. polythene sheeting over the surface and continue to fibre-glass. Gel coat first then laminations, to required thickness. When this side has cured it can be removed and another side made in the same fashion.

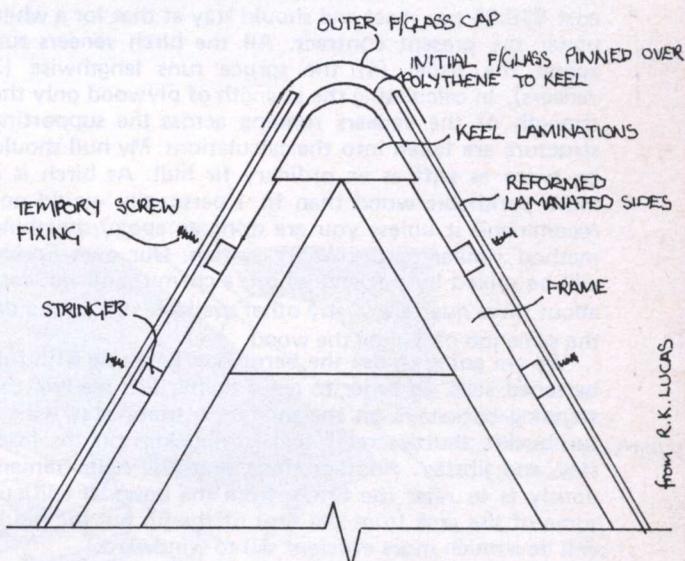
The completed sides are then offered up to the boat to check mating edges. At this point construction can begin. The keel, stem and stern are covered with polythene and 2 layers of cloth (woven roving) laid over it and pinned. The sides are then screwed in position. At the point where the two halves of a side join, bolt in position, on the outside, a wood plate to ensure a constant curve with the rest of the hull. Resin is then applied to the keel, stem and stern fibre-glass in order to bond the hull sides together. When this has cured lay up another three laminations capping the sides to a depth of 3". Apply, lay-up resin and cloth to the joints between the two 'side' halves and leave to set and cure. It will now be necessary to paint the gel coat on the exposed fibre-glass lamination, to ensure a smooth regular surface over the whole keel, stern, stem and hull.

After curing remove the screws securing the sides to the wooden 'plug' and with the aid of many people gently lift off the completed fibre glass hull. In its present state the hull will need extensive propping.

Looking in admiration at your handywork, climb inside with resin, a cloth and completely cover the inside with another lamination of fibre glass. The thickness of hull will depend upon the size plywood originally intended.



Plan View of Building Board



Section thro' Keel Construction

At this point, having decided to scrap the wreck, another hull can be prepared using the same requisites as before. Upon completion you should be left with two gleaming hulls in your back garden, and be ready to start work in earnest.

Considerations at this point are strengthening of the hulls, beam mountings and decks, any ideas please.

See drawing illustrating points and a note for converting plywood sizes to the equivalent thickness of fibre-glass (NOTE: use chopped strand mat for sides as this is more rigid than woven roving, although not as strong).



Equivalent tensile strength:

Marine ply 1" thick = Fibre glass laminate $\frac{1}{2}$ " thick.

Marine ply 3/8" thick = Fibre-glass laminate $\frac{3}{16}$ " thick.

Useful reference: Information brochure from:

GLASPLIES,
2 Crowland Street,
Southport, Lancs PR9 7RL.

It is worth noting that on the above firm's price list the two hulls for a NARAI can be constructed for under £500.

David and Joan Lewis of The House, 15 Cottingham Avenue, Horsham, Sussex, who are building a 41' Narai Mk VI in Foamsandwich GRP — Rani III — have written to let us know that Berger Paints are no longer supplying paint to people unless they purchase 30 litres of any one type of paint.

BUILDING AN ORO

by Bernie E. Beshere, Box 698 S.R. So., South Beach,
OR 97366, U.S.A.

I have built a shed in which to build it and have all the 1 x 3 and plywood. I was fortunate to get all of the 1 x 3 for a little over \$200 and I got to pick it all out myself. The plywood is 7-ply birch on a composite birch and spruce core. Source: Plywood and Door Co. 1430 E, 130th St. Lake Calumet Harbour, Chicago, Illinois. It cost \$18.05 per sheet and should stay at that for a while under the present contract. All the birch veneers run across the panel (4) the spruce runs lengthwise (3 veneers). In calculating the strength of plywood only the strength of the veneers running across the supporting structure are taken into the calculations. My hull should be twice as stiff as an ordinary fir hull. As birch is a more perishable wood than fir I personally would not recommend it unless you are using an epoxy sheathing method similar to the WEST system. Our own Epoxy will be mixed by a friend who is a chemist and will cost about three quarters of any other available epoxy and do the same job of sealing the wood.

We are going to use the bermudan ketch rig with full battened sails. In order to get a tighter luff we will use standing backstays on the mizzen, a triatic stay with a turnbuckle (bottlescrew), and turnbuckles on the forestay and jibstay. Another thing that will help tremendously is to raise the bridle from the bows. It will cut some of the area from the foot of the jib but the result will be a much more efficient sail to windward.

Our auxiliary power will be Watermota sailing reversible propellers driven by 7 h.p. hydraulic motors. To power the hydraulic pump we are looking for a good used 15-18 h.p. air-cooled diesel. If we can't find one by launching we will use any inexpensive air-cooled gasoline engine we can find until a good diesel comes our way.

We have written to The Design Office asking permission to raise the deck level about 9 inches in front of bulkhead #1 and aft of bulkhead #4. This would give more storage space, more buoyancy, and keep the overhead in the bunk sections out of the water in case of a capsize.

Our ship will be documented as a trading vessel and it will be used to provide a living for the ones it carries instead of the other way around. Our main stock in trade will be high profit, low weight cultural artifacts

but I am prepared to go back to commercial fishing or carpentry if all else fails.

Our ship will also be the home for myself, its financier, my wife, its motivator and our three children, its crew. I fully realize how lucky I am to have the whole hearted support of all four of them. Without their constant enthusiasm for the last three years of scrimping and saving I would still be just smoking my pipe and dreaming.

May a gentle force 6 breeze keep you moving in the right direction.

AUXILIARY GENERATORS

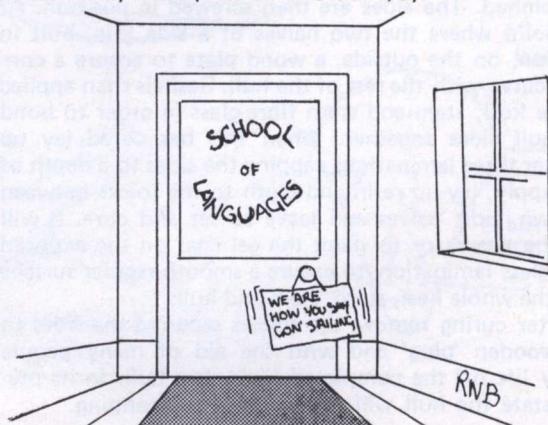
by Rick Holland, Canada

I have been looking into generators for providing our own electricity on board our Tangaroa "Roving Seagull". We have a caravan at a campsite where the electricity is switched off in the winter so this puts us in the same position as a boat. Hence we decided to make our own. We bought a Honda generator model E300 which puts out 300W and runs our lights and a TV set and also a fridge at the same time. The E300 weighs 40lbs (18kg) and runs for 4 hours on $\frac{1}{2}$ gallon (2 litres) of gas. We ran it every weekend last winter and it proved very satisfactory. One pull usually starts it working very easily and it has been a very good investment. Two gills (1 gallon) for 80 cents in Canada is usually enough to work the generator from dusk until it is time for bed. As well as being able to use power tools, dead 12V batteries for starting your boat engine can also be charged. The Honda generator can be put in a class of essential extras to make sailing more comfortable. I don't know what marina's charge in England, but in Canada and USA it is very expensive. The polycat concept of freedom is to get away from these things — this generator certainly makes you independent. Worth thinking about.

Arthur Johns of Rochester is building a Hinemoa called SIMBAMYME and has been using a product for sealing and bonding called G4. Practical Boat Owner has said the following about G4:

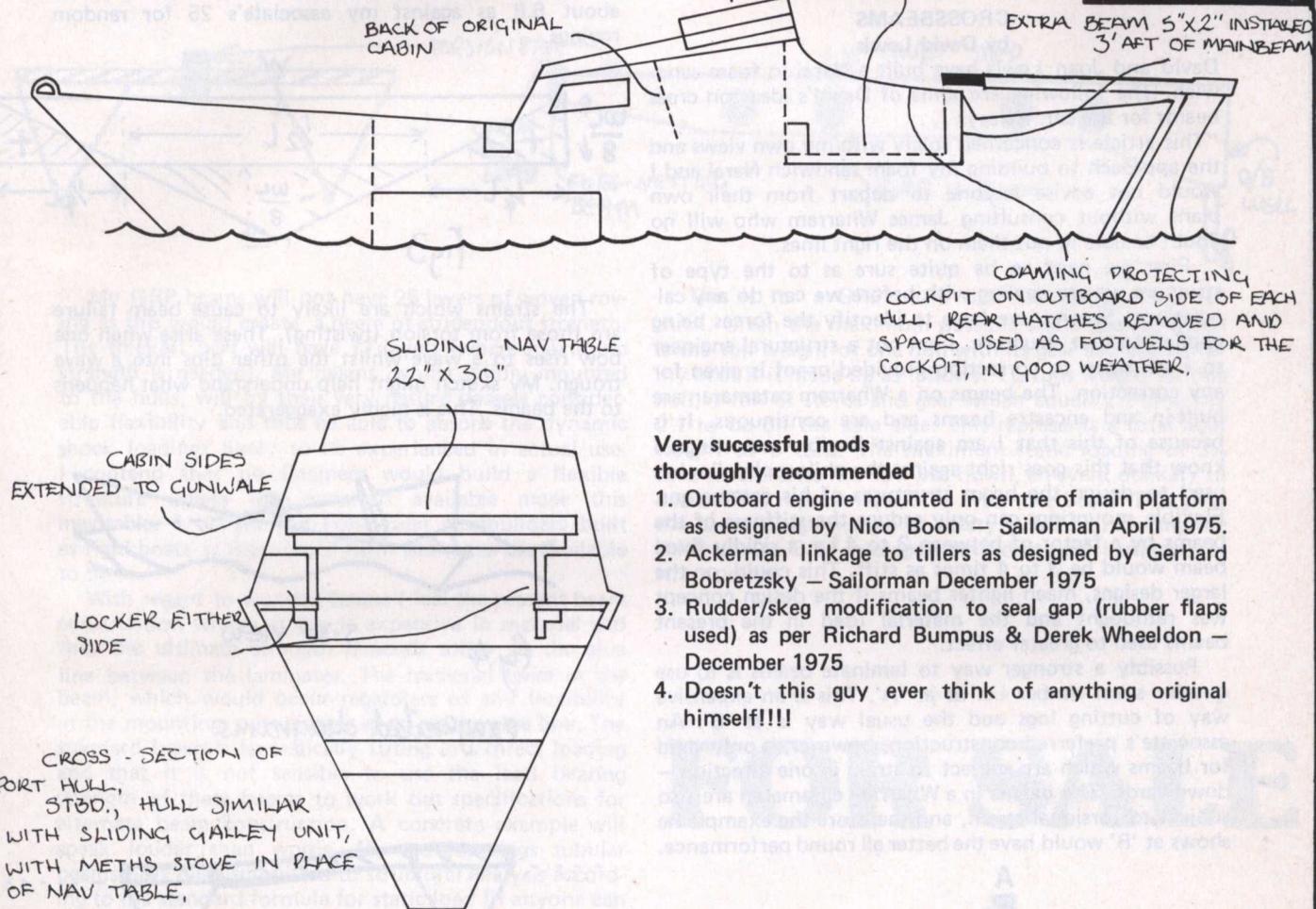
"G4 is a one component plastics resin that is claimed to produce a very strong bond between resinglass and wood thus making it suitable for use when skinning wooden boat hulls. The makers, Bondaglass-Voss, say that G4 is resistant even to boiling water and is stronger than the wood itself. No hardener needs to be added to the G4 since it is activated by the moisture in the air. It is a thin liquid, slightly brownish in colour and may be either brushed, applied by roller or spray gun. It can be used for protecting metal against corrosion, for varnishing wood, and can also be applied to decks with a little dry sand or cork grit to make a non-slip surface.

G4 comes in 1, 1½, 5 and 25kg sizes. The smallest size costs £2.78 ex VAT and the 5kg size, £11.12. Availability is general (it's called G4 Marine in chandlers) but if you would like further technical details contact Bondaglass-Voss at 158-164 Ravenscroft Road, Beckenham, Kent (Tel: 01-778 0071/3)."



The Sailorman

MODIFICATIONS TO HINEMOA "SILVERHEELS"
 Sam Nelson sailed his Hinemoa Silverheels from the Clyde to Plymouth and back singlehanded in the summer of '76 to see the start of the OSTAR. These are some of his modifications to Silverheels.

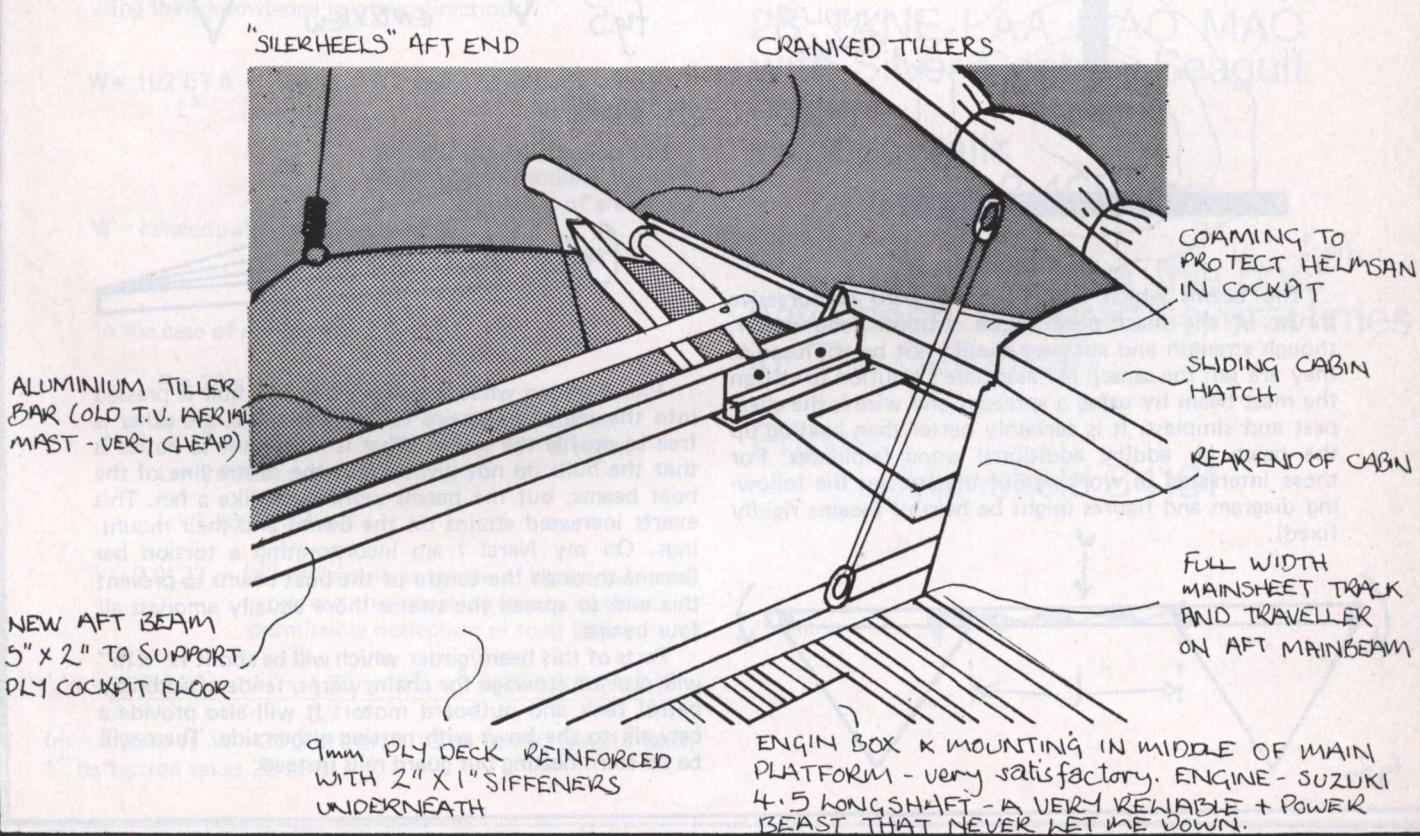


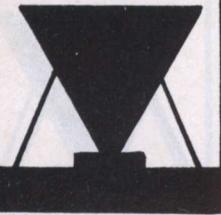
COAMING PROTECTING COCKPIT ON OUTBOARD SIDE OF EACH HULL, REAR HATCHES REMOVED AND SPACES USED AS FOOTWELLS FOR THE COCKPIT, IN GOOD WEATHER.

Very successful mods

thoroughly recommended

1. Outboard engine mounted in centre of main platform as designed by Nico Boon — Sailorman April 1975.
2. Ackerman linkage to tillers as designed by Gerhard Bobretzsky — Sailorman December 1975
3. Rudder/skeg modification to seal gap (rubber flaps used) as per Richard Bumpus & Derek Wheeldon — December 1975
4. Doesn't this guy ever think of anything original himself!!!!





CROSSBEAMS by David Lewis

David and Joan Lewis have built a Narai in foam sandwich. The following are some of David's ideas on cross beams for the cat. He says . . .

"This article is concerned solely with my own views and the approach to building my foam sandwich Narai and I would not advise anyone to depart from their own plans without consulting James Wharram who will no doubt be able to put them on the right lines."

First we need to be quite sure as to the type of structure we are dealing with before we can do any calculations. Second, we have to identify the forces being applied to that structure. I am not a structural engineer so I am open to correction provided proof is given for any correction. The beams on a Wharram catamaran are built-in and encastre beams and are continuous. It is because of this that I am against flexible mountings. I know that this goes right against the philosophy Jim has used to design the beam structures of his catamarans. Flexible mountings can only reduce the stiffness of the beams by a factor of between 3 to 4 i.e. a rigidly fixed beam would be 3 to 4 times as stiff. This could, on the larger designs, mean lighter beams if the design concept was rethought and the material used in the present beams used to greater effect.

Possibly a stronger way to laminate beams is to use quarter sawn timber i.e. as at 'A'. This is an expensive way of cutting logs and the usual way is at 'B'. An associate's preferred construction, however, is only valid for beams which are subject to strain in one direction — downwards. The beams in a Wharram catamaran are also subject to torsional strain, and therefore the example he shows at 'B' would have the better all round performance.

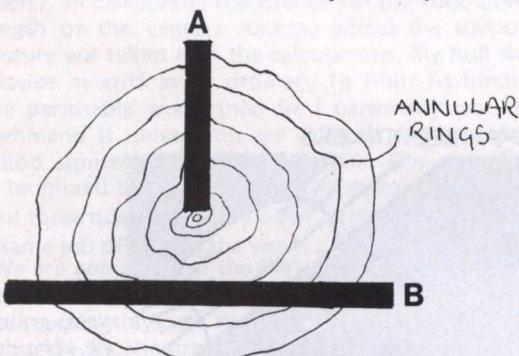


fig 1.

The beams which take the downward compressive thrust of the mast need to be stronger (and stiffer, though strength and stiffness should not be confused as they are not the same). My associate's solution to stiffen the mast beam by using a spreader and wire is the cheapest and simplest. It is certainly better than beefing up the beam by adding additional wood laminates. For those interested in working out the stresses the following diagram and figures might be helpful (beams rigidly fixed).

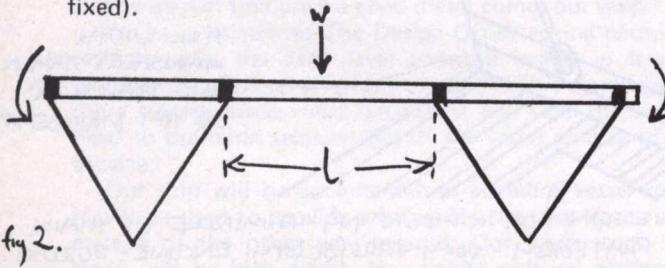


fig 2.

NB 1 is the distance between the inner 2 beam fastenings, w is the weight of the mast + the compression forces from the wind in the sails. These with the weight of boom and sails can be quite high but on my Narai Mk IV 1 is about 6'6" and therefore the bending stresses on a 7" tubular GRP beam are not excessive. Unidirectional rovings are being used giving a factor of about 6.8 as against my associate's 25 for random rovings.

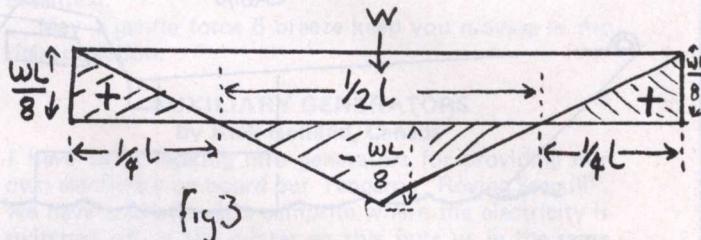


fig 3

The strains which are likely to cause beam failure are those from torsion (twisting). These arise when one bow rises to a wave whilst the other dips into a wave trough. My sketch might help understand what happens to the beams. This is highly exaggerated.

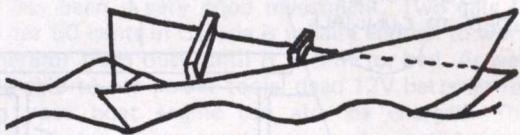


fig 4
side view

exaggerated diagrams

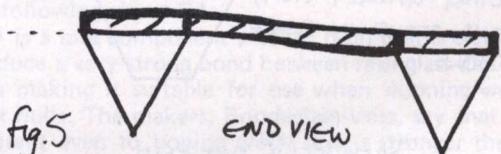


fig 5
end view

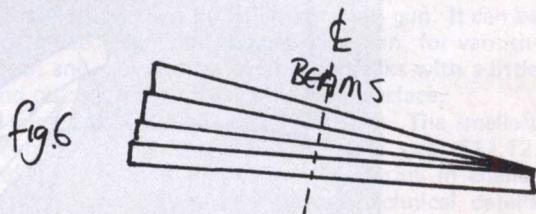
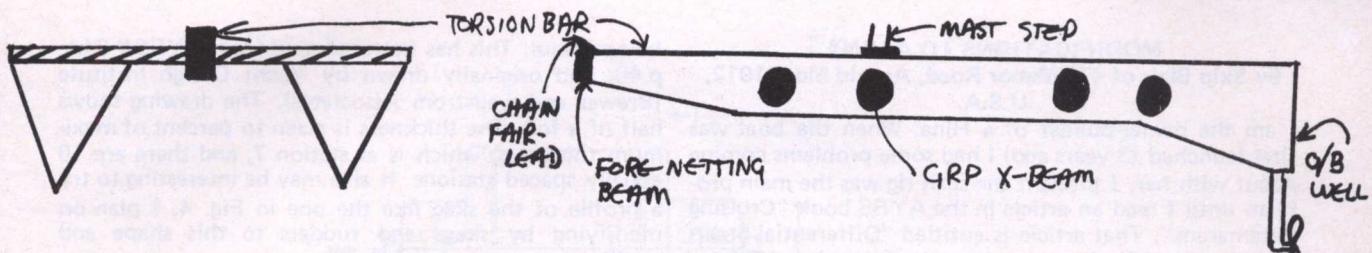
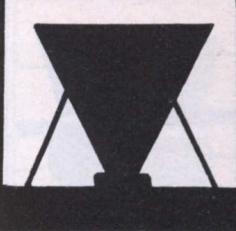


fig 6
BEAMS

Fig. 6 shows what happens when one hull is pressed into the sea and remains fairly level whilst the other is free to profile the waves. What is important to notice is that the hulls do not pivot about the centre line of the boat beams, but the beams work more like a fan. This exerts increased strains on the beams and their mountings. On my Narai I am incorporating a torsion bar (beam) through the centre of the boat beams to prevent this and to spread the strains more equally amongst all four beams.

Parts of this beam/girder which will be about 12"x15" will provide stowage for chain, warps, fenders, outboard petrol tank and outboard motor. It will also provide a catwalk to the bows with netting either side. There will be no stern netting but guard rails instead.



My GRP beams will not have 25 layers of woven roving as this would create a beam of stupendous strength. The thickest part will have 11 layers (where maximum strength is needed). My beams, whilst solidly mounted to the hulls, will by their very nature possess considerable flexibility and thus be able to absorb the dynamic shock loadings likely to be experienced in actual use. I contend that no Engineer would build a flexible structure unless the materials available made this inevitable. I believe the Polynesian boatbuilders built as rigid boats as they could from the materials available to them.

With regard to wooden beams I feel the present beam construction whilst simple is expensive in material and that the ultimate strength depends solely on the glue line between the laminates. The torsional twist in the beam, which would occur regardless of any flexibility in the mountings puts a sheer stress on the glue line. The standard beam is fantastically strong in a direct loading and that it is not sensible to use the load bearing strength of these beams to work out specifications for alternate beam construction. A concrete example will speak louder than words. My wovenroving tubular beams have been submitted to structural analysis according to the standard formula for static load (if anyone can work out the dynamic loading then they would be better using their knowledge in other directions).

$$W = 192 ET \delta \quad \text{where: } L = \text{beam span between fixt} \\ L^3 \quad \text{mountings (m)}$$

$$\delta = \text{mid span deflection (m)} \\ E = \text{Young's modulus (N/m}^2\text{)} \\ I = \text{2nd moment of area (m}^4\text{)}$$

W = concentrated midspan load (N)

In the case of my beams:

$$E = 30 \times 10^9 \text{ (N/M}^2\text{)}$$

$$I = \frac{\pi}{4} (D^2 + d^2)(D^2 - d^2) \text{ where } D = 0.14m \\ d = 0.165m$$

$$L = 2.133m \text{ max}$$

$$I = 1.76 \times 10^{-5} m^4$$

$\delta = 0.0127 \text{ m (}\frac{1}{2}\text{'' deflection at centre of beam span -- to work out this equation you need either permissible deflection or load (W)}$

$$\therefore W = \frac{192 \times 30 \times 10^9 \times 1.76 \times 10^{-5} \times 0.0127}{9.7} = 132,730 \text{ N}$$

$$Im = 4.25 \text{ lb ft } W = 31,230 \text{ lb ft} = 13.94 \text{ ton ft. (say 14 tons)} \\ 1'' \text{ deflection takes 28 tons!}$$

This is for a GRP beam 6½" in diameter and ½" thick. Given the maximum possible static loading which is the full weight of one hull with its gear and stores, for my boat it is made up as follows: 1¼ tons weight for one hull, 1 ton of stores and gear which equals 2½ tons, say 2½ to be on the safe side. This represents a total boat weight of 5 tons. The maximum static loading of 2½ tons would arise if a hull was flown, an event unlikely to occur. This represents 5/8 of a ton per beam. This gives the beam a high margin of safety. I will be reducing the thickness to 3/8" average with additional laminates at stress points.

FOR SALE

28' TANE LAA MAO MAO

with Silver Century Seagull

motor

Various sails

£2,400 ono

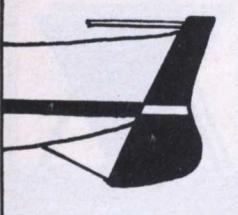
The exploits of this boat have been featured several times in The Sailorman

Phone:

Mansfield 34161



The Sailorman



RUDDERS

MODIFICATIONS TO A HINA

by Skip Blair of 478 Manor Road, Arnold Md. 21012,
U.S.A.

I am the owner-builder of a Hina. When the boat was first launched (3 years ago) I had some problems coming about with her. I thought the sprit rig was the main problem until I read an article in the AYRS book "Cruising Catamarans". That article is entitled "Differential Steering" (p. 91-92). It was written in December 1958 by V.E. Needham. So I modified my tiller connections to incorporate this system. At the same time I faired my skeg and rudder together to get as much of a foil shape as possible with the $\frac{3}{4}$ " ply. I also faired the bows to a point rounded to approximately $\frac{3}{4}$ ", and the sterns to a $\frac{3}{4}$ " flat. Since these improvements the boat comes about quite well. We still occasionally need to backwind the jib. It is now a rare occasion that we cannot bring her through the wind.

Description of Differential Steering and Ackerman Linkage

When a catamaran is making a turn, the hull on the outside is making a larger circle than the hull on the inside of the turn. Because of this each rudder should turn more and less for the inside and outside hull respectively. The amount of difference between the rudders depends on the diameter of the circle being made, so the linkage must be set up to obtain this effect. This is done by keeping the rudders straight while angling the tiller bars inwards, towards the centre of lateral resistance of both hulls combined. Mr. Needham found for his boat that a reduction of this inset by 5 or 6 worked best. This keeps the rudders accurate to between 0-50° of rudder. He also found that the connecting bar should be connected at a point that is a ratio of 8:1 of the tiller length from the pindles. This is the way I set my Hina up, and it seems to work quite well. This puts the tiller bar above the inboard bulwarks, when the rudders are straight, leaving the afterdecks free to sit in while steering (of course you need to move when making a sharp turn to the leeward, if sitting on the windward hull).

To connect the tiller bar to the rudder I ran the bar with a wedge at the proper angle along side the rudder stock and bolted through all three (see Fig. 1.). To calculate the angle of the wedge I used the centre of the board (fore and aft) and half way between hulls for the centre of lateral resistance. You can draw a right triangle with these lines and calculate the angle using tangent

opp. (see Fig. 2).

$0 = \text{adj.}$

minus 6°. For the Hina $18^\circ - 6^\circ = 12^\circ$.

I have calculated the angle for the rest of the designs in table 1. Using this place for the centre of lateral resistance may not be accurate enough for some, but was satisfactory for me. As I said, it works well and less turbulence caused by the rudders is seen in a tight turn.

Rudder and Skeg Shape and Profile

I feel that it is important for the rudder and skeg to be of a hydrofoil shape so that maximum control can be obtained. This seems most important with the wide shallow rudders. The shape in Fig. 3 has been found to

be optimum. This has been redrawn from AYRS# 84A, p.40, and originally drawn by Yacht Design Institute (Brewer and wallstrom Associates). The drawing shows half of a foil. The thickness is given in percent of maximum thickness, which is at station 7, and there are 10 equally spaced stations. It also may be interesting to try a profile of the skeg like the one in Fig. 4. I plan on modifying by skegs and rudders to this shape and profile.

Beam Chock Modification

In Fig. 5 I show the modification of the beam chocks I have made. These are much stronger than the original ones shown on the plans. They do require much longer bolts, but I think it may be worth it. The reason I made the modification is that I had problems with the original ones. I believe they were not properly built as the glue joints were not good. They probably would have held together if well built, but since I had to rebuild them anyway, I decided to go ahead and make them stronger in design.

1	2	3	4	5	6
22'	10'	2'6"	11'	3'9"	12°
28'	12'6"	3'2"	14'	4'8"	12°
34'	16'6"	5'6"	17'	5'6"	12°
36'	17'	4'9"	18'	6'2"	13°
40'	18'6"	6'2"	20'	6'2"	11°
45'6"	20'	6'	22'9"	7'	11°
46"	20'	7'	23'	6'6"	10°
51'	21'6"	7'	25'6"	7'3"	10°

Table 1

1. LOA

2. BEAM OA

3. BEAM OF EACH HULL

4. DISTANCE FROM EACH RUDDER TO CLR (Fore & Aft)

5. CENTRE OF BEAM

6. ANGLE OF WEDGE (G-6°)

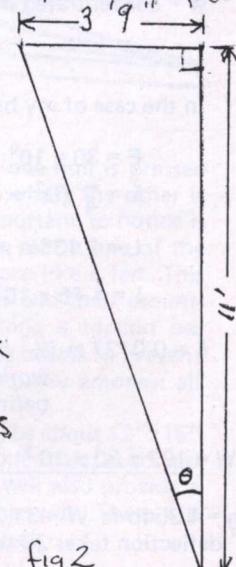


fig 1

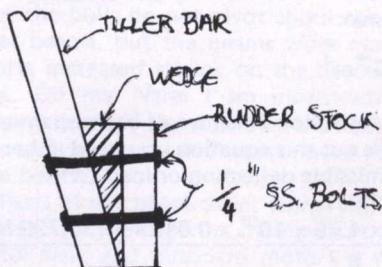


fig 2

The Sailorman

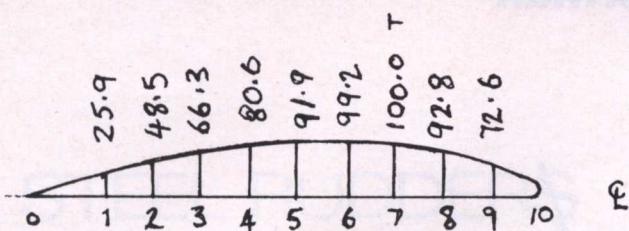


FIG: 3

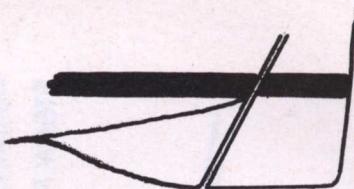


Fig. 4

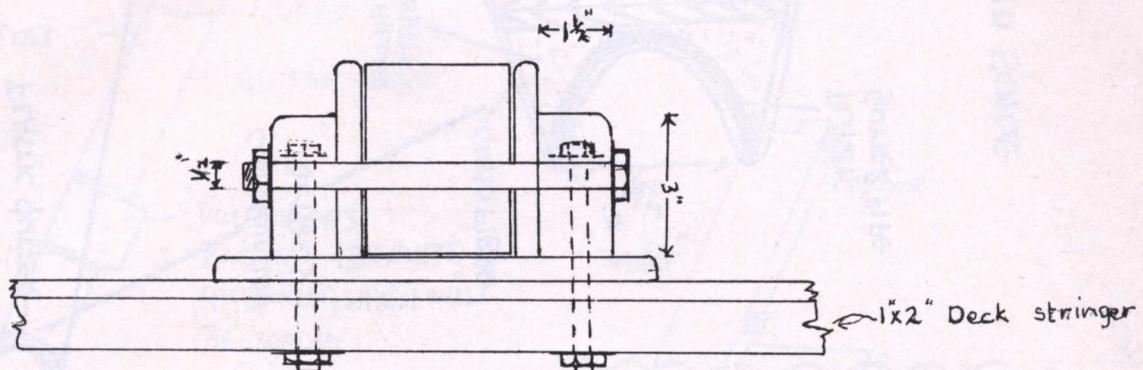


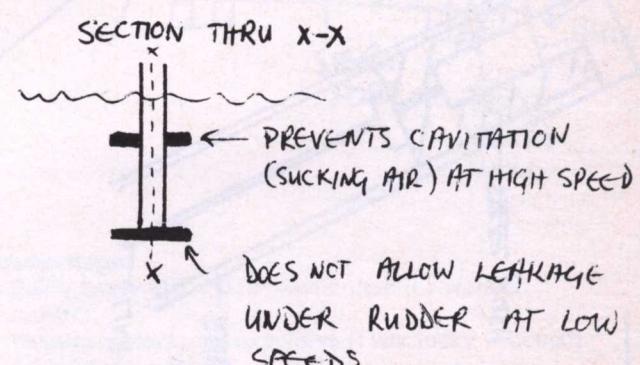
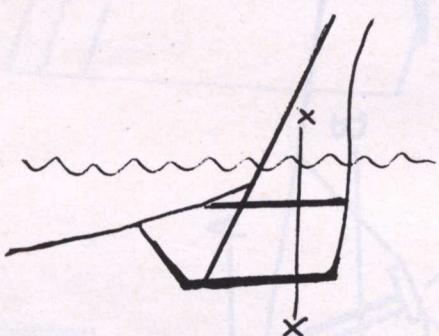
Fig. 5.

* * * * *

The Rudders on Bernie Bershere's Oro

The Rudders on Bernie Bershere's Oro

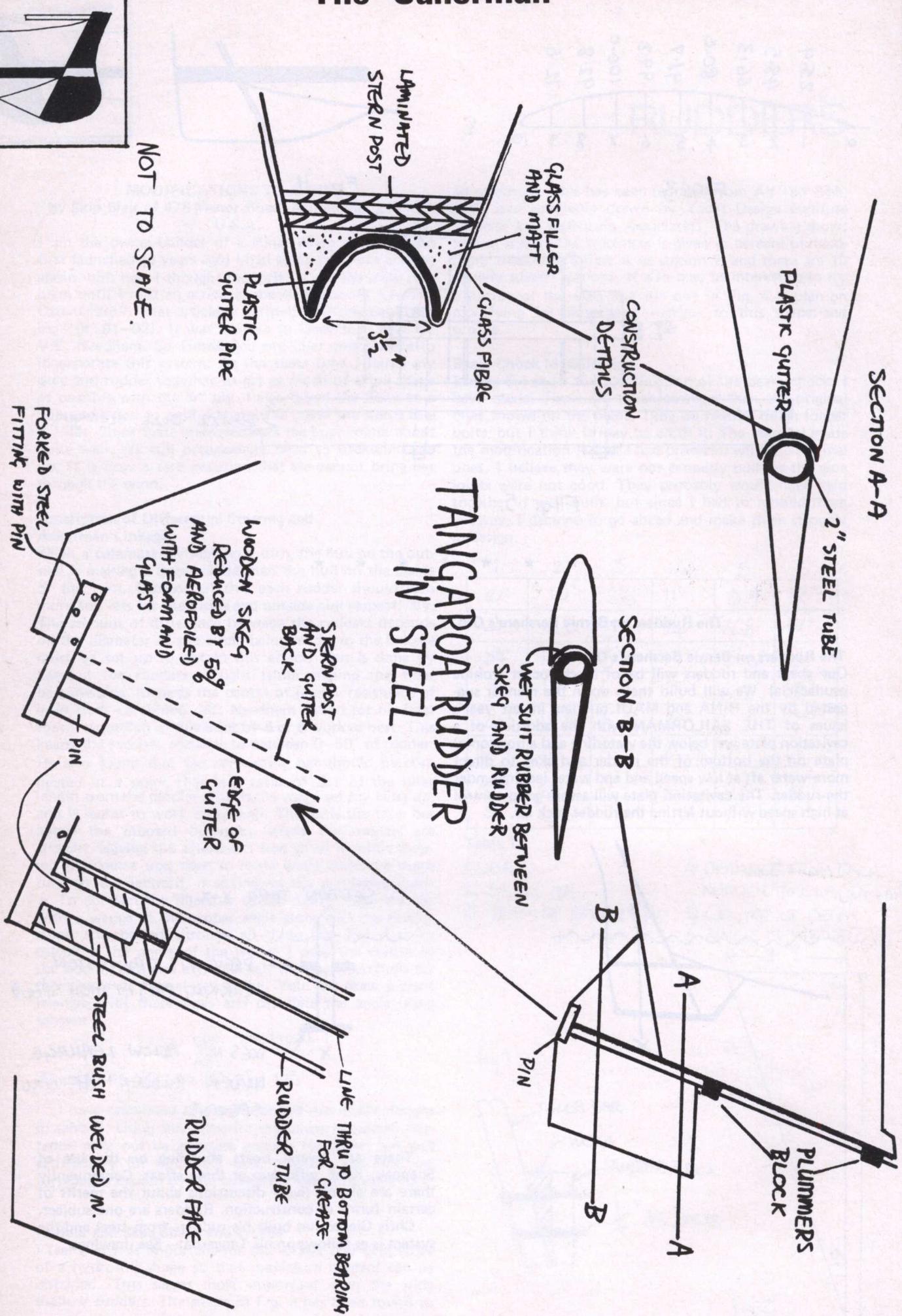
Our skegs and rudders will be of black locust (robina pudacacia). We will build them up in the manner suggested by the HINA and MAUI builders in last year's issues of THE SAILORMAN with the addition of a cavitation plate just below the waterline and a horizontal plate on the bottom of the rudder and skeg to direct more water aft at low speed and end water leaking under the rudder. The cavitation plate will assure good control at high speed without letting the rudder suck air.

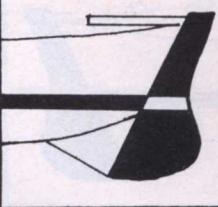


There are several boats abuilding on the Isle of Sheppey, Kent, with two or three afloat. Consequently there are always lively discussions about the merits of certain forms of construction. Rudders are one subject.

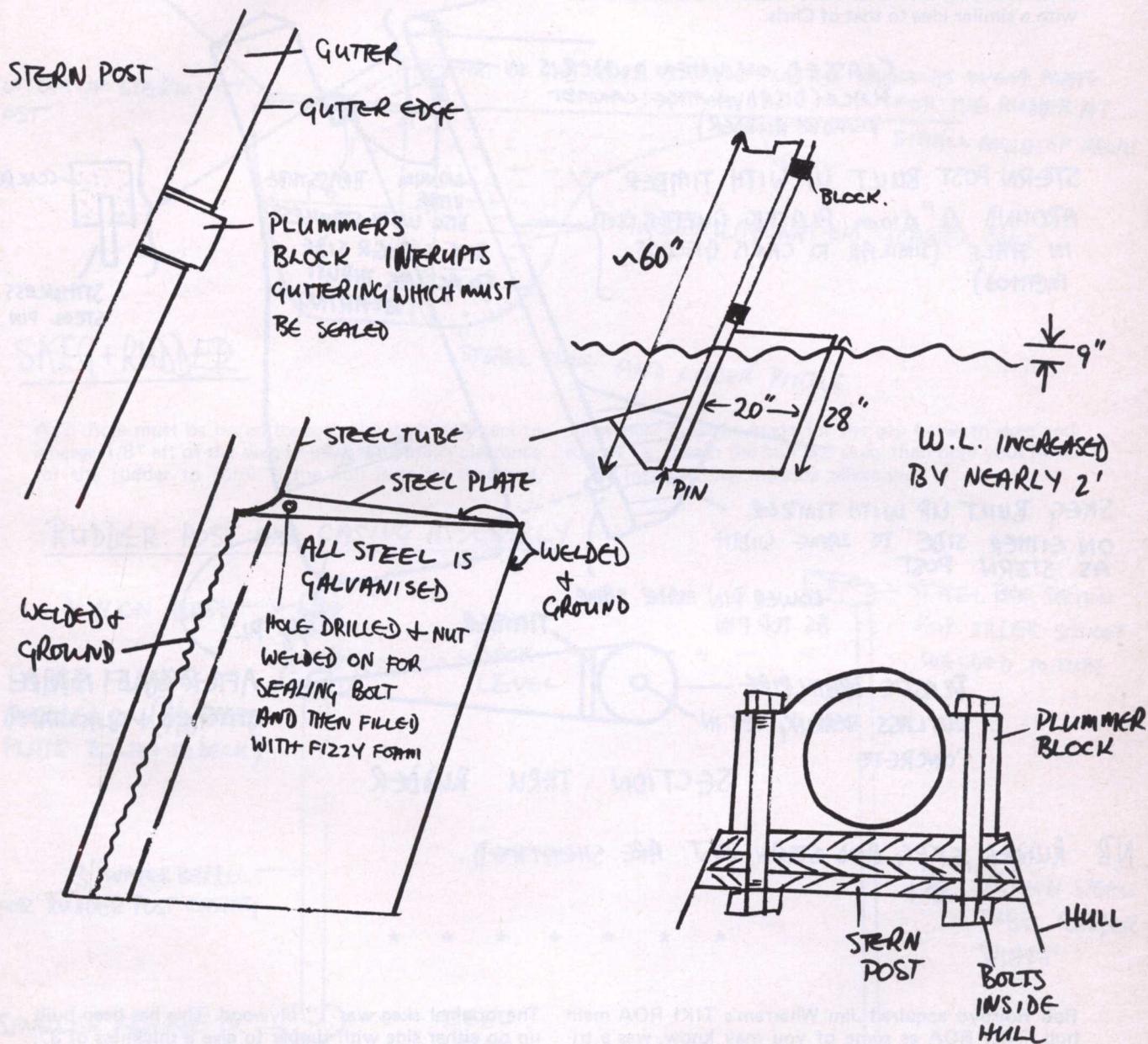
Chris Giecco has built his rudders from steel and the system is as follows on his Tangaroa:— See drawings

The Sailorman





STEEL RUDDERS



Advantages

1. 4 bolts to remove the rudder.
2. Very strong
3. Hydrodynamic with reduced turbulence
4. Increased WL
5. Steel is easy to work (with the right tools)

Disadvantages

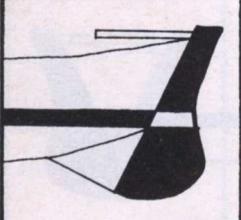
1. Fairly heavy (15–20 lb heavier than the wooden rudder)
2. Plummers blocks are expensive (I was lucky – bought 4 for £8 in a sale)

Some thoughts

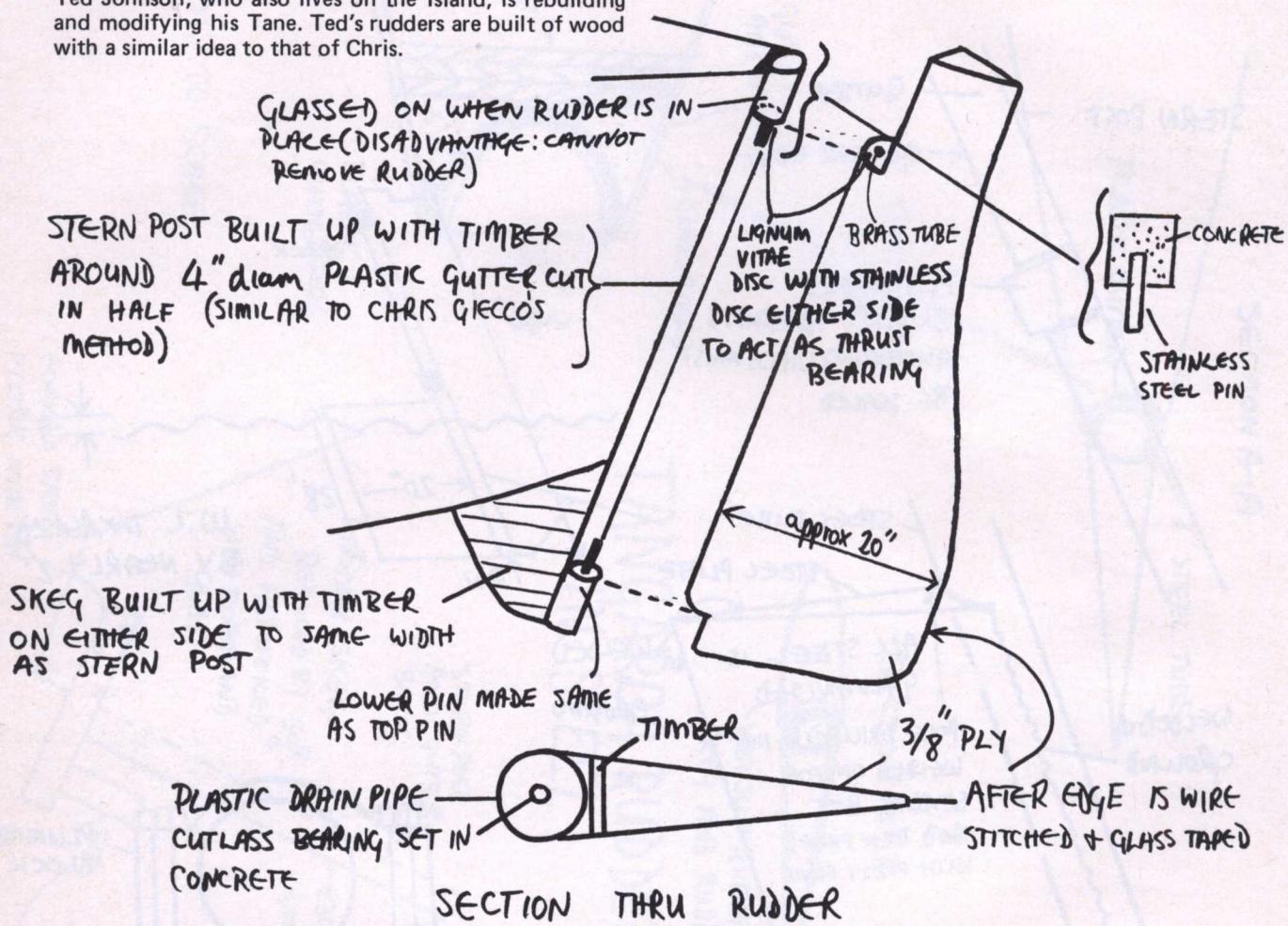
1. Larger gutter and pie would be better (problems with pintles and their fixing)
2. Possible tailplane at bottom of skeg to reduce hobby-horsing



The Sailorman



Ted Johnson, who also lives on the Island, is rebuilding and modifying his Tane. Ted's rudders are built of wood with a similar idea to that of Chris.

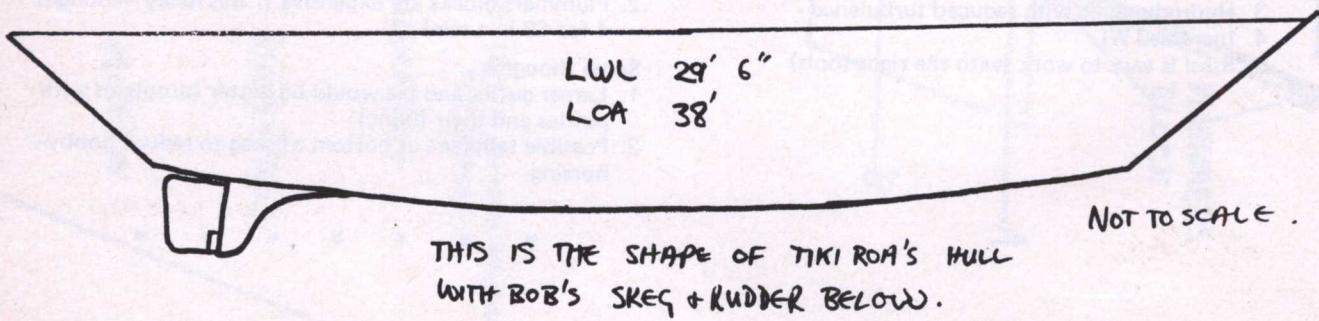


N.B. RUDDER, SKEG AND STERN POST ARE SHEATHED).

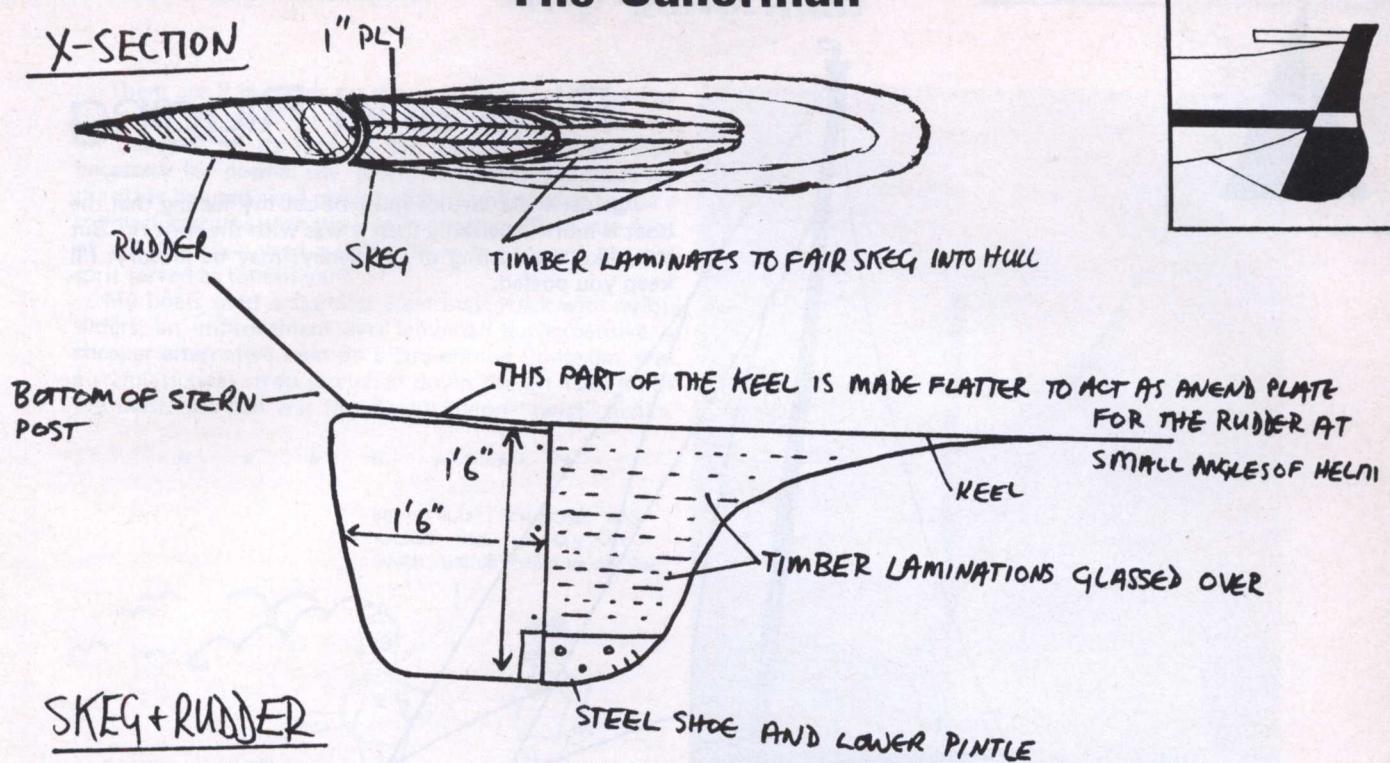
* * * * *

Bob Holroyd acquired Jim Wharram's TIKI ROA main hull. TIKI ROA as some of you may know, was a trimaran that Jim built in 1966. Bob is rebuilding the hull and proposes to build another like it to make a cat. The first hull is nearing completion and has a skeg and rudder beneath the hull.

The original skeg was 1" plywood. This has been built up on either side with timber to give a thickness of 3". The leading edge of the skeg was then shaped to give a semi-elliptical curve. The after edge of the skeg was given a semi-circular groove of 1 5/8" radius.



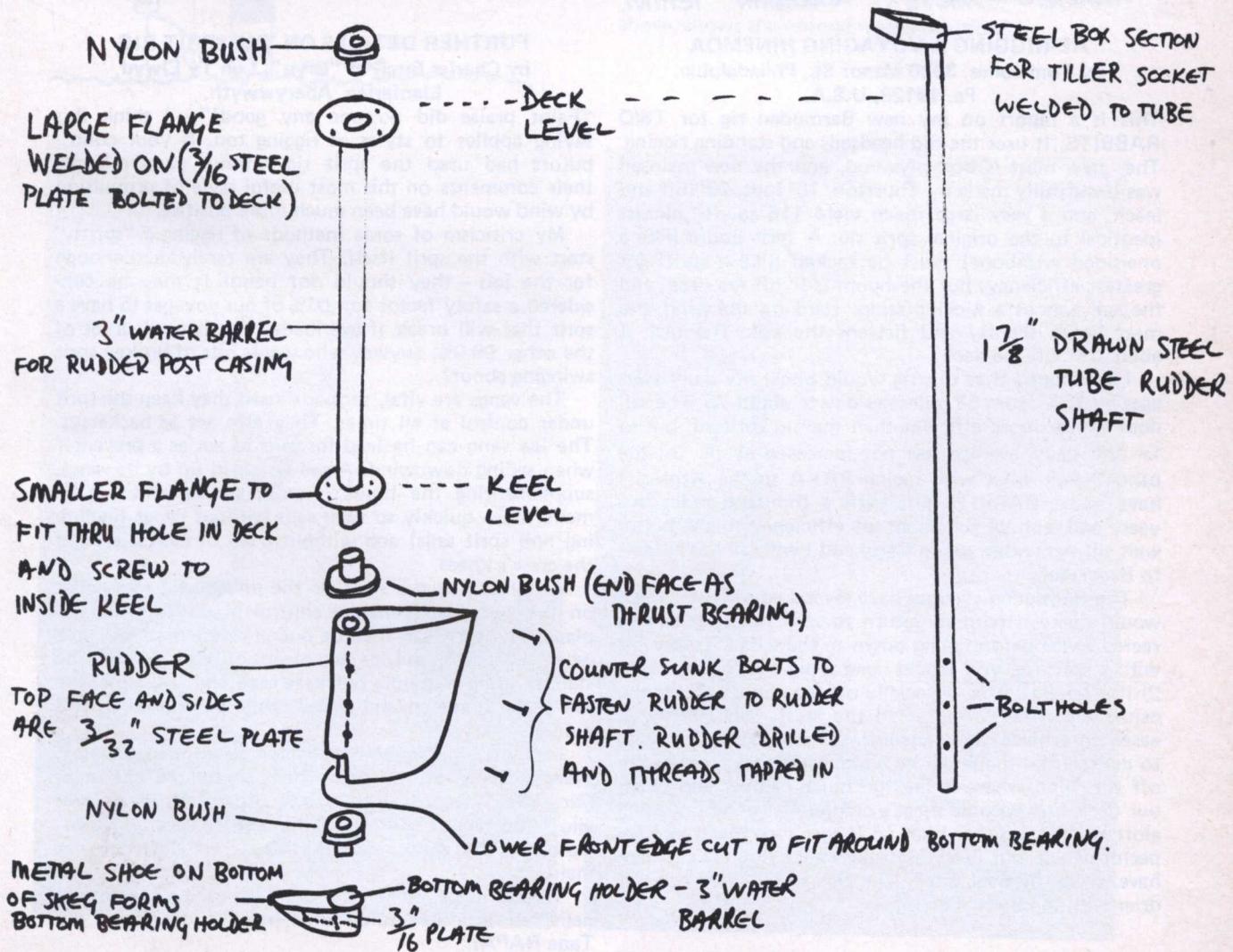
The Sailorman

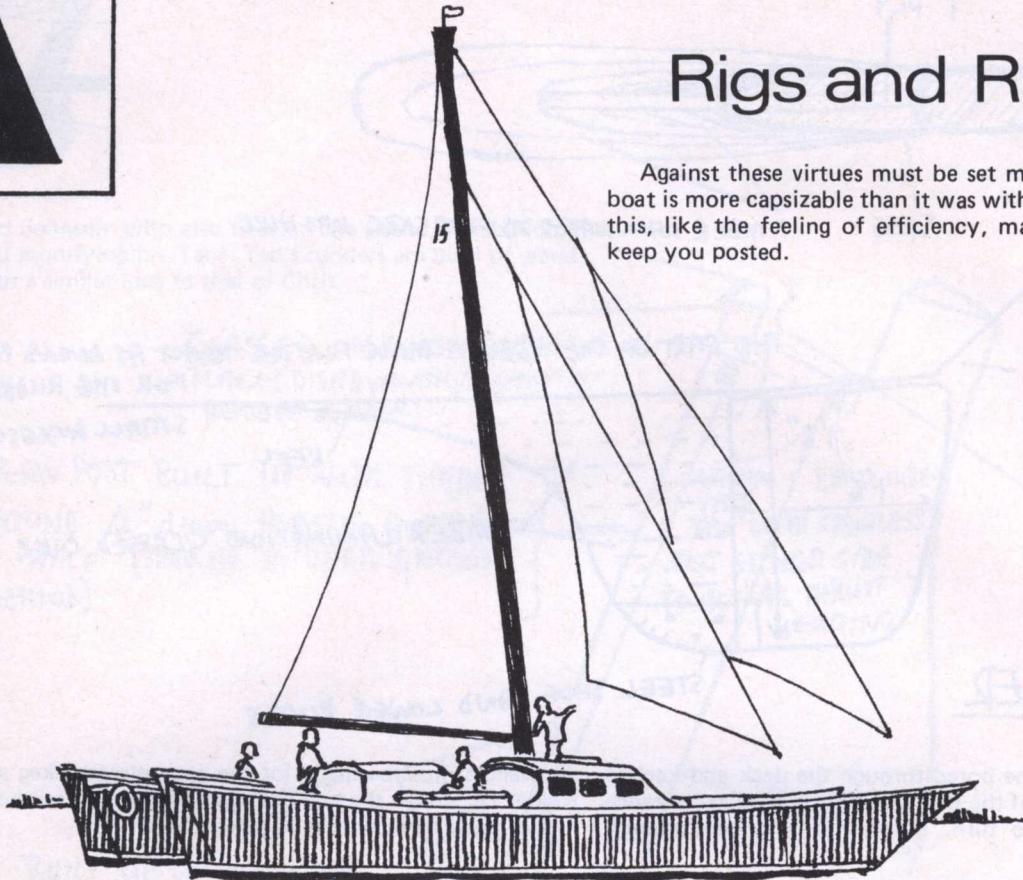


A 3" hole must be bored through the deck and keel to emerge 1/8" aft of the skeg to give just enough clearance for the rudder to turn. If the hull is to be sheathed, allowances must be made for the gap between skeg and rudder i.e. sheath the hull and skeg, then bore your hole.

All metal fittings must be galvanised.

RUDDER POST AND CASING ASSEMBLY





ANDREW WALSH'S CANADIAN TEHINI

HUEBSCH

RE-RIGGING A VOYAGING HINEMOA

by Tom Jones, 3920 Manor St., Philadelphia,
Pa. 19128, U.S.A.

This is a report on my new Bermudan rig for TWO RABBITS. It uses the old headsails and standing rigging. The new mast is box plywood, and the new mainsail was beautifully made by Thurston. 10' foot, 20' luff and leach, and a very large roach yield 116 sq. ft., almost identical to the original sprit rig. A sprit boom (like a one-sided wishbone) must be tacked (like a sprit) for greatest efficiency; but the boom is 5' off the deck, and the sail acts as a kicking strap. Hard on the wind, the mast bends slightly and flattens the sail. The tack is about 15" off the deck.

I had hoped that this rig would boost my daily averages by 10%, from 68 miles per day to about 75. The sail does appear more efficient than the old spritsail, but so far the daily average has not increased at all. On the other hand, what with racing RAKA to the Azores, I have sailed RABBITS less than a thousand miles this year, and a final judgment of efficiency might better wait till next year, when Carol and I will sail her at least to Bermuda.

The Bermudan rig does have several advantages which would make it hard to return to sprit rig. 1) It can be reefed twice before going down to the trisail. To do this with a sprit rig, you would need a big hole in the deck. 2) It balances better, especially off the wind, because the center of effort is closer to the mast. Self steering is easier to achieve. 3) It has less running rigging. In trying to control the shape of the boomless spritsail, especially off the wind where it has too much camber and twist, our deck had become a cat's cradle. 4) There is nothing aloft to flog around. I am no longer sure that this hurt performance, but it certainly was annoying, and it may have made the boat pitch. The ride seems smoother and drier with the Bermudan rig.

Rigs and Rigging

Against these virtues must be set my feeling that the boat is more capsizable than it was with the sprit rig. But this, like the feeling of efficiency, may be illusory. I'll keep you posted.

FURTHER DETAILS ON THE SPIT RIG

by Charles Birch of "Bryn", Lon Ty'Llwyd,
Llanfarian, Aberystwyth.

"Faint praise did no one any good!" — I think this saying applies to styles of rigging too. If your contributors had used the sprit rig without parts missing, their comments on this most useful style of propulsion by wind would have been much more positive.

My criticism of some methods of rigging a "spritty" start with the sprit itself. They are rarely man enough for the job — they should *not* bend! It may be considered a safety factor for .01% of our voyages to have a sprit that will break if overloaded but it spoils a lot of the other 99.9%, anyway who wants bits of broken sprit swinging about?

The vangs are vital, properly used they keep the sprit under control at all times. They also act as backstays. The lee vang can be lead forward to act as a preventer when sailing downwind. A sail wrapped up by its vangs, supplementing the brails is quite secure, and can be made more quickly so than sails without vangs (including non sprit sails) and without a sea of canvas around the crew's knees.

A halyard to the sprit via the mast-head, to a collar on the sprit itself enables control in the fore and aft plane. The sprit can then be pulled to the mast and held when furling the sail, or as a means of reducing sail. The stanliff using a double block at each end will allow the sail to be unreefed and raised while on the wind, and pulling.

In short, it should be possible to control the sprit independently of the sail, which should be cut quite *flat*. This, together with proper use of the vangs, will allow the sail to continue pulling when several degrees closer to the wind, than the usual relatively full cut main.

The sail is by Jeckells, who after doing a superb job, delivered in double quick time. (see photographs of my Tane RAPA).

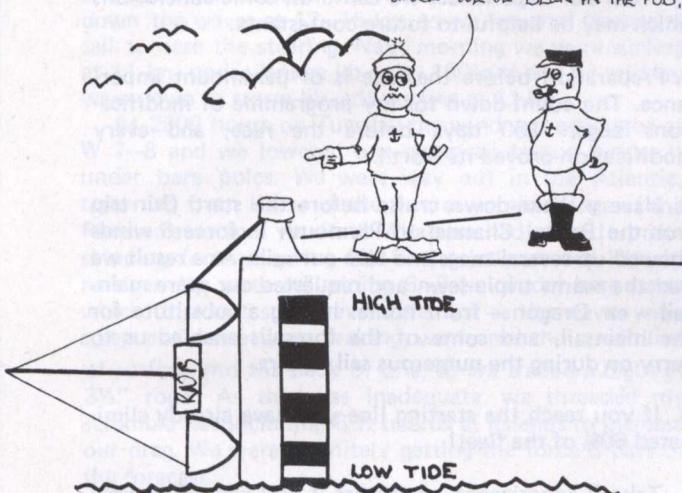
The Sailorman

There are 2 halyards on the sprit, one for the head of the main, the other for the tack of the topsail. Cleats are on the sprit, at its foot. If the mast is 2' longer than necessary for normal use, it will be a better purchase for the sprit halyard, and provide the height needed to use a topmast carrying (for the Tane) another 70 square foot of sail. My Hina used a GP14 jib as the topsail, the old sprit served as topsail yard.

My boats used a stainless steel mast track with nylon sliders, an improvement over lanyards, but expensive, a cheaper alternative seen on a Drascombe Longboat, was a stainless steel strop stretched down the aft face (?) of the mast, the luff was fitted with nylon "twist" hanks.

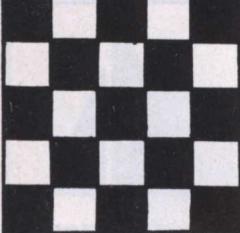


HEY FRED! SOMEONE HAS
NICKED THE B*GGY CAT
SINCE WE'VE BEEN IN THE PUB!



above, shows the normal reefed position.





The Azores Race was organised by MOCRA (Multihull Offshore Cruising and Racing Association). George Payne, as RAKA's skipper, gives his assessment of the race.

About 20 yachts had declared their intention of entering the MOCRA 1977 race to Horta on the island of Faial in the Azores, 1300 n.m. from Plymouth, yet on the day, 31st July, only 8 started. Two yachts retired leaving six to finish in the following order:

Three Legs of

Mann II	Nick Keig	Tri.	53ft.
Day Tripper	R.M. Norris	Tri.	34ft.
Gipsy Moth V	Giles Chichester	Mono.	57ft.
Raka	George Payne	Cat.	38ft.
Byzance	J.J. Mascart	Mono.	37ft.
Sea Raider	Brian Sanderman	Mono.	33ft.

The organizers had great difficulty handicapping such a mixed fleet, but by estimating how long each boat would take if they were helming it themselves and adding 2 days for calms, they gave Aqua Blue, a 39ft. Tri. which retired, 12 days for the 1300 n.m. passage. Other competitors were then rated to Aqua Blue. Three Legs for instance was allowed 9 days and RAKA 12 days 18 hours. In the event the estimates were remarkably accurate as on corrected time RAKA took 12 days 21 hours. However, this placed her fifth and Three Legs last. The monohulls did very well under the prevailing conditions, probably due to their better windward performance but the Tri. Day Tripper was the overall winner.

In contrast to the keen racing start, no one bothered on arrival in Horta to work out the placings for 3 days. The sun shone, Horta was beautiful, the people friendly, and the hospitality overwhelming, who cared? — we had arrived!

On RAKA we naturally questioned whether we could have done better. A new suit of sails might have done the trick, but as I explained to my crew, had I bought these I couldn't have afforded to enter the race. After three days out Gipsy Moth V and Aqua Blue were within a mile or two of us in a near calm, tacking to cover each other. This seemed a fruitless exercise so when a light wind came up we hoisted our 500sq ft drifter loaned by Jim Wharram, headed off and saw no other competitor thereafter. The wind direction made it difficult to hold the rhumline course to Horta without losing speed so

we concentrated on rushing south in the hope of favourable winds later. These never came, exploding our theory about the Azores high, and making us doubt the wind roses on the routeing chart. Having sagged away so far east of the rhumline, got south of the latitude of Horta, and spent several days in the vicinity of the Azores islands tacking towards our destination, we expected to be the last to arrive. We were overjoyed to find that the only yachts ahead of us were those we expected to be there, and they had all sailed similar courses to ourselves.

From our experiences we can draw some conclusions which may be helpful to future contestants:

1. Preparation before the race is of paramount importance. The count-down for my programme of modifications began 150 days before the race, and every modification proved its worth.
2. Have a shake-down cruise before the start. Our trip from the Bristol Channel to Plymouth in force 6 winds showed up several snags and tore our sails. As a result we had the seams triple-sewn and requested our spare mainsail — ex Dragon — from home. Having a substitute for the mainsail, and some of the foresails enabled us to carry on during the numerous sail repairs.
3. If you reach the starting line you have already eliminated 60% of the fleet!
4. Take 2 experienced navigators if you can. Mine were superb — Jim's wife Ruth and Tom Jones of Two Rabbits fame from Philadelphia. Their ability to work independently and compare fixes inspired confidence, and made decisions about changing tacks easy.
5. Crew balance is vital. The skipper you have to bear with, Ruth and Tom's abilities you already know, but you must also have a David Oliver aboard. David has been associated with the sea from boyhood — tough, resourceful, alert and cheerful, he seemed in his natural element, foreseeing every change in the elements and never relaxing until dangers had passed.
6. A good watch system is necessary. Our periods began with 2 hours standing-by — avoiding that coming from warm bunk to helm — then 2 hours at the helm and 4 hours off. At noon we had "Happy Hour" (actually two) when everyone mucked in. We began again at 1400 hours thus rotating the watch times — the dog watch system of course.
7. Keep going, never give up, the others are probably having the same problems as you are.
8. Buy a well-cut suit of sails for the race if you can afford it, but eliminate every source of chafe before you do. Polycats have a good chance in this race so why not enter for the next race in 1979?





Gale Warning

by George Payne

The following account is of the heavy weather that RAKA encountered on the way home after the Azores Race.

The entry in RAKA's log for Monday 22nd August, 1977 at 1800 hours reads "Sunny afternoon, but during the last hour, high winds clouds, mackerel sky and low scudding clouds quickly covered sky. Wind backed." These are standard signs of a depression and winds to come, but the barometer showed no dramatic change and only fell slowly. Six hours later we were surfing down the waves at 12–15 kn. so we lowered the mainsail to ease the steering. Next morning we were surfing at 11 kn. under jib only, 180sq ft and by midday were down to storm jib, still surfing at 11 kn.

At 2000 hours on Tuesday the wind was estimated at W 7–8 and we lowered our stormsail to run before it under bare poles. We were way out in the Atlantic, returning from Horta in the Azores on the fringe of the Finisterre sector, yet Ruth Wharram had picked up the shipping forecast giving SW 5–8 winds on our Hitachi receiver. We were still doing 6–7 kn. under bare poles which does not sound excessive, but as the waves were steep and some were braking, we feared the possibility of surfing into the back of one, so we trailed a bight of 3½" rope. As this was inadequate, we threaded my scramble net including 6 ft boards at its ends to increase our drag. We were definitely getting the force 8 part of the forecast.

Thirty hours later there were still no signs of it abating, indeed we feared worse to come, and it did. RAKA was taking the seas well, but they were continually foaming through the deck slats, and the buffeting of the waves on the sponsons (side extensions to the hull) made us fear for their survival. There were 5 of us aboard, which, with gear, food, 37 gallons of water, 25lb and 45lb anchors, duty-free stores etc. made us lower in the water than we had ever been before.

The waves already had ample time and fetch to build up to their maximum height, when the wind began to increase, its persistent monotonous whine wearing on our nerves. Survival now depended on simple things, especially our compass light, as the steering was sluggish with so much drag astern and needed constant attention night and day. When the compass light burnt out, we had a spare bulb ready; when the electrical system was swamped we used a torch; if this had been dunked we had a candle lantern ready. Not once must we get beam on to these waves.

Two days passed, the wind was force 9 and the waves were higher, probably 30–35 feet according to a formula in Adlard Cole's book. The crew were apprehensive but still cheerful. My fear as skipper was that the strain would tire us and we might relax our concentration at the tiller. It was my turn now at the helm. Soon a wave broke over the stern hitting me in the back with such force that I was pushed against the taffrail (spanning number four beam) hurting my forehead and bending my spectacles. There was 2 feet of water in the sternwell, but I remember calling for the pump, clearing the water, and then asking for relief at the helm as I began to feel the onset of shock. Nothing serious maybe, but it was a warning as to what could happen.

Joyce, my wife, whom I had lured on to our first ocean trip with promises of sailing in the sunshine, continued to cook throughout this period, but had to escape

from the cabin at times to revive herself on deck secured by a safety harness. It says much for her and polycats that she managed so well, and we even cheered ourselves by saying how much worse it might have been in a monohull.

Sometime on Wednesday afternoon, two of us were sitting on deck, fortunately secured by our harnesses, when we began to surf down a wave. The bow plunged in, and the following wave completely submerged us. This is the end I thought, Roy was swept against the mast. My next view of RAKA was of it rising out of the water like a surfacing submarine – Oh joy, what a boat! Not once did we feel she would capsize hull over hull, but pitchpoling seemed a possibility, although there is a theory based on Polynesian practice that fine, sharply raked bows plunge through, rather than are tripped up, when entering waves. It was not the time to theorise; however, what should we do now? We could see our trailing warps were being washed towards our stern when these creamers swept down, so we streamed canvas buckets on 200 feet lines to get a grip on the wave beyond the one immediately threatening us. This did the trick although we still continued SE at 2–3 kn.

It was now Thursday, and remembering that all this started on Monday, we wondered just how much longer it would go on and whether we could endure it. I will only speak for myself, as my crew maintained their outward cheerfulness. A combination of shock after my contact with the taffrail, fear that we might pitchpole, responsibility as skipper for all these fine people, and more years of age than I like admitting, combined to induce an anxiety and numbness I had never felt before.

Should we inflate the liferaft and secure it on deck in readiness? Stupid, this would put our only chance of escape in an emergency at risk. What then? Nothing, just hang on and endure it. Besides yachts had suffered damage in less severe conditions than these, and there was no evident damage yet to RAKA.

Thursday spent itself, the barometer fell again, heavy rain squalls swept us, and Ruth commented that squalls are usually an indication that the end of the storm is near. Usually! That was the rub. She was right, but it was late on Friday before the wind had dropped to N.W.6. We slowly retrieved our warps, set the stormjib, obtained a sunlight and found that we had made a good few miles towards home.

The classic work on sailing in these conditions is of course Adlard Cole's "Heavy Weather Sailing" but the descriptions all relate to monohulls. Our ocean cruising polycat sailors, apart from Tom Jones, seem to sail over the horizons without writing of their experience so some comments specifically for polycat sailors may be useful.

1. Lying a-hull did not seem feasible to us although Day Tripper, a light 35 ft trimaran did this for 36 hours. However, she left Horta several days after us and probably only got the tail-end of the gale.
2. Even under bare poles, our slim hulls and fine ends made the speed excessive. A safe speed needs judgement. Several canvas buckets on very long lines seem to give the control necessary, but tyres (normally used as fenders) might serve as well. With short lines the gear tends to be swept on to your stern.
3. Despite our precautions we were pooped several times. The hatch sides of the steering position should be raised to shoulder height to minimise this possibility.



4. Everything needed in heavy weather should be available lashed on deck. Bow compartments should be completely sealed and contain limited stores and equipment only. Ours contained 10 gallons of water each for later use but were otherwise stuffed with foam blocks and inflated bags from a dinghy. My efforts to seal these compartments need separate description but were so successful that only cupfuls of water were found in the bilges at the end of the voyage.

5. The gaps between the slats in the deck are absolutely necessary despite the risk of losing cutlery and car keys — mine are $\frac{3}{4}$ —1" wide. Water surges through continuously so crew should wear harnesses and be attached at all times. Slats can be forced up by water pressure so screw them down well.

6. Rope of various lengths and sizes is vital for many purposes. Spiral coils or hanks are pretty but useless. Stuff the rope bit by bit into bags or buckets in random fashion like anchor chain going to locker. Tie a bowline on a bight to identify the end — the beginning when you draw it out. By this method, you can draw out hundreds of feet without it snagging.

7. Cooking can continue in extreme conditions in polycats so give the cook a chance to operate comfortably and efficiently. This also deserves an article to itself. For the skipper, his fear is fire or explosion, compounding his problems. As we used gas this was a real danger. By fixing the cylinder just outside the cabin, the cook only had to open the hatch a few inches, slide a hand through and turn off at the cylinder everytime the stove was used. We seldom failed in this discipline — we should have been 100%.

8. Tiller and rudder should be exceptionally strong as the loads are severe. Some polycats I have seen around would have failed in this respect. A simple self-steering gear would be a boon, but what satisfactory one exists for the conditions? What would a short-handed crew have done?

9. A satisfactory watch system is vital to avoid overstraining any individual member, ours became very flex-

ible during the gale. My wife did her share in the galley but lacked experience to steer in such conditions. I had broken one pair of spectacles and was using a 30 year-old pair giving blurred vision at short distance. In prevailing conditions such as these, with spray obscuring both the compass and my lens, I felt I put the crew at risk by steering at night. This left 3 for the night watches. Joyce and I remained dressed in oilies and awake all night, ready for immediate action, to serve hot drinks, and try by occasionally talking to the helmsman to help pass the time. Ruth never missed a single shipping forecast, kept the log, read the barometer, but always did her turn at the helm. Roy and David never took off their oilies but removed the mattresses and "slept" on the bare bunk boards. A communication system (speaking tubes?) between the hulls would have been useful.

10. I could think of no way of picking up a man who fell overboard in these conditions unless he grabbed the trailing lines.

11. Lastly, I come to the need for special arrangements for storage on deck. My sponsions have a number of compartments which are self-draining. Anything put in them, sails, rope, water containers, outboard motor, bowls, buckets etc., tend to remain there despite the wind and the waves. Since these sponsions were experimental, they were only attached with screws so that I could remove them whole without affecting the original design. Despite the hammering they received, resulting in a few loose screws they survived and minor modifications will make them entirely satisfactory. Attention should be given to deck storage in these designs to avoid having to open bow hatches or remove deck panels to reach gear.

Summarising, we all realise that we owe our safety, perhaps our survival to a combination of the following circumstances:

1. We were sailing an exceptional craft which provided a relatively stable environment.
2. We were sufficient in numbers and experience (although except for Ruth it was our first ocean crossing) to tend the boat at all times, and were not sick, so that each crew member was able to carry on cheerfully.
3. The cook managed to provide hot meals and drinks at all times.
4. Although wet on deck, we were in latitudes where we did not suffer from cold.
5. That conditions did not arise which forced us to experiment with new tactics.



Gone with the Wind

"THE FREEDOM OF THE SEAS" by Michael Briggs, Sailing Secretary

Having spent six weeks of this summer cruising up the Irish East Coast and Scottish West Coast without once being asked to fill in a form, show ship's papers, pay harbour dues or bow and scrape to any petty official, I returned home more firmly convinced than ever that Sailing offshore offers a freedom not found in many other walks of life. No doubt many P.C.A. members will breathe a sigh of relief "At last that dangerously bureaucratic sailing secretary has discovered what the P.C.A. always knew; now perhaps he will stop trying to frog-march us into the Sail Training Scheme and let us do our own thing as we always have in the past."

To those who are tempted to think that way, and to all who rightly value the freedom of the seas for yachtsmen, let me tell this cautionary tale:

Once upon a time (August 25th 1977, in fact) a yachtsman who had been doing no more than his own thing was towed into Padstow by the local lifeboat for the third time in five weeks to a remarkably hostile welcome, characterised by phrases like "You are a b*****y menace!" from the locals. Their very understandable dislike of this man's abuse of his freedom, besides being reported in national media, attracted the following comment from the local Liberal M.P. for Truro: "I am asking the Minister to see whether there cannot be some legislation introduced which would make it impossible for a man like 'X' after he had ONCE been towed in to put to sea again before Coastguards had given the O.K. to his boat and to his own seamanship". These fateful words should be seen as writing on the wall for every Yacht Club, class association and yachtsman in this country, and to no group more than to the P.C.A. Here is why:



1. THE THREAT

It is now past history that the concept of Freedom of the Seas no longer applies to Merchant Ships. Repeated abuse of that freedom by poor navigational equipment and incompetence, by pollution from tank cleaning, and by over fishing has combined with overcrowding to give rise to extensive International and National maritime laws, manifested in Collision Rules, Separation Zones, Fishing Limits etc., etc. In the light of these new developments, the yachtsman's freedom appears as an exception to the Modern Law of the Sea, even though the new Collision regulations have reduced his rights in several important aspects which offshore yachtsmen should learn by heart and ignore at their peril. Apart from those new limits, a yachtsman can put to sea in any boat, however unsafe. He can sail anywhere, however inexperienced and no one can bring him to book if he gets into trouble, whether caused by his own bad luck, or incompetence or foolishness or refusal to listen to advice. Thanks to the R.N.L.I. (and Airborne Rescue Services) and to the former's volunteer unpaid crews, and to all those who fork out on Lifeboat Day, there's always a willing hand to save the yachtsmen from trouble, free of charge, free from fine or tax, and no questions asked. Small wonder then in this world where no-one else gets something for nothing, that Mr. Penhaligon (the MP in the tale) should seek to bring yachtsmen into line with Merchant Seamen, car drivers, Flyers and indeed with yachtsmen in other countries, notably South Africa (as described in past issues of the SAILORMAN).

Look back at Mr. Penhaligon's proposals, which amount to "Seamanship and boat seaworthiness tests for anyone towed in by the lifeboat." Even if confined to those who've been towed in the threat is bad enough since every yachtsman, like every rider, has his one fall. But what self-respecting bureaucrat would fail to compare this with MOT and driving tests only for those who've had a crash?? Far more likely would be a whole new inspectorate to test all boats and all yachtsmen sailing offshore, expenses chargeable either as a new form of ship money tax or as a fee, falling on the individual. Or perhaps they'll begin slowly, testing the obvious and notorious caterories, notably home made boats and multihulls, both because of their bad record and the contrast with the standard "plastic bathtub" image. Two hits on the P.C.A. in the first salvo.

2. WHO CARES?

Twenty years ago, even less, most yachtsmen would have agreed with the P.C.A. and the poet who wrote:

"I must go down to the sea again
To the lonely sea and the sky
And all I ask is a tall ship
And a star to guide her by."

Since the fibreglass revolution, however, a yacht has become an alternative to the weekend cottage, an adjunct to the fast car and the swimming pool, a stage on which to act before the Joneses, in short, an extension of modern man's ordered, cluttered life onto the disordered, empty sea. The modern yachtsman might sigh:

"I must go down to the marina again
To the crowded marina and trot five
And all I want is a Tupperware 32 with titanium jib
track, blooper, reacher, TV, fridge, hot and cold
water
And an autopilot to steer her by."

To that man, seamanship and seaworthiness tests would be an acceptable part of the paraphenalia with which he loves to surround himself. Imagine a marina bar conversation "I've just passed my advanced sailors' tests."

Thus, not only does the yachtsman's freedom of the seas appear an anomaly to the unthinking landsman who in fact pays for the lifeboat but more seriously, many modern yachtsmen have neither experienced or even desire this freedom. Small help can be expected from the racing boys either, for whom the rules and regulations are tools in the winning game. (If you don't believe it, look in on a MOCRA scrutineering session or at their new draft safety and minimum equipment regulations — but DON'T PLEASE show them to Mr. Penhaligon!).

3. WHAT CAN WE DO?

If we value our present freedom to sail, where, and how in what craft we like, the P.C.A. and its members individually might consider the following three propositions:

- a) We must bear in mind perhaps more firmly than before, that his freedom will only exist while it is not abused, and that abuse even by a very few, in putting the lives of rescuers at risk, will damage both his freedom and that of all yachtsmen.
- b) We must, as an association, keep our house in order by voluntary provision of seamanship training, construction advice and representation of our position to the powers that be. The P.C.A. does this with the Sail Training Facility, articles on building and sailing in THE SAILORMAN, and informally among its members at rallies or elsewhere. The R.Y.A. does the same for all yachtsmen. Only if P.C.A. and all yachtsmen are seen to encourage seamanship and seaworthiness voluntarily will the bureaucrat judge it unnecessary to force us to do so.
- c) At the risk of appearing self-righteous or plain nosey, we should not be slow to point out to those who abuse this freedom or take it for granted — the consequences for all yachtsmen. James Wharram has been warning of the danger of bad (or unstable) design for the future of multihulls as a species for many years, while the P.C.A. is at present in dialogue with MOCRA over the effects of their new safety rules on multihull seamanship.

Just as it is our business when other yachtsmen abuse our common freedom, so it is just the business of the public when we do our own thing in a way which necessarily involves rescue services. These services exist because the landsman public cares for us, and, like a parent, provides for our safety in spite of us. If our use of our freedom gives the public cause to think that we presume upon that freedom or regard it as a right, they will, just like a parent, fortify that care with paternalistic legislation limiting our freedom. No cry on our part that we never asked for such care will cause them to remove it as the price for our continued freedom. Nor will the repeated assertions of coastguards and lifeboatmen that 99% of yachtsmen cause no trouble at all defer the media or the bureaucrat once their interest has been aroused and their lust for regimentation tantalised.

Heed the words of St. Peter (with apologies for paraphrase) "Be seamanlike, be vigilant, for your adversary the bureaucrat like a roaring lion, prowls about, seeking whom he may devour"

Happy free sailing to all





Over which horizon did you sail?

HINEMOA TO HOLLAND

by Richard Bumpus and Maggie Hunt

"What! Across the North Sea in that! Without an engine!" "That" to which they referred was Surf Song our Hinemoa when we got across to the Continent.

Surf Song slipped gently eastward with the ebb tide from Harty Ferry with a mere zephyr from the south west. It was to be an eight hour drift with a crashing thunderstorm to the Tongue Tower about 6 miles to the north of the North Foreland. About 17.15 hours we took our departure from the Tongue Tower in the evening sun, with the forecast north west force 3-4. The spinnaker helped drive us into the oncoming night. The southern North Sea is signposted all the way to Holland with buoys and lightships. For most of the night I steered alone while Maggie stayed below out of the cold and wet as she was feeling a bit queasy. Her cheery face reappeared now and then in the darkness, on this her first nightsail, with a fistfull of sandwiches and soup to warm the inner soul. As the bows nodded their way easterly I nodded once, only to be brought back to life by the tug of the safety harness as I leaned over the side.

Our course wandered a bit as we went from gybe to gybe to make the best use of the spinnaker. The shipping lanes were well defined and we only had to alter course once. I never saw the loom of the West Hinder light vessel but the loom of the North Hinder was visible so we altered course more to the south east, taking account of the tide. The easterly sky paled into a grey dawn while our south easterly course became a reach which gave us a wet ride.

A little before 8.00 a.m. Maggie came to life again. Gradually the Belgian coastline appeared in the mistiness, we sighted the A.1. bis buoy off the Belgian coast and then sailed parallel to the land for the next six hours to Breskens — first with a strong favourable tide and then an adverse one, with the spinnaker pulling again and the wind in the north west. The sea was very sloppy, but under the conditions we surfed quite a bit. Maggie took the helm and is now an addicted speed merchant.

The Harbour Master at Breskens was very pleasant and most helpful and we tied up alongside a Dutchman who said that he recognised Surf Song from two years before in Ramsgate. Having recovered from a night with no sleep, we crossed the Schelde to Flushing where we had a bit of a hassle in the locks. I would have sailed through the inner harbour at Flushing if I could have got the top sail up, but a Belgian boat offered us a tow to Middelburgh through the Walcheren canal. Halfway along after waiting for the odd few bridges to open, his engine stopped and he started sculling while I towed Surf Song with a long warp along the towpath (she pulled very easily). Soon a German motor boat came by and offered a tow to both the Belgian boat and ourselves and while we waited for yet another bridge to open they passed round the Schnaps.

We liked Middelburgh very much with all the yachts tied up in the town and we were very impressed with the Yacht Club facilities and the chandlers two doors away. The next day we managed to get a tow to Veere which was very pretty, full of boats and rather touristy. Being towed through the canal was like being in a different world with Surf Song after the cold, grey, boisterous North Sea.

We sailed through the Veerse Meer and locked out into the Ooster Schelde. Our lock technique was now A.1. but I wonder what the lock keeper thought of a small cat, being paddled through. We sailed around the eastern side of N. Beveland, and under the very high roadbridge against wind and the young flood tide to Colinjesplaat where we had a wonderful surprise. There stood Dieter who took our warps and welcomed us alongside Lucky, his newly launched Tangaroa. He bought it secondhand, stripped it out and rebuilt and rigged it in 14 months — she was beautiful. We were overwhelmed by the hospitality of Dieter and Agnes — the brown bean soup was delicious after a cold evening sail.

The next day we sailed to one of the man-made islands being built on the sand banks in the Ooster Schelde. It was a beat all the way for about 2 hours. Lucky, being a longer boat than Surf Song and with a powerful cutter rig, naturally sailed a little faster but Surf Song gave her a run for her money. We anchored in a very enclosed bay and talked polycats. At 5.00 a.m. the following morning we sadly left Dieter, Agnes and their daughter asleep on Lucky under the stars. With bleary eyes we laid our course around the Roodpot, across the Raan Bank and then south westerly for Ostend. The wind was north west force 4 and the ride was wet but fun. Maggie steered most of the way while I ticked off the miles on the excellent though expensive, new Dutch charts we bought. Surf Song handles very well with no bad manners. As we sailed with the tide, our distance from the Ooster Schelde to Ostend of 42 miles was covered in 6 hours giving us an average speed of 7 knots over the ground under working sail. (Two years ago we averaged 8 knots over a period of .3 hours from Boulogne to Dover).

We followed a ferry into Ostend where we discovered the harbour to be packed with yachts, either on pontoons or lying alongside one another. We ended up seventh in a line abreast. Almost immediately we arrived two of the yachts wanted to move to pontoons while three others wanted to put to sea and so with much manoeuvring, tangled breast ropes, fending off and "I've told you three times to put that bloody engine on!" from a British yacht, all was eventually sorted out and we ended up peacefully alongside a British owned Westerley, the owners of which had just cruised down from Sweden. We spent a very boozy evening with them — they even asked if we wanted to stay aboard for the night as they weren't too sure about our accommodation!

Our sail down the coast to Dunkirk was enjoyable apart from discovering how useless out of date charts are. Common sense and observation soon showed that the buoys in the marked channel were numbered the opposite way to that shown on the chart. We sailed into Dunkirk (our usual trick with no engine) and did a very good coming alongside manoeuvre under sail. We had a surprise when we heard "Hullo Surf Song" — it was Jacques and Martine from Brussels who had sailed with us at the Whitsun Meeting at Queenborough. A few days earlier they had met Dieter and Agnes and told them of us (as Dieter had previously mentioned to us.) The North Sea coast seems a small world full of friends. The crew of a Belgian ocean racer of about 32' were very interested in our performance. He said he could sail 35 to the apparent wind in a force 7. I had never sailed like that and as he played his trump card, I played mine. I said that given a good breeze with my flat cut spinnaker

The Sailorman

on a reach I would be hull down over the horizon and home in time for tea. We agreed that it was swings and roundabouts, although the vessels did differ markedly in size.

Dunkirk to Calais was a drifter with a stronger tide than reckoned. We anchored off Calais as it was flat calm (well, I suppose you can't sail into every harbour!) The next day it took us five hours to the White Cliffs of Dover. Maggie spotted the chalky cliffs first — what I had thought to be cloud over the land was in fact the grass of the cliff tops. While off these cliffs a ferry altered course towards us and gave a loud hoot.

Do I have a friend on the bridge of a Townsend Thoreson ferry? We waved madly and all the passengers did likewise. Visibility had been 1–2 miles all the way across and shipping was light. The ferries, hovercraft and later the fog horns of the South Goodwin and Varne lightships were additional aids to our navigation across the Channel.

Off Deal the fog closed right in to nil visibility. A French sloop with sail and motor and of about our length closed in on us and said "You go to Ramsgate?" "Oui" we replied. He sailed alongside in the light breeze. When this died he towed us while we navigated — I flashed so many fingers at him to tell him how many degrees to steer (luckily only about 20°). We found a buoy and the Frenchman with his new-found bearings navigated while the hovercraft roared around in the thick whiteness. Maggie's hawklike eyes spotted the lights of Ramsgate and then they were gone again in the fog. When we reached the outer harbour and tied up you couldn't see from one side of the harbour to the other for the pea-souper.

Wherever Surf Song went she attracted a great deal of attention with her sprit rig. In Ramsgate one evening while dining on veal cutlets and salad we heard a voice on the wall say "That's a Wharram cat. where they live in the hulls."

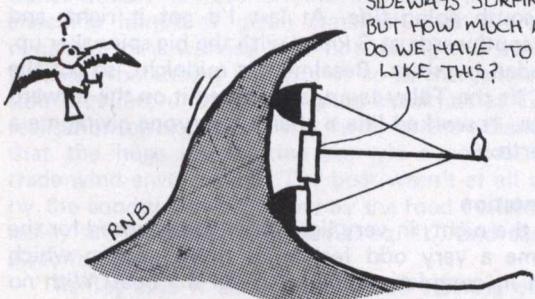


EXTRACTS FROM A LETTER BY PENNY LATHAM (who together with K.C. Jensen owns the TANGAROA Mk. IV of which a photograph was published in the SAILORMAN)

We had a fairly uneventful trip from Milford Haven down to Spain and then to the Canary Islands.

Since then we have sailed from Tenerife on 19.1.77 and arrived in Antigua, West Indies, 25 days later, which was a little longer than we anticipated; but a week of very bad storms and gales, 1000 miles west of the Cape Verde islands saw us under bare poles, dragging warps and a large lorry tyre to slow us down. In spite of that we still covered 500 miles that week, luckily in the direction we wanted. We realise now that this must have been a tropical storm, although rare at that time of the year. The seas were very large and confused with rolling breakers etc.

We had a near capsize under bare poles while trying to lie-a-hull one night, but we were so exhausted we felt we had to try it.



After that we continued steering to keep the stern to the waves and although terrifying there was no danger of capsizing. I think the seas were so large, they were capable of overwhelming us and one very large wave lifted one hull so high, and on top there was still green water coming. Luckily the wave was moving so fast, it hit the other hull and wrenched us back vertical, although KC swears we were past 90°.

Anyhow after that week we had two weeks of relatively good tradewind sailing although strong winds and squalls kept us under reefed sails most of the time.

Our last 3 days were very enjoyable and we even managed a fairly steady 12–15 knots the last day. Nevertheless we were very glad to drop anchor in English Harbour.

We have been helping another Wharram cat. (51') from Penzance with their day charter and enjoyed this.

While in the Canaries we carried out some alterations on the boat and installed a centrally placed small diesel engine with a long shaft. We also bought a second-hand ARIES self-steering vane gear. To install this, KC built a small area of slatted deck aft of the mizzen mast and mounted the vane between the hulls. This worked very well even at speeds of 12–15 knots and is well worth considering for anyone planning a long ocean passage. For the tail end of our bad weather we managed to set it to hold the boat while running under bare poles and could never have managed the crossing without it, although we still kept 24 hour watches. It unfortunately would not work under the very rough weather. To fit the vane we had to dismantle the wheel steering and when not using the vane we tiller steered. The diesel has been a good investment and by way of a car alternator connected to the engine we can keep our batteries charged with ease.

We both of us feel built in water and fuel tanks are very important since this keeps a large amount of weight low down. (Even without built-in water tanks weight can be kept low by stowing food stores and other heavy gear in the bilges — Ruth Wharram).

Apart from these things we have not altered TANGAROA M, IV and still find her very seaworthy. She stood up to the crossing and rough weather very well.

Regarding the ARIES vane gear we found, to prevent it overcorrecting, it was best rigged by ropes and some shock cord (elastic) to the tillers.



FOR SALE: Douglas fir mast and unstayed standing topmast for Hinemoa. One season old Jeckell's mainsail, two season Thurston topsail. Some fittings. \$100 takes all. T. Jones, 3920 Manor Street, Philadelphia, Pa. 19128.

ORO FOR SAIL, marine ply-cascover sheathed, decked, furnished, crossbeams made and fitted. Many other bits and pieces. For further information contact Dave Mitchell, c/o Richard Bumpus, 2 Frenches Row, Barrow Green, Teynham, nr. Sittingbourne, Kent.





The Sailorman

1100 MILES SINGLEHANDED IN A HINEMOA by Sam Nelson

I decided to fulfill the ambition of years and attempt a longish singlehanded journey. After all, I had a tough and reasonably comfortable little boat in my 23' Hinemoa SILVERHEELS. Down to Plymouth and back for the start of the 1976 OSTAR was the obvious choice. The return journey from my home in Troon on the Firth of Clyde was about 1100 miles, with some nice open bits to cross, to provide an illusion that I was one of "Them" when in fact I'm one of "us", with wife, children, mortgage, and all that, with no intention of abandoning them, at least not for more than three weeks.

Equipment

"Silverheels" has no self-steering, but like all Wharrams she is very well balanced, and I hoped she would self-steer by biasing the tillers with shock-cord as required. The rest of the necessary equipment for going offshore was on board, in fact she was equipped to the requirements of the RYA handbook YR10/72. Anybody intending to take a boat offshore, whether racing or not, is well advised to get YR10/72 from the RYA, and work their vessels up to the standards described.

The navigation department in the port hull has a very good semi-portable navigation table, 22" x 30", sliding along the tops of lockers built up either side, to gunwhale level. When not in use, it slides forward out of the way, making a quarter-berth out of the port bunk, which was cramped but comfortable. I carried 12 charts Reeds, Seafarer Echosounder, Seafix D-F, Ventimeter, ex-aircraft "P" type compass, with two Silva walking compasses attached either side of the eleven-foot wide cockpit for steering. These are very accurate, show up well in the dark without special illumination, and at under £3 each are very good value.

The voyage south

I left Troon on Sunday 23rd May at 1700 in a light westerly, with a forecast of S5/6 for Irish Sea, gales Malin, destination Portpatrick, 55 miles south of Troon. With such a forecast it might have been sensible to stay in port, but the local forecaster gave no hope of a favourable wind for at least 48 hours, and I was hoarding my 21 days like a miser. A good bash to windward will sort us both out, I thought, and better to break things close to home. This proved to be remarkably good thinking. By midnight the wind was SE 6, and I was down to storm jib and double-reefed main, making it nicely to windward. At 0500 off Girvan pounding seas dislodged a piece of the slatted platform which is used as a diving hatch, and had not been lashed down. It was lost, along with a couple of plastic baskets containing warps. I was left with a 3' x 3' hole in the platform forward to starboard, which made moving about on that side very hazardous. A diversion to Girvan was indicated, which was about 3 miles to windward. Started the engine when about half a mile off, and struggled into harbour at 0600 with the wind warm and steady SE 25-30. The boat was steering in a peculiar way, surging around, and making like a submarine in the short, heavy chop. When safely tied up found the starboard forward hull half full of water — the hatch fastenings had not been screwed down tightly enough. So: 39 miles made, all to windward, and some lessons learned cheaply.

After a few hours sleep, a phone call home brought wife with matching douglas fir to renew the lost platform piece, and the boat was ready for sea again by 1800. The forecast still gave gales Malin, Irish Sea, so had a good night's sleep, and was rewarded at 0633 with Irish Sea SW4 becoming NW3/4, and never mind the gales Malin, Shannon.

Departed Girvan at 9 a.m. 25th, destination still Portpatrick, wind SW3, warm clear, seas slight. Enjoyed a marvellous day, getting the boat going to windward, and lashing down everything in sight, twice. The promised NW wind arrived at 3 p.m., and the boat took off on a broad reach, arriving off Portpatrick at 6 p.m. Hove to, to decide whether to ride the favourable wind on to the Isle of Man, or spend the night in Portpatrick. The entrance to Portpatrick didn't look very inviting, so after changing into a wetsuit, and preparing lots of food, set course for Peel at 9 p.m., having been hove to for nearly 3 hours, dithering. Wind NNW 5, seas rough and getting rougher as they bucked the North Channel tide.

Spent much time during the night trying to get the boat to self-steer, but with the wind astern, and quite big seas very large helm movements were required to keep her on course, so I steered her all night, heaving to every couple of hours for navigation and refreshments. It was very cold during the night, and the uselessness of a wetsuit when sitting still became more and more apparent. Also a simple thing like using the loo took fifteen minutes, struggling in and out of neoprene jacket, long johns, etc.

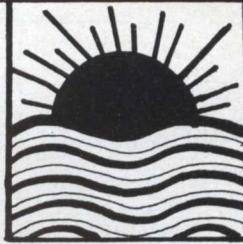
Calf of Man light came up on the nose at 0400, and daylight brought a change of wind to the west. At 0600 I was 5 miles west of Peel, in very big seas, and decided Peel was too exposed for the conditions, so diverted to Port St. Mary, on the southwesterly tip of the island. Calf Sound, between the main island and the Calf was full of boiling water and rock fangs, so hauled up to windward and bashed through very big seas to pass well clear of Chicken Rock to the west (very aptly named, considering the options!) then eased sheets for a mad run downwind, through acres of boiling water and overfalls, to arrive at Port St. Mary at 0830/26th. 98 miles sailed (including distance sailed to windward) in 23 hours 30 mins, and a few more lessons, learned, the main one being that the boat didn't mind rough seas. The other lesson was to keep the wetsuit for diving and dinghy sailing.

Hot showers and much hospitality at the IoMYC at Port St. Mary was much appreciated, and after a most enjoyable 24 hours in that lovely spot sailed at the disreputable hour of 1130 on 27th, destination Holyhead. Wind right on the nose force 2 to 3, and enjoyed a very pleasant 21 hour sail, much of the time with my shock-cord self steering doing very well. I mainly relied on the Seafix for navigation, though at that stage my lack of expertise at using the instrument made it more appropriately called a Sea Approximation. Arrived at Holyhead 0800/28th, 89 miles sailed, all to windward, in the 21 hours. After phoning home, I picked up a spare mooring off the yacht club and into my bunk. Woken up by an angry fat man in a big yacht at 1100 demanding his mooring back, so in a fit of pique sailed forthwith, destination Milford Haven. Wind light Northerly, with strong south going tide. At last I'd got it right, and drifted southwards at 3 knots with the big spinnaker up, surrounded by ships. Beccalmed at midnight, so got the spin in, lit the Tilley lamp, and placed it on the forward platform. It worked like a charm, everyone giving me a wide berth.

Disorientation

During the night, in very light airs, I experienced for the first time a very odd feeling of disorientation which resulted in complete inability to sail the boat! With no

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horizon, my boat a brightly-lit oasis suspended in an inky black sphere, I sailed around in circles, jibing gently on occasion, wondering what had happened to my always doubtful sailing ability! Finally took a firm grip on myself, took a bearing on the wind, as far as I could ascertain, drew a little picture in the rough log showing the relation of the wind to my desired course, then set the sails accordingly, and inched the boat around until I was on course. Held that course grimly until things settled down, then an hour later had to go through it all again. This phenomenon bothered me again during the trip, and I found the only way to avoid it was to have as little light showing as possible. I then had no trouble tuning my boat in with the elements, as it were, but this was not always the sensible thing to do in busy shipping areas.

The morning brought WSW3, clear, cold with bright sun, and I continued across Cardigan Bay on a close fetch for Bishops and Clerks, with hopes of making it across St. Brides Bay and into the tricky Jack Sound passage with the beginning of the tide, at 2130, and the last of the daylight. The wind headed me during the day, however, so diverted to Fishguard, arriving at 2330/29th, average speed 2.7 knots, from Holyhead, not much, but something that gave food for thought was that I had kept going, more or less, since Port St. Mary, and was still functioning pretty well after 2½ days.

In the morning moved from the commercial harbour to Old Fishguard, a delightful sheltered spot with good holding on white sand, pubs, a welcoming sailing club with showers, and Dilwyn Jones, a friendly multihull builder/owner whose wife dispensed home-made fruit cake and cups of tea aboard his very roomy 29ft Ninetails catamaran.

The forecast next morning gave Lundy SW 4/5, becoming W 3, which was perfect, so left Fishguard a little regretfully 1300/31st, destination tentatively St. Ives, but if that Westerly came I was going for Plymouth in one go. Clear of Bishops and Clerks there was a boisterous SW5, and I experienced for the first time the trauma of a big Atlantic swell, complete with breaking crests. The seas off the west coast of the Isle of Man were small brothers of this lot, and my log registers what is now a comical degree of alarm and dismay. I reefed busily, and bore away with the sheets started a bit until we were about 65 degrees from the wind, luffs lifting slightly. In this defensive posture "Silverheels" slipped along easily, heading 310 straight for Tuskar. If the Westerly didn't come I would go and sample some home-grown Guinness. I left a favourite piece of shock cord on the helm, and retired below, shaking with fear. She self-steered beautifully, occasionally copping a breaking crest on the port side which sounded as if the cabin was coming off. At 2200 Tuskar came up on the nose, distance about 10 miles, then half an hour later the wind started backing to the West. I went about and settled on a new course, having the same relationship to the wind and the sea as before, heading nicely for the Iberian Peninsula. At 0400 I had managed 75 miles so far, in spite of the defensive posture. The wind settled to a boisterous W5, with a big long swell with hairy breaking crests that gave sensational double thumps on the hull sides in succession, chucking lumps of green water all over the place. I remained very worried and not sailing the boat at all properly, but doing 5 knots or so in the general direction required, until after a good breakfast at 0700 the realisation awoke that I was fairly in the Atlantic, and that the huge intimidating sea was a normal sort of trade wind environment. The boat wasn't at all worried by the conditions so fortified by the food I unreefed the main, set the No. 2 Genny (90 sq. ft.) and eased her away for Lands End.

The log says it all — "1350 Hand steering on beam reach, boat being bashed something cruel, cabins leaking,

much green water on foredecks. Days run 128 miles." From 1550 to 1950 ran 27 miles equals 6.7 knots. Not sensational but very good for these very lumpy conditions. Put that in your 1.4 times square root of 19ft., you leadmine drivers."

At 2000 hours, 31 hours from Fishguard everything functioning well including me and Land-ho, Pendine light bears 150 about 15 miles. Abeam Longships an hour later Neptune shrunk my big head by causing the wind to drop away, and I was trapped by the foul tide describing big circles off Longships until 0600! Ships all around, land close, and getting closer to port, sleep was out of the question. There was some wind, dead against tide which raised a horrible jerky pyramid sea, which killed the sails stone dead. Escaped with the change of tide (a bigger boat wouldn't have been bothered) and had a glorious spinnaker run in bright sun to the Lizard, and lovely to see Mounts Bay for the first time. At 1625 was abeam the Lizard, about three miles off. Wind backed to NW about 4, and the last 45 miles were sailed closehauled, sails sheeted hard and flat, we got up to windward like a scalded cat, arriving off Rame Head at 0100. 45 miles in 8 hours 35 min — 5.2 knots. Started the engine a little later of Penlee and anchored clear of the fairway south of Drake's Island in 30 feet of water at 0200/3rd. I had made it in time for the start, with a day to spare.

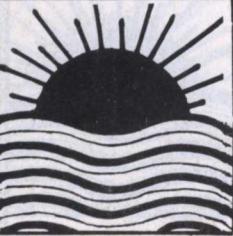
Fishguard-Plymouth 247 miles in 50 hours 45 mins — 3.65 kts. Total distance sailed Troon-Plymouth 561 miles in 154 hours — 3.65 kts. I had run out of tea and coffee at Lands End, and the only hot drink I could think of was Whisky and hot water. Sounds great, but not if you HAVE to have it. I went to sleep planning an attack on the Plymouth supermarkets.

Plymouth and the OSTAR

The next two days were a euphoric daze. Plymouth was crowded with OSTAR competitors, and I spent a fortune on film of the competing yachts in Millbay dock. The Royal Western Yacht Club were extremely civilised and welcoming in a posh sort of way, and I was taken in hand by the local Wharram Mafia, Steve Turner being very hospitable, as only a Cornishman can. I got "Silverheels" a berth in the Marina at the Barbican for the very fair charge of £1.38 per night. Her elegant lines were spotted almost immediately by Les Landricombe, a Narai Mk4 builder, and he in turn introduced me to Steve, and so it went. I was taken out to Pat Patterson's boatyard at Millbrook, where there were a number of Polycats in various stages of completion. Two beautiful OROs were admired, but I was most taken by a very beautifully finished Tangaroa, complete and afloat that had been built by a local shipwright. 50% more waterline than the Hinemoa, and enough room inside to stand up to put your trousers on. What luxury! I returned to "Silverheels" very thoughtful.

Early on the morning of the 5th June I slipped quietly out of the Marina without using the engine, and sailed gently to my old anchorage to the south of Drake's Island. I had a grandstand view of the mighty OSTAR fleet coming out to the starting line, every one passing within a few hundred yards. At 1100 I raised the anchor, and ignoring the prohibited areas notified, started with the Pen Duick Class at 1200. I didn't feel too conspicuous, as about 50,000 French spectators were doing the same, in a great variety of vessels, including a specially chartered ocean going passenger liner,

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which was charging about like a dinghy. The afternoon was spent with a large number of yachts beating down to the Lizard in the light SW wind. Mike McMullen in "Three Cheers" went by me close to leeward as if I was at anchor, and I was by no means the slowest boat around. Something that was very noticeable was how very badly some of the bigger boats were sailed, which also gave me food for thought. That first night was the most dangerous of the whole voyage, with yachts crossing tacks in the blackness, all over the place. Visibility was not good, with light rain and mist, and I was nearly run down several times. I was off the Manacles buoy at dawn the next day, and drifted down towards Lands End with the tide, mostly becalmed, for the whole of the day, and the second night. The wind freshened at dawn on the Monday, and we rounded Longships at 0800/7th. The wind set in SW3/4, and with a fair wind I squared away for Milford Haven in a day of brilliant sunshine and flying spray. Landfall was made off Linney point the next morning at 0830, in misty conditions, right in the middle of a very active firing range. I managed to sort out where I was, mainly by a line of soundings, and got the hell out of it, to be intercepted by the Range Safety Boat when clear. "They've stopped firing" sez he. "@?!! off" sez I. He didn't, and made a point of escorting me to the entrance to Milford Haven. I was worried that my particulars were going to be taken down, with a view to prosecution for infringing the firing area, but it turns out that it is not possible to prohibit free passage upon the high seas and one may infringe such areas with impunity, if you don't mind the screech and bangs of live shells going off. I can't really recommend it.

Most of James Wharram Associates were away in Canada at a Multihull Symposium but I was warmly welcomed by Lesley and Nuala, and made myself useful by demonstrating my salt-encrusted Polycat. to a potential customer from the continent. I was shown over TEHINI and most interesting of all, I examined TANGAROA (mentioned in the previous article.)

Back over the Irish Sea

All this time, the forecast for Irish Sea were giving steady SW3/4, and I was missing it, so cut my socialising short and sailed from Milford Haven at 1000/10th June, destination Troon. Outside there was a splendid SW4 blowing, but I had to heave to for an hour until the tide turned in my favour at Jack Sound. The north-going stream began at 1210, and I arrived at Jack Sound at 1310.

The log tells the story. "1320 Cleared Jack Sound. Incredible: Never again. Narrow winding passage between rock fangs. Water boiling and breaking with heavy SW swell surging into funnel. No soundings due to turbulence. NEEDED large whisky when clear."

Gale warning

Settled down again past Bishops and Clerks, and into the Irish Sea, then at 0033/11th the weather forecast gave Irish Sea SW 4/5 increasing 6 to 7 occ 8 Rain Mod. Ran through the night, with the wind rising steadily, until at 0910, 95 miles out from Milford Haven, the large and very confused sea started thumping the boat badly. I adopted the Tom Jones (Hinemoa "Two Rabbits") defensive posture, and hove-to with the storm jib (30 sq. ft.) sheeted hard amidships. "Silverheels" lay about 70 degrees to the seas, her diagonal attitude giving an apparent much longer waterline. That's what the books

say, and they're right. Unfortunately I got bored after an hour and half, so turned away downwind again and ran like a scalded cat, sometimes running down the waves, and overtaking them, other times being overtaken by the seas, depending I think on whether the little storm jib was blanketed or not in the troughs. After a couple of hours of this hair-raising progress I was badly pooped twice, the second time both rear hatch covers came off. I recovered them, replaced them and then got a hammer and nails and NAILED them down. The time had come to heave-to in earnest, so I returned to the Tom Jones defensive posture, and apart from the howling of the wind, and the violent jerky motion she was really quite comfortable. I'm not at all prone to seasickness, so cooked up a good meal with some difficulty, then didn't fancy eating it! At the worst it was a clear force 8, with large well-marked areas of foam blown in streaks down the wave-fronts. All the time hove-to the boat rode like a bird with its head under its wing, not at all bothered by it all, and I didn't have a moment's anxiety. At 1700 I got bored with the whole business, and decided to divert to Holyhead, which was a beam reach 24 miles away. She flew off, with just the storm jib up, and at 1940 South Stack came into sight, right on the nose. At 2000 hours I was one mile west of South Stack, and could already taste the first pint in the club. Then came a cruel jest from Neptune. The strong tide running to the north around South Stack got me, and I was swept away to leeward, into Holyhead Bay. I didn't have much petrol in the engine, and it would be very tricky filling it in this lot. I didn't fancy my chances of getting up to windward with only the storm jib, so took a quick bearing on Skerries Radio Beacon (030 degs.) then set course 320 degs. to clear the Skerries. Got a good pinpoint on them 15 minutes as they went by in the murk, and continued heading NW until 2330, when I hove-to again, well clear of the Anglesey Separation Zone, for a Zizz.

Strangely enough, this episode was almost the most enjoyable part of the trip, once I cleared the imaginary taste of lager from my palate with a large Cream of the Barley, and I cooked and ate a huge meal sitting in the leeward hull discovering by happy accident that she would self-steer to perfection (well, almost) in these conditions with just the storm jib up, crew in the leeward hull. From about 1800 conditions had been slowly moderating, and when I hove-to it was about force 6 from the SW, gusting higher at times. Set course again for Troon at 0400 in moderating conditions, and had the spinnaker up for 5 hours the next afternoon, approaching Bonnie Scotland. Beccalmed again, off Stranraer for 4 hours the next evening, which made a welcome rest, then got the wind again early in the morning of the 13th and arrived home off Troon at 1025 on Sunday 13th June, on the fringes of another Force 8 SW gale. The magic Suzuki outboard started 3rd pull, miraculous after all the seas that had been breaking over it, then ran out of petrol five minutes later! Of course, the spare petrol was in one of the hatches that I'd nailed down!