AYRS PUBLICATION N°80

Round Britain 1974

"MANTIS IV"

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ROUND BRITAIN 1974

CONTENTS

THE ROYAL WESTERN/OBSERVER ROUND BRITAIN SAILING RACE, 1974

The object of the race is a sporting event to encourage the development of suitable boats, gear, supplies and techniques for efficient short-handed cruising under sail, and also to test the speed and seaworthiness of wildly different types of boats by enabling them to race against each other on equal terms. The crews are limited to two people per boat and boats must exceed 24 feet in length.

This A.Y.R.S. publication has been made possible by the help and information given by the organisers and competitors. It is produced in the hope that the lessons learnt by racing can be used by other yachtsmen to their advantage and so that some of the failures can be guarded against.

Michael Ellison,
Administrator, A.Y.R.S.

THE 1974 ROUND BRITAIN RACE
Comments by Michael Ellison

The 1974 Round Britain race was an outstanding success. As with the previous two races held in 1966 and 1970, it has been said that everyone who completes the course is a winner.

The first race was covered in A.Y.R.S. publication 57 and the second formed the main part of our publication 75, Deepwater Seamanship—it was given the title because Seamanship is above all the main quality which enables two crew to complete five separate passages between the specified ports each with a set time of departure.

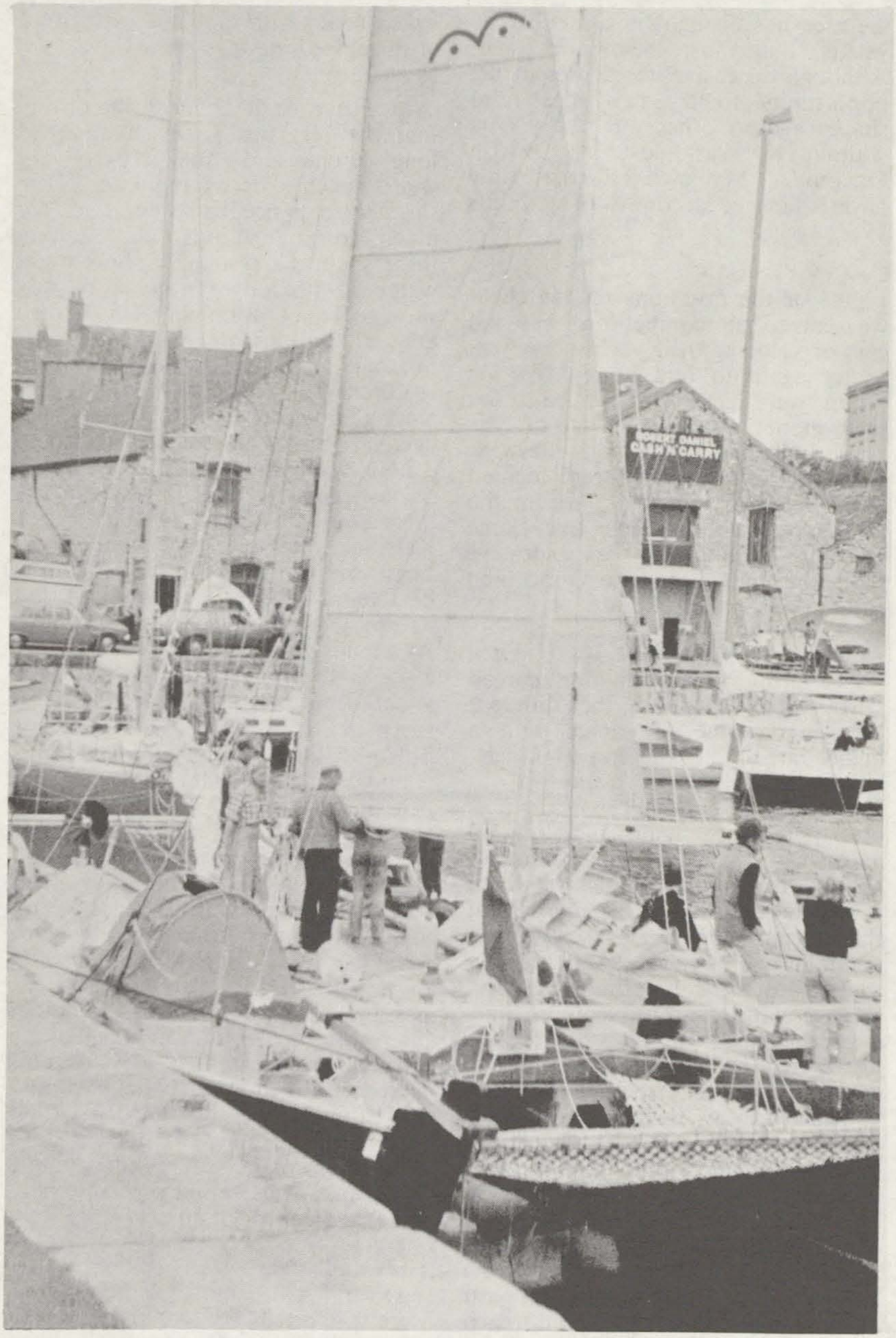
Prizes

In this race there was the major prize for the first yacht to return to Plymouth and a second main prize for the first yacht below 35 feet. Again there was a handicap prize to add interest and as before the handicap factors were not published so that it is impossible to produce an odd shaped monster to win this prize—you just have to sail and propel the yacht to the limit of your ability. It seems to help if you have a very small yacht that does not look too fast—but don't count too much on this for the next race. The handicap committee are bound to be unpopular with all except the winner and they do deserve a lot of credit. There are other prizes including one for the fastest time on each stage. As the fleet spreads out into completely different weather patterns the later yachts are quite likely to get a favourable wind where the leaders were becalmed or beating and thus collect a trophy.

As before the yachts in this race are a grand mixture both in size and type. I prepared a graph comparing each yacht between each port but the result is meaningless. We are comparing Ron Glas, a very comfortable cruising craft with full home comforts and with a "junk" rig that can be handled without ever going on deck with the true racers like British Oxygen, Three Cheers, Tripple Arrow and F.T. "Quailo III" must also be classed as racer but she was built to the rating rules which intend to give maximum pleasure to a large crew and not as in this race to encourage the development of craft suitable for cruising with a limited crew. "Gulf Streamer" and "Petit Suisse" were both in this race to win, but neither exactly fit as outright racers for this particular event.

Under 35's

To my mind one of the best things



PREPARING FOR THE RACE — Michael Ellison

the race has brought is a number of yachts built just below 35 feet. Although expensive, these present the opportunity to try new ideas and shapes against other top rate yachts without the vast cost of "British Oxygen." My own effort is fully covered in the accounts of "Mantis IV."

Cost of Yachts

One of the questions on the sheet we sent to all competitors was the cost or value of their yacht—this was to try again to find if any type or group were getting more boat for their money. In the 1970 race, the home builders such as John Beswick with "Leen Valley Venturer" seemed to be getting good value. From the replies received, it seems that home building is no longer less expensive than the purchase of a good and suitable second hand craft.

Failures

The proportion of failures spread fairly evenly between the different types and value of yachts with a higher rate among the home builders, although the yacht which was lost was professionally built. The main failures were once again rudders and masts. In the case of a mast, we have a very complex structure which is dependent on a great number of shackle pins and rigging screws and the failure of any one of these can lead to instant dismantling. A good seaman reduces sail in plenty of time, a good racing helm presses on with just a fraction less than the ultimate load on every part so that failure is understandable. In the case of rudders, it seems clear that the loads involved in the control of a yacht at high speeds has not been understood by designers and builders. A number of centre boards and dagger boards also failed and it seems that some crews left the full amount of board down when on a high speed reach and under these conditions in rough water, I can not think of any board which could withstand the extra load of dropping sideways off a wave.

Watches

In this race it is most interesting that the very fast yachts abandoned long watches and either worked very short watches or as required. The slower yachts needed to be at sea for much longer periods and among these yachts, a system of short night watches with longer watches by day was generally adopted. On British Oxygen, they usually worked 1 hour on and 1 off when both were not required on deck, "Three Cheers" worked roughly 3 hours but very flexible and "Gulfstreamer" worked 3 hour watches at night and 4 hours during the day. On Burton Cutter, there was no fixed routine. Nick Keig of the very successful Three Legs of Mann reported "Totally flexible." When the helmsman felt he was loosing efficiency we changed. As a guide, 4 hours on in good weather 1 — 2 in bad weather." Of these yachts none were using self steering.

As so many of the leading yachts did not keep regular watches this would indicate that they are not necessary. It is most interesting to consider how long the passage has to take in hours to make regular sleep desirable and naturally, this will depend on each individual person and yacht due to the differing work load involved. If a prolonged calm or a gale from ahead increased the passage time in hours it would be interesting to note how the sailing efficiency decreased. Perhaps this is something that each crew should find out before the race so that action can be taken to prevent both crew becoming exhausted at the same time—this would probably happen when approaching port.

Heat and Light

Once again Calor gas and 'Gaz' were preferred for cooking with a few paraffin and one methylated spirit (alcohol). There was one re-

ported gas failure and this leads me to state that for offshore sailing, I do not like the 'safety' requirements of various authorities that require the gas bottle to be placed outside with a drain overboard. In every case I have come across so far, the leak has either been in the gas pipe, especially the flexible pipe to the stove, or at the tap on the stove or light. It seems to me that the tap on the gas bottles are very reliable and if the bottle is convenient to the stove, the user will turn the gas off at the bottle. If the bottle is outside and is in almost constant use as when sailing at night, my experience is that it is just never turned off. The gas pipes should be as short as possible and be frequently inspected.

We have received nothing but the highest praise for the "Seawife" navigation lights which were chosen by a number of competitors. We could not use these on "Mantis IV" because we started with the mast free to swing on each tack and a tacking light would cause some considerable confusion.

"Seawife" navigation lights have a flourescent tube showing the correct red green and white sectors. The 21″ 13 watt light has a range of 2 to 3 miles, uses 1.2 amps at 12 volt current and costs £15.07 or £17.05 to include an all round white anchor and emergency light above the tricolour light. A 12″ 8 watt unit of the same design uses 0.7 amps and costs £12.54 (1974 prices!) The address for details is:—Weylite Ltd., 58 Normandy St., Alton, Hants., England.

On "Mantis IV" we used oil navigation lights because there is neither room nor enough space to carry batteries and charging equipment. We used dry batteries for the echo sounder, speedometer and radio set. The oil lights are very satisfactory and can stay alight under a surprising amount of water—they do not like violent movement and need fitted mounting brackets.

In this race and in our 300 mile Crystal Trophy race, a totally unacceptable number of yachts continued without lights. A member from Sydney, Australia reports that in a number of their long distance races, he has observed yachts without navigation lights so these are not isolated cases—I suppose because they are mainly racing to the same destination, they do not collide and we will just have to hope that two racing fleets do not cross tracks at night . . . Checking the lights after the finish would just ensure that skippers 'saved' their lights for arrival and the only way that I can see to enforce this is to have a yacht with radar stationed at a headland and disqualify offenders. It is a tragic thing to find that yachts are breaking the rules and then not declaring this on completion of the race, yachting is a sport which is made possible by trust and honesty and I hope it can continue.

Again the "Minicat" and "Maxicat" heaters were popular with competitors, the "Minicat" puts out 2,000 BTH/HR and runs for 24 hours on about 2½ pints of lead free petrol. It measures 8″ diameter and 7″ high. These heaters are very safe and do not burn if left upside down. (A sock which fell onto the heater became charred but did not burn—after this one member put the socks into a biscuit tin over the heater to dry each watch). These heaters are available from Weylite Ltd., £8.00 for the small one.

To be fully effective and reduce condensation rather than just circulate warm damp air, it is necessary for every stove or heater to have a pipe to lead the warm air outside. Very little attention seems to have been given to proper ventilation and heating of the yachts in the race. This is more surprising when the race takes yachts above 60 degrees North latitude and snow showers could certainly be encountered around the Shetland Islands.

Following the list of the yachts are comments and accounts of the race by competitors who kindly returned a question paper to us. Some of the replies are slightly repetitive but as each has sailed over 2,000 miles, these comments represent a wealth of experience. We can perhaps learn more from the yachts that failed to complete the course and I am sorry that we do not have more details of some of these so that we can learn without repeating expensive mistakes.

I gather that F.T. lost more than one rudder and the trimaran "Gancia Girl" also had a log entry which read "under power looking for the rudder."

Size Order	Crosshaven	Castle Bay	Lerwick	Lowestoft	*Plymouth Finish Order*	*Elapsed Time*	Length O.A.	Type
Burton Cutter	11	7	6	6	British Oxygen	10 04 26	70.00	C
British Oxygen	1	1	3	1	Three Cheers	10 05 37	46.00	T
Manurera	10	5	4	4	Gulf Streamer	10 07 48	60.00	T
Gulf Streamer	4	4	2	3	Manureva	11 03 15	70.00	T
Quailo III	8	9	8	7	Three Legs of Mann	11 12 13	34.11″	T
Tripple Arrow	3	3	11	8	Burton Cutter	11 18 49	80.00	M
Outlaw	28	25	20	19	Quailo III	12 01 37	55.00	M
Ron Glas	46	36	32	29	Tripple Arrow	13 01 30	49.00	T
Three Cheers	2	2	1	2	F.T.	14 06 14	34.10″	T
Pulau Tiga	21	42	41	34	Superstar	15 09 40	34.11″	T
Galway Blazer of D.	52	38	36	35	Tyfoon 5	15 16 51	34.06″	M
Gancia Girl	39	47	37	32	Josephine M	15 21 30	35.00	M
Zeevalk	32	28	27	26	Chough of Parkstone	15 22 27	30.00	M
Frigate	12	13	22	16	Frigate	15 23 52	38.09	M
Snow Goose of Wight	19	24	19	12	Snow Goose of Wight	16 01 14	36.10″	C
Josephine M	17	22	14	13	Morning Song	16 04 11	33.06″	M
Mex	33	34	31	28	Outlaw	16 06 15	48.06″	M
Three Legs of Mann	5	6	5	5	Albin Ballard	16 07 02	29.11″	M
Superstar	26	17	12	10	Loiwing	16 18 12	34.07″	M
F.T.	7	10	10	9	Petit Suisse	16 19 28	24.09″	M
Croda Way	6	14	43	37	Eroica II	16 23 41	31.00	M
Loiwing	24	26	23	23	Cherry Blossom	17 00 13	33.00	M
Catch 34	29	35	34	31	Zeevalk	17 11 38	39.06″	M
Tyfoon 5	23	20	15	14	Shamaal II	17 20 30	25.06″	M
Morning Song	22	18	16	17	Minnetaree	17 23 39	30.00	C
Cherry Blossom	37	33	26	21	Shesh	18 04 39	29.03	M
Eroica II	36	30	24	20	Ron Glas	19 14 30	47.00	M
Chough of Parkstone	27	23	18	15	Mex	19 15 06	35.00	M
Minnetaree	14	16	30	24	Helene II	19 16 05	26.00	M
Albin Ballard	31	27	21	18	Croda Way	20 23 35	34.09″	T
Airedale	48	46	38	36	Galway Blazer of D.	21 01 43	42.00	M
Shesh	34	31	28	27	Gancia Girl	21 03 38	42.00	T
Eclipse of Mylor	61	49	45	40	Catch 34	21 07 28	34.00	C
Heavenly Twins	56	45	39	38	Boule D' Ecume	21 13 33	26.00	M
Helene II	42	37	33	30	Airedale	22 17 20	29.06″	M
Boule D' Ecume	50	39	35	33	Pulay Tiga	22 19 25	44.00	T
Sherpa	54	43	42	39	Heavenly Twins	23 02 46	26.02″	C
Shamaal II	35	32	29	25	Sherpa	23 14 20	26.00	M
Petit Suisse	38	29	25	22	Eclipse of Mylor		28.00	M
Windsor Life	60	50	44	41	Windsor Life		24.02″	M

Total of 40 to Finish.

'C' = Catamaran
'T' = Trimaran
'M' = Monohull.

Position	YACHTS IN SIZE ORDER	Length O.A.	Disp. at Start	Sail Area	Spinnaker	L.W.L.	Material	Approx. Value	Self Steering	S.S. Used?
6	Burton Cutter	80.00	30.0	2,400	Yes	69′ 00	Aluminium	£100,000	None	
1	British Oxygen	70.00	13.0	2,200	Yes	60′ 00	G.R.P.	£80,000	None	
4	Manureva	70.00	(Publication 71 as "Pen Duick V")							
3	Gulf Streamer	60.00	6.2	1650	*Yes	57′ 06	G.R.P./F.	£50,000	None	
7	Quailo III	55.00	17.0	1,543	Yes	49′ 02	G.R.P.		Aries	Not used
R	Tehini of Deganwy	53.06	5.0	1,250	No	40′ 00	Plywood	£10,000	None	
8	Tripple Arrow	49.00	3.5	761	Yes	45.00	G.R.P./F.	Inexp.	Not	used
17	Outlaw	48.06								
R	Slithy Tove	48.00	4.5	800	Yes	40.00	Ply	£5,000	None	
R	Peter Peter	48.00	? ?	910	No	42.00	G.R.P.	£8,000	Q.M.E.	Not used
27	Ron Glas	47.00	10.5	810	No	36.0	Cold Mould Sheathed	1971	Hasler	All the Time
2	Three Cheers	46.00	3.2	550	Yes	44.0	Cold Mould Sheathed	£15,000?	None	
R	Johnwillie	46.00	7.0	1200	No	40.00	G.R.P./F.		Vane to Trim Tab	Used
R	Hippokampos	45.00	15.0	840	Yes	33.00	Cold Mould Wood	£34,000	Aries	Used
36	Pulau Tiga	44.00								
R	Cymro	43.06	(Publication 76)							

	Vanessa	43.00								
31	Galway Blazer of D.	42.00	4.5	525	No	34.00	Cold Mould Wood	£12,000	Hasler	Used
32	Gancia Girl	42.00	(Publication 57 and 76 ex "Toria")							
R	Kasanti	40.00	6.7	956	Yes	35.00	G.R.P./Balsa	£12,000	Airies	No
23	Zeevalk	39.06	(Retired from 1968 Single Handed Race)							
14	Frigate	38.09	12.0	600	Yes	30.3	Laminated Ply		None	No
	Double O Too	38.02								
15	Snow Goose of Wight	36.10	4.5	900	Yes	33.5	Wood	£3,500-£4,000	Hasler	Part Used
	Goram	37.06								
	Mud Slide Slim	36.00								
R	Battle Royal of C.	37.06	6.5	580	Yes	26′ 3″	G.R.P.	Owner Finance	Hasler	Yes
12	Josephine M.	35.00	5.0	424	Yes	26.5	G.R.P. Hull Wood Top		None	
28	Mex	35.00	6.5	540	Yes	27.00	Steel	£27,000	Wind Pilot	broke
5	Three Legs of Mann	34.11	2.5	780	Yes	34.06	G.R.P./F.		Hydro-vane	Not used
10	Superstar	34.11	3.5	470	Yes	32.00	G.R.P./F.	£13,000	None	No
9	F.T.	34.10								
30	Croda Way	34.09	2.2	570	Yes	32′ 6″	G.R.P./F.	£14,500	None	

Position	YACHT	L.O.A.	Disp. Tons	Sail Area	Spinnaker	L.W.L.	Material of Hull	Approx. Value	Self Steering	S.S. Used?
R	Mantis IV	34.09	?1.7	560	No	34.00	Ply/F.	£3,500	None	
19	Loiwing	34.07	6.00	509	Yes	25′ 6″	G.R.P.	£20,000	Hasler	Yes
33	Catch 34	34.06								
11	Tyfoon	34.00	5.00	600	Yes	30.00	G.R.P.	£13,000	Aries	70% of Time
16	Morning Song	33.06								
22	Cherry Blossom	33.00	7.0	600	Yes	26.0	G.R.P.	£8,000	Gunning	40% of Time
N.S.	Meinwen Ifan	32.00								
21	Eroica II	31.00	6.5	490	Yes	24.0	G.R.P.	Approx. £7,750	Quarter-master	Worked but 90% Hand steer
R	Tower Casper	31.00								
13	Chough of Parkstone	30.00	3.1	450	(3)	21.00	G.R.P.	£8,000	Hasler	Part time
25	Minnetaree	30.00			Yes			(Iroquois Class Catamaran)		
R	Fidget	30.00	4.0	370	Yes	23.7	Wood	£3,500+	Gunning	Not used
18	Albin Ballard	29.11								
R	Blue Squirrel II	29.09								
R	Bacardi Spirit	29.06								
35	Airedale	29.06	Reg. 6.6	533	No	23′ 9″	Wood		Hasler Trim Tab	Yes

26	Shesh	29.03	3.0	340	Yes	23′ 04″	G.R.P.	£6,000	Not used	
39	Eclipse of Mylor	28.00								
R	Tane Nui	28.00	1.0 plus stores	325	Not used	23.04	G.R.P.	Approx. £3,000	None	(Used rubber bands to Tiller)
R	Coup de Sabre	27.00		310	Yes	22.01	G.R.P.	£7,000	Q.M.E.	Not used
37	Heavenly Twins	26.02	2.7	370	Yes	21.06	G.R.P.	£6,000	Q.M.E.	Used
29	Helene II	26.00	2.5	366	Yes	19.06	G.R.P.	£7,500	Plastimo	Used
34	Boule D'Ecume	26.00	2¼	367	Yes	19.05	G.R.P.	£5,500	Q.M.E.	5% of Time
38	Sherpa	26.00	3.0	289	Yes	25.00	Hot Mould	£3,000	Own make	Yes
24	Shamaal II	25.06		290	Yes	20.00	G.R.P.	£4,000	Hasler	Yes
R	Contessa Caroline	25.06		290	Yes	21.00	G.R.P.			
R	Skol	25.02	5.0	280	Yes	119.00	Wood	£2,600	Q.M.	Yes
20	Petit Suisse	24.09	1.3		2	20.00	G.R.P.		None	
40	Windsor Life	24.02								
R	Shyauk	24.01	?			20′ 0″	Wood	Built 1956 £1,350	Hasler	Used
R	Black Velvet	24.00	2.0	260	Yes (2)	17′ 0″	G.R.P.	£4,000	Q.M.E.	Very little Use
R	Bluff	24.00	1.7	206	No	18′ 0″	G.R.P.	£2,500	Q.M.	Yes

YACHTS WHICH RETIRED

(In order of arrival at Crosshaven or longest distance)

		Position at Stages	1	2	3	4		
C	Peter Peter	... ...	16	11	7	11	48.00	Dismasted.
T	Johnwillie	... ...	13	12	9		46.00	Lost float.
M	Hippokampos	... ...	25	15	30		45.00	Mast failure.
M	Cymro ...	... ...	18	21	17		43.03″	
M	Tower Casper	... ...	53	40	40		31.00	
M	Slithy Tove	... ...	9	8			48.00	Hull Damage.
T	Mud Slide Slim	...	15	19			36.00	
M	Skol ...	... ...	44	41			25.02″	Hull Damage.
M	Contessa Caroline	...	47	44			25.06″	
M	Bacardi Spirit	... ...	41	48			29.06	
C	Kasanti ...	... ...	20				40.00	Hull damage.
C	Tehini of Deganwy	...	30				53.06	Sails blown out.
T	Mantis IV	... ...	40				34.09″	Hull damage.
M	Coupe de Sabre	...	43				27.00	Leaking Stern Tube.
C	Tane Nui	... ...	45				28.00	Hull damage.
M	Blue Squirrel II	...	49				29.09″	
M	Fidget ...	... ...	51				30.00	
M	Battle Royal of C.	...	55				37.06	Only entered to Crosshaven
M	Black Velvet	... ...	57				24.00	Sick Crew
M	Bluff	... ...	58				24.00	Time and weather - See note
M	Shyauk	.., ...	59				24.01	Rudder problem.

Total of 61 finished at Crosshaven.

M = Monohull C = Catamaran T = Trimaran.

ANALYSING THE ROUND BRITAIN RACE
by John Morwood

Results Analised

by Dr. John Morwood

A yacht race such as the Round Britain can be described in terms of the giant winds and waves met by the boats and the damage and other mishaps which occur to them. All this has been done elsewhere in this book.

In this article, I will confine myself to a speed analysis of the various yachts in their different fortunes of the race. It has been an interesting, though rather tedious exercise to do.

A yacht is supposed to travel at a speed proportional to the square root of the 'sailing length' which I have taken to be L.O.A. plus L.W.L. divided by 2. Speeds were found by dividing the distance by the time taken. For each yacht, the 'sailing length' was worked out and its square root found. Next, its average speed in the whole race and in each leg were found. The figuring took three weeks of spare time, dispite constructing Distance/Time/Speed graphs.

THE TOTAL RACE

by Dr. John Morwood

Fig. 1 shows the graph of the speed in knots over the square root of my L. Though the points are well scattered, it clearly shows the advantage of length to speed. A speed merit analysis of greater worth can be found in the RATIO of speed to the square root of length which can be estimated by lines radiating from the left hand bottom corner.

For instance, such a line drawn at an angle of 45° shows yachts with a $V/\sqrt{L}$ of 1.0. Yachts above this line have been very fast indeed and the greater their angular distance from it, the faster they are.

In terms of absolute speed, the race was won by British Oxygen at an average speed of 7.7 knots ($\sqrt{L}$ of 8.06). Three Cheers also did an average of 7.7 knots but her $\sqrt{L}$ is 6.67, a much better result in terms of $V/\sqrt{L}$. The third yacht, Gulf Streamer did 7.68 knots ($\sqrt{L}$ of 7.6), which is also good. Manureva, in fourth place, was poor with 7.05 knots and $\sqrt{L}$ of 8.28 while Burton Cutter, two places later, was even worse with 6.7 knots and $\sqrt{L}$ of 8.63. Three Legs of Man, in fifth place and in front of Burton Cutter, did 6.87 knots with a $\sqrt{L}$ of 5.87. She sailed at the highest $V/\sqrt{L}$ of all the yachts. If the handicap prize had included multihulls, she should have won it. She did, however, win the under 35 foot prize.

Of the single hulled yachts, Burton Cutter has already been mentioned. Quailo III, an Admiral's Cup yacht, came in seventh with 6.5 knots and $\sqrt{L}$ of 6.86, which was about the average ratio of the monohulls. Tyfoon V was the next single hull in at 11th place and won the under 35 foot prize for monohulls. She did 4.98 knots at $\sqrt{L}$ of 5.41. The performance of the rest of the monohulls, with one exception, Petit Suisee, was almost unremarkable as regards speed. Petit Suisee, however, was relatively the fastest single hulled boat with a speed of 4.78 on a $\sqrt{L}$ of 4.73. This ratio was only beaten by Three Legs of Man so we have to report that Petit Suisee is a very fine and fast boat and was extremely well sailed. The Royal Western Y.C. of England has some mysterious handicapping system which gave the handicap prize to Chough of Parkstone, which only did 4.84 knots at $\sqrt{L}$ of 5.05. A handicapping system based upon $V/\sqrt{L}$ would have given Petit Suisee the monohull prize and second place overall in the race, beating all the multihulls except for Three Legs of Man.

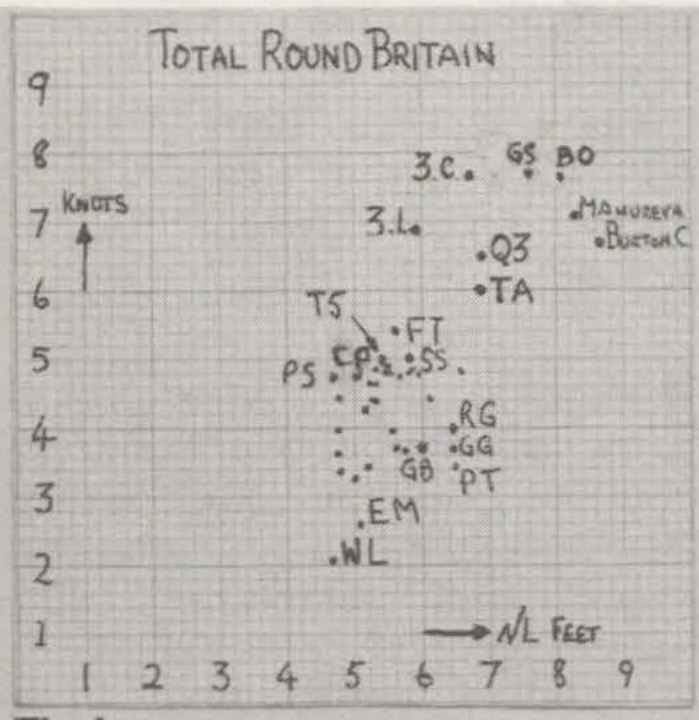


Fig.1

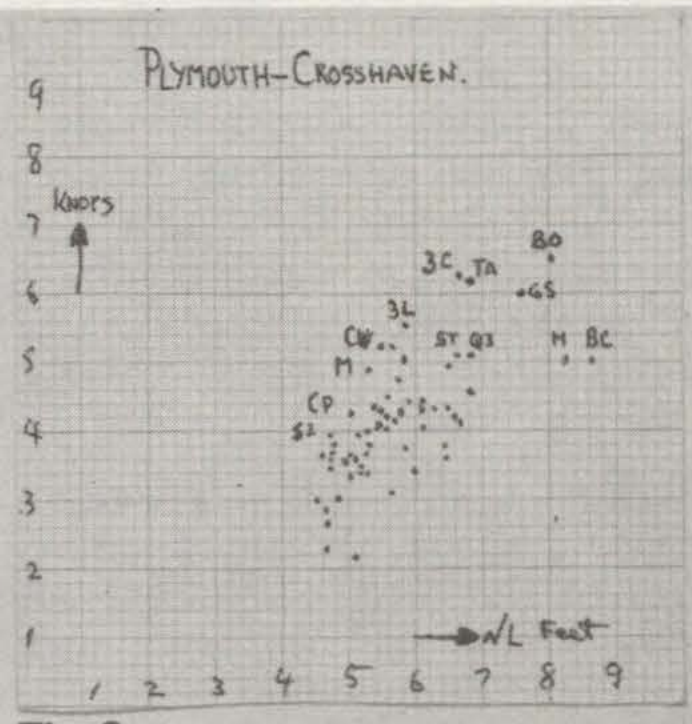


Fig.2

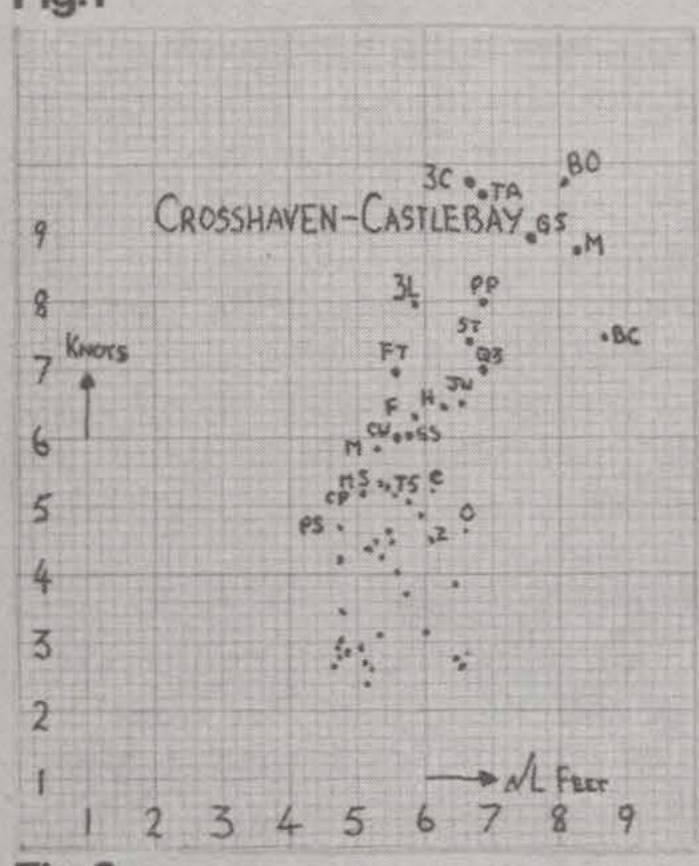


Fig.3

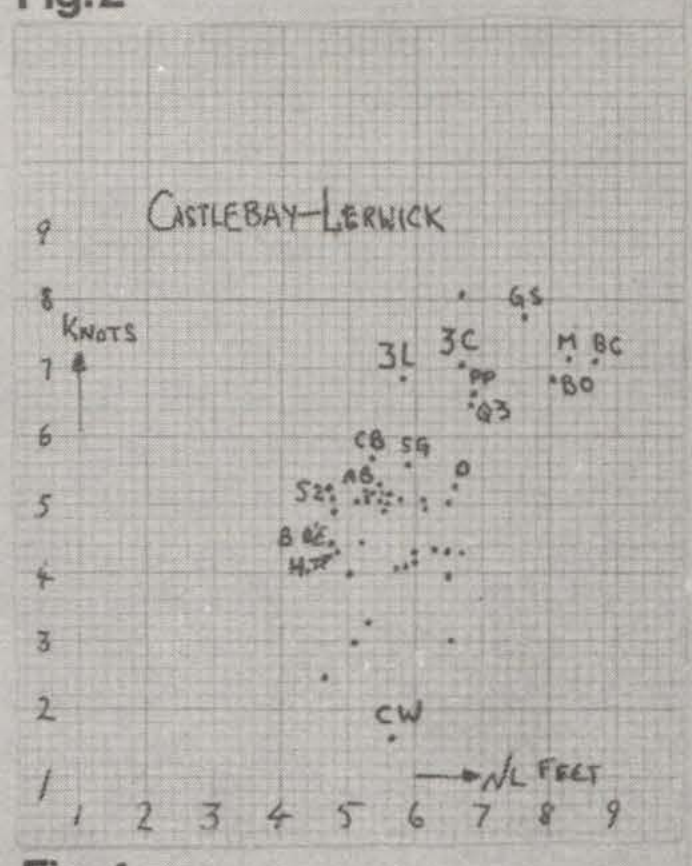


Fig.4

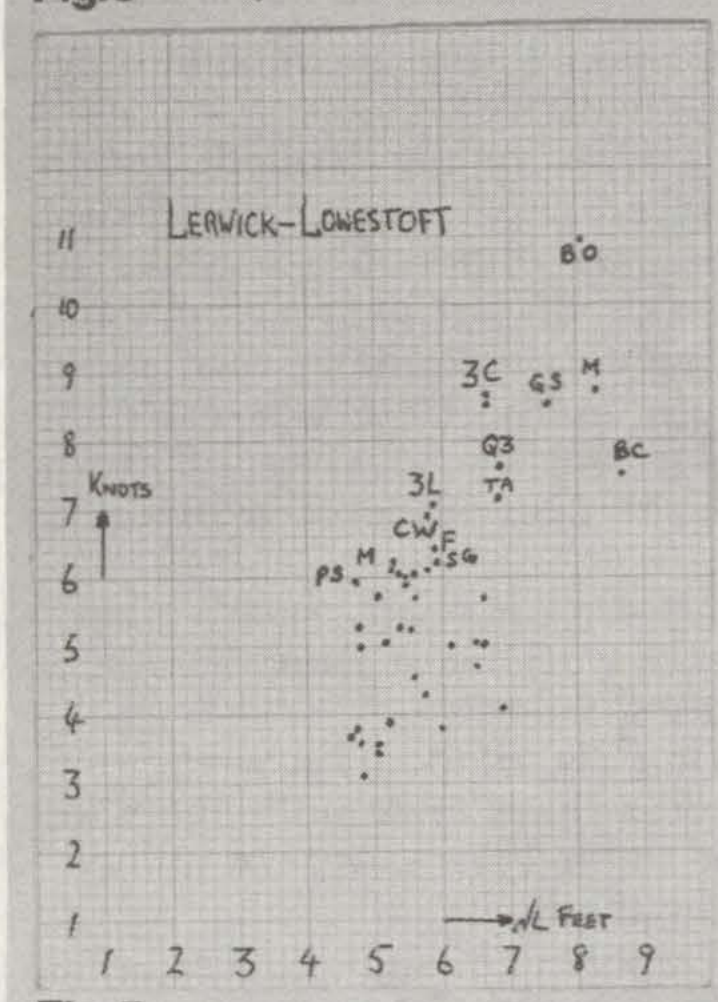


Fig.5

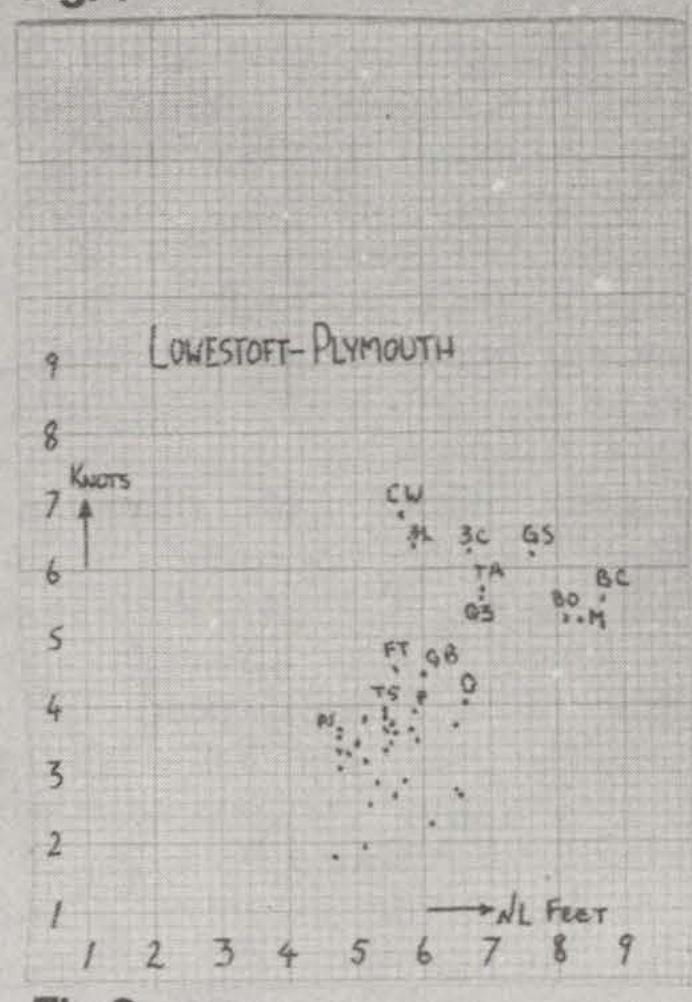


Fig.6

Ron Glas (4.0 knots at $\sqrt{L}$ of 6.44) and Galway Blazer (3.37 knots at $\sqrt{L}$ of 6.00) were relatively slow, being 5th and 6th from the bottom on a $V/\sqrt{L}$ basis. Both have Chinese Junk rigs and are well organized and comfortable yachts to sail. Their poor showing in speed is entirely due to the rig.

THE RACE AND ITS STAGES

Figs. 2, 3, 4, 5 and 6 show the stages of the race. The best way to analyse these is, in my opinion, simply to count the boats which beat the mystical figure of $V/\sqrt{L}$ of 1.0 and those which were the fastest on a $\sqrt{L}$ basis on the Plymouth to Crosshaven leg.

THE TOTAL RACE. The following boats beat 'the ratio':—Three Legs of Man, Petit Suisse, Three Cheers and Gulf Streamer.

PLYMOUTH TO CROSSHAVEN. No boats beat 'the ratio.' The best six boats were:—Three Cheers, Three Legs of Man, Croda Way, Minnetaree (cat), Chough of Parkstone (mono) and Shamaal II (mono).

CROSSHAVEN TO CASTLEBAY. The following boats beat 'the ratio':— Three Cheers, Triple Arrow, Three Legs of Man, F.T., British Oxygen, Gulf Streamer, Peter Pater, Minnetaree (cat) Slithy Tove (mono), Hippocampus (mono), Superstar (tri), Quailo III (mono), Chough of Parkstone (mono), Manureva, Morning Song (mono).

CASTLEBAY TO LERWICK. The following boats beat 'the ratio':— Three Legs of Man, Shamaal II, Cherry Blossom (mono, sailed by two girls), Three Cheers, Helen II (mono), and Gulf Streamer.

LERWICK TO LOWESTOFT. Petit Suisse, Three Cheers, British Oxygen (at an average speed of 10.93 knots), all beat 'the Ratio' by the greatest amount. No less than nineteen other yachts also beat 'the ratio' due to the predominately following wind. There were 10 monohulls, 7 trimarans and 2 catamarans.

LOWESTOFT TO PLYMOUTH. Only two yachts beat 'the ratio,' Croda Way and Three Legs of Man. This was due to light and head winds, Croda Way's speed only working out at 6.8 knots.

SUMMARY OF THE RACE

Counting all the above boats in the legs of the race (some are counted more than once) we find 23 trimarans, 21 monohulls and 7 catamarans. The monohulls in general are small.

CONCLUSIONS FROM THE ROUND BRITAIN RACE

1. In order to win this race, one needs a yacht with an "L" of about 50 feet. Either a light weight trimaran or a scaled up Quarter Tonner would do.
2. Monohulls are NOT slower than multihulls but large ones cannot be sailed fast by two men.
3. A light weight boat is of the greatest value for speed whether multi or monohull.
4. The Junk Rig is a poor performer, as compared with the conventional rig.
5. The Round Britain Race would be best handicapped on a $V/\sqrt{L}$ basis.

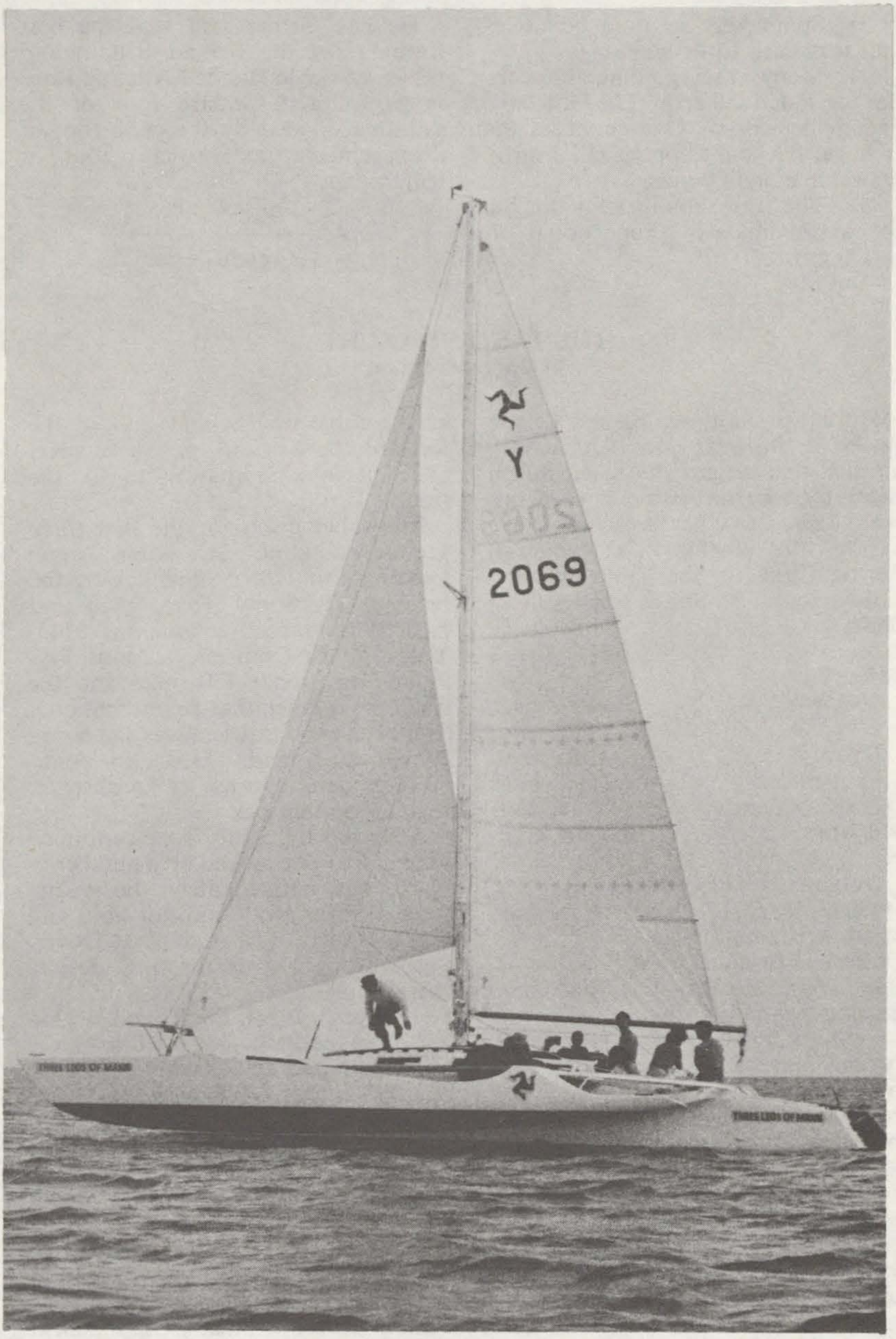
In addition to the above summary, John has written:—

The graphs for the Round Britain Race are on a $\sqrt{L}$ basis. The Bruce Number was impossible because of the absence of sail area figures—the rated figures would have been quite hopeless. Slithy Tove was rated at 700 sq. ft. but she set over 1,000 sq. ft. of light canvass, even without a drifter.

For Boats—Having spent about two weeks working at Bruce numbers and graphs, I find:—

1) Una rigged boats are about 5 points less in Portsmouth number than the sloop. (The lower the number the faster the boat).

2) Trapeze or sliding seat also seems to be worth 5 points.



THREE LEGS OF MANN *Photo by Nick Keig*

3) Spinnakers seem to be useless but it is hard to be sure.

4) Many racing dinghies carry far too much sail area. The Dutchman being the worst. One supposes that a huge, flat and flapping sail destroys its value in light winds.

5) The Bruce number for dinghies is approximately proportional to $\sqrt{\text{Length}}$.

He has further said that the best formula for the Round Britain and Observer single Handed Atlantic Race is as follows:—Square root of the sail area divided by the cube root of displacement times square root of length:

$$\frac{\sqrt{\text{sail area}}}{3\sqrt{\text{weight}}\ \sqrt{\text{length}}}.$$

THE FASTEST YACHT
by John Morwood

During the last two Round Britain Races of this year and 1970, a very unusual and remarkable single hulled yacht took part. At the start of this year's race, I saw her sleek blue shape passing the 80 foot (24.68 metres) Burton Cutter in the light wind and wished her well. She is a home built sloop.

Slithy Tove:

L.O.A.	48ft. 0ins.
L.W.L.	40ft. 0ins.
Beam	9ft. 0ins.
Draught..	8ft. 0ins.
Displacement	4½ tons
Sail Area	704 sq. ft.

Designer, builder and owner: Michael Pipe, 15, North Furzeham Road, Brixham, Devon.

The Round Britain Races

In 1970, Michael Pipe had been cruising with his family when he arrived at Plymouth for the start. Putting his family ashore, he set off in the race and was surprised to find that he could hold the multihulls on the wind and overtake them in a blow downwind.

Slithy Tove's performance was truly remarkable. She was 5th to enter Crosshaven and 2nd into Castlebay. On the third leg from Castlebay to Lerwick, Slithy Tove started a seam at the joint between the 12 mm. and 9 mm. plywood planks forward where she was pounding. The joint which gave trouble was behind one of the forward bunks and not accessible. She put into Stornaway to fix the trouble.

The times given for the first three yachts rounding St. Kilda were: Ocean Spirit (which finally won the race), 1435, Slithy Tove, 1850 and Apache Sundancer (catamaran), 2145. The distance from the start at Plymouth was about 750 miles and the weather was such that an international fleet of over 60 trawlers was sheltering behind the island. Gusts of up to 80 m.h were reported by an observer high up on the rock.

After repairs, Slithy Tove continued in the race. She moved up a number of places but, unfortunately, the repairs done at Stornaway, did not hold and the work had to be re-done at Dover. She finished 19th in the race. despite these vicissitudes.

This year (1974), the Round Britain Race was dominated by four large multihulls and one small one of 34 feet 11½ inches (10.6 metres). After these came the 80 foot (24.4 metres) Burton Cutter and the 54 foot (16.5 metres) Quailo III. After these came Slithy Tove which cost only a fraction as much as these large and heavy boats. Slithy Tove was 9th place into Crosshaven and 8th place into Barra where she was only 8 minutes behind Burton Cutter. On the next leg, from Barra to Lerwick, the wind was force 8, at East, backing gradually

to North, for virtually a whole 24 hours. During this, Slithy Tove made good N.E. for 110 miles in 22 hours. She was thus slamming into very unpleasant steep seas at better than 7 knots. During this hammering, a spreader was shaken off the mast and the weld of its locating tube fractured. This was put right at Lerwick but Slithy Tove was out of the race and she cruised gently back to Brixham in about 4½ sailing days.

Slithy Tove's Speed

In the hard conditions of these two Round Britain Races, one can say that Slithy Tove is comparable in speed with three much larger yachts, namely: Ocean Spirit (an 'Ocean 71, G.R.P. Yacht), 71 feet long (21.6 metres).

Burton Cutter, 80 feet (24.4 metres) long and Quailo III, 54 feet (16.5 metres) long, an R.O.R.C. yacht.

The first and simplest reason for this is simply the amount of sail area which she carries in relation to her weight. The exact relation of these three factors is given by the formula: Speed is proportional to $\sqrt{}$Sail area/ $3\sqrt{}$ Displacement.

In a book by Edmund Bruce which will soon be published by the Amateur Yacht Research Society, the foregoing formula is called "The most important formula in yachting" because it gives an easily calculated basic merit figure for any yacht.

Figures of this formula for various yachts are as follows:—

1. Twelve Meter, 1.02 (with maximum sail area, 1.20).
2. Ocean racing yachts such as the above three, about 1.00.
3. Cruising multihulls, 1.25.
4. Racing multihulls, Tornado, 1.9.
5. Crossbow, the 60 foot (18.3 metres) 'single tack' proa, the speed trial winner which did about 30 knots, 2.3.

Slithy Tove's 'merit figure' is 1.23, which seems to place her about right for the rough conditions of The Round Britain Race.

Slithy Tove's ability to carry sail area in proportion to her displacement derives from her deep, 8 foot (2.4 metres) draft, a light hull of 1½ tons (1520 kg.) and a ballast weight in a bulb at the bottom of the keel of 2½ tons (2540 kg.). The other half ton of displacement comes from her iron work, crew and gear.

Slithy Tove's Iron Work

Slithy Tove's light weight hull derives from an ingenius iron work system which takes most of the sailing strains away from it. This iron work is so simple (once it has been done) that it is amazing it has not been done before. It should certainly become an inevitable feature of all future yachts unless one insists on a hull having the mast in the middle of the accommodation and being wracked by really enormous strains from the shrouds. I am a strong believer in the traditional but not to that extent.

The mast is stepped on the junction of four tubes which span the coach-roof and take its compression strains down to the bilges. Triangles above this (struts and tubes) run to the shrouds, while an athwartships, triangles run to top of the fin keel. The fin itself is hollow, 8 inches thick at its widest and made of 1/8th inch thick mild steel plate, reinforced with two webs.

The Hull Design

The Midships Section. This is a semi-ellipse made up of four chines on each side. The flat floor from section 4 aft would mean that she would pound rather badly if driven hard into a short head sea but there is the minimum of wetted surface. For some reason, she reminded me of Joshua Slocum's Spray but, on looking up the sections of Spray, I found her to be much more V'd. She would be much more sea-kindly.

The Lines. The first thing to look for when examining lines is the rise of the buttock lines aft. The smaller

the angle at which these rise, the less will be the turbulance of the wake. An angle of rise of 14° or more will turbulate the wake badly and the boat will be hard to steer and have a lot of resistance. Slithy Tove's buttock lines aft rise at 8°. Those of Spray rise at 10°. This low angle of rise for both these boats is achieved by the use of wide transomes.

The next thing to note is the amount by which the waterlines are pulled in at the stern. If pulled in too much, there will be a large quarter wave. Again, the wide transomes of Slithy Tove and Spray mean that there is little contracture at the stern. Both this and the small rise in the buttock lines mean that there are long, nearly straight lines aft on which the boat can run.

Finally, the great length to beam ratio of Slithy Tove (approximately 5.7 on the waterline) combined with a hull which only draws 18 inches (.45 metres) gives very little acceleration and deceleration of the water flowing around her.

The Fin and Rudder

The fin area of 39 sq. ft. (10.86 sq. m) is 5.5 per cent of the sail area, a slightly large figure, I think. I suspect that the leeway angle is less than 5° which is the figure which gives the greatest lift to drag ratio of a hull.

There is a flap on the trailing edge which is not thought nowadays to be of use.

The rudder is small which shows how easy she is to steer.

Summary

Slithy Tove is a relatively inexpensive, very fast, habitable yacht. Her speed is due to a small amount of ballast on a very deep keel combined with a very fast hull shape. Her only defect is pounding forward when driven hard into steep seas. A more V'd hull section with firmer bilges would remedy this. The iron work which takes most of the sailing strains from the hull should be used on every yacht. Any of my readers who would like to own a single hulled yacht with the performance of a fast cruising multihull, could not do better than to get Michael Pipe to design her for him.

Letter from Michael Pipe to John Morwood.

Dear John,

The tetrapod, while shortening the mast and reducing its cost and handling problems, is really part of the hull. I was concerned with longitudinal stiffness of such a shallow hull and chose to use the cabin top and tetrapod as a means of deepening the hull structure amidships—the maximum bending moment occuring in a sharp peak under the mast step. The stresses from the transverse rigging only are taken off the hull by the connecting steel work which connects the shrouds loads to the fin. Stresses for the fore and backstays are taken by the ply hull. A next logical step might be to use steel or alloy lattice internally to carry the longitudinal rigging stresses also; Strongbow went some way towards this with a pair of ply beams the full length of the hull which are really Vierendeel girders.

I agree that a trim-tab (or 'fin flap') at 2° to the centreline has much the same lift—drag ratio as a slightly larger symmetrical fin. However, running with the fin flap amidships must give slightly reduced drag? I accepted the cost of this complication partly to see if I could detect any benefit from its use, but mainly to provide an auxiliary rudder, 1973 R.C.C. Journal "Gyre and Gimble" refers.

Surely to reduce pounding, softer bilges, rather than harder are required? A new Slithy Tove would have a narrower waterline, reducing initial stiffness, but not much affecting stiffness when heeled, I would also move the centre of byoyancy slightly aft, but not so far as Slocum's 'Spray.'

Slithy's pounding should not be overstated; the section of hull affected is approximately 6 feet long, representing about 25 sq. ft. only of hull surface which requires to be stronger, where the pounding stresses focus. The extra hull weight required is negligible. No one need travel to windward in the fore cabin and the physical motion in the main cabin, galley or cockpit is no problem. An eight-meter type of hull pounds far worse.

Slithy Tove has, regrettably, so far no ghoster. In light airs reaching, we have set 1,400 sq. ft. setting the working jib flying on the spinnaker boom used as a bowsprit, ahead of the Genoa, and the second jib back to front on the backstay. To windward, a new Slithy would have about 1,100 sq. ft. on 4 tons displacement, a drifter would increase this to say 1,500 sq. ft.

Strongbow is 18 feet longer and only 6 inches wider on the waterline. Her aim was "Fastest for minimum effort of handling," rather than "Fastest for minimum cost." I think she is perhaps a little narrower than the optimum.

I cannot agree that increased size is of no value. Surely, as linear dimensions are increased, heeling moment increases by the third power, whereas stability increases by the fourth power. Therefore, relatively more sail ratio can be set, within the limits of the strengths of materials, and draft. The latter can be extended by a lifting fin for coastal waters and I would expect to get speed advantage up to at least 100 feet.

As regards the hollow fin, I try to keep water out of it. With a screw cap on the top with a lug welded on underneath, chain could be stored on it. I have also added two sumps, the capacity of each being about a quart, let into the top of the fin to hold bilge water.

Sincerely,
Michael Pipe.

Letter from John Morwood to Michael Pipe.

Dear Michael,

You will know the interest that many informed yachtsmen have in Slithy Tove. Michael Ellison brought my attention to her after the last Round Britain Race in which you also did so well.

At present, we are going through the galley proofs of a book by Edmond Bruce and Harry Morse on the more technical side of sailing. One of the items which is proved in this book is that the merit of a boat as regards speed can be very well assessed by the formula:

$$\frac{\sqrt{\text{Sail area}}}{3\sqrt{\text{Weight}}}$$

This formula even works for cargo carrying vessels where it is written:

Resistance — Displacement 2/3

Resistance is proportional to the displacement raised to the power of two-thirds.

Slithy Tove has a value of this formula of 1.3. The values for other yachts are as follows:—

Twelve Metre Yacht:		
To windward ..		1.07
Broad reach ..		1.02
Running ..		1.20
Tornado Catamaran		1.90
Crossbow:		2.30
Ocean Racing yacht:	about	1.00
Cruising Yacht:	about	.85
Cruising catamaran:	about	1.25

The Twelve Meter does about 7 knots close hauled in a 10 knot wind. Slithy Tove did the same in a gale to windward which is about what one would expect from her higher "Merit figure," as above.

I have the job of analysing the figures of times and distances for the last Round Britain Race. I will try a comparison between the times against the $\sqrt{L}$ and times against the "Merit Figure" and see which is best.

One feature about Slithy Tove rather bothers me, as a cruising man. Surely, such a flat bow pounds dreadfully when driven to windward. I once sailed a 20 sq. metre yacht in Norway with approximately your hull shape and it was most unpleasant in a short head sea. Having only sailed dinghies at the time, however, I was sailing her fairly upright. It might have been better to have heeled her more.

An American friend and I have recently been corresponding about yacht design. One of our propositions was to see if a single hull could be designed with racing catamaran performance. This means a "Merit figure" of about 2.0 It is my guess that it can be done by using an absolutely flat floor. Slithy Tove would need about 2,000 sq. ft. of sail to get this ratio. If the displacement were to be reduced to 1½ tons, the sail area needed would only be 900 sq. ft. In both cases, it would be hard to hold up the sail area.

Length to Beam Ratios

We discussed this at Plymouth. It would appear from the figures of Edmond Bruce that the maximum length to beam ratio which would be of any use is 8 : 1 of the heeled waterline beam to heeled waterline length. In light winds, a ratio of 6 : 1 would probably be better. I guess that you achieve these proportions with Slithy Tove and I would appreciate your figures in this matter.

The Low Ballast

It has been suggested to me that one of the reasons for Slithy Tove's injuries in the Round Britain Race was that she might pitch around her low centre of gravity and thus have a very violent motion indeed. I cannot see that this would be worse than having a boat with the weights spread out fore and aft, as with heavy scantlings. In all, I would think that Slithy Tove has a fairly easy motion for her crew, relatively speaking, though the pounding of the flattish floor forward might be unpleasant.

In all, everyone must agree that Slithy Tove is an advance in design. We all hope you will manage to get your desire of a more strongly built version. I have my doubts, however, if any increase in size would be of value. The "Merit figure" for Cutty Sark is only 1.25.

John Morwood.

Finished 1*st*

"BRITISH OXYGEN"
Robin Knox-Johnson

Mike Ellison,

Thanks for the report on the 1970 race. I was somewhat surprised at the impression of anti-Ocean Spirit feeling this gives about the late arrival in Plymouth before the start of the 1970 race, as I have not heard this before. In fact, we were given an hour penalty for each hour we were late, which seemed over heavy to us.

Just to set the record straight on a couple of other points: we sailed round the Island the week before to find out where sheet leads should go. We returned to Portsmouth to fit these and sort out the engine which was giving trouble—hence we were late in Plymouth. It's not such a dramatic story, I know.

Second point: we were not the favourite at the start or before the race if you remember.

Third point: all subsequent boats of the Ocean 71 Class were given an extra 1 ton of ballast, hence I think I was right to put 5 tons of sand in in Barra. The boat's performance improved dramatically as a result.

I hope when you write this race up you will remember that B.O. was not the favourite!

Yours,

Robin.

No. 22 B.O.
Answers to questions:

Challenger Class. R. McAlpine Downie
13 tons, cost about £80,000
Watches:—As suitable. Generally 1 hour on/1 hour off.

Hydraulic keels worked exceptionally well and it was possible to operate them at 17 knots.

The mainsheet track pulled out as we approached Lerwick due to faulty workmanship and we lost all the mast spreader supports at one time or another.

Three mainsail halyards broke during the course of the race. The reason for this has not been established, but small sheaves on the mast exit boxes are suspect.

Finished 2*nd*

"THREE CHEERS"
Sailed by Mike Mc Mullen.

"Three Cheers" is a Newick designed trimaran sailed to 5th position in the 1972 Observer Single-Handed Atlantic Race by Tom Follett. She is still owned in the U.S.A.

She is built of cold moulded mahogany veneer sheathed in polypropelene and epoxy resin.

For the race she did not have self steering. Gas is now used for cooking. Watches were roughly 3 hours but very flexible.

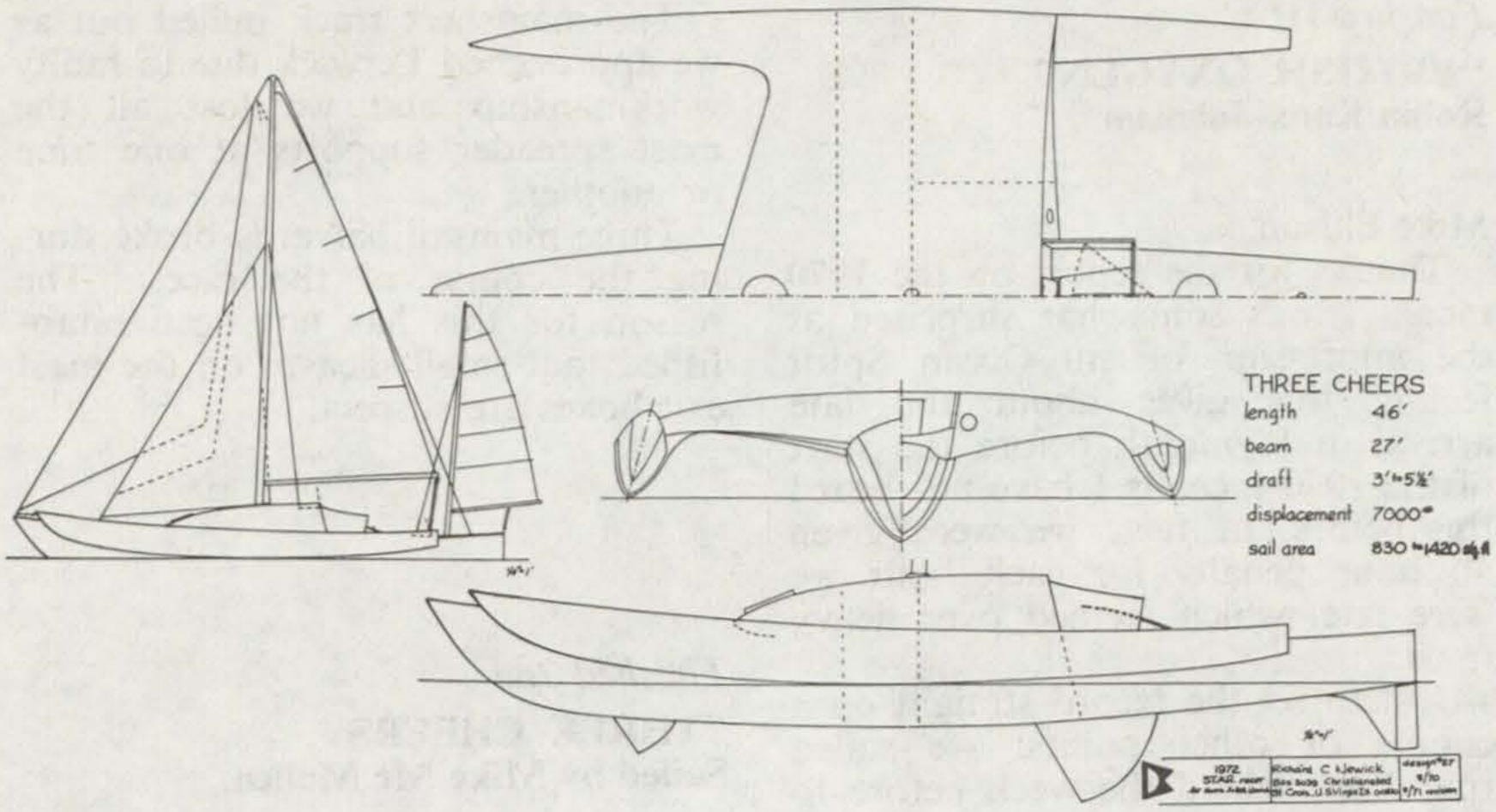
Notes:—

1) Spinnaker **without** a pole is astonishingly efficient and was carried at one stage in a force 6 when we reached 30 knots at one point on the surf! Not much strain on sail as boat is so light. We used it on every leg.

2) No equipment failures of any kind were experienced—nor have been experienced since the launch of the boat.

3) Working sail area is 550 approx. *i.e.* main, staysail plus No. 1 jib.

Note:—It was not reported but Mike McMullen fell overboard while changing a headsail before reaching Lowestoft and his crew—Martin Read got the boat back to him but then had some difficulty in helping Mike back on board from the water.



Finished 3rd

"GULFSTREAMER"
Sailed by Philip Weld and David Cooksey.

Built of 'Airex' and glass 'sandwich' in U.S.A. to a design by Dick Newick "Gulfstreamer" sailed over from U.S.A. for the race. She started without a spinnaker but one was flown out to Castle Bay and carried for the last three legs. She did not have self steering for the race. Watches were 3 hours at night and 4 hours by day.

Notes:—

1) Hood Rod furling/reefing yankee jib a great work saver.

2) Brooks and Gatehouse apparent wind indicator a great aid for night on-the-wind helming.

Note:—The centre board case on "Gulfstreamer" comes through the cabin and opens on deck. This will avoid the problem of flooding the cabin when replacing the board as happened on "Trumpeter" in 1972.

The "Back-Stay-Sail" has not so far been a success.

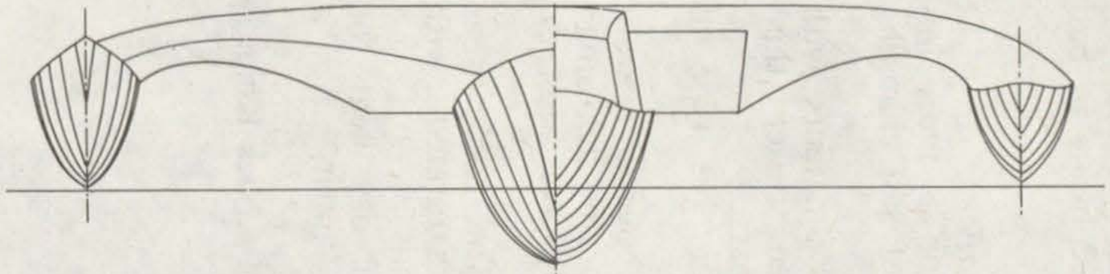
Finished 4th

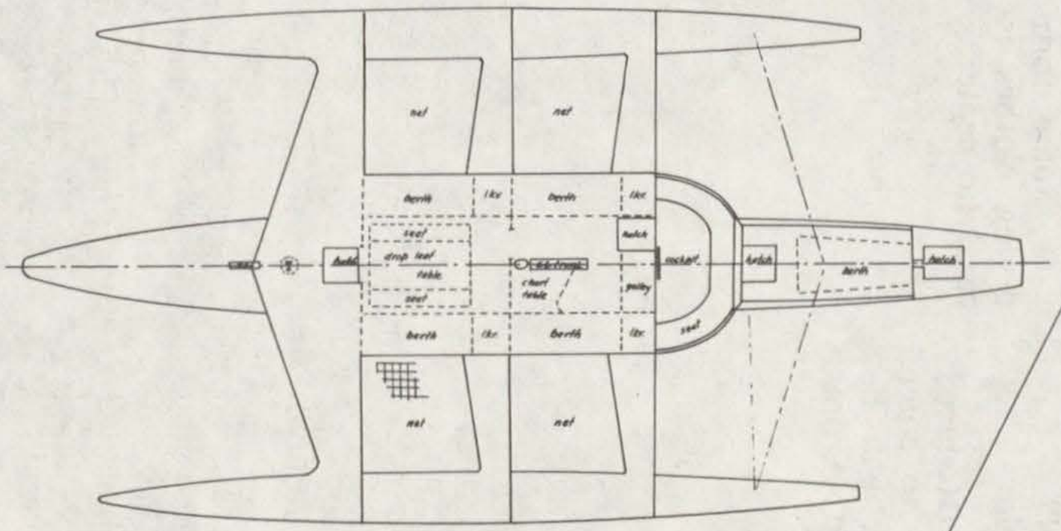
"MANUREVA"
Sailed by Alain and Jean-Francois Colas.

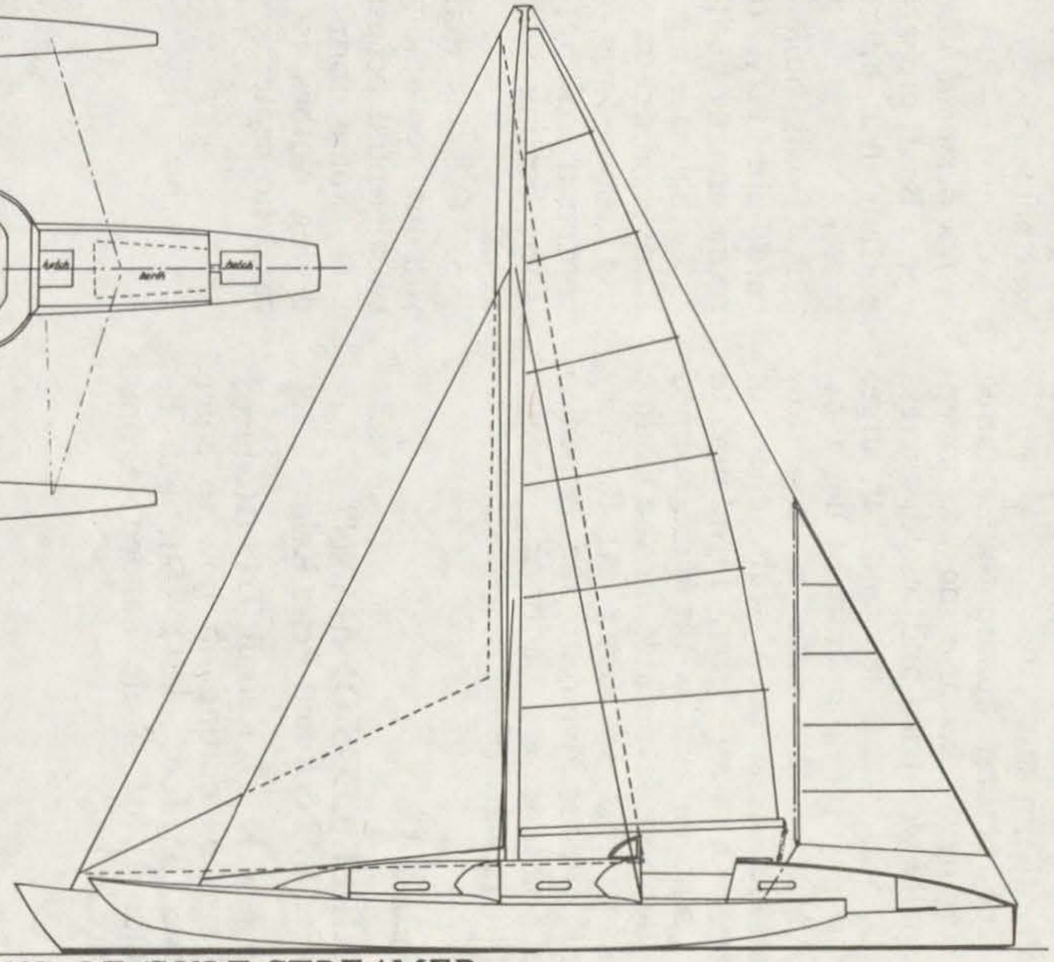
As noted by Robin Knox-Johnson "Manureva" started as favourite with the bookmakers in Plymouth (and London) before the start. First known as "Penduick IV" and described in A.Y.R.S. publication 71 this yacht was bought by Alain Colas and won the 1972 Observer Single-Handed Atlantic Race. She also holds sailing records across the Pacific and made the worlds largest racing monohulls in the fully crewed race round the world look like the later 'grain barges' compared with the clipper ships on the same run.

Since we last saw her, large flaired buoyancy chambers have been added to the bows of the floats—obviously to give lift and prevent the lee bow digging in. This is probably very good for the owners peace of mind but it can do nothing for the speed.

Unfortunately, Alain has not returned our question paper—probably he is sailing and it never reached him.







sail areas	
main	480 sq ft.
staysail	306
jib	436
Genoa	864
backstaysail	117
total working	1358
maximum	1765

LOA.	60'
LWL.	56'-6"
BOA.	31'-2"
BWL.	4'-6"
S.A.	1358 - 1765 sq ft
Disp.	13,460 lbs.
Draft	2'-3" to 7'

60' trimaran for Mr. Philip S. Weld Gloucester, Mass.	Richard C. Newick RFD. Vineyard Haven Mass. 02568 U.S.A.	design 28 sheets 1/12

PLANS OF GULF STREAMER

He is reported as having left over a ton of stores in Lerwick and of complaining that she was too heavy. The 'short' stages of this race apparently do not suit Alain.

The betting apparently favoured "Manureva" because she was exceptionally well tried and tested whereas B.O. was brand new and far larger than any previous craft of her type.

"Manuvaria" made a very slow passage (compared with others of her own size). from Plymouth to Crosshaven and as the wind seemed to be more favourable for the leading yachts, this was bad. At the very start outside Plymouth, she seemed to be pointing very badly and sagging off to leeward of the other yachts.

Finished 5th

"THREE LEGS OF MANN"
Sailed by Nick and Peter Keig

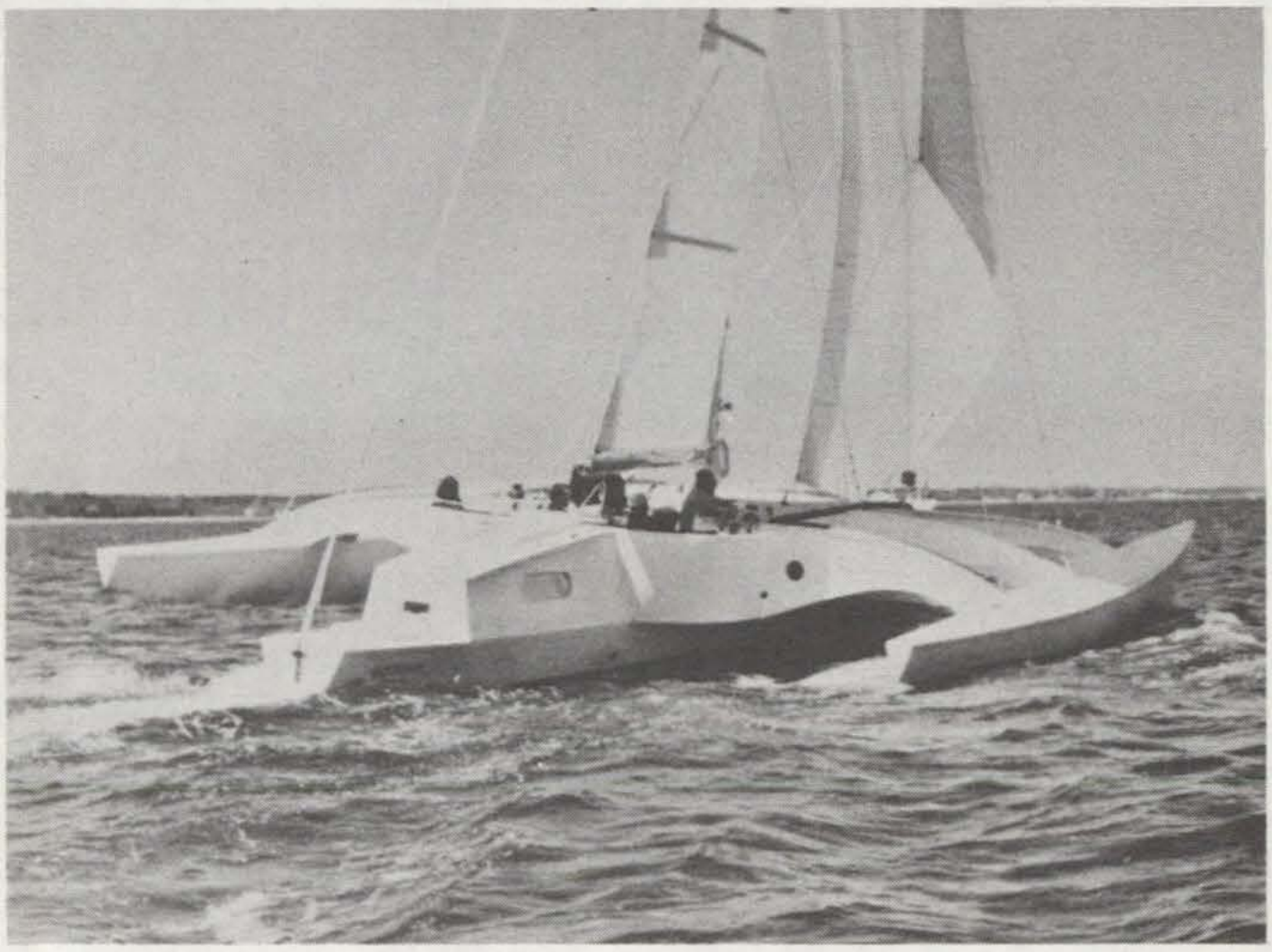
Class K 37 Kelsall Tri (Reduced in size by cutting off bow to enter under 35 foot class). She will be restored for single handed Azores Race in 1975.

Watches:—Totally flexible. When the helmsman felt he was losing efficiency, we changed. As a guide: 4 hours on in good weather, 1—2 hours in bad weather!

A few personal observations:

1. Boat preparation is more important than hours of sail changing practice.
2. Boats built by amateurs with care are very often better than professionally-built boats.
3. Self-steering for this type of Race is unnecessary.
4. Some form of dodger to prevent continual soakings for the helmsman when beating would have been an asset.
5. Oilskins that you could wear without becoming saturated with sweat would be useful.
6. Some form of dry heat for drying clothes is a "must," *e.g.* a catalytic heater.

Nick Keig.



GULF STREAMER

Finished 6th

"BURTON CUTTER"
Sailed by Leslie Williams and Peter Blake

Designed by J. Sharp and built of aluminium. Displacement 30 tons and 2,400 sq. ft. of sail. Burton Cutter, entered for the Whitbread Round the World Race, but did not re-start after the stage to Cape-Town.

Burton Cutter was fitted with a home made and designed self-steering gear and this was used throughout the race except for about four hours.

Watches were not fixed.

Leslie Williams notes:

No gear failures at all.

Comfortable ride but bloody hard work.

Huge physical size crew a necessity.

Spinnaker, 3,500 sq. ft. a frightening thought but by meticulous planning and forethought proved surprisingly harmless.

Storm spinnaker 2,500 square feet and carried in wind force 7 to 8 on two occasions.

Still think the leading multis got away with murder but performance of "Three Legs of Mann" fantastic.

Always a good race for anyone to complete!

(There is no mention of any reason for her being dried out ashore in Crosshaven but it was reported by locals that there was trouble with some of the instruments).

Finished 7th
"QUAILO III"
Sailed by T. D. Parr and S. Allinson

Nicholson 55 Class monohull yacht well known on the racing circuit, chosen for the British Admiral's Cup team in 1973. She would usually race with a crew of about 12.

She was fitted with Aries self steering but this was not used during the race. Watch times were between 3 and 5 hours. Her mainsail is 500 square feet and her largest genoa is 1043 sq. feet.

Mr. Parr has written a full account for the R.O.R.C. magazine "Seahorse." He also answered our questions and sent a photo of "Quailo III" flying a spinnaker as used during the race.

Notes:—The crew know the yacht very well indeed.

They decided to helm all the time except when dropping the spinnaker. The self steering worked but a collar parted if it was driven hard. Spares were carried.

They used roller reefing and found it satisfactory.

They averaged 8½ hours sleep **per leg,** never longer than 1½ hours at a stretch.

Time at sea was just over 12 days total of which only 25% was hard on the wind. The only damage was a broken wire halyard and a blown out number 4 genoa.

QUAILO III

Finished 8th

No. 14 "TRIPPLE ARROW"
By Brian Cooke

Dear Michael,

Many thanks for your A.Y.R.S. letters. Delighted to give a reply to the points you mention re: the R.B.R.

First of all, I hope your own efforts in the foiler, in the R.B.R., were not too disappointing. I suppose complete success in a new development is expecting too much. Even with "Tripple Arrow" we had many teething troubles but these were mostly resolved before the R.B.R. started.

Anyway to answer your questions:

Designed by Simpson-Wild Marine Ltd. 49ft. O.A. one off. (45ft. W/L)

Displacement, 3½ tons (designer's estimate).

Sail Area: 761 sq. ft. (Main and Yankee and staysail).

An inexpensive boat for her size—list price confidential.

Designer's S/S gear—not proven very satisfactory, but in fairness, no time for exhaustive tests, not used and dismantled at Barra.

Cooking by Paraffin. OPTIMUS 2-burner stove (no meths needed).

Watches: Aim was 3 on 3 off but in practice with the fairly fast passages made we decided to "push it" and we both joined in all sail changes and anything else which might slow the boat in any way if done single-handed. We grabbed sleep when we felt justified.

I expect you have a lot of stories about the capsize at Lerwick and thought you should have the salient facts, viz:

Wind from Muckle Flugga to Lerwick NNE 5. After rounding southern tip of Brasay Island, we came on the wind and it was then a beat to Lerwick, about 4 miles away.

We covered about 1½ miles of this without incident and then ran with a calm in the lee of the land about ¼ mile off. A breeze made and we continued again, gradually opening out on the land. There was another calm which lasted long enough for "T.A." to lose all way. We were then about 3 cables off The Ord with Lerwick in sight 2 miles away with both of us in the cockpit ready to let go sheets if a sudden puff came.

A sudden disturbance appeared on the water immediately ahead in the form of little spikes of water (not the usual ripples when a wind makes). We both saw this but literally before the tuns of the genoa and main sheets could be taken off the winches, an almighty gust hit the yacht—I believe from abeam and coming down off the hills at an angle of 45° to the horizontal. With no way on, the whole force of the wind was in a capsizing moment and I estimate that the 180° flip took less than 10 secs. My crew was catapulted out. I hung on until it was evident there was no hope and then got caught under the boat.

So far as recovery was concerned, the rigging was dismantled by a skindiver under my instruction, and the mast recovered on to the recovery boat, while "T.A." was in deep water. She was then towed alongside and righted by crane.

So far as can be ascertained, there was no damage at all to hull or rigging or sails in the actual capsize which I think speaks highly of the design and construction. The considerable overall damage can be directly related to the recovery and submersion in sea water.

We stowed the liferaft in a position where it would be accessible in the case of a capsize. This could have been very important if the capsize had occurred at night, as once capsized, it was just about impossible to go inside the boat to get flares (which were also in the liferaft).

Yours,

Brian.

Finished 9th
"F.T."
Sailed by David Palmer and Luke Fizt Herbert

Sailed by David Palmer of the Financial Times newspaper this yacht was designed and built by Derek Kelsall for the under 35 foot class.

She was sailed in the Crystal Trophy race, a 305 mile race for multihulls and was booked into Mashfords yard at Plymouth for repairs before the race.

Unfortunately our form asking for details has not been returned and this is an interesting new multihull which did not come up to expectations and which suffered some structural failure. The design features low struts from the hull to the floats and in spite of fairing these must cause considerable drag. On arrival at Lowestoft, F.T. was observed to have one float lashed with rope and repairs were necessary at the join to the hull.

Finished 10*th*

"SUPERSTAR"
By Designer and Skipper A. J. Smith

"Superstar," a Telstar 35′ (Finished 10th), was a scaled up version of our 26′ Telstar. The major considerations in the design was load-carrying which as most multihull designers are aware, is very difficult in a trimaran. However this was achieved by lowering the outriggers on the 35′ Telstar down into the water but keeping a good beam to length ratio. The beam to length ratio of the main hull was again fairly standard, approximately 8 to 1. The one point which could have effected the performance of Superstar was the flare above the waterline just projecting approximately 15″ out from the hull sides to give more cabin space in the saloon.

The width of the main hull was 4′, the width of the cabin sole 9″ above the waterline was 7′. The other thing with the Superstar was the topsides and although this was very well faired in, didn't look bulky, in fact, one had quite a surprise when opening the main door and going in and seeing how much volume there was in the boat. All this potentially bad windage. Superstar was not designed or intended for offshore racing. I just hoped she would be as fast as possible and consequently a small rig which would be supplied as standard, was used. This was only a 38′ mast, compared to the 46*f* mast of F.T.

The beam of Superstar was only 20′ compared to the 27′ beam of F.T. So you could see we had everything against us from the loads of wetted surface with all three hulls in the water, from the narrow beam to the small sail area, loads of windage and the flare which should have pounded. That was the reason for putting Superstar in the Round Britain Race. I felt with all that, it was necessary to take her out in a competitive offshore race and find out whether she was any good. I would just point out that the 26′ Telstar was certainly a much more lively boat and after the first trial sail in Superstar, I preferred to sail the 26 footer, and I was very worried about the performance of Superstar—I thought I had built a 'white elephant.'

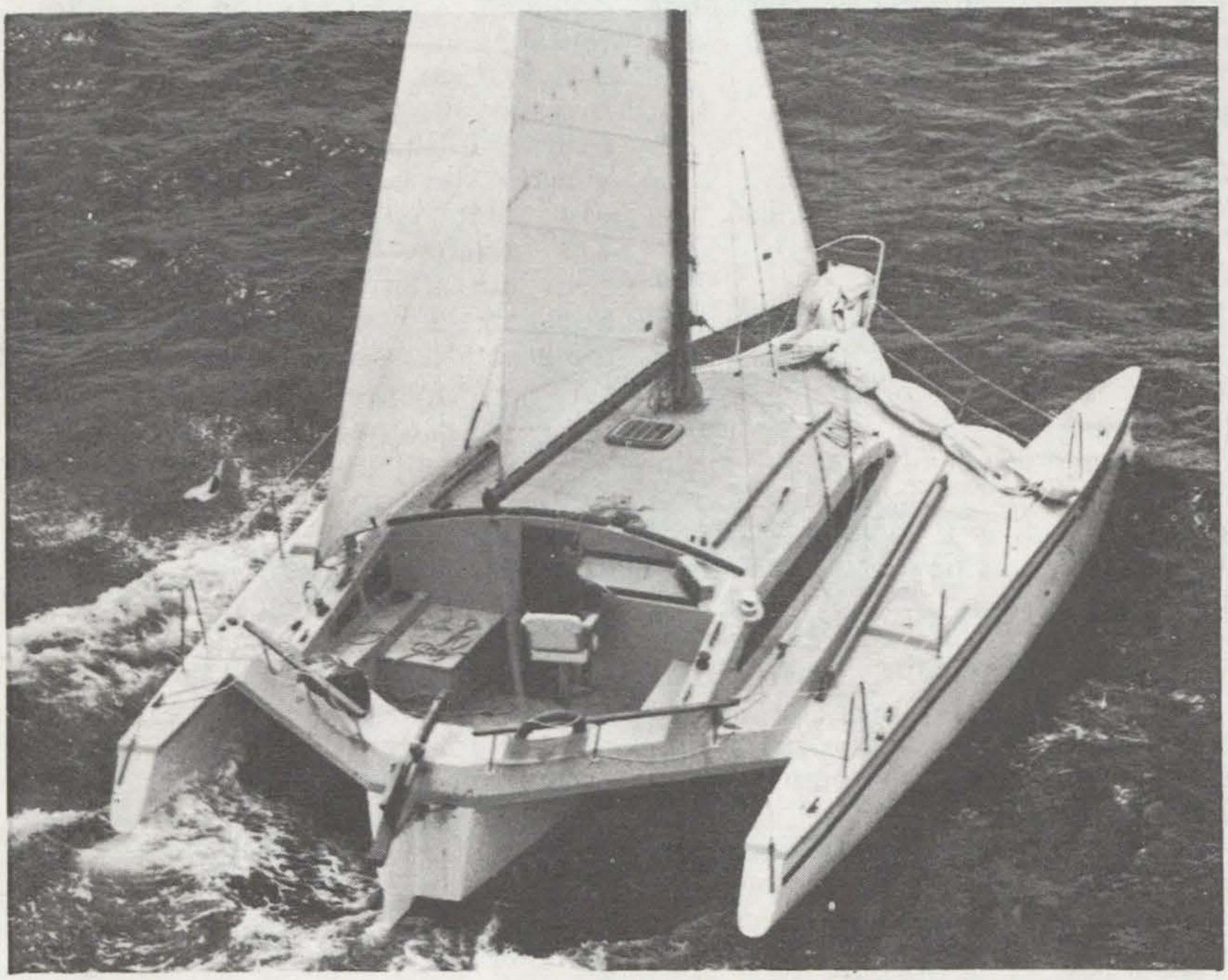
We entered Superstar in the Crystal Trophy prior to the Round Britain Race and I was generally pleased with her performance, although in light airs she was as expected, not very good because her short mast and high wetted surface. Incidentally we did easily beat two of the smaller Telstars and Snow Goose and several other much larger boats.

For the Round Britain Race, I had a new much larger genoa made which I thought would improve her light weather performance. Unfortunately, this proved to be our downfall and in the first leg to Crosshaven, which was a relatively light weather sail, we struggled to go to

Windward with this much larger genoa. We would have been far better off if we had dropped this larger genoa and put the 150 genoa up. We were 26th into Crosshaven, which was probably where we should have been considering our overall length, but we were obviously disappointed with that.

When it came to leaving Crosshaven, the wind was approximately force 7 and it was a dead beat up from Crosshaven and towards the SW corners of Ireland. Most of the boats just in front of us went out under main and smaller headsail.

We made the decision to go out under full main and a 150 genny deciding it would be better to go out with too much sail up and to reduce it rather than go out with too little, and never have the courage to put more sail up. This proved to be the right decision, as within hours of leaving Crosshaven, we had overtaken several boats ahead of us. It was those few hours that taught us how to sail Superstar. Her lower outriggers increased her stability considerably. The fact that She had a relatively short mast by comparison with the racing machines, meant that her centre of effort was a bit lower and we could force her to windward in a force 7 with a full main and genny. The way to sail Superstar was just on the speedo and we kept the speedo at 7 knots. Coming a few degrees off and we found we were several knots faster than equivalent length monohulls, to windward. Eventually however, we couldn't stand the pounding anymore and we reduced the headsail. But



SUPERSTAR
The outstanding 35ft. Trimaran for rugged offshore racing — safe and comfortable cruising.

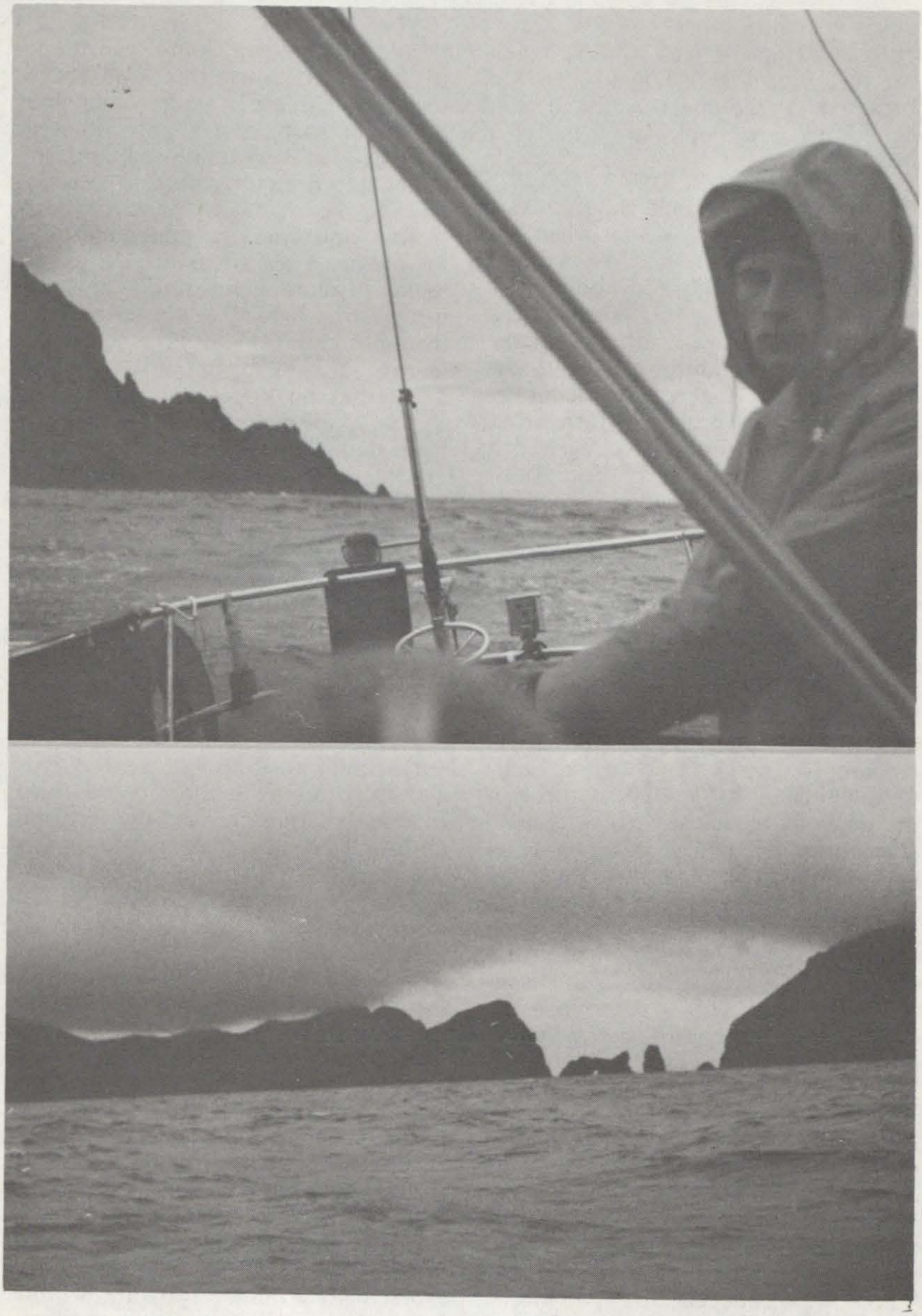
when we came round the SW corner of Ireland and it was a close reach, we then put the 180 genoa up and rocketed up the coast until the wind headed us, again we were back on a beat.

Coming out of Castle Bay, we were beating out to St. Kilda when we were hit by a force 9. We reduced sail to the storm jib and about third of the mainsail area and still managed to sail to windward at 7-9 knots. Under those conditions, I have the distinct feeling that if I turned sideways, I would probably turn over, although it was only a feeling and it did happen to us on several occasions and we didn't turn over or were likely to. Apparently, while we were sailing to windward quite comfortably, F.T. was hove to. John Willie was lying under bare poles. Hippokampus was practically hove to, but they had sail up, self steering was set and they were inside and were sailing at about 70° to the wind and only a few knots, with the trysail up. Apparently on one occasion they were knocked flat and bent most of the guardrail. In this leg, we gained several more places although we felt we would have done better had we not had problems with our working jib. We chose for the Round Britain twin forestays. The system was that the sail that was taken down was lashed to the deck with eyelets while the other one was up. This way, we could theoretically change headsails quicker. I discovered this is not a particularly successful system on strong windward sailing because in this instance, the working jib broke loose from its lashings in only an hour and chafed most of the stitches off the tack which had to be laboriously stitched back. Eventually, the storm died and our speed was reduced to 2/3 knots. We couldn't increase the speed until I had stitched the sail. We would have done better had we been able to get the working jib up sooner.

The worst part of the race was, I think, sailing down from the Shetlands to Lowestoft when the wind turned southerly and again we were punching down the east coast. Unfortunately, the sea was very confused and this made very difficult going. A decision had to be made whether to carry canvas and literally punch through the confused sea, or reduce canvass to make it more comfortable and just not go anywhere. We chose to punch through and for hours when I lay in my bunk in my off watch period, I felt that no boat could stand that sort of punishment. We were fortunate that Superstar stood up to it. Under those conditions, John Willie broke an outrigger off and Peter Peter broke a mast and I believe there were several other dis-mastings. The whole of the race was spent to windward and I think the proportions were out of 15 sailing days, it took us to get round Britain, 13 of them were spent to windward, the winds varying from force 6 to 9.

Our final position was tenth overall and third in the Under 35'. I think this is a triumph for the cruising multihull because under strong windward conditions with all the windage we had the monohulls should easily have beaten us and they didn't. In fact had we had any reaching wind, we would have been considerably further ahead of the monohulls than we were. We may even have been able to catch Quailo.

A few observations of the race are that the rigging needs to be very tight particularly the inner forestay which is not for any sailing qualities but simply to eliminate the jerk loads. To emphasize this, our inner forestay on the first leg when our rigging was fairly slack, started to bend at the Norsemen terminal and three strands had gone. We then tensioned all rigging up bar tight and eventually we lost a toggle on one of the forestays, and on the inner forestay we



ST. KILDA — photo by Claus Hehner on board MEX

were forced to use a shackle which was just not strong enough but it held. This just would not have happened if the rigging had been slack. The other thing was I think twin forestays are not on for this type of race and one must not make the mistake I did and assume because there are two, you only need the same wire you use on the rest of the rigging. In fact even if you use twin forestays, it is essential to increase the diameter of the wire and the size of the bottle-screws. Because of that, I think cost dictates a single forestay. A single forestay also means that the sail comes down and will have to be put away which will eliminate the chafe which was a serious problem to us. Superstar was built with a very high free board to try and disguise some of the cabin, but this again was another plus because this high freeboard kept the water on the deck to a minimum and throughout 3,500 miles, the only water we had taken in the outrigger was about 4″ in total, as most people who sail trimarans would agree, is remarkable. Water in outrigger is the bane of trimaran sailors and incidentally the hatch was not at anytime locked. We found that we did not even need to put the catches on, it was just closed and definitely not water-tight.

Having taken part in this race in 1966, which at the time I thought was tough, I now realise just how tough off-shore sailing can be, and without doubt this Round Britain Race was the toughest off-shore race I have known, and I just don't know how I kept going. It is a credit to any boat that finished the race. The only unfortunate thing about the race was that the flying machines were ahead of the bad weather, and I wonder how they would have fared in the windward slog that we suffered.

Yours sincerely,

A. J. Smith.

Finished 11*th*

"TYFOON" 5
From Belgium, sailed by Gustaaf Versluys and Fred Schulpen

The yacht is an Ohlson 25 class, fitted with an Aries self steering, which was used during the race. The crew worked 3 hour watches.

Finished 12*th*

"JOSEPHINE M"
Sailed by Mike and Josephine Birch

This is a Warrior class yacht, designed by A. Primrose. G.R.P. hull with wood topsides. She did not have self steering, used paraffin for cooking and worked 3 hour watches. A note from Mike Birch said that he enjoyed the race very much and he hopes to do it again. He would like to try a multihull!

Finished 13*th*

"CHOUGH OF PARKSTONE"
Sailed by Leslie Dyball

The Boat: The S.S.30 is of medium displacement, does not mind a bit of additional weight, is well balanced up to 25 degrees of heel, broaches at 35 degrees, is fast with wind (apparent) of 11 kts. or over, a bit sluggish below this. The hull is well built and the interior very comfortable and well planned.

She has Brookes and Gatehouse instruments, Homer, Heron, Hacta, Harrier, Hengist, Horsa, all considered invaluable.

Her engine is the Albin 12 h.p. 022 petrol with Menkematic folding prop. The latter is subject to distortion apparently caused by the force with which the "stops" are hit when gear is engaged. It spent the entire race folded with rubber bands

to secure it in position. The engine is fitted with "dynastart" and Lucas alternator separately charging two 50 amp. batteries, one supplying power for engine starting and the other for all lighting. A "T" connection and extra valve in the engine water cooling system allows the bilge to be pumped by the engine. This is normally done when charging batteries, which takes 20—30 mins. once a day. There are numerous extra lights below and two paraffin lamps in gimbals, the one on the after cabin bulkhead being kept burning all night. There is an extra Stern light with double filament bulb giving 6 or 16 watts at choice.

(Proctor) Mast and main boom are both considered oversize and never give a moments worry. The internally formed track for gooseneck and sail slides is trouble free, all standing rigging is 6 mm. 5 by 19 stainless, 3/8ths stainless rigging screws and toggles on all shrouds, **no rigging screw on forestay,** 3/8ths wheel type backstay adjuster. Full length mainsheet tracks across bridge deck, immediately aft of companionway. One pair (only) Barlow two speed sheet winches. All halyards finish on mast, which has two small Barlow winches. Spinnaker boom downhaul led to cockpit coaming. Stainless wires 4 mm. are fitted along both sides of deck from cockpit to foredeck, inside shrouds, to receive lifeline clips.

Ground Tackle was 30 fthms. 5/16ths chain, 25 lb. CQR, 30 fthms. nylon warp with 6ft. ½ inch chain and 20 lb. Danforth. The CQR dragged a bit at Castle Bay. A heavy Redseal Avon rubber dinghy was carried in the forepark and the Beaufort liferaft was stowed on top of the after locker in the cockpit.

We started with 10 gallons of petrol in the main tank, 2 in can; 30 gallons of water, two 10 lb. Calor Gas.

Sails carried were:Mainsail, No. 1, 2 and 3 Genoas, working jib, storm jib, all except No. 1, triple stitched. Light weather sails were oversize running spinnaker, IOR spinnaker, Starcut (only used once), oversize drifter and IOR drifter, spinnaker staysail.

The Race. This was exceptionally fast. CHOUGH averaged 4.8 knots for the rhumbline course, but as we were able to lay this for something like fifty per cent of the time, the real average speed must have been well over 5 knots. The wind must have been forward of the beam for about 75 per cent of the time. This was good for us because CHOUGH is a good windward boat and likes plenty of wind.

We had force 7 or over, three or four times,—on the leg up to St. Kilda, which was a 19 hour dead beat, twice after leaving Lerwick, on two consecutive nights, both times with the wind from ahead, and finally on the leg down Channel, again from ahead. All these occasions produced very severe pounding as a result of "dropping off" wave tops at 5 or 6 knots. Several times we were anxious whether the hull would stand up to the shocks and for the first time, I can remember, I was unable to sleep throughout a watch below. But all she suffered was a cracked stringer up forward.

We used a single slab reef, although we also had roller reefing. The slab reef is as quick, can be done easily single handed and the sail sets better. The only extra gear needed is an additional slide under the boom, incorporating an "eye," set at 45° below the reef cringle. With this reef and the Storm Jib (65 sq. ft.), CHOUGH would go to windward at 6 or 6½ knots, falling to about 4 knots after hitting a bad wave.

When changing headsails, we hanked on the new sail beneath the old, (no rigging screw on forestay), used

the weather sheet on the new sail, leading this through the same slide as the existing sheet, dropped the old sail, unhanked it and hoisted the new.

In the first gale, off the Orkneys, our spinnaker boom was washed out of its forward fitting and overboard. Later, when closing the Norfolk coast, we got a fair wind and made up a jury pole out of two oars and a boathook fastened with spare jubilee clips. This did service for about six hours in a light wind and was replaced at Lowestoft. This was the only breakage or loss, apart from spinnakers, experienced, a very important factor in getting that vitally important sleep.

The oversize spinnaker blew out of its head three minutes after setting at Inishteraght, the halyard being recovered next morning. This was mended at Castle Bay, but blew out again and down all one side approaching the Shetlands, just two minutes after I was called to help get it down! This was again mended at Lerwick. Our highest recorded speed was 10½ knots under oversize spinnaker on the run from the Bishop. But we once had a steady 7—8 knots broad reaching under oversize reacher with spinnaker staysail underneath.

The Handicap. Given that it is impossible to handicap fairly under Time-on-distance or Time-on-time, without pre-knowledge of the average speed, the handicappers made a valiant attempt and succeeded in bringing boats of roughly equal size into real competition.

With the Time-on-distance system used, it was inevitable in a fast race that all the larger boats should be out of the running. To win, the scratch boat would have had to complete the course in under four days! (Elapsed time).

By the same token, the handicap results should have been dominated by the smallest boats, but they were not. I think this points to two interesting conclusions. Firstly, I am sure it is arguable that the very large boats, of whatever type, cannot be sailed efficiently by two people. This means that, with a handicap primarily based on L.W.L., they are at a disadvantage. On the other hand, the very small boats are at a disadvantage in a race experiencing long periods of strong winds from ahead.

If these deductions are correct, one would expect to find the winner in the medium size bracket, *i.e.* the 30—25 footers. In fact the race was won by a 30 footer and five out of the first seven on handicap were in the 30—35 foot bracket. The two exceptions were the smaller boats, (PETIT SWISS and SHAMAAL), both of which were exceptionally well sailed in the adverse conditions.

L. B. Dyball.

Finished 14*th*
"FRIGATE"
Sailed by John Holmes and John Tanner.

This yacht was designed by Dick Carter and built of laminated plywood in 1973 by Souters.

She was not fitted with self steering gear and her crew worked 'flexible' watches which tended to be between 2½ to 3 hours.

Catamaran
"SNOW GOOSE OF WIGHT"

Windermere 2825

The Homestead,
Ghyll Head,
Winderemere,
Cumbria.

8th September, 1974

Dear Mike Ellison,

I enclose the completed questionnaire and will try to set down my impressions of the race.

Snowgoose's performance and history is well documented so I will not waste time on that. I think that the reasons for us not doing too well this time are four fold:—

1. The comparative inexperience of the skipper and crew of this sort of race. *i.e.* Neither of us had sailed Snowgoose in **any** race at all previous to the Round Britain. I had done three years of family cruising in her but this is a very different kettle of fish.

2. Considerably more windward work than would normally be expected; more than in either of the previous two races I believe. We were on the wind in each leg as follows:
First Leg — Plymouth to Scillies.
Second Leg — All except the last 40 miles.
Third Leg — Barra Head to St. Kilda, then very close reaching until clearing Rona. Muckle Flugga to Lerwick.
Fourth Leg — about 300 miles from Lerwick to somewhere off Flamborough Head.
Fifth Leg — South Foreland to Plymouth.

That adds up to quite a lot of beating and this is Snowgoose's worst point of sailing.

3. We could have done with a new mainsail and a new working jib. These two sails contributed to the poor windward performance.

4. Insufficient practice with the boat under race conditions. John Bennet and I only had a weekend together sailing before starting the race.

Possibly a fifth reason was that we carried too much weight. We took a lot of spares which were never used.

Regarding equipment. I have written to you before about various bits and pieces so you might like to know how things faired.

We had previously broken two rudder blades in rough seas when pushing hard and took three spares just in case. We did not need any of them! I had fibreglassed over the new plywood blades and this seems to be the answer.

E.M.I. log. Previously we had a lot of trouble with this and it was unreliable. Last year I fitted a weed deflector and also an E.M.I. representative checked all the gear at Plymouth. We had no trouble at all, our dead reckoning was extremely accurate and the spare Walker log that we took never came out of its box.

The only E.M.I. instrument that was not very reliable was the Echo Sounder, Mark 2. It worked in shallow water (less than 50 ft.) but the fathoms scale was not usable and we could not use it as a navigational aid in fog.

Both of the E.M.I. Wind instruments worked well throughout the Race.

The Homer-Heron D.F. was very good and 100 per cent reliable as always. We found Daunt Lt. Vessel and Muckle Flugga in poor visibility relying entirely on this instrument and dead reckoning and were less than ½ mile out on both.

The Hasler self steering was also checked and adjusted by a representative from Gibbs before the race. It works well on the wind or with the wind ahead of the beam but has never been wholly successful on a broad reach or running.

A small hoop on the top of the servo-blade which is activated by the pin on the wind vane machanism snapped off near the N.W. of Ireland. We were able to replace it temporarily with a small swivel block lashed into place until we reached Barra. There we ordered a new piece from Gibbs (it arrived in Lerwick) and had a temporary piece made up which worked quite well until we fitted the new piece at Lerwick. Interestingly I note that Gibbs have in fact modified the piece that broke on later models so it has obviously been found to be a weakness.

Generally, we found that if we were tired, then the self steering could steer a better course than the human helmsman but otherwise we preferred

to steer and always when the wind was abaft the beam. We could never really cure the zig-zagging down wind which occurred when self-steering and surfing.

Generally we had a comfortable race with dry bunks, gas cabin heater and plenty of cooked food. We are now aware that we did not push hard enough at the beginning of the race but by the end we were getting quite competitive.

I think that the boat still is very competitive given a good bit of reaching. We really felt that we should have been in the first ten.

I think that it was unnecessary to carry a (heavy) wooden dinghy. We were one of the few boats to do so as there were good ferry facilities at all harbours where we were not alongside.

Watches: Normal, 3 hours, 2 hours in bad weather, occasionally 1 hour.

I hope that this gives you some useful data.

Kind regards,
John M. Hart.

Finished 19*th*

"LOIWING"
Sailed by David Cannell and Chris Gill

Sagitta 35 class yacht built 1973/'74 of G.R.P., used a Hasler self steering gear and worked watches between 3 hours and 1½ hours.

Finished 20*th*

Southampton 29 . 9 . 74
Beat Guttinger
14, Seymour Road,
Shirley,
Southampton.

"PETIT SUISSE"

Dear Michael Ellison,

Boat: "Petit Suisse," Type Quarto, designed by David Thomas, 1.3 tons displacement, 2 spinnakers, LWL 20ft. G.R.P. construction, built in 1974.

No self steering gear, Meths spirit for cooker and watches of 4 hours.

I must say—We have been very lucky throughout the race. Before the race a lot of things went wrong. The boat was first of all not completed in time, and once we had the boat, that was three weeks before the race, a lot of things had to be changed, blocks, both beds, batteries secured, hatch-covering, a lot of dry stowage room had to be built, new compass handle fitted.

That took us nearly two weeks of preparation and reparation. That gave us only two days of trial sails (150 miles), before the race started. Fortunately, we were very well prepared regarding the navigation.—and we were physically very fit (fortunately). During the race we didn't have many problems. Some gear failed, three times the mainsail broke, masthead-unit (windspeed and direction) was blown off the mast, tiller-extension came loose several times, both hammocks broke, three times batteries capsized which caused considerable damage to our clothes (in one harbour we had to refill the battery with more than 2 litres of acid!)

Equipment that worked especially well: Honda—Generator, Jib—Switch system (Latsey and Lapthorn), Sailor-life jackets with attached harness.

The worst thing of the whole race was, that the boat was leaking through the skeg and we had to pump every four hours. Because of the flat bottom of the boat, we always had water on the chart-table when we were reaching. That made navigation rather difficult because the charts were most of the time too wet to write on. Fortunately there are a lot of good beacons along the coast of G.B.

Another thing I have forgotten to mention is: the navigation lights (bow and sternlight) never worked longer than two or three hours on

each leg, after having being repaired in the harbour.

Some advice for the next race. Take some sail-repairing gear with you, including special sailmaker-glove, take a lighter not a box of matches, check the mast before you go on a long race (I was very surprised when I climbed up the mast, I discovered that not less than three bolts hadn't been secured by a split-pin)!!

I must say that Albert and I did really enjoy the race very much and we will definitely do it again. (In a bit bigger and more comfortable boat).

Yours sincerely,
Beat Guttinger.

Finished 21st
"EROICA II"
Sailed by Richard Wood and Andrew Scott

This is an Elizabethan 31 class yacht built in 1969/'70 of G.R.P. and completed at home. She has a Quartermaster self steering which was only used for short spells. (90 per cent hand steering) Watch keeping was completely flexible depending on ability to keep the boat sailing fast. Usually 4 hours in day and 3 hours at night, sometimes down to one hour in bad weather.

Mr. Wood comments:

1) I think it would be best for the future of 'open' races if it were made absolutely clear at the outset, that organised back-up teams are not allowed at any stop over points and that their use would lead to disqualification. Also, I think it would be best if competitors were required to sleep on board while in port. (To exclude boats with inadequate accommodation).

2) We had problems with severe hull flexing in the forward cabin—the hull panels are unsupported for their whole 6 foot length and flexed up to 6 in. when sailing to windward in any sea. Considerable strengthening is required for these panels. All attempts to shore up the sides proved unsatisfactory for any length of time.

3) We had made out navigation cards for each leg of the race and found these very useful especially in bad weather. They were varnished and covered in 'cling' plastic. On each card was listed tidal information for each headland, vertical danger angles, safe bearings changes in magnetic variation, direct courses and distances (degrees magnetic and degrees compass), page references for pilots and almanac, list of lights and radio beacons.

4) We found the Quartermaster self steering gear adequate for two handed sailing, but found we could usually steer faster by hand, so used it only to go below to navigate etc. It does not seem to be powerful enough (for a boat of this size) to be suitable for single handed **racing** though it should be adequate for cruising.

(*Editors Note:* Part of rule 12.4 of the race reads . . "They may not be assisted by a maintenance team especially organised in advance to take over the maintenance and repair of that individual Yacht." I confirmed just before the race that this rule was not altered).

Finished 22nd
"CHERRY BLOSSOM"
Nicholson 32 Class
Sailed by Clare Francis

Low Felling,
Clee Hill, Esher,
Surrey.
10th September, 1974

Many of the comments I could make have, I'm sure, been made by others. Like the importance of preparation, of being reasonably fit, of crew compatibility, and so on.

But perhaps there are a couple of points that I might mention—one of which nobody else is in a position to comment on. I speak of all-girl crews ! !

Despite all our attempts to make men believe the contrary, I feel it is time to admit the truth—that us women manage very well. Most men who've sailed with women not only suspect that this is so, they even give us our fair share of tough jobs! (and quite right too).

But I mention it here for publication because both Eve and I were amazed by the number of times we were asked how on earth we were going to manage, not having bulging biceps and pounds of muscle. Certainly most of these questions came from non-competitors, although there were a couple of notable exceptions (no names ! !). But it is interesting to note that these two gentlemen have never sailed with women!

Anyway, having completed what was a rather demanding race, I am now more certain than ever that the ability to handle a boat like Cherry Blossom over longish periods of time (3 to 4 days) depends not on strength, which is commonly believed, but on stamina and fitness. Obviously when racing a 50 footer round the buoys, strength of individual crew members is vital for fast sail changing and sheeting in. But I am talking here of handling a moderate-sized boat over a long course in such a way that she is sailed as near to her maximum as is seamanlike with a crew of only two.

How often has one read of boats getting into difficulties because the crew was exhausted. Too often. I myself have seen a good strong crew exhausted after twelve hours of a hurricane (and we still had twelve hours to get through). The women, on the other hand, soldiered on much longer and were in a better state to do the deck work.

Of course it has long been realised that women have greater stamina than men under certain conditions. What has not been realised, I think is just how important stamina is in a boat compared to brute force. Certainly it's nice to have both, but there's always a way round anything that requires muscle. Getting in the No. 1 Genoa, for instance, can be difficult in a stiff breeze. But Eve and I found it reasonably easy with the two-geared winches and, if all else failed, we would luff the boat up into the wind for a moment and sheet in quickly while the pressure was off the sail.

We also carried a heavy spinnaker up to Force 6 or when it got too hairy, whichever was sooner. And that took quite a bit of getting down. But with a lot of forward planning and very slow execution, we managed without too many mishaps. Not that we didn't have our moments—but then who didn't?

Certainly I would advise anyone picking a crew to go not so much for the beefcake who's been sitting in an office for the last year as the person who's been taking exercise regularly, who is reasonably fit and who may be expected to have some stamina.

So, I hope I've gone some way to persuading the world that muscles ain't everything. Eve and I were always able to do whatever was necessary to keep the boat going well—regardless of time at sea or weather conditions. And not a bulging muscle in sight—we were just reasonably fit.

The other point I would make is that we blessed the day we got Big Bertha. I should explain, was our **full-sized** heavy spinnaker. Spinnakers blew out and spinnakers ripped, but Big Bertha went on for ever. Some people had what I think are called 'storm spinnakers,' which are small sails of heavy cloth, but I don't think any of them were used; by the time it was that windy, nobody needed a spinnaker up at all.

Big Bertha gained us hours of time on the first and third legs. When everyone had taken theirs down, we

kept her up, knowing there'd be no nasty ripping sound. It meant some pretty wild sailing, but Big Bertha was well worth her expense, if only for the peace of mind she brought us—no spinnaker repairs necessary the whole way round. I would recommend a heavy spinnaker to anyone who wants to do well in a windy downhill race!

Watches: Ad Hoc, usually short (2 hours) at night, longer in day (3 hours plus).

Yours sincerely,
Clare Francis

Finished 24th

"SHAMAAL II"

Round Britain Race '74 by Richard Clifford

(Contessa 26 Class Yacht)

Self Steering: Hasler self steering vane gear used nearly all the time except when running reaching under spinnaker, then it required hand-assistance.

No breakages apart from steering lines chafed through due to an unfair lead through cheek blocks.

On my previous Shamaal (also a Contessa 26), I had a Quartermaster self steering and one day I will produce a comparison of the two types of gear. However at present, I feel that with only 4,000 miles under my belt with the Hasler, I don't know it well enough yet.

Spinnaker: Carried two.

a) A 1 oz per sq. yd. standard IOR spinnaker, which we blew out on the first leg in F5 doing 7 kts plus; mended in Crosshaven. On the third leg the head of the sail 'delaminated so I put a strengthening patch on in Lerwick.

b) 2 oz. per sq. yd, and slightly smaller than the IOR spinnaker. Hardly used this one. Now intend to make it up to IOR size as I think it will be of more use.

The light spinnaker was set for a total of 65 hours in the race, and would have been more if we had not been worried about loosing it completely.

I regret not having a starcut for reaching.

Watch Keeping: Used a similar system described by Captain SES Tailyour in AYRS 75. However, I worked a 'static' system meaning that one always kept the same watches so ones body got used to sleeping at set times day and night. Sometimes in bad weather the system was disrupted and we changed timings to suit ourselves.

Having used the system when I sailed back from the Med. in '71 and from the USA in '72, I feel that it requires a bit of getting used to, possibly 3 or 4 days at sea before one really feels the benefit.

Rowing: We rowed Shamaal for a total of 10 hrs. in the race. I have tried sculling Shamaal and find it more convenient but not as efficient. One must have strong. light and flexible oars with a simple system for rigging them. I lashed the oars onto the main foresail sheet winches which was not satisfactory. We quite often only rowed with the leaward oar to try and 'creep' to windward.

Electricity: We have electric lighting. The Nav. lights are on the pulpit. I saw a number of mast head 'strip lights' (Sea Sure?) with the normal nav light sectors and they looked really good, and could be seen clearly at sea. I rarely use the cabin lights at sea except for the chart table light whose bulb is painted with red nail varnish so that it does not spoil the night vision too much. We had no problems with lighting.

Being short of cash, I did not install any instruments, and really missed not knowing our speed and wind strength and direction.

Battery Charging: I do not have an engine in Shamaal. For battery charging, carry a small mains 5 amp charger and in each port would take

one of the two batteries ashore for charging. It may be of interest that on a previous cruise back from Gibraltar, one 75 amp battery 'lasted' 16 days, mind you we did use it very sparingly.

Conclusions: 1. Apart from reterating Mike McMullens conclusions about the 1970 race, I can add little.

2. Time at sea before the race in testing conditions is well worth the discomfort.

3. It is a 'fun' race with a lot of challenge, enjoyable racing and plenty of private battles.

Richard.

Finished 26th
"SHESH"
Sailed by Richard and John Burrows

"Shesh" is a Shipman 28 class yacht designed by Olle Enderlein. She did not use self steering and watches worked were "variable according to the weather."

Finished 27th
"RON GLAS"
Sailed by Jock McLeod and Julian van Hasselt.

"Ron Glas" was a one off design by Angus Primrose, she is built of cold moulded plywood and sheathed with 'Cascover.' (Nylon).

Watches worked were 3 hours from 2100 through to 0600 then one four hour watch to 10.00 and then "rather vague" until 21.00.

Jock reports "It may be of interest to know that both "Ron Glas" and "Galway Blazer II" suffered some hull damage on the race—the exact cause and the exact occasion when the damage occurred is not known by either crews, but it seems that we both have struck some heavy floating object (a baulk of timber?) when pounding to windward. Neither of us noticed a particularly hard crash or thump and only discovered our respective damage some time

SHAMAAL II

after it had occurred. Both boats were damaged below the water line on the starboard side towards the bow. "Galway Blazer" developed a leak, but Ron Glas did not. (Stronger construction and sheathed).

I wonder if any of the other boats were aware of hitting any floating object or noticing any particularly large jetsam during the race, or were we the only two unlucky boats?

(Editors Note: Hull damage was very common on the second leg and a number of retirements were caused by this but no-one has reported hitting anything except rough water and especially confused seas).

Both "Ron Glas" and "Galway Blazer of Dart" use Col Haslers version of the "junk" rig and both have Hasler self steering. Jock McLeod worked with Col Hasler as his assistant for some years).

Finished 28th

"MEX"

Entered from Germany and sailed by Father and son, Claus and Cay Hehner

"Mex" is a 'one ton' boat, real sister of "Optimist A" designed by Dick Carter and built of steel in 1967.

Troubles listed the loss of the storm spinnaker, old sails torn and a broken mainsail winch. They also had trouble reefing.

A note from Claus reports:— The race was especially hard because we lost our self steering on the second leg and it was not repairable. It was not strong enough for the race conditions. I have also learnt that there has been great development in yacht construction over the last seven years.

Barra Head from "MEX", Cay Hehner steering

Oil Rigs in the North Sea. *Photo by Claus Hehner on "MEX."*

Finished 29th
"HELENE II"
Sailed by Gerd Bucking and Wolfgang Quix

Ecume de Mar class yacht built in 1973. Fitted with a French "Plastimo' self steering gear which was used. Camping Gaz was used for cooking. Of watchkeeping, they report 6 hours daytime, 4 hours at night, 6-6-4-4-4 this is the best system!

Finished 30th
"CRODA WAY"
Sailed by Stuart Rogers and Mike Best

Designed by Andy Simpson for Simon Williams and built in 1973, she was known as "Dancing Begger" and did very well in the 1973 Crystal Trophy race. She is built of foam—G.R.P. sandwich and features a centre cockpit and inside steering position. She did not carry self steering and her crew worked three hour watches. Her position of 6th at Crosshaven, 14th at Castle Bay and 43rd at Lerwick reflect some of their problems, mainly mast failure.

Finished 31st
"GALWAY BLAZER OF DART"
Sailed by Peter Crowther and Tony Addiss

Designed by Angus Primrose with a Chinese junk type schooner rig having 525 square feet of sail on the two unstayed masts. Her hull is of 'cold moulded' wood construction. The crew worked three hour watches and used paraffin for cooking.

A comment from the skipper notes that "An attempt to use a large genoa in light airs seemed to work speed-wise, but as one has to get out of the

hatches and go forward it goes against the principle of sailing this rig, whose main disadvantages is slowness in light airs."

Finished 33*rd*

CATCH 34 (PROUT SNOWGOOSE)
By David Dillistone

Brook House,
113, Park Lane,
London, W1Y 4HJ

Dear Mr. Ellison,

Both Martin Baldwin and I are newcomers to this type of racing and our judgments are necessarily based on enthusiasm and novelty than on experience. We thoroughly enjoyed the race and found it a better teacher than many seasons or ordinary cruising or racing. The organisation was excellent and if one man had to be singled out as hero of the event as a whole it must surely be Lloyd Foster. (Sailing Secretary of Royal Western Yacht Club).

I must add my voice (doubtless to that of many others) on one point. Since the race I have noticed the unmistakable beginnings of pressure from the yachting establishment to turn this race into a handicap event. Yachting World's coverage in their September issue is an excellent example. The handicap element must be retained as a fun subsidiary to the main event but nothing more. Otherwise we take the first step on a path which will lead inevitably to a SHOCRR (Short Handed Offshore Cruiser Racing Rule) and to designs based on artificial criteria.

You ask about equipment. Having fitted out "CATCH-34" myself, I have a host of stories to tell but will single out only the two extremes for comment. The Aries is excellent right through from Nick Franklin's helpfulness and expert knowledge to the actual performance of his gear at sea. At the other extreme is the Midas

GALWAY BLAZER OF DART

wind direction and speed meter. Neither I nor the Midas engineer were able to get it to work satisfactorily and it had failed completely before we reached Crosshaven. And to add insult to injury one of the anemometer cups blew away completely in our first strong wind off Barra.

Watches:—Ad Hoc but basically 3 hours on/3 hours off.

Yours sincerely,
David Dillistone.

Finished 34th

Dear Mr. Ellison,
ROUND BRITAIN RACE
By Mike Teal and Boule D'Ecume

Regarding comments and observations re gear etc.

1. **Ecume de Mer** class of boat in general has been recommended for its capacity to go to windward. This we had noted before but it was amply demonstrated in this race.

The capacity of the boat to stand hard weather has not been noted before (as far as I know). We had a more-than-60-degree knock-over at one stage en route to Lerwick and also were pooped twice but the situation soon rectified itself. As with any light boat you get thrown around and the limiting factor is how much of this the crew can stand.

2. **Water in the Fuel system.** As a result of being pooped, water got into the air-hole in the cockpit leading to the petrol-tank. It had not occurred to us before, but it wuld seem sensible, before going into really hard weather, to have a small rubber bung made to close this small hole and prevent contamination occurring.

3. **QME self-steering gear** (P. Beard. This we only used about 5 per cent of the time. We had tried it out before and experimented, with the aid of brass eyes set into the tiller at different places, with several different angles of action by the tiller-lines on the tiller. We did **not** find that the gear would sail a better course than we could ourselves. It could be made to steer the boat but on most occasions would luff up both more frequently and dramatically than a human helmsman—thus leading to a loss of speed. In short, our feelings are that this gear is more a cruising aid than a racing aid: its variations in course steered could be reasonably acceptable for cruising. For winds aft of the beam it was more or less impossible to set it to produce a satisafctory course.

4. **Breakages.** In general these were minor, thank Heavens. With the general pounding in hard weather, our Seafix (normally such an excellent instrument) lost its BBC reception and the dial also came loose.

Used Ewen Tailyour's watch system as used in 1970 race (publication 75). very satisfactory.

Hoping these comments may be of help.

Further to comments on **QME Self-steering,** we used **small** cockpit dodgers in the race and found they made no difference to the performance of the gear when these were not fitted.

Mike Teal.

Finished 35th
"AIREDALE"
Sailed by David Couper and Jeremy Wrightson

It may be of interest to know that we were one of the very few boats who went around this course without suffering any damage whatsoever, and that no sophisticated gear was carried. Navigation was solely by Walker Log, Compass and Sextant.

Worked 4 hour watches.

Finished 37th
No. 38 "HEAVENLY TWINS"

Self steering proved very valuable.

We found we lost sleep at the ports (due, of course, to my crew's excessive drinking habits!!) and needed to get to sea again for a reasonable amount of sleep.

The self steering allowed us to stand much longer watches, and sometimes one of us would do a four—or five-hour watch instead of a three-hour one, if we didn't feel tired and the other was asleep.

Worst part of the race were the daily calms coming down the East Coast.

Boat stood up very well, with no damage.

Sincerely,
Pat Patterson.

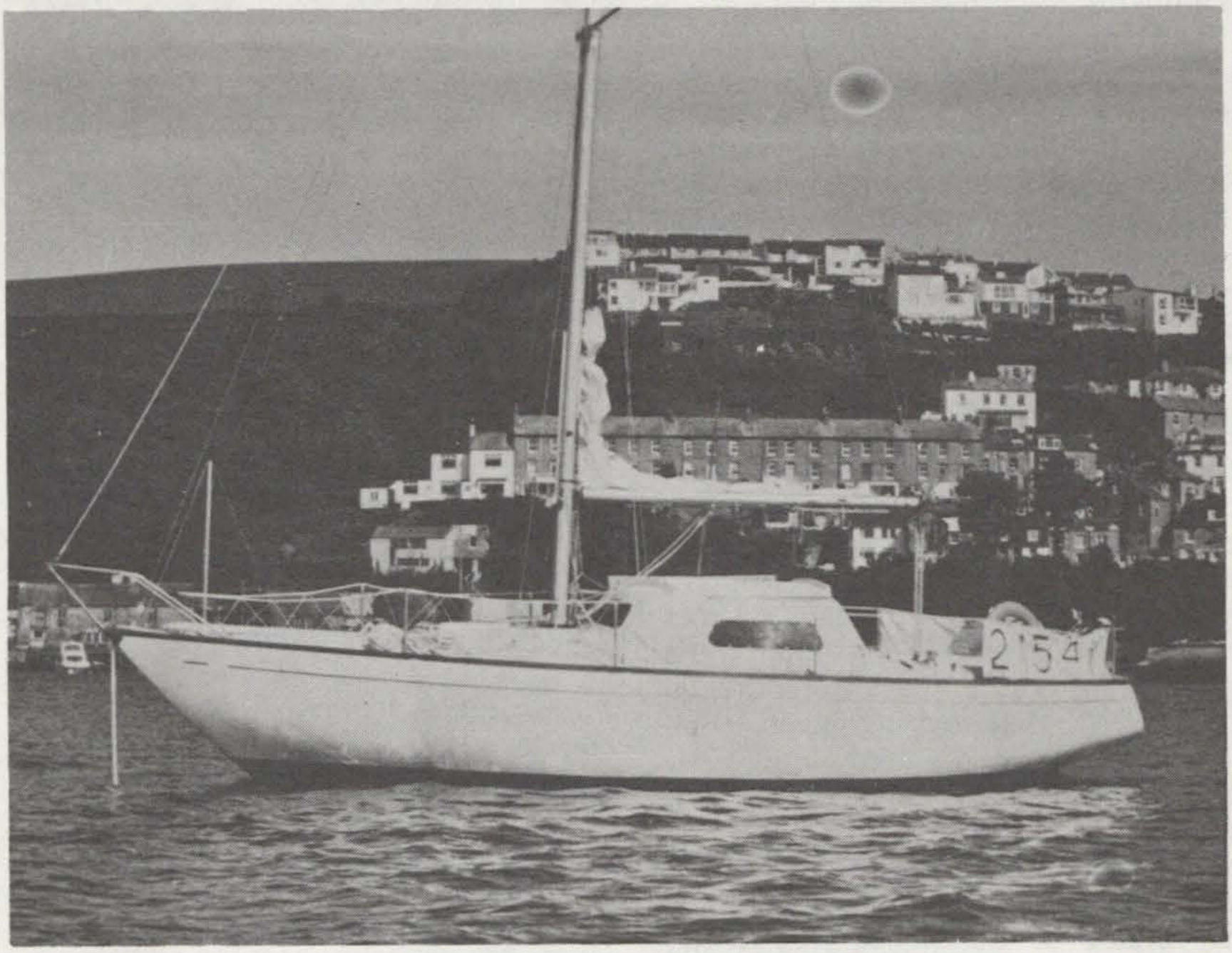
Answers to questions:
Class: HEAVENLY TWINS
Displacement: 6000 lbs.
QME Self steering, Gas cooking.

Finished 38*th*

"SHERPA"
By Alan G. Perkes

The following are extracts from a Port to Port or should I say, blow by blow account which I sent home to my wife Hazel during the Round Britain Race, 1974. During the "Round the Island Race" (Isle of Wight), I was accompanied by my wife, Peter Hunter, John Bevan, Martin Hutchinson. Hazel and John sailed with me to the start of the R.B.R. at Plymouth where Charles Gautier joined me and the two of us sailed Round Britain. Jack Barker sailed with us on the return leg from the finishing to Hamble. To them all and those others who helped my most sincere thanks.

"Sherpa" is an Atalanta 26 class yacht, designed by Uffa Fox and built



BOULE D' ECUME, Mike Teal

of hot moulded wood by Fairy Marine, England.

Watches were usually 3 or 4 hours but always changed at 0100.

Round the Islands
Sunday, 7th July, 1974.

09.00 Hours. Position approximately 10 miles south of the Lizard. Wind West, Force 1. Course North West, speed 2 knots. Fog 200 yards.

So there you are. Not going fast enough or in the right direction. The average speed required to finish the Royal Western/Observer Round Britain Race is 3—4 knots. But with a bit of luck when we round the Scillies things should improve.

The idea came a few years ago but most of the effort has centred around the last six months or so, getting the life raft, distress radio beacon, flashing floating light for the horseshoe lifebouy and so on.

Tuesday.

In the inner dock we had joined the vast and various fleet also entered for the Royal Western/Observer Round Britain Race, 1974.

After Wednesday, Thursday and Friday, when we were checked over, given our handicap, which is a joke, parties, visiting all the boats and more parties, we arrived at the great day. July 6th, 1974.

The start was across the harbour inside the breakwater. We had moved out of the inner dock at 06.00 when the lock gates opened and picked up a bouy off the Royal Western Yacht Club. Three Cheers tied up to us astern. Tripple Arrow and Gulf Streamer tied up to another bouy and so on. This race looks like a Multihull benefit. I expect this is the last time we shall see them.

We were reasonably positioned at the start. The wind being very light we made good use of an oar to maintain steerage way out west of the breakwater. All a bit crowded, but it all sorted itself out. A Westerly Force 3 gives us a close reach to the Eddystone which we round and then stay close hauled on the starboard tack out to sea. We have kept company with Galway Blazer and Fidget. I think there are a few behind us. The sky clouds over and the wind eases and we put in one or two tacks towards the Lizard. In the evening, just before it got dark we saw Gancia Girl, the record holding trimaran, not her conditions, and the 30ft. Wanderer class yacht Airedale.

During the night the wind slowly died and visability deteriorated and by 09.00 Sunday when I started writing things were a bit slow. I caught four mackeral and we took turns in using an oar to boost our speed by a knot. The wind never quite died and during the day we worked our way passed the Lizard without seeing it, although from time to time we heard the fog signal.

During the afternoon, we spied a sail to windward astern and this proved to be Tane Nui, the smaller of the two Warham cats. She closed with us but passed astern, as she could not point as high as we could. The wind practically went, so after a while we thought we would row over to them and have a chat. Just when we got within range the wind came up from the S.W. and away she went and within an hour she was out of sight—most impressive. Then the wind came about Force 2, freshening through the night to Force 3—4, the sky cleared and we had a fine evening. It took us down to the Bishop Rock Light which we rounded at 03.00 hours, still 9 hours behind our schedule. The wind now being astern and the moon full, we hoisted the large spinnaker and set off N.N.W. for Ireland. Now we are getting somewhere.

As it got light, the wind freshened and we saw Galway Blazer coming up astern. We held her for several hours and then we were forced to change to the smaller spinnaker. Galway Blazer then slowly overtook us and by midday, she was out of sight.

The wind increased apace and just before 13.00 hours when we were debating whether to take down the small spinnaker. It made up its own mind by breaking the guy with a bang. So down it came, up went the genoa. Still doing six knots at times. Overcast now and still freshening so lower the main for lunch and then rehoist with a deep reef. At 15.00 the wind went round abeam to west and the sky cleared. Now on a reach. As I write, 19.00 hours, the wind has eased and I have just taken out the reef. A trawler came to have a look, not too close thank goodness. A big sea running but only the occasional splash of spray comes aboard. I have not had to put on oilskins YET. Sky alternately banks of low, almost fog type clouds and belts of deep blue sky.

We sailed on all day and night at a good rate. The night was fine and moonlit. The wind fairly fresh and steady. Towards morning we got a sight of Old Kinsale Head Light but not the Daunt Light Vessel off the entrance to Cork. Fortunately the Light Vessel has a radio beacon and we homed in on this. Our dead reckoning position had been accurate but it would have been difficult to find the exact entrance after 130 miles, from the Bishop Rock, without the help of the Radio Direction finder.

We sighted the Light Vessel shortly after it got light as the wind lessened. as we closed the shore we hoisted the small spinnaker and crossed the finishing line of the first leg at 08.18 min. 40 sec. This meant that we had picked up eight hours 40 minutes of lost time from the Bishop and where in fact only 20 minutes behind our schedule. After three goes we managed to find a mooring without being moved on by our Irish friends.

A couple of great days in Crosshaven and here we go again 06.00 hours on the 11th July. We listen to the shipping forecast. South to South West, Force 4—5 Locally 6. Right on the nose. We roll down a reef, hank on the No. 1 and No. 2 on our twin forestays, put up the No. 1. and sail down to the start.

We start at 08.30 as there is a terrific flood tide which we had not allowed for. The wind is not so strong so first we shake out the reef and then put up the genoa. An overcast day breaking later into glorious sunshine.

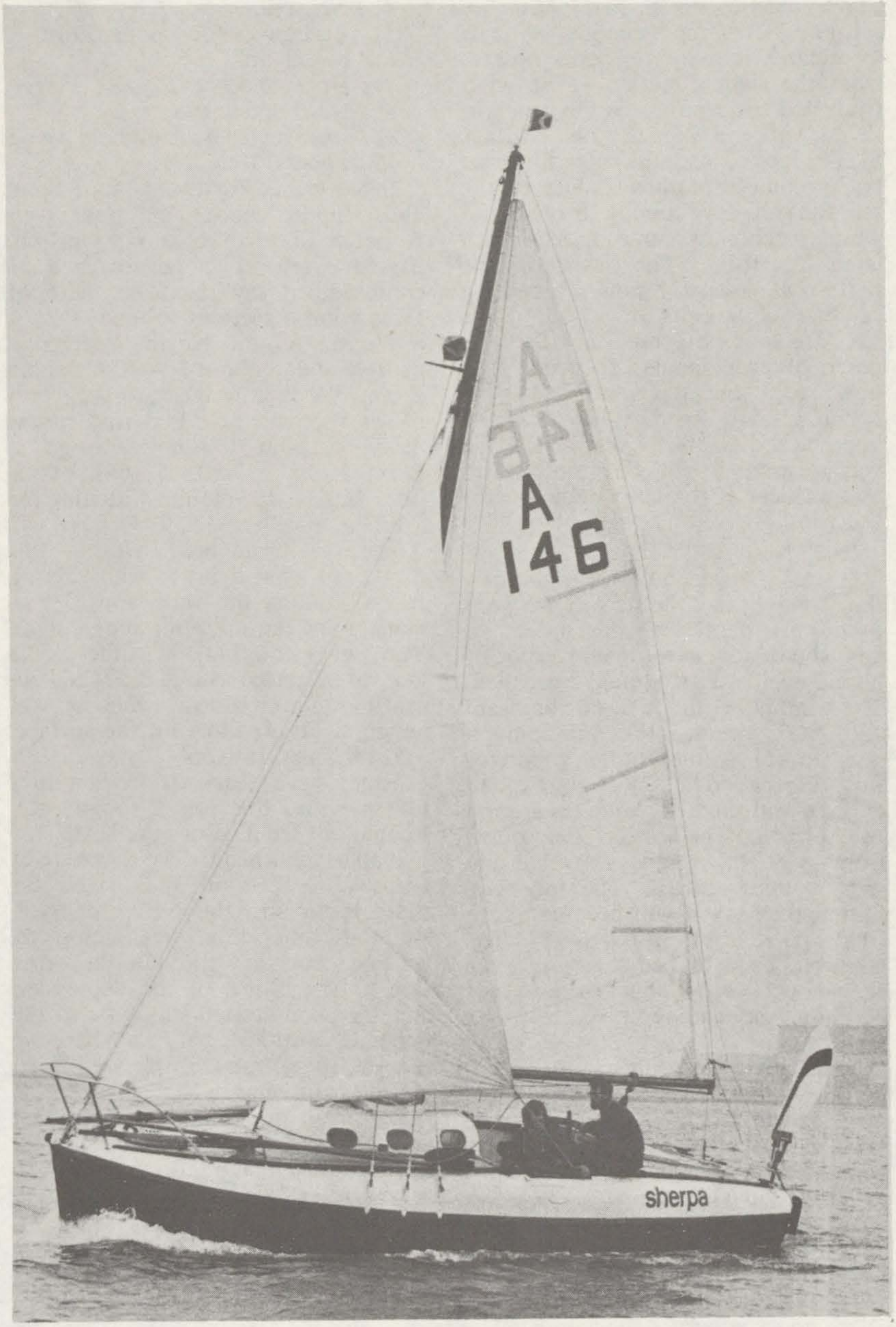
We beat down to Old Kinsale Head and just beyond we tack downwind of our old friend Gallway Blazer. The wind has freshened to about Force 6 and we are back to No. 1 and one reef the main. 16.00 hours, Gallway Blazer goes about and heads inshore, passing just ahead of us. We have made up over an hour on her. We are continuing out to sea to dodge the foul tide which will start in an hour or so. A rough sea but she is not throwing as much water about as she would in the Solent.

18.00 hours, 12th July.

We stayed on the off shore tack most of the night and are about 25 miles south of Misen Head, the wind a bit on the light and variable side. The morning cold, overcast and great banks of dark clouds can be seen with the rain just falling out of them. We don't catch much of it and by midday it thins out and then clears, except over the land. We clear Misen Head and open up the deep bays which run north east into Ireland. It looks a fabulous cruising ground. The wind which was west dead ahead from Crosshaven now decides to head us again and go N.W. We are now beating up to the Bull Rock (about 6 miles), very light wind, about force 3 with full main and genoa. A bright afternoon, but the wind is cold.

16.00 hours, 13th July

We beat slowly on all night until early morning when we were about 6 miles west of Great Skellig (The Ocean Mountain). The forecast was still N.W.—N. but it was blowing



SHERPA

slightly east to north, so at 11.00 we set out N.W. for America or is it Greenland, in search of better breezes from the right direction. The wind freshened and we took in the genoa in favour of the No. 1 job. Great Skellig looked magnificent with great bushy cumulus clouds almost to the sea, the suns rays shining through and white patches of sunlit haze, which is in fact rain. The day the same pattern as yesterday slowly becoming brighter with belts of cloud. The seas are quite big but only the odd patch of water comes aboard. It is now 16.00 and the wind had gone round slightly to the N.W. and I have tacked to the N.W., almost the way we want to go. Sun quite warm as I sit here at the chart table out of the wind.

09.30 hours, 14th July, 1974

It's all changed now. For the first time we are pointing the way we want to go. A depression has moved in and we are now in the warm sector or humid sector as it should be called. The wind is W., force 5, on the beam and NOT ahead. We are doing a good 5—5½ knots, quite good for little Sherpa. The sky is fully cloud covered and there are showers around the horizon. The sea has gone down from yesterday and scarcely any spray coming aboard. The only snag is that they say it will become South (that's O.K.), but force 6—8 later. Oh well, back to bed. I reckon we are about twenty hours behind but we should be making up some of that now.

09.00 hours, 15th July

Gale warnings from all directions. A deepening depression is moving West to East right over us. The west wind went S.S.W. and freshened until at 18.00 hours yesterday when we were reduced by the following sequence:—

1) full main genoa.
2) Large reaching genoa and genoa goose winged.
3) Genoa
4) No. 1 jib.
5) Bare poles for ½ hour, Force 8.
6) No. 2 jib.
7) No. 2 and No. 1 goose winged.
8) No. 1 and genoa.
9) Deep reefed main and old genoa.

15.00 hours, 15th July

It has rained for twenty four hours and stopped about an hour ago. A patch of vivid blue sky has just passed overhead. The sea is a bit confused, to say the least, with all these wind directions around.

We are off the North West coast of Ireland and about 30—40 miles offshore. We kept well out to get plenty of sea room in case the wind turned nasty. About 130 miles to go to Barra Head. Doing 5—6 knots in little bursts downhill. Catching up a bit on time.

The sea birds are giving a fine display of what flying is really about. Just skimming the wave tops. Fulmars, a few puffins, gulls and gannets. You would not think a gannet could look so disgusted as one did when we nearly ran him down while he was having a little paddle on the surface.

12.40 hours, 16th July

Times have changed. When they told me that this was a tough race, I could not see it. But now ! !

It all began when the wind went light I shook the reefs but then laced the slides back onto the NEW mainsail. By the time this was complete, we had come out through the other side of the centre of the depression and the wind started this time in the opposite direction. N.E. Where we wanted to go and it blew. Deep reefed, main and No. 1 then treble reefed main and No. 2. First East then North. Then the trouble started.

The rudder blade fell off.

It sheered off just below the stock. Chuck managed to retrieve it as it was still retained by the downhaul. In coming off it had knocked the tab rudder up and the bottom pintel sheared off. We hove to with jib aback and then took all sail off and

lay-a-hull all night. Lying abeam to the wind and sea. The wind increased to a good gale force 8 and the sea built up. She lay very comfortably and down below one was only aware of the state outside when a wave broke on us or just below us with a roar. Not only that but I could not get the engine to charge the batteries.

Came the dawn. After a tiring night I re-rigged the tab rudder, fortunately having spare parts aboard and together with the stub of the main rudder, we got some sort. of control. As it was still blowing hard, I first tried the storm jib and then the No. 2. At this point (Please Mr. Custer can I change my library book?) a wave broke over the boat and the Hitachi D.F. set got a bit damp and that does not work any more. Thank goodness we still have the Seafix.

By 07.00, 16th July, we were under way again, steering more or less 080 degrees, almost where we want to go, at something between 2 and 4 knots, depending on whether we are going up or downhill. So there we are—tough. A wave just broke over the boat laying her over until her cabin side went under. She staggers on gamely crashing down on some waves and being crashed on by others. When will this ever end one asks. ENORMOUS seas, but the sun is shining and visibility is good. We have not ventured on the deck since we set off this morning.

08.00 hours, 17th July

Things a lot better this morning. Yesterday afternoon and evening we continued under storm reefed main and No. 2 jib. In the evening the wind dropped a bit but we left the sails as they were all night. The forecast is only Force 5—6.

We have developed a slight leak under one of the bearers under the starboard bunk, must be all that pounding. We rigged the pump from the galley into a hole in the floorboard. It just required a few strokes every half hour or so but always left a bit swirling around. We tried the engine again last night. Clean the plugs and it nearly went but I think the impulse may not work well, at the angle we are at. It should go alright. We were close hauled, port tack until this morning when the wind went round to N.W. and we are on a reach for Barra Head. I unreefed the main to the deep reef points and set the genoa to balance it, steering not too bad but she wanders a bit in the waves.

Nice sunny morning, a few clouds, should be a reasonable day. I am feeling tired, exhausted is nearer the mark. Sleep is not easy, with all the crashing about, although it is a bit better now.

08.00 hours, 19th July

We sailed on all day and as the wind went more round to the west we lowered the main and just left the genoa and then changed to the big reaching genoa. Hours after we expected, we sighted Barra Head, fine on the port bow. Although we had been in brilliant sunshine with a few clouds, mist had formed over the islands and we could not see it until we were about 10 miles off, when in fact we had thought that with the prevailing conditions we should have seen it a good 30 miles away. To celebrate we tried the reefed main again which seemed to work as well as without it, only faster.

As we closed Barra Head, we sighted a sail astern coming up over the horizon. This demanded that we made an effort so we had full main up and Chuck and I took it in turns steering by sitting on the afterdeck steering by holding and moving the wind vane. We had a good race, with them catching us fast all the time. However we held them off and finished six to seven minutes in front. She was in fact, Contessa Caroline. We managed to luff over the finishing line without the problem of tacking and started the engine. The engine

fault had been corrected, found by Chuck earlier in the afternoon when spray was no longer coming aboard. Water in the fuel filter, which I suppose is not surprising. We finished at 21.05, which is 22 hours behind schedule but not bad in the circumstances.

We were met by John Allen who showed us where to anchor and advised us that he would help with our problems in the morning and told us what beach to go up on.

In the morning of the 18th July, we got the rudder blade off and inspected the bottom and found three screws sticking out about an inch where obviously the water had been coming in.

John Allen looked doubtfully at the rudder and after much deliberation contacted Norman Johnston at the Shell Factory (where they grind sea shells to powder for various applications). I got a lift over to what proved to be Compton MacKenzies old house and was received with much kindness. A new blade was made up out of old sheet of mild steel, strengthened and cut, holes drilled and old holes filled. It took all of 6 hours and then the man would not take anything for his trouble or the magnificent tea also provided by his charming wife. The man who gave me the lift returned and collected me at about 22.00 and upon return to Sherpa, I was taken to a party proceeding apace on the now mastless Croda Way—No comment.

16.00 hours, 20th July

Well we are off again. I hope. I say this because we started on time at 21.05 last night in pretty poor conditions. Wind West, force 6—7, visability about one mile and murky with it. About an hour out, close reaching down to Barra Head, we heard a Gale Warning 'Possibly Force 10' so we returned to Barra and had a nights sleep. The morning of the 20th July and it looks brighter but still blowing and the forecast said 6—8 locally 9 at first. We weigh anchor and restarted at 12.18 with the intention of listening to the 14.00 forecast in time to return if thought prudent. The forecast said W. force 6—8 but I think this has gone. We are now south east of Barra Head, about six miles out and preparing to tack to St. Kilda. Wind about 5—6 from the West. Sea big from last nights blow.

On our way out last night we saw Eclipse of Maylor a Gaff Ketch coming in looking very snug. Contessa Caroline and the Folkboat Skol also left yesterday and returned. They were still in Barra when we left. However, Heavenly Twins and Airdale have left this morning. The Tankard, Windsor Life arrived late last night in a Force 9. Black Velvet has not arrived yet.

12.30 hours, 21st July

We tacked passed Barra Head, and close reached towards St. Kilda. First under full main and No. 1 then we slowly reefed the main until in the end we took it down as the wind freshened to force 8 at times.

At 11.00 hours, Chuck sighted St. Kilda and we passed it at 11.30 We are now sailing E.N.E. for Flannan Island, 42 miles off with the old genoa boomed out to starboard and the wind dead astern. The sun showed through for a while but now low clouds have brought the wind about force 7. We are roaring along in massive seas doing 6—7 knots at times. One blow, the starboard bunk pounded its stringer loose again last night but at the moment its not leaking much as we are running. Keeping our fingers crossed for a following wind to Muckle Flugga.

21.00 hours, 22nd July

St. Kilda looked fabulous, much higher than I expected, great mountains of rock, straight out of the sea with the mist and clouds forming a crown.

We continued on with the old genoa for a while but by 16.40,

21st July the wind came up and the sky clouded over. We were in for a blow. Down to storm jib, running with the wind on our port quarter.

Then followed a pretty miserable night. Wind up to force 8 most of the time. Doing 3—4 knots with storm jib only. Continuous heavy rain. Everything is sodden or at least damp. The Hitachi got another wave over it. The Auto twin has decided to reduce itself to a whisper. The Sea Fix won't pick up 1500 m. Oh well, shipping forecasts are played to the same old record these days anyway. W—N.W. Force 6—8, rain, visability poor. They occasionally put in a force 9—10 I believe.

We plodded on feeling all very depressed until 10.30 on 22nd July when we appeared to sail through the cold front and the cloud began to break up and the wind eased so to No. 1 jib and deep reefed main. By 13.30, we got to full main and at 14.15 we got a good D.F. fix putting us 195 miles, 080 degrees from Muckle Flugga, North Shetland, so we altered course towards it. At 16.00 the wind increased so that we were surfing up to 8 knots. A bit dodgy out here so we took off everything and set the reaching genoa. The wind being aft of abeam, port side. Then a few hours later we got the reefed main up again as well. Been doing quite well lately, averaging 5 knots plus. All a lot more cheerful with the brighter weather, although its a bit cold. Had a good nights sleep and a clear up and ran the engine for half an hour to charge the batteries. It is now evening. A rain shower just passed and the sky is half covered by a whole mixture of clouds with the sun shining through. Just hope it holds for a couple of days and hope we can get the stringer repaired by a yard or someone in Lerwick, for I fear that a flog to windward would do us no good at all. At the moment, not much water is coming in thanks to Chucks anti-leak mixture—flour. cooking oil, butter and I dread to think what else, I did see him eyeing a 7 lb. tin of jam ! !

Chuck saw a sail this afternoon—set on a bronze mast, could be Croda Way.

10.30 hours, 23rd July

A fairly quiet night, first under the old genoa and then reaching genoa. Wind got up to about force 4 and we took down the reaching genoa, still doing a respectable 5 knots. One cheerful event which made my evening, I found a bag of dry clothes, the luxury of a dry pair of socks you would never believe. I also found the red balaclava helmet which I had for my Birthday, as a joke, I believe. Now it is my prize of arctic wear, highly recommended fashion.

After the gale the sea went down surprisingly quickly but it has now built up again so we have to watch our speed. If we push on too much she surfs and trys to broach. We now have the old genoa to port on the light pole and the No. 1 to starboard doing 5 knots and 6 knots downhill. The sun is shining although there are a few scattered clouds the wind is almost astern and must be force 5, gusting 6. A few nosy fishing boats come to have a look. Well I suppose they do not see many yachts up here. It feels rather like being on the top of the world. The top end of Scotland is over there a hundred miles south. The sun set last night and then there was a long twilight and the sun rose again. I tested it and could just read a book at midnight. It is colder though, about late March temperature down south.

We hope to reach Muckle Flugga early tomorrow morning and Lerwick later in the day which should catch up some of back log of time.

21.00 hours, 23rd July

We have just passed Foula Island, 10—15 miles off, looking very interesting. One day when there is time!

We seem to have been a bit farther

south than reckoned by D.F. but then we have not been checking the compass or the D.F. very much. We are now steering up the west cost of the Shetlands and are about 60 miles off Muckle Flugga. The wind is west about force 5 and on the port beam. We are making good progress at the moment. Sky really something with giant rain clouds climbing up into a clear blue sky. Tonight should be the furthest north so it should not get too dark. When we round Muckle Flugga, it is all downhill, at least on the chart. Great news, our Auto twins radio has stuttered back to life.

07.00 hours, 24th July

Well Muckle Flugga is just a few miles off, in sight, fine on the starboard bow. It looks as if we will make it after all. We got the small spinnaker up for the first time since the other corner—The Bishop Rock. A flock of Terns have just come out to greet us with their little squeaky chat. They sound as if they have a bearing that needs oiling. The land of the Shetlands stretches away to starboard in a dark silhouette of hills and a big swell keeps jumping up to hide it.

I think I will broach Hazel's bottle of Martini to celebrate as we go round. Then right hand down and home James.

15.00 hours, 24th July

As we approached Muckle Flugga the wind fell away and we ran into a patch of overfalls which made life a bit bumpy. Then the wind came back and we switched back, off at 6 knots. With the wind came the rain, although we missed most of it astern. Off the Muckle Flugga Light the wind again fell away and as Chuck was sleeping I selfishly let him sleep and had a private moment of satisfaction at having got this far and a toast to Muckle Flugga, Sherpa, Hazel had made a libation to the gods of the sea or to which ever one helped us. A rather emotional moment, for I suppose this is the Cape Horn of the British Isles.

The wind gently came back astern and we picked up speed once more. The sea has gone right down, quieter than the Solent on a moderate day. We are now off the Out Skerries and can see the approach to Lerwick. The sun is shining and the sea and sky are rich blue. The last few days are what it is all supposed to have been like but I expect the rest was all due to the Bomb, Harold Wilson or something!

09.45 hours, 27th July

We had a lovely sail into Lerwick, having lowered the spinnaker off Bressay Island and hoisted the genoa, the wind first fell light so we did a bit of rowing and then as we rounded the corner into Lerwick it freshened and we had a fresh beat to the finish line by 20.43 on 25th July. We tied up alongside Tower Caspar, outside of Airdale and Boule D/Ecume. In front of us Pula Tiga outside of Gancia Girl and behind Galway Blazer.

An unfortunate incident occurred on the following morning. We were both in bed when I.M.F.V. "Harold" and "Ambassadore" came up the harbour with full loads at full speed creating such a wash that our mast swung behind the backstay of Tower Casper and snapped in half.

What promised to be 48 hours rest became a nightmare.

'Phone calls, getting statements, arranging repairs, more 'phone calls. The people of Lerwick were most helpful and did everything possible to put things right. Friends arrived to invite us home for baths, meals and drinks. Our washing was whisked away and done. Returned dry and aired. It is only regrettable that the uniformed part of the Harbour Organisation was as solid as the stonework of its quay, but I suppose they are scared of the fishermen.

Anyway we got the mast repaired. The boatbuilders put a wooden block

inside and six layers of fibre glass outside and reckoned it would get us home. We had a wooden stringer put on the outside of the hull and bolted through to the inside of the starboard bunk, hoping this will cure that particular problem.

The weather in Lerwick was first class and Peter Hunter gave us a quick tour in his hired car.

We left on time, 20.43 hours, 26th July, bound for Lowestoft. The wind very light from the East and we made good use of an oar to clear the harbour. Outside there was enough breeze to sail at about 2½ knots so we changed to the reaching genoa and full main and had a quiet night easing south. In the morning, the wind, the old faithful, went round to head us and we are now laying 10 degrees, in other words 30 degrees off course to starboard still with full main and reaching genoa, close hauled on port tack, speed 3½—4 knots. Fair Isle is visible to starboard about 12 miles away. Someday!

20.00 hours, 27th July

Plodding slowly S.S.W., wind still heading and light. Hove to for 15 minutes to try and find further seepage under starboard bunk. It appears to be near the water line forward. Overcast and quiet. Nice bit of sleep.

16.30 hours, 28th July

About 23.00 the cloud covered over and the wind freshened then eased round to the west and it rained hard. Off we went the right way for a change and so it continued all night and the next morning when clouds cleared and it became a summers day. The wind gradually eased down and at 14.00 we tried the spinnaker for an hour but the wind headed again and now is light southerly and. we are only making S.E. at 2 knots Still the sun is shining and we are dry, so why complain.

17.30 hours, 29th July

The wind went completely for about three hours leaving us banging around in the swell. Great rain clouds all around, some with rain visibly falling from them. Then the wind came back from the west fairly fresh and off we go south once more. The sky is still light at night. There was an arch of twilight to the north all night from the sun shining across from the other side of the arctic. Today had been a mixture. Bright, bright morning with everything a sparkle and the boat plunging and jumping. At mid-day it clouded over and rained a bit. It freshened so we had to lower the reaching genoa and hoist the No. 1 then double reef the main. We have now taken out the reef and just hoisted the genoa as the wind has eased from the south-west to west, doing a fairly regular 4 knots all day. The sky overcast but appears to be clearing from the north west. Chuck is going to make some pancakes. I am sitting out of the way down in the after cabin. Not a bad spot as it seems the easiest motion in the boat. We have been trying to ease slowly west of south all day in the hope of picking up some lights tonight. We shall see.

16.30 hours, 30th July

We had a lovely sunset, flaming red and all the coloured clouds you could think of. We did not see any lights, although we thought we could make out the coast before it got dark. We made good progress south all night and in the morning the wind freed to aft of abeam and we had the spinnaker up for a few hours. Then it fell light. Then it headed us and now having closed the shore near Whitby, we think, we are wallowing about. All our plans for getting into Lowestoft tomorrow are fading, still 115 miles to go. Chuck is asleep and I have left Sherpa to it in disgust.

The pintle track on the steering gear broke this morning but fortunately I managed a repair using a spare slide further up the track. The clicking of Speedo tells me we are moving again. Just as well. A ship was converging, although he was altering

course, I tacked to clear him. The wind of course, what there is of it, is right on the nose. Where is the West force 5—7 they promised us?

21.00 hours, 31st July

A pretty miserable day. It has been raining off and on all day. To start with, we spent most of the night beating down to and past Flamborough Head—getting nowhere fast. A lot of shipping about on this inshore route so at midnight, we took a long board out to sea. Noel Bevan's radar detector proved its worth now, although I think its use will improve with practice. We should get plenty.

Visibility dropped to about a mile. Mid morning the wind went round to south west force 4 and we are more or less heading the right way. A couple of gas production platforms is all we see until 16.00 we sight the Dowsing Light Vessel to starboard. We are keeping well up to windward of our track to get the lee of Norfolk from Cromer as a South west force 7 perhaps Gale 8 is forecast. We just had a big rain squall and reefed the main. Of course, as soon as we had finished the wind dropped so we took it out again and replaced the No. 1 for the Genoa. We are actually not quite close hauled. Sky still completely overcast and so are we. But we are looking forward hopefully to Lowestoft tomorrow. We were thinking yesterday it could take a week ! !

12.10 hours, 1st August

Having seen the Dowsing Light Vessel and later the Dudgeon Light Vessel, things improved considerably. A favourable tide took us quickly down to Cromer where we were under the lea of the land. Here we had a foul tide but as visibility was good, we could check exactly where we were. When the tide turned in the early morning we fairly rushed down the coast to Lowestoft doing about seven knots over the ground. We crossed the finish line at 08.48

Everyone of our little bunch was in before us but they all started earlier from Lerwick and we have more or less held our own. Croda Way has picked up a couple of days—not surprising. We are lying alongside Heavenly Twins, next to Airdale, Galway Blazer with Paper Tiger across the way and Peter Peter down the harbour mastless.

Let us see if we can have a holiday here as the next leg could be hard to windward.

17.00 hours, 3rd August

I awoke at 06.30 for the shipping forecast. Sherpa is lying moored between the dolphins in the Harbour. Not a whisper of a breeze and I could hardly see the Yacht Club. a mere 100 feet away. The forecast however was just what the doctor ordered. Variable 2—3 then EAST, yes East, force 3, 4—5 later. A high is forming over Wales should give us E. or N.E. winds for a few days. Let's hope for once they are right. After all we have had unexpected winds almost all the way round.

When we set off at 08.49 across the start line, there was practically no wind at all and a light N.E. prompted us to cheekily hoist the big spinnaker but we could not carry it for long as the breeze went all over the place.

A favourable tide took us south for three or four hours and by midday the easterly onshore breeze caused by the land warming the air inland had arrived. We dropped the large genoa and once more tried the large spinnaker, which pulled well in the steadily increasing wind which was as well as by now we were sailing against the tide making good over the land about 2½ knots. Off Aldeburgh we had to point up a bit towards the Shipwash Light Vessel and so after three and a half hours, we once more lowered the spinnaker and hoisted the large genoa. We are now about four miles north of the Shipwash, the wind is on the beam about force 4. The main is out at 45° and pulling well, held down by the kicking strap. The large genoa is sheeted via the end of the boom and pulling like a

horse. I have just changed the light vane for the heavy one and we are fairly tearing along doing 5—6 knots in a smooth sea. The colour of which is tainted by the sand. The Orfordness shore is visible on the starboard beam. The sky is overcast and the wind tells me it is time the 'Smelly Hellies' were donned. I had better see if I can spot the Shipwash.

16.30 hours, 4th August

We tore across the Thames Estuary with a freshening N.E. right behind us, increasing at times to force 6—7, at which time we reduced to the No. 1 only. Quite a rough short sea developed and by midnight, we were off the Goodwin Sands and the visibility had been reduced to about half a mile. Then it rained and we had a thunderstorm. The 06.30 forecast said N.E. Gale force all down the Channel but of course by mid morning the wind had dropped and gone round the S.W. The visibility still being poor we laid a board out to sea heading south doing 3 knots and not really getting anywhere. The rain has stopped but the fog and low cloud is still with us.

17.00 hours. We have just tacked to W.N.W. and the Royal Sovereign Light Tower—we hope.

15.00 hours, 5th August

We tack inshore to the light house off Beachy Head and there the wind left us. After half an hour wallowing in the greyness of coming night and low cloud the wind returned as hoped from the north. At first it was slow going against the tide but at midnight it turned and we made good progress until midmorning when we again had a foul tide off St. Catherines to the south of the Isle of Wight. The dawn had cleared the sky and we now have a perfect summers day, warm, sunny and a gentle breeze.

We just stemmed the tide off St. Catherines with the wind first North then giving East to let us set the spinnaker. We sat there for about three hours doing 3½ knots and not moving an inch over the ground. Then of course, when the tide turned the wind dropped and then came back from the west. Dead on the nose. Never mind. It is a lovely day and its all very pleasant. The wind has now picked up and we are doing 4 knots N.W. along the S.W. shore of the Isle of Wight towards the Needles and the tide is helping us along nicely. I must now return to the serious business of sitting in the sun and doing absolutely nothing.

15.45 hours, 6th August

We beat with the tide under us and towards evening we were off Swanage. We made an attempt to round Anvil Point but as by now the tide was once more against us we were swept back to the east as soon as we poked our bows round. We beat back and anchored just the east of the point in 30 feet of water. This was at 21.30 and at 23.30 we tried again. The wind had gone to practically nothing and at first, we made no progress. Then after a while, we got the full effect of the tide which runs up to three knots and were swept westwards through the tide race off St. Alban's Head. The lights of the Shambles and Portland Bill came up and I rowed gently to ease us south to be in a line to clear them and then just as it got light a gentle southerly picked up and in a smooth sea we picked up speed and just cleared Portland Bill before the tide once again turned against us. It was a beautiful night, with a full moon, quiet and gentle with no ships or alarms to disturb us. Today the wind has stayed with us so far, although it has eased slowly. We first had the genoa up, then the reaching genoa to round Portland then the small spinnaker and now the large one, which we will drop if it freshens as, like sailors of old, I fear my spars. We are laying a course direct to clear Start Point but I don't think we will make it before the tide once more turns. This is what it is all about. Blue sky, blue sea, a gently breeze,

real sun bathing weather and we are making the most of it.

10.00 hours, 7th August

We sailed on all afternoon in very pleasant conditions and the wind gradually increased. We made out Start Point after checking the D.F. and then saw it faintly through the coastal fog. At 19.00 hours, the tide turned against us but as by now the wind had increased considerably, we managed to sail over it using the main and 2 genoas goose-winged. Fortunately by the time we neared Plymouth the fog had cleared and we were able to make out the lights to find our way in and across the finishing line at 01.50 on the 7th August. All we have to do now is sort ourselves out and sail a mere 120 miles back to Hamble.

Retired

"BLACK VELVET"

Sailed by Ewen Southby-Tailyour

Dear Michael,

Thank you for your letter of the 15th August. I am very happy to fill in any comments I have on the race and the yacht.

Class: Hurley 24/70 by Ian Anderson.
Displacement: Two Tons.
Valued at: £4,000
Cooking by: Calor Gas.
Watchkeeping: See page 65 of A.Y.R.S. publication No. 75.

Equipment which failed:

The QME steering gear which I had borrowed for the race and which had been specially balanced by the designer's agent in the West Country was not a roaring success. Close-hauled in force 3—6 it was reasonable but under any other conditions it was a waste of the little money I had paid for it! Black Velvet is an extremely well balanced boat. Down wind it was a disaster and on more than one occasion I stowed the gear and lashed the helo with better results. Particularly on one day when I was single-handed and trying to beat to windward in a force 7. I am removing the gear and buying a Hasler which I am used-to from Speedwell in the last race, and which I trust.

The Calor gas was a disaster from the fitting point of view. Before the race the brand new flexible hose, leading from the copper pipe to the gimbled cooker developed a leak which was nothing more than faulty equipment. I had a fire in the galley started by the gas leaking from the hose, igniting and setting fire to the glass fibre deck head as a great stream of fire was spurted out under pressure from halfway down the hose like a primitive flame thrower. I had it mended, or replaced, to find that the replacement was the wrong length (which I should have noticed) and so it rubbed on the inside of the hull removing the coating and allowing the metal protecting it to corrode with the same result as before; and another fire. We will get it right in the end but it all started with the bad workmanship. However, I have tried different fuels over the years and still reckon that gas, if fitted properly, and sensibly used, is best for cooking at sea, Black Velvet's cylinders are in a self draining locker outside. But this does not allow for leaks down below in supposedly reliable armoured hoses!

Under the heading of equipment that worked particularly well I would place the yacht as a whole. Although I had to abandon the race due to a sick crew, I sailed her over 2,000 miles of the southern part of the course mostly single-handed and through three Atlantic gales and two Channel ones. At no stage did the small yacht give me cause for concern, other than my own fear and general doubts of my own ability; indeed I felt more at ease in her than on the odd occasion in the previous Race in the 49 foot Speedwell in the seas of an Atlantic gale. This is probably because she is so light that

she offers little resistance to the waves. On the other hand, we were quite lucky and seemed to avoid the really large breakers although it would be interesting to speculate whether this was so because of our size *i.e.* we tended to ride the surf. This will not always happen with a great curling wave but it did strike me that we tended to be so buoyant that we were lifted before the real weight could exact its toll. Having said that, we were knocked down (90°) three times but I had fitted great storm battens across the companion hatches and had had the fore hatch sealed down with glass fibre so that there was little danger except to upper deck fittings and mast.

While I'm on the subject of satisfactory equipment, I believe that it should be mandatory for yachts under a certain length to have Weylights at the truck of the mast. Not only do they use precious little 'juice' but are incredibly bright. The change over from the different coloured sectors is now well marked. Not only did I carry these lights but I noticed other yachts who also did so. At last a yacht can be seen at night. In one gale the Weylite failed due to my bad maintenance of a deck socket and I had to resort to the conventionally fitted navigation lights (on the pulpit), the sea running at the time was about 8—10 feet. I have never felt so 'naked' in my life and resolved there and then that I would never sail without Weylites again! After all, they are unaffected by angle of heel, masking from low cut genoas or high running seas. I'm not sure if I can think of any disadvantages (Windage perhaps—weight at the truck of the mast but what good seaman will argue these points against sheer good safety sense)

Once again, I would like to emphasise my system of watch-keeping which a number of other yachts have now adopted. It ensures that regardless of the weather the maximum amount of rest is obtained at the correct intervals. Of course it would not suit all people, but as a basis for adoption I firmly believe that it is first class.

Yours sincerely,
Ewen S.

Retired
"JOHNWILLIE"
Sailed by J. Westall and B. Cherry
One-off Tri. John Westall.
Displacement: 7 tons.
Sail Area: 1200 sq. ft. main and genoa.
Construction: Foam sandwich g.r.p.
Built: 1973.
Self steering by Vane/trim tab was used.
Diesel fuel used for cooking.
Watches: Flexible—usually 2 hours.

We lost the windward hull in rough seas S.S.E. of Lerwick, and abandoned after 2 or 3 hours of sailing on lee hull only. Later she was seen to capsize to windward. Failure of the structural steelwork was the cause but details not yet known.

J. Westall
29-8-74

Retired
"PETER PETER" (Catamaran)
Sailed by John Perry
Dear Mike,

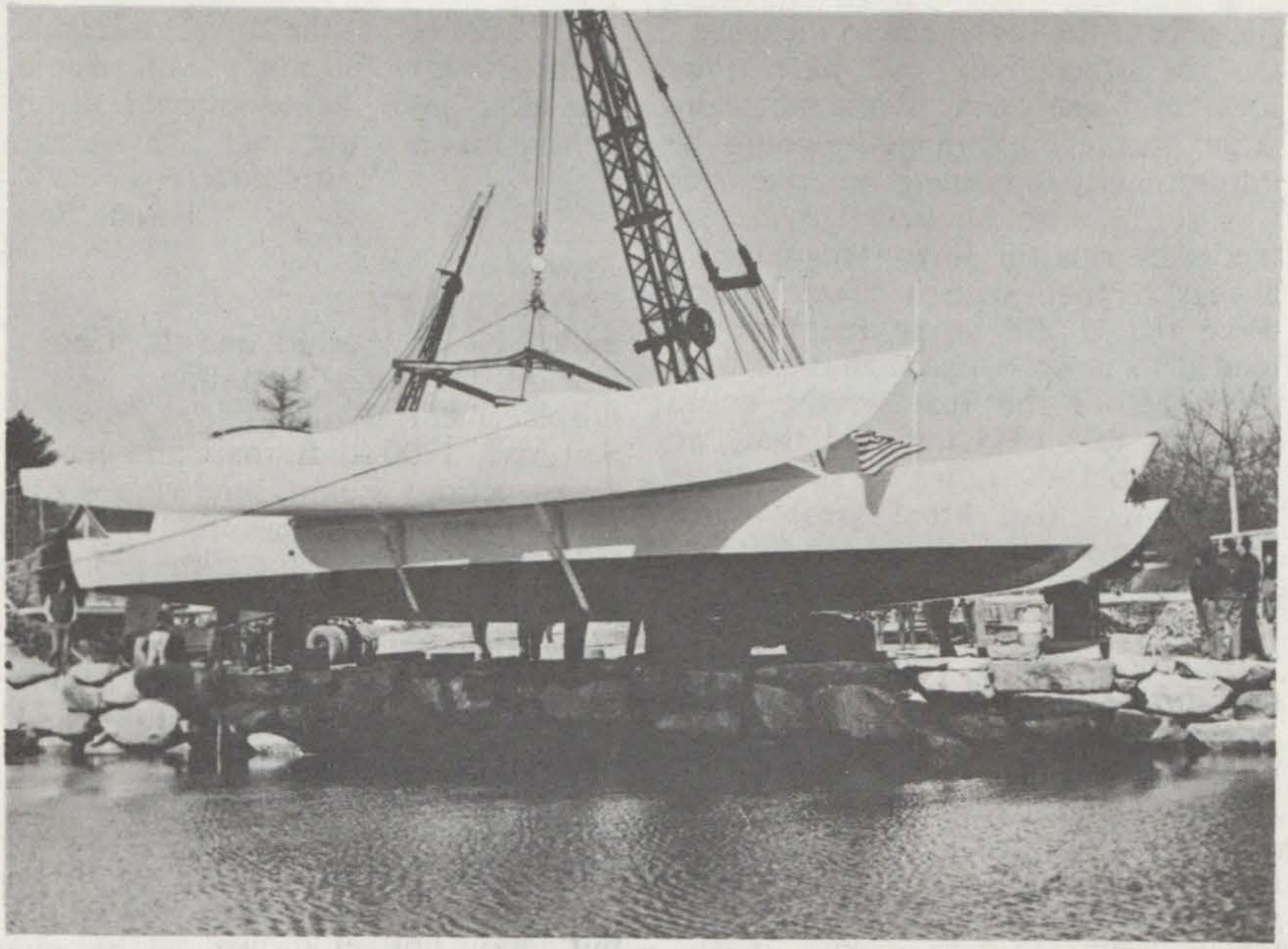
Your brother came down to Lowestoft and was a great help. As you know, a deck fitting went and I snapped the mast.

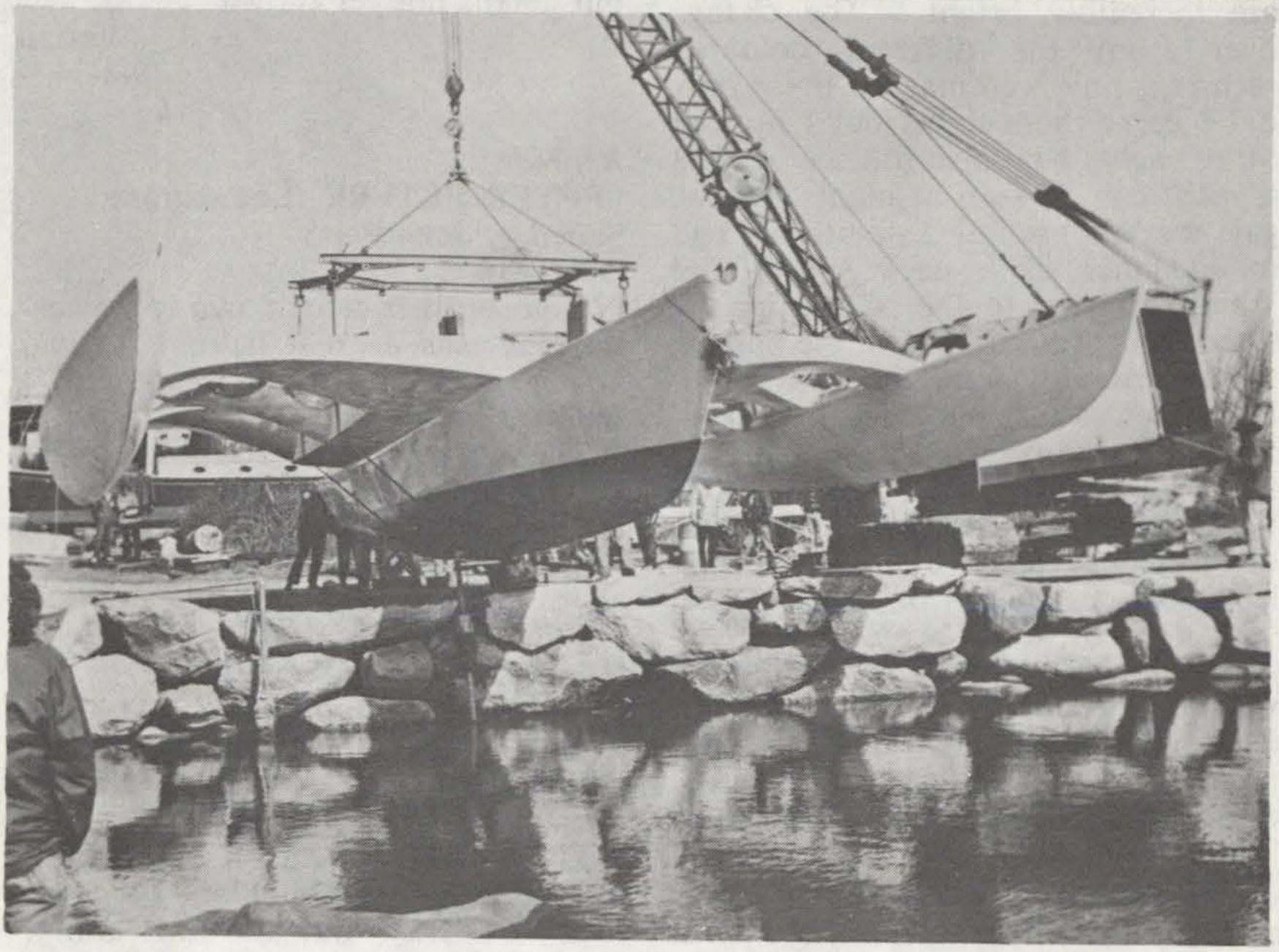
The Azores 'open' sounds a great idea. I am all against the mad single-handed idea which defeats the most fundamental rule of seamanship: a good look-out.

Why do we go on looking with favour at this 'mad' deviation?

Yours sincerely,
John Perry.

Answers to questions-
'PETER PETER' One off Catamaran, 910 sq. ft. of sail, built of G.R.P. in 1972. Carried but did not use a QME Self steering. Worked 4 hour watches.





Phil Welds 60ft. Newick designed trimaran GULF STREAMER, launching March, 1974. *Norman Fortier Photos.*

Retired
"TANE NUI"
Designed by James Wharram and Sailed by Graham Rates of Loch Eil Centre, Fort William.

Dear Mike,

Thank you for your letter of 15th August. I would like to answer the questions as asked and then write a few notes which can be included if there is sufficient space. I was most excited by "Mantis" and was very pleased to have had a longish chat with Dave Chinery—I believe John Morwood visited you and I missed him, most annoying! I was most impressed watching "Mantis" after you sailed past us at the start; the way she sits up is rather eery and she appears completely unlike a cat or a tri.

Watches kept: A & B 0700—0800, A 0800—1300, A & B 1300—1400, B 1400—1900, A & B 1900—2200, A 2200—0100, B 0100—0400, A 0400—0700.

"Tane Nui" was a professionally built craft that was supposed to be ready in February but was only just completed before the deadline for the race of June 8th. As she was being built about 600 miles away from where I live, no check apart from telephone calls and letters was kept on her construction and Jim Wharram was away in the West Indies aboard "Tehini." This proved to be a disastrous mistake. I should point out here that Alastair Mitchell, my co-skipper, and I were sailing the boat for Jim and neither of us owned the boat. When we arrived in Milford to sail her to Plymouth, we were met by a glum Jim who was very unhappy about the way the boat was built. The staff of James Wharram Associates were engaged to a girl in getting "Tane Nui" ready for sea and all smelt prettily of fibreglass resin.

However, we set off only one tide late and beat off across the Bristol Channel against a lumpy sea and about Force 4 SW wind. During the night the wind rose steadily and as we reefed down for the umpteenth time off Lundy in about Force 7, the roller reefing gear gave up having lasted about 6 hours—at this stage we were very pleased that we had insisted on the three rows of eyelets that had been put in the sail for a jiffy reefing system.

By the following afternoon, we decided to take a break at St. Ives as we had not slept while driving over night from Scotland and the previous night had been rather hectic. After a good sleep we set off the following morning under jib only at a merry 8 knots into one of those mornings that one has nightmares about. Grey and white sea, and lashing rain, and the prospect of a hard beat to double Cape Cornwall and Lands End.

However, once this grim part was over we had a superb reach from the Longships to the Lizard, averaging a fraction over 10 knots and hitting 15 knots on a few occasions. I find such speed in a boat 23ft. on the waterline quite frightening. We arrived in Plymouth an hour late for scrutiny after an interesting beat up the Sound where we actually tried to capsize her, but only tore the clew out of a staysail —most impressive. Our time in Plymouth is a memory of at least 1,001 small and large tasks completed, helpful friends and an incredible amount of hard work. The start was a positive relaxation after this.

We made an excellent start with Albin Ballad but as we couldn't get our ghoster to set properly, did not go out of Plymouth Sound very fast. By the Eddystone Light we were most impressed by the way the fleet had scattered as we held out for some hours beyond we only saw Ron Glas, Airdale, Catch 34 and Gancia Girl in our vicinity. We tacked in the dusk which soon thickened to fog and were becalmed in Mounts Bay, listening to the mournrful sound of Tater Dhu horn all night. We rowed a

little the following morning and found that we could make 2 knots with a fair amount of effort and soon packed it in. We had fitful puffs of breeze from about 10 a.m. but were greatly disappointed when a DF plot (that later proved quite accurate) indicated that we had moved 2 miles in 10 hours! In a prolonged puff we overtook Sherpa to leeward and although they skulled valiantly, when a steadier breeze came up during the afternoon, we left them rapidly—by now a sheeting arrangement for the ghoster was fixed. We rounded the Bishop in company with several other boats at 0100 in a breeze that was failing yet again. However, six hours later it picked up and we were soon reaching quite happily at an indicated 8 or 9 knots. Indicated wind speed was 20 knots. In the middle of the afternoon the wind swung sharply into the West and we were faced with the prospect of a beat to Crosshaven. At about this time Gancia Girl over took us looking very stable and impressive. Eventually we had a very close reach to Crosshaven where we arrived at 0230.

On the way across we had indications of the trouble that caused our retirement. The forward beam mounting on the port hull was lifting the deck from the bulkhead. We reefed and took down our staysail and proceeded fairly sedately for the last few hours. We also tried to calculate the rate at which water was leaking into the hulls and estimated 65 galls. per day—rather a lot for fibreglass we felt!

After fibreglassing the deck to the bulkhead in Crosshaven, we set off with high hopes on the second leg. Our leeway indicator (courtesy of A.Y.R.S. to go with our cutter sail plan from the same source), helped us to go to windward quite well at just under 50° off the wind with 4° of leeway. But as we tacked up the Irish coast towards Fastnet on a superb day of bright sun and a wind of about Force 5, it was obviously not to be. The repair creaked but held while the strain was moved back to the port coach roof, which began to rise and fall! Upon long and close inspection it appeared that about six feet of deck was starting to separate from the hull and we had visions of unzipping like a banana. Retiring seemed the only seaman-like thing to do but such an incredible waste of time and effort. However, we reluctantly turned and headed back for Crosshaven, our short race over.

We thought of many ways to cure the problems but all involved a complete rebuild to bring the boat to the planned specification.

Some interesting points came out of the race. I was impressed with the speed of Tane Nui and her cutter rig was abviously efficient although I was not impressed with the cut of the sails, which were badly out of shape after 800 miles. I believe we were the only crew to wear full oilskins all the time like dinghy sailors, and in future I will have a well-sheltered steering position. Finally, next time the boat will be finished a year before the race!

Sincerely yours,
Graham Rates.

Retired

No. 4 "SKOL"

Sailed by Capt. R. F. B. Gatehouse and Edmund Gatehouse

12th August, 1974

I entered my 14 year old Folkboat "Skol' for the 1974 Round Britain Race. She was one of the older and smaller craft in the race and we were not sponsored. 'Skol' is a conventional Folkboat of carvel construction and before the race I had her hull strengthened and removed and checked all the keel bolts and the majority of the scarf bolts. She was considered by a reputable yard to be in good condition for the race; however during the race we sustained fairly serious

hull damage at a time when the winds were not very strong, although the seas were very confused, and as a result had to retire from the race.

We had uneventfully completed the first leg of the race from Plymouth to Crosshaven in Southern Ireland and were on the second leg from Crosshaven to Barra in the Outer Hebrides. We were dogged by head winds all along the South Coast of Ireland and the greater part of the West Coast, tacking in close company with Ron Glas and Pulau Tiga.

Soon after first light on the 15th July the wind died down and as the weather forecast had informed us the wind was cyclonic variable. For about four to five hours we were nearly becalmed in a lumpy sea with the wind coming from all directions. This was a very frustrating time because we were only about 50 miles from Barra. We tried rowing but were not able to make much progress because the motion continuously put us off stroke.

Later in the day the wind came round to North North East about force 7 and we had to reduce sail to storm jib and trisail. The seas were confused with no predictable patterns. This was due I think to the changing wind directions. We were only able o point about 60° — 70° into the wind and we made good about 2 knots on the port tack. During the night we estimated that the wind was gusting Force 8 and 'Skol' came off some of the waves fairly heavily, shaking herself from stem to stern. However she was handling well and we were able to use the vane steering. At one time, we considered 'heaving to' but decided against it because Ireland was 60 miles to leeward and we were also determined to make Barra as quickly as possible. We reduced our watches to 2 hours each, with the off duty watch fully clothed down below. "Skol" was by this time shipping a considerable amount of water through the sides of the cockpit and consequently I did not really notice how much water was entering hrough the hull.

The morning of the 11th July, brought little change to the weather and 'Skol' was taking a bit of a bashing. Nevertheless, we were holding our position. By early afternoon the wind began to moderate and backed to the North. That night Edmund saw the Skerryvore light and later we were able to change to the working jib and reefed main. Soon after first light we were able to see Barra Head and by 12.38 we had crossed the line to finish the second leg to Castlebay.

When we arrived in Barra we found that we had cracked a plank and broken seven frames, five of them in a row, and also a stringer, all on the starboard side. This had been the lee side when the seas were at their greatest height.

Navigation was comparatively easy during the gale because we had Barra Head Radio Beacon coming clearly the whole time. We also carried a 60 fathom echo sounder which was particularly useful as an extra check, particularly when sailing over the Stanton Banks and the shallower area off the Skerryvore light.

1st August, 1974

Vane Steering.

We had the Quarter Master Vane Steering Gear, which proved very useful under certain weather conditions.

On the wind with wind strengths of Force 3 and above, particularly in Gale Force winds when the cockpit was unpleasant for long periods of time.

I found that directly we were free of the wind we were able to steer much better by hand because the vane steering tended to take time to correct itself. Occasionally in heavy weather, when the stern was lifted clear of the water the gear obviously had no effect.

When we were moving through the water at speeds of 6 knots and above with the gear in the disengaged position the trim tab caused extra Torque on the helm. In these conditions, we unshipped the gear as it caused drag.

As a conclusion, I was very glad to have the gear on board, but for racing I would have liked to have a lifting trim tab.

Oars and Rowing Positions

My brother is the oarsman and was largely responsible for supervising the fittings. We carried two light, hollow wooden racing oars. We installed five rowing positions, two in the bows (1 and 2) where the rower was able to select either port or starboard, depending on the heel of the boat. The rower sat in the bows facing aft with his feet on the forward edge of the cabin and was able to get a powerful position.

Two other positions were in the cockpit (3 and 4). The rower could either face aft sitting in the cockpit, or face forward with the tiller between his legs and push the oar.

Whenever the speed of the boat dropped below 3 knots we both rowed and were able to keep the boat moving at a reasonable speed. Our maximum speed was just 4 knots with a good cruising speed of 2 —3 knots. The longest we rowed at any time was 4 hours continuously when we made against a foul tide round the Lizard.

The fifth position was in the stern and we only used this in harbour when the oar was used as a sweep.

Cockpit Cover.

We had an internal cockpit cover made because our cockpit is not self draining. This was very useful and saved us a great deal of pumping. It was also reassuring in the following seas when there was a risk of pooping.

Storm Jib and Tri-Sail.

We had a storm jib and tri-sail made for the race by Gowens of West Mersea and both proved very useful and carried the yacht to windward in winds of Force 7—8.

Jib — 37.5 sq. ft. Tri-Sail — 41 sq. ft.

Slab Reefing System

We had two rows of reefing points and found both gave an excellent set to the main. I also fitted a winch to the boom to haul down the clew. The system was very easy to work singlehanded.

Wind Direction and Speed Indicators

We fitted Brookes and Gatehouse Hengist and Horsa which we powered from a 12 volt dry cell battery, because we had no engine to charge our ship's battery. The equipment was very useful for night sailing and sail trimming.

Retired
"COUPE DE SABRE"
Sailed by Lt. David Harris, R.N.

Myrtle Cot,
16, Russell Road,
W. Wittering,
Sussex.
26th August, 1974

Dear Mr. Ellison,

I am delighted to assist where possible but since this time there were so many entrants (67) and so many retirements (21), you will probably be swamped with material so I will keep my notes fairly short.

1. Class of yacht. SABRE 27. Was purchased in kit form with just the hull valves and the engine fitted by Marcom, the remainder of the work being completed by myself.
2. Displacement. I honestly do not know but since all of my scantlings are smaller than all of the other Sabres that I have seen and I carry more equipment than any of the others, I would say within a couple of hundred pounds of design weight.

3. Sail area. Main 155
Working jib 155
Storm jib 80
Genoa IOR 264
Spinnaker 450

4. All bar the working jib by Jeckell. All quite good but the main when slab reefed was particularly good. It did not roll too well. The working jib was by Team Sails and has been sent back to them since it started to fall to pieces after a very short life.

5. Waterline length 22ft. 1in. I am afraid that the committee handicapped us at 21 but am not sure, my crew sent the details in to them and I have only just found the mistake while preparing these notes.

6. G.R.P.

7. 1973 but still not finished fitting out.

8. To date I have spent nearly £7000 but this includes the interest on a £3000 marine mortgage and that £3000. I would put the value with the full itenery at close to £7000.

9. Self steering, QME.

10. No. In all fairness we did not give the gear a fair trial but since we worked a one up one down it did not become a necessary piece of equipment.

11. Gas.

12. 4 on 4 off from 0800 to 2000, 3 on 3 off from 2000 to 0800. I should point out that we are both

COUPE DE SABRE

Submarine officers in the Royal Navy and are quite used to this system of watchkeeping.

Other points of interest:

As so many times happens when on a long race we were a little late in getting the spinnaker down on one occasion and put a small bend in the boom and also bent a quick release fitting on the inboard end.

At some time on the second leg, we put too much strain on the main and caused the boom end fitting to bend. This prevented us from reefing below 4 rolls. We did not find a way to repair it at sea and had to seek shelter to do so.

I fitted a folding prop and obviously used it too much when we were heading for Plymouth before the race. The stern tube parted from the hull (Due I suppose to excessive vibration) the Cutlass bearing parted from the stern tube and the keel. It was in fact this little mess that put us out of the race, the reason being that I could not remove the shaft. The inboard coupling has two nuts to retain it on the shaft but to get at these, I had to have a special tool made. If I could have removed the shaft, I would have plugged the hole and carried on but my attempts to make a watertight joint round it failed.

Incidently when I refitted the stern tube arrangement last week, I discovered that it had been badly fitted in the first place and was quite a lot out of line, in fact the cutlass bearing was 1/8 in. out of true over 2 in.

Lessons learned.

Get the sails down early.

Carry a couple of large adjustable spanners for 'Brute Strength' repairs.

Where special tools are required, always carry them.

Do not trust any one else's work, especially things like the alignement of shafts, etc.

Yours Aye
D. J. Harris
Lieutenant, Royal Navy.

No 40
"SHYAUK"
Sailed by William T. Serjeant
42, Folly Lane,
Hockley, Essex.

Comments:

"Shyauk" was too small for the especially tough sailing along the western coast of Ireland (Force 7—8, between W and NW for 2½ days). She had to be ahull during force 8 winds.

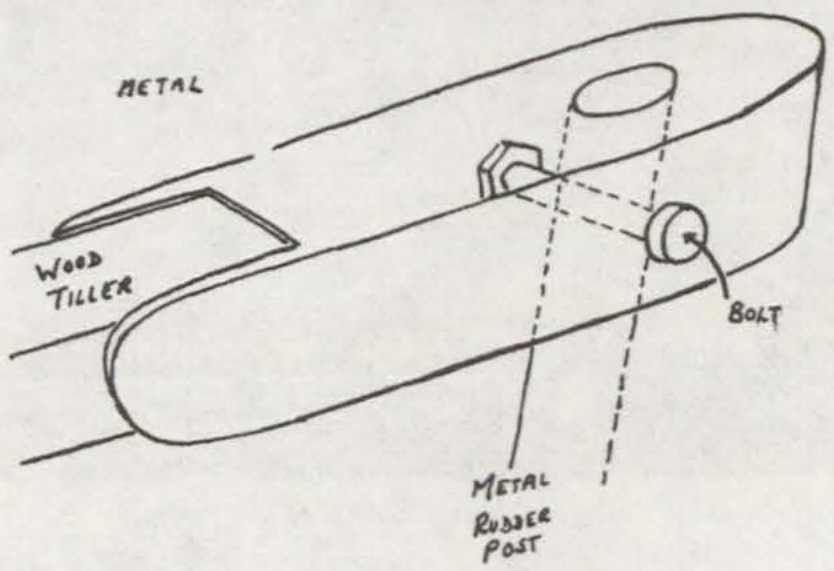
The Hasler 900 SP gear would work in all conditions, but was not effective in force 1—1½ winds when running (she would sail on a zig-zag course 10° either side of the desired course). The gear worked exceptionally well in force 7—8 winds, when on the run.

The tiller attachment was found to be unsatisfactory and due to wear, worked loose—inherently a bad design.

Wear occurred between the rudder post and the metal tiller fixture, because there was no way of applying pressure between the post and the fixture.

Watches: 4 hours with Dog watch 1200 — 1400 — 1600.

Yours sincerely,
William T. Serjeant.



Retired
No. 13 "FIDGET 30"
Sailed by Jeremy Halbati

3, The Crescent,
Alverstoke,
Gosport.
26th August, 1974

Fidget. One of six built by C. & N. designed by Charles Nicholson and now classed by ourselves as the original Nicholson 30 (wooden!)
Displacement: 4 tons. Built of Wood —mahogany on oak frames.
in 1939. Her value: Difficult to say but at the moment in the region of £3,500 or possibly a bit more.

Self steering. Gunning—Wind Major, we never really got it to work.

Cooking by Gas. Watches. You have published Ewan Tailyour's watch system, and ours was extremely similar and I felt had the same advantages.

0600 — 1200
1200 — 1800
1800 — 2100
2100 — 2300
2300 — 0100
0100 — 0300
0300 — 0600

Although this was very similar, we shook the watch below at 1700 for an early supper and for sailchanges. We stuck fairly rigidly to this and found that it gave us an adequate amount of sleep and allowed a certain amount of flexibility.

Cooking was a problem but I was cook and my man Dicky was the navigator, so the hours worked balanced themselves out, although we both did navigation and cooked.

Our trip did not last too long in a racing environment as, you probably know, we retired off Barra. This meant we had to get the boat back so we went through the Caledonian Canal and south to Lowestoft (for a beer) where we started again but ran out of time.

The gear we were particularly pleased with was our Weylite Masthead Nav. light. I know the "Yachting World" does not like them but in the rules of the race it states that you will burn navigation lights during the hours of darkness. The drain on our battery was minimal and I am very glad we had a bright light at the top of the mast in the Dover Straits!

We had some fun there. The problem of the two colours merging is easily solved by adding a metal strip up the tube to act as a shade. I am convinced this idea works and that I can be seen clearly and at a far greater distance than a conventional set of Nav lights that disappear underneath waves and spray. I think also from personal experience at sea that you only need to see a light and perhaps have a radar contact to tie up, and you are aware of the problem —you then act accordingly having tracked and taken bearings, so all you need to see is a light and to be aware that there is a boat there. There are people who will disagree but what else is a yachtsman doing when he shines his big torch on to his sails?

Apart from my rambling, we suffered no gear failure apart from one seam on our genny which was a very small tear.

I hope that you will find my answers adequate and that they will help you in your research.

Yours aye,
Jeremy Hulbatt.

Retired
"BATTLE ROYAL OF CHICHESTER"
Sailed by Rev. Stephen Pakenham and Elizabeth Pakenham.

The yacht is an Ohlson 38 G.R.P. hull moulded by Tyler and completed by the owner in 1973 with a cutter rig.

She has a Hasler self steering gear which was used. Gas cooking.

Watches—"Repeated pattern each 24 hours after American reasearch

on U.S.N. The pattern could therefore be a complicated one designed to cater for the natural sleeping patterns and work periods of skipper and crew. It worked extremely well (for one leg only as the boat was only entered to go as far as Crosshaven).

"Jibswitch" was fitted to both forestays and it worked extremely well for a system in its second year of development. Minor troubles of the season have already been thoroughly examined and are most unlikely to recur."

Retired
"SLITHY TOVE"
Sailed by designer Michael Pipe and Ian Porter.

Of multi-chine construction and a displacement of 4½ tons, "Slithy Tove" was the second monohull to finish the first stage to Crosshaven, she arrived 9th next to "Quailo III" and ahead of "Manureva" and "Burton Cutter."

She carries about 800 sq. feet of sail with a sloop rig and does not have self steering. Her crew used "the no-system" of watch keeping. She finished 8th at Castle Bay but unfortunately was once again unable to make Lerwick undamaged, this yacht was driven very hard and in fact finished ahead of "Quailo III" but behind "Burton Cutter" at that stage.

Retired
"KASANTI"
Sailed by John Dicks and Eric Carpenter.

Designed by R. MacAlpine-Downie this is an Apache class catamaran built by Sailcraft. She entered the 1970 race as "Warlord" sailed then by the designer. She suffered hull damage on the second stage and retired from the race and sailed back to Plymouth. She is fitted with a Aries self steering gear but it was not used during the race.

Retired
"BLUFF"
Sailed by Rod White and Dan Hogarth

'Halcyon 23' class yacht designed by Alan Buchanan having a centre keel and two bilge keels. Her displacement is only about 1½ tons.

From Roderick White:—I was very interested to read your publications on the previous Round Britain Race (No. 75), especially to find details of Ewan Tailyour's very senior watch-keeping system. We had signally failed to establish the pattern of this at Plymouth and Crosshaven either because Ewan and his confidants found an explanation beyond them or because our understanding had been impaired by the rigours of being harbour bound!

Our watch keeping system was basically 3 hours on / 3 off except that the amount of time spent handling over (which could vary between 10 minutes and 90 minutes) did not detract from the 3 hours for the one going off watch. This became modified for a period during the gales off the West coast of Ireland when hourly pumping and the demands of the helm seemed to require changing over every hour.

Our steering compass became dislodged and was swept overboard and the use of a handbearing compass without light proved very tedious. It helped us conclude that progress into the Northerly gales was becoming distinctly marginal, and that com pletion of the course within the prescribed time limit, let alone our four week holiday, was fast disappearing.

So we retired and returned to Plymouth, putting into Blacksod Bay on the way to report our action. Running back seemed a piece of cake —until, off Fastnet, the gooseneck broke. We were then able to put the twin forestays to good use and continue under two headsails all the way into Plymouth Sound. It took 6 days and we touched eleven knots at one well remembered moment!

Retired
"HIPPOKAMPOS"
Sailed by Alan Goodfellow and Trevor Harvey.

This is a 15 ton displacement sloop designed by Angus Primrose and built of cold moulded wood by Souters of Cowes in 1971.

The crew set night watches only of 3 hours each, she is fitted with an Aries self steering gear which was used.

Mr. Goodfellow reported: "Hippokampos" behaved perfectly throughout the race. We were forced to retire about 150 miles north of Lowestoft because of a broken rod cap shroud which fractured at the lower end of the thread at the top end.

We were able to jury rig the mast by using the genoa halyards to form a temporary strut, but were unable to set any canvas, but were able to motor to Lowestoft having just sufficient fuel.

I should be very happy to take Trevor Harvey again, but as I shall be 64 by the time the next race come round . . . . . ?

I certainly think that to choose the right companion, is the first consideration on this and any long distance trip. Whether you win or lose or get into trouble, providing you are on good terms with your companion, you can cope with anything. Of the 2,000 miles or so that we sailed about 1,500 were on the wind, which, as all sailing folk know, is the most uncomfortable point and usually the wettest. We both thought that the real heroes of the race were those in anything smaller than "Hippokampos" which is 45 ft. O.A. When conditions were favourable, we lived in 5 star luxury, and even when it was rough we lived in at least two star. And of course you are less time at sea when conditions are bad.

As no doubt everyone else realised that it ceased to be a race after the first day at sea, with some boats sailing days and sometimes even weeks apart, in completely different weather patterns and conditions, but unless all the vessels are of one kind, I see no other way to run it.

One of the saddest things I thought was the coverage given on the television, when the first boat to finish got too much and the winner, "Cough of Parkstone," was not even mentioned. We even got shown several times and while we were pleased to see ourselves on the old Box, we did not even finish, at least not under sail.

But then I suppose we all get our own particular satisfaction from the Race, and anybody who gets round Great Britain, I think, is "A Winner."

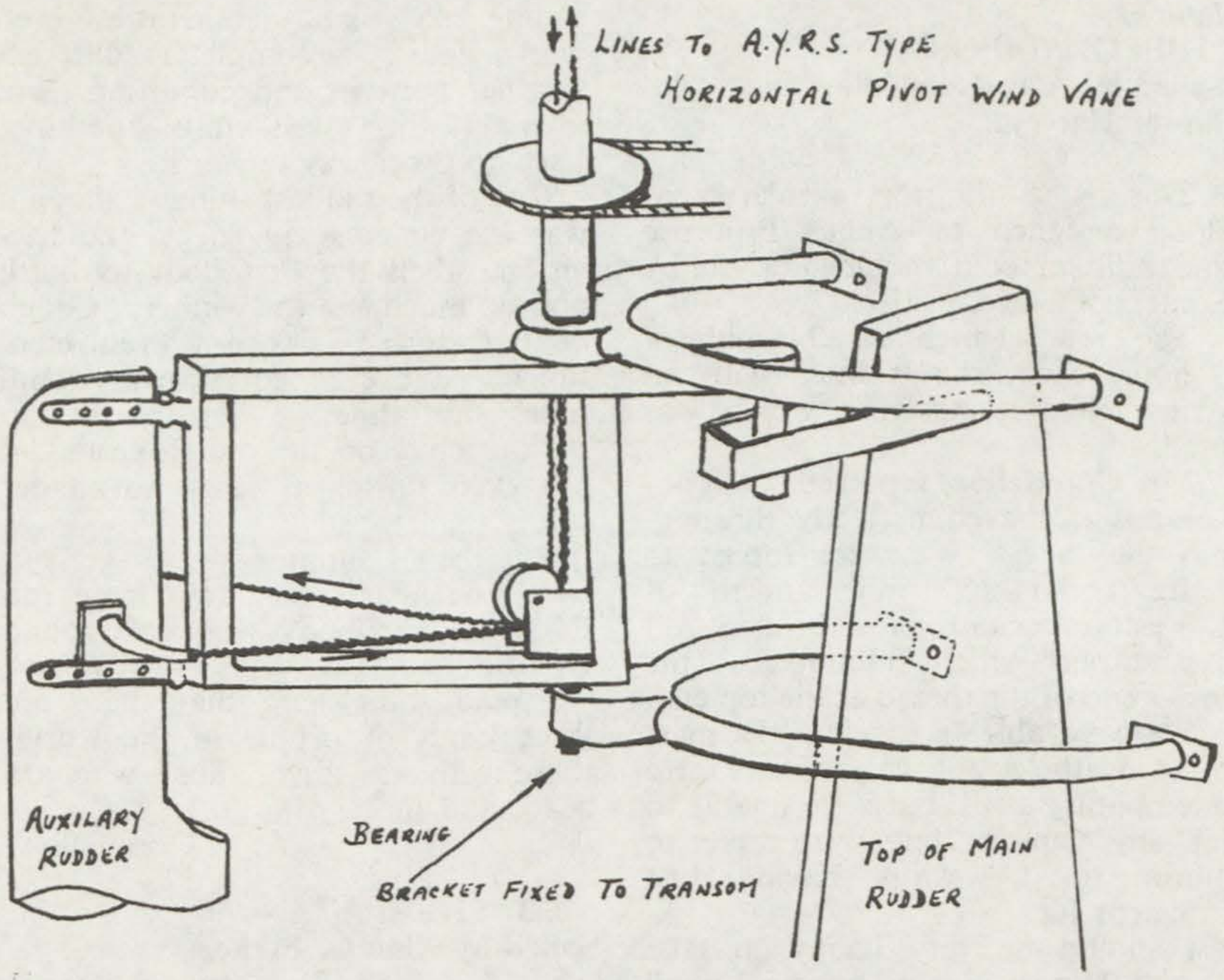
I read somewhere that there are three kinds of people in the world, those who are alive, those who are dead, and those who go to sea.

A. E. Goodfellow.

No. 3 "SHERPA"
Sailed by Alan G. Perkes
57 Twickenham Road,
Twickenham, Middx.

My self steering gear which I developed because there was no gear on the market which would fit a boat with a lifting rudder blade. It seemed to me at the start that the trim tab principal where the tab worked direct on the trailing edge of the rudder was a back to front approach, as the trim tab worked the opposite way to the rudder. I therefore introduced a frame round the rudder (also useful for boarding) and put in a swinging arm to take the trim tab which now worked the same way as the rudder. This also allowed the swinging arm, when disengaged to be swung clear of the lifted blade and, if the vane lines were slackened, the trim tab would lay forward if the boat was motored in reverse.

This arrangement also has the advantage that it can be tuned to



SHERPA VANE GEAR

(Full drawings available on request)

various wind and sea conditions. If the tiller is lashed hard or with a little play only, the trim tab will in fact stear the boat, In flat conditions it can be made to put the boat about if required even with the main tiller lashed amidships. If the tiller is left unlashed the tiller is seen to follow closely after the vane even though on an Atlanta it has to overcome the additional friction of the wire over four right angle turns and the bearing at the base of the tiller.

Without this gear, when the main rudder blade snapped off just below the stock approximately 120 miles W.S.W. or Barra Head we would have had more difficulty in reaching land. As it was, with what was left of the stock below the waterline and the trim tab we managed reasonable progress. In fact we had to use the wind vane to steer and could not steer by the tiller, which we did from Barra Head to the finishing line off Barra, by moving the vane by hand.

"DANCING BEGGAR"

Broadstone Farm,
Walditch, Bridport,
Dorset.
29.9.74

Dear Michael,

Enclosed is a drawing with sail plan, G.A. interior, section and your questionnaire.

Due to a late start building (thirteen weeks before the race) the boat wasn't ready despite the fantastic effort everybody put into her. But we did get her into the

water and rigged the day before the start! However with a number of essential deck fittings absent, the interior unfinished and an untried boat we decided it was prudent not to take part. So I can't say anything about the race, only our private race to get a boat ready in three months.

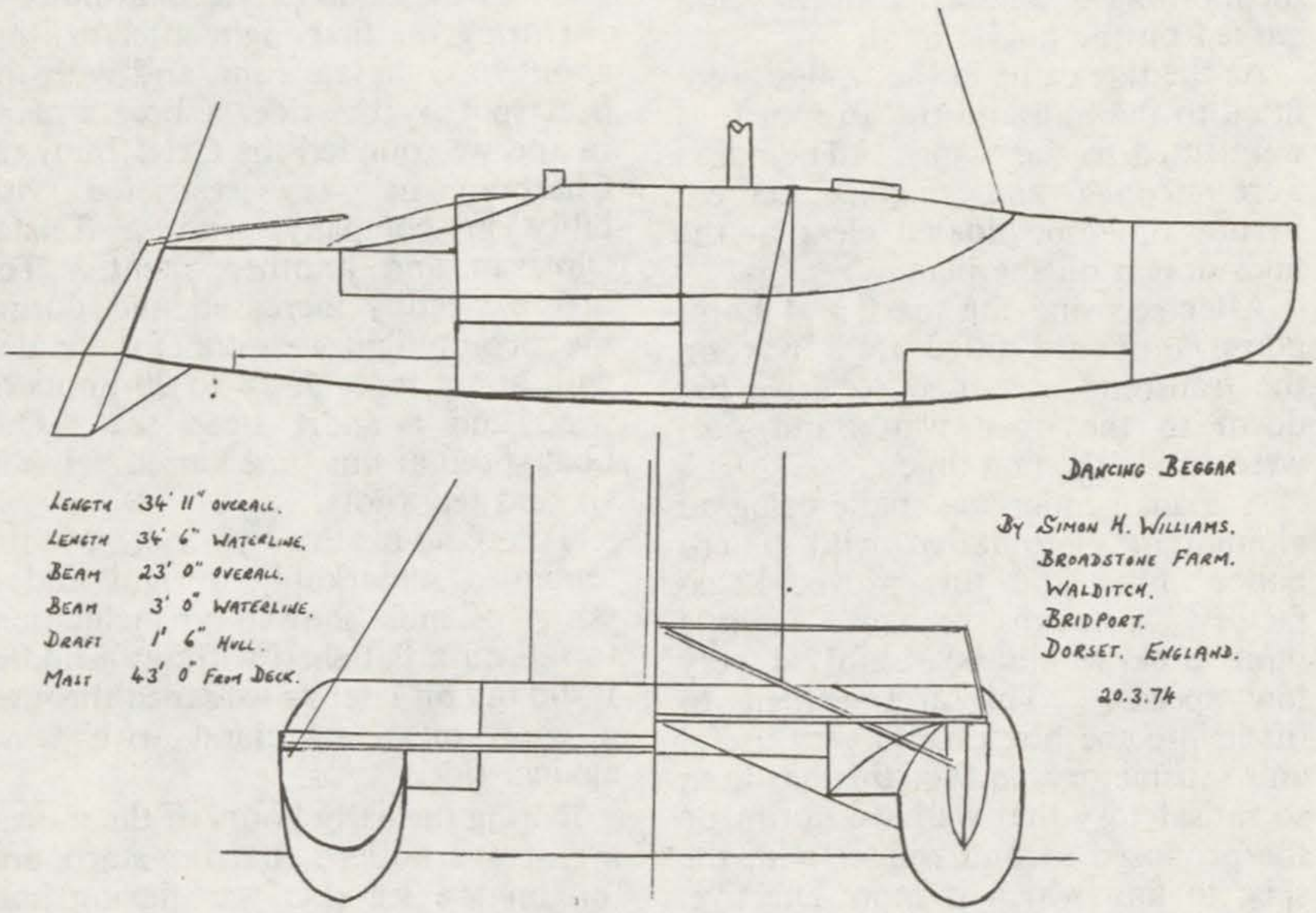
I started design work on Dancing Beggar reincarnated as a racing Catamaran last October, but with the three day week looming and the general unsettled economic situation, decided to wait and see. However, in late February with enthusiasm rekindled, I decided to go ahead. One of the major factors making it possible was a promise from Peter Ellison to make up all the metal work.

Apart from time there were a number of problems. I had an open sided unheated cow shed to build in, so foam sandwich was out of the question. Cold moulding was ruled out as there were no structural veneers available, so plywood was all that was left.

I developed the hull lines so that $8' \times 2' \times \frac{1}{4}''$ sheets of ply could be bent diagonally on stringers giving a round bilge hull form. We learnt a number of tricks for doing this, but it would not have been possible at all without a very fair structure of frame, keel and stringers.

Despite Peter's involvement with the metal work and a number of late night sessions where he listened patiently in between giving helpful advice, suggestions and reassurance, he was undecided about taking part in the race due to family commitments. However on seeing the hulls he decided to come. It was this decision on his part which really kept the team spirit at the "Walditch Coop" in full flood right through to the launch.

The project was very fortunate with suppliers, in particular Seahorse Sails (Offshore) and Sailspar. Sailspar let



us have the sections and a lot of fittings which we assembled; and both Seahorse and Sailspar gave a lot of help and advice.

Even when I started the project, I was aware of the possibility that the boat might well not be ready in time. So I decided that whether she was or not, she must be built of top class materials and workmanship. This I think, we have achieved which is at any rate the best consolation prize one could hope for.

So, though we lost our private race and therefore failed to take part in the Round Britain, we hope to make first class competition next year.

Yours sincerely,
Simon H. Williams

"MANTIS IV"

By Michael Ellison.

"Mantis IV" was completed to the lines shown. Designed by David Chinery and built by Peter Chinery, the 34 ft. 9 in. hull was trailed the 50 miles to Fareham harbour early in the morning of Sunday. 26th May and parked on the public hard.

As the tide came in the 'wings' were fitted to the hull and the 16 foot foils were fitted to the 'wings'. The masts were stepped and rigging secured. In due time she floated clear at the lines drawn on the plan.

After securing the mast, a 4 horse power outboard fitted to a box on the transome was used to drive her down to the open water and sails were set for the first time.

A spade rudder was made using an aluminium plate faired with 'micro ballon' filler and this proved satisfactory although perhaps a little more area would be useful at very low speeds. The arrangement to lift it into the box proved very useful and satisfactory, in fact this has been so satisafctory that we have not made the proposed second rudder with the skeg to find which is more effective.

She handles well under sail although slightly sensitive to fore and aft trim. Moving weight forward can make her slow to come about, a manoeuvre which is always helped by backing the jib and/or easing the mizzen sheet.

The most impressive feature of "Mantis IV" is the very slight angle of heel. David Chinery had underlined on the original plan "Note: When sailing boat will **not** heel more than 5 degrees." this is in fact the case, so that the usual angle is 4 degrees when sailing.

"Mantis IV" has proved very comfortable and stable with no tendency to excessive rolling or pitching. There is very little wake and only the slightest water disturbance by the foils at sailing speeds.

"CRYSTAL TROPHY RACE"

On the 300 mile Crystal Trophy race, Mantis sailed with only two crew as a warm up for the Round Britain race. The start was against the tide with very light winds and it was soon apparent that our light weather performance was not as good as the light racing multihulls.

During the first night after drifting about in complete calm and with the fleet split by the tide, a breeze came in and we rounded the CH 1 buoy off Cherburg in very restricted visibility in company with a Telstar trimaran and another yacht. The breeze steadily increased and during the second night we were close hauled with about force 5, 18 to 20 knots of wind and a short steep sea. Our boat speed at this time varied between six and ten knots.

Throughout this period, Mantis remained remarkably upright and a bottle of milk showed no inclination to fall off a flat shelf without a fiddle. If did fall off later as we sailed through a chop off a headland with wind against tide.

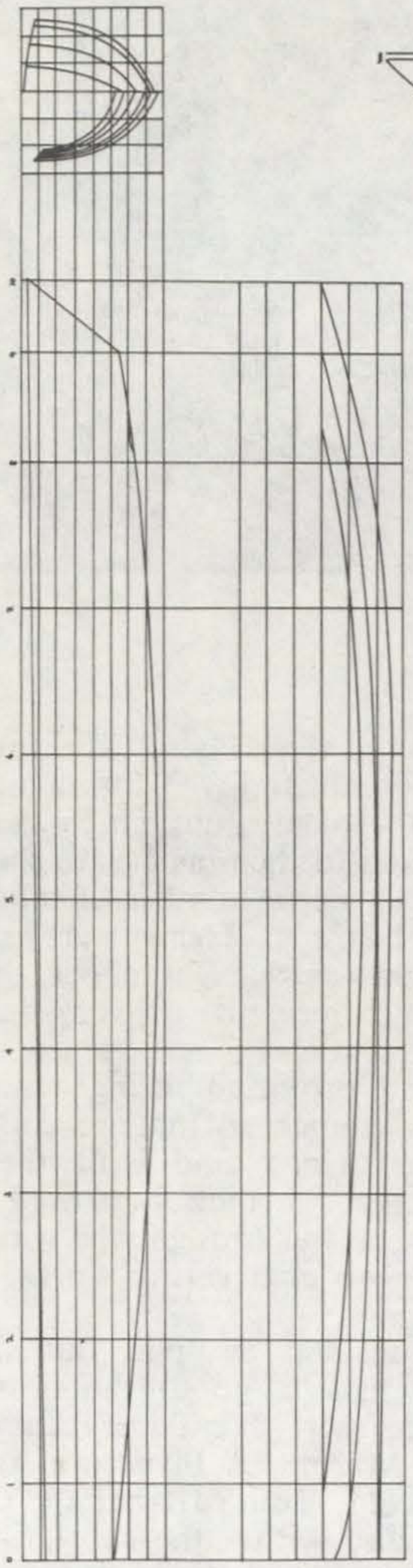
During the early hours of the morning, it was noticed that the starboard foil on the lee side was flexing and that the joint of the plywood along the after edge of the 'wing' was

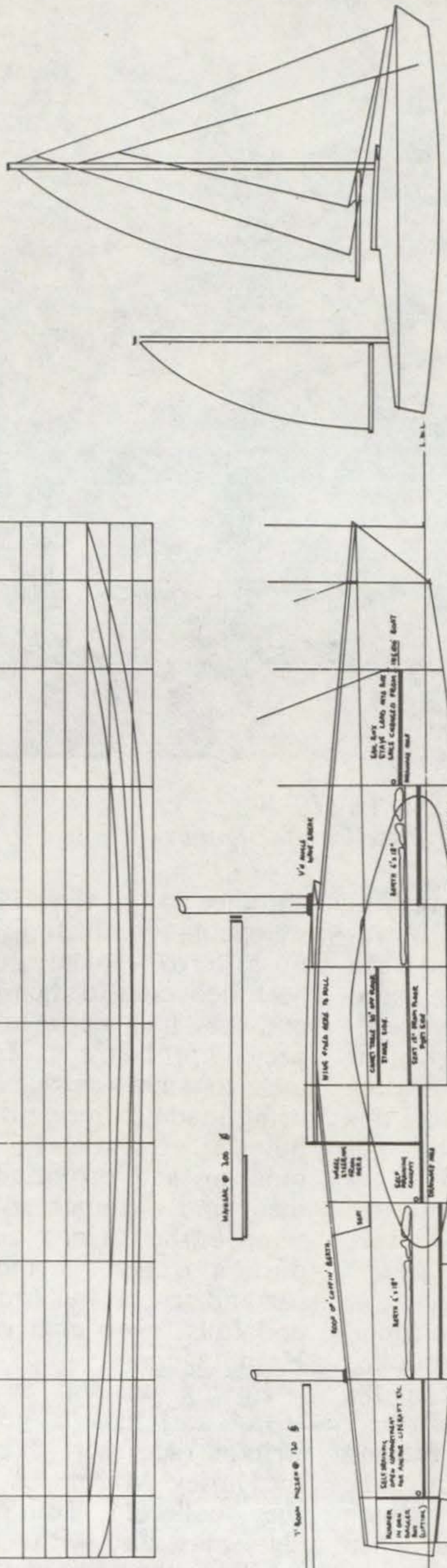
MANTIS IV
Wing after Crystal Trophy

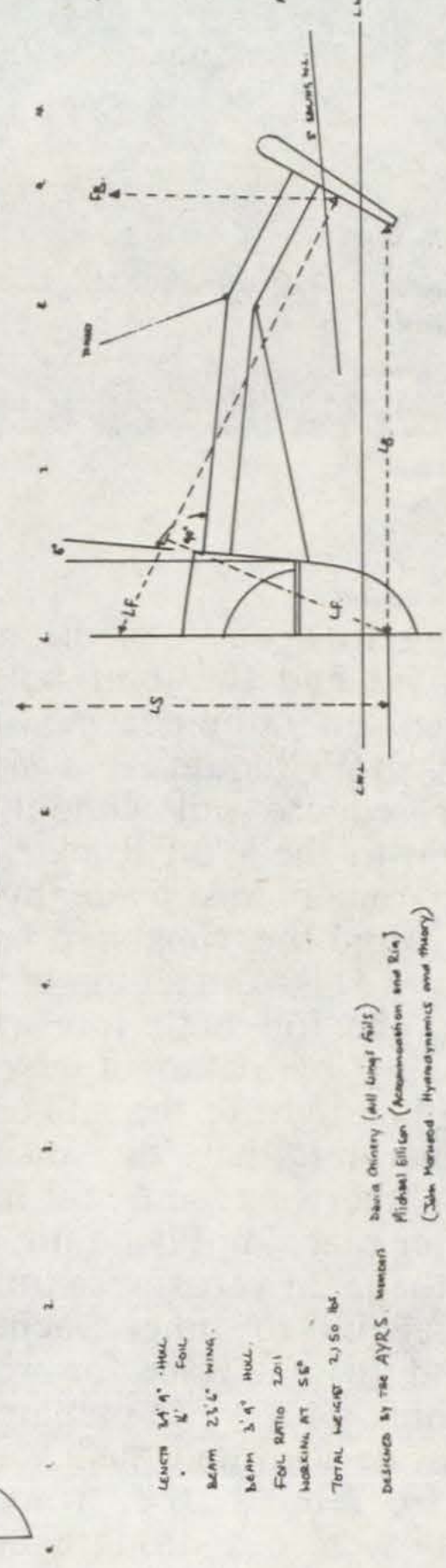
starting to open. As the movement increased and the joint failed it was decided to stop racing and sail direct to Plymouth at a slow speed under reduced sail without proceeding out to the Wolf Rock. An emergency repair was made by winding rope round the 'wing' and lashing this tight. We also put a loop of rope right round the foil both fore and aft of the 'wing' by making a lasso and this we pulled tight to the hull as we were not certain that the main beams within the wing were still intact.

After reaching Plymouth, we found that the main yards were fully booked for repairs to other yachts in the Round Britain Race for which there was only 14 days to prepare. We had almost decided that there was no time left to rebuild the 'wings' which clearly were not strong enough when we visited the small yard of Skentlebury, Laira Bridge Boatyard at the entrance to the river Plym. The yard were busy completing the fitting out of a ferro cement hull which had been delivered to them as a bare shell and they had met a number of unexpected problems. There were no men to spare as a great effort was being made to meet the delivery date but Mr. Skentlebery let us use a mooring and promised lifting equipment and a launch so that we could remove the 'wings' and load these onto a trailer. I then borrowed a car and trailer and brought the wings and foils to an engineering works in Hermitage.

Having decided to 'pull out the stops' and have a go at the round Britain race, Mr. Skentlebery called in Hurley Marine of Plymouth and they collected Tom Herberts "C" class mast and within the short time available they rigged the mast with a masthead rig including new spreaders







NOTE: SAIL FORCE X LS - FOIL FORCE (= SAIL FORCE) X LF + (FOIL BUOYANCY OR) X LB.
(SAIL FORCE) LS - LF (= LB)

L = MOM. LEVER ARM
S = SAIL
F = FOIL FOR.
B = MOM. BUOYANCY.

NOTE: WHEN SAILING BOAT WILL HEEL MORE THAN 5°

MANTIS IV

LENGTH 34'9" HULL
" 8' FOIL
BEAM 23'6" WING.
BEAM 3'9" HULL.
FOIL RATIO 2.01
WORKING AT 5.5°
TOTAL WEIGHT 2,50 lbs.

DESIGNED BY THE AYRS. Members David Chinery (All Wings Foils)
Michael Ellison (Accommodation and Rig)
(John Marwood Hydrodynamics and theory)
Peter Chinery Joint Designer and Builder

and provided a new step and matching deck fittings so that the mast no longer swings. We are also able to move it fore and aft by slacking the rigging and removing one bolt. Hurley Marine did this work supplying stainless fittings and wire complete with bottle screws all for a most reasonable price. Mr. Skentlebury brought his splicing machine on board and together we stepped the mast and set up the rigging so that Mantis can set a masthead genoa which Jim Lloyd brought with him and which is now used on his 'Telstar' trimaran.

The price charged by Mr. Skentlebery and by Hurley Marine at Plymouth made a very pleasant change from the Solent area. All the work and material including transport of the mast cost less than double the price charged by Lymington Sail and Tent Co. for fitting two rows of reef points to the two mainsails. In all cases the work done was entirely satisfactory.

From Plymouth to Hermitage is about 180 miles and to save two journeys, both foils and 'wings' were removed and taken together. This made strengthening and repair more rapid as they were laid out together in the workshop but it left Mantis at a considerable angle of heel.

Having been secured and strengthened with steel straps the 'wings' and foils were secured together so that they no longer flex, and paint on the join remained unbroken until the French trimaran "Manuvaria" drifted across the bow and one foil while Mantis IV was at anchor at Crosshaven.

Refitting the 'wings' proved a difficult task. We floated out the 12 foot 'wing' on an 8 foot inflatable dinghy but it proved impossible for two people to lift the wing high enough to insert the beams into the hull. At low tide when the hull was dry we tried to jack the hull upright using blocks and wedges, but the tide returned before we got her up. If you can imagine the sun having set, continuous rain and boots full of water you will understand.

The following morning Mr. Skentlebery brought his launch alongside with one 'wing' across the deck and using ropes and a purchase we pulled the hull upright and fitted the wing without any further trouble. With one wing and foil in position the hull is completely stable—it was a mistake to remove both at the same time.

ROUND BRITAIN RACE

The race started with light variable breezes in Plymouth harbour and a S.W.'ly breeze of force 3 outside. This enabled the competitors to reach the Eddystone Lighthouse close hauled on the starboard tack after which they could not clear the Lizard Head on the Port tack. Lizard Head is 38 miles from Eddystone. The successful yachts this time sailed South on the starboard tack for up to 35 miles and then tacked so that they cleared the Bishop Rock light off the Scilly Isles. By sailing South they crossed the main shipping lane and were not put in a dangerous situation during thick fog which came down around midnight and lasted until about 11.00 the next day.

On "Mantis IV" I came onto the port tack a few miles after passing the Eddystone in the hope that the wind would veer slightly and we would get clear of the lizard with a favourable tide. This did not work out and as we came clear of the headland, we were faced with the prospect of tacking across a shipping separation zone against the tide with visibility less than half a mile. In this situation, I decided to return and anchor behind the head until visibility improved. At 10.00 on Sunday morning the fog lifted enough to show that we had anchored in a bay about ½ mile from the Lizard lifeboat station, more or less as planned—we used about 40 fathoms of line in 10 fathoms

of water—the breeze was offshore.

As the fog lifted we got the anchor up and proceeded. Once clear of the Lizard we soon came upon other yachts in the race as we tacked towards the Bishop Rock. We passed the two Junk rigged yachts without difficulty—their rig at its least efficient with the light breeze and beating to windward. We worked the tides well at this stage and rounded the Bishops Rock just behind two other small competitors but unfortunately 18 hours behind the leaders. The 135 miles from the Bishop Rock to Crosshaven took a further 25 hours, an average of 5.3 knots. The wind at this stage slowly increased and veered so that we were only just able to clear the rocks at the finish line without tacking and as we approached the coast a steep sea built up with the wind at 20 knots against the tide. This was our first chance to try the stiffened mast and strengthened wings and we were able to drive hard with no sign of the foils or wing twisting although as the wind came ahead we had to take in the genoa and reef the mainsail and mizzen as both masts seemed very uncomfortable. Under reduced sail everything was very comfortable and steady but the speed was no longer competitive.

To sum up my feelings of this passage, I will say that I am completely satisfied with the stability and seaworthiness of the hydrofoils on Mantis IV. I am confident that we could have survived storm conditions if necessary. We retired from the race because we were unable to catch the leading yachts and if we had failed later this might have completely discouraged further development work on offshore hydrofoils for a number of years. Our hull was a great step towards reducing the cost of building a yacht. it was built to a price but it was and is strong enough. Unfortunately there were a number of minor defects which caused some discomfort but these would not have been noticed if we had been competitive. These were mainly that the forward port window leaked badly onto the forward bunk. The drain holes in the sail locker were too small so that the locker could in fact fill. This would not be a disaster unless one wanted to tack at that instant. The drain holes in the centre cockpit are too low and water from passing waves enters the cockpit whereas very little spray comes over the top, the same applied to the aft cockpit but the water here did not cause any inconvenience.

The lack of outstanding performance seems due to lack of sail area or excessive weight which amount to almost the same thing in light winds. The mizzen from a Shearwater sets well but close hauled it does remarkably little work. The 'C' class mainsail set extremely well and it is not necessary to remove the battens to reef. The twin forestays from the sail locker were not used much after conversion to the masthead rig as the largest sail to fit the stay was set and left up when the genoa was lowered. Heavy weather racing has still to be tested but the sail was reefed to save the mast and not due to any concern about stability.

Faults: If I were to start again, I would try to avoid the mistakes made with "Mantis IV." The first was my hopeless under-estimate of the cost of materials—this came to around £1,600 for the hull, foils and wings. Building time was a fantastic 560 hours and all done by Peter Chinery in a garage only just wide enough for one car. We arranged help to turn the hull over during building and also to push it out when complete.

David Chinery the designer has said that next time he will use thicker plywood as the 4 millimetre bent too easily and stretched out into bulges when the bulkheads were inserted to give an undulating surface. (like

a starving horse). Peter who built the hull would prefer to use the thin ply again. I have suggested that it may be satisfactory to proceed as before making up the two sheets of plywood the desired shape and the full length of the hull from the thin plywood and then glue strips of thin wood fore and aft along the sheets. This would perhaps allow the ply to bend to the required hull shape and yet prevent the bulges. A small bulge looks like a mountain when viewed along a flat. On "Mantis IV" they were all faired before the fibre-glass skin was applied.

Instruments:

The instruments on Mantis IV were entirely satisfactory so far as the three essentials are concerned. To me these are magnetic compass, echo sounder and radio direction finder. I use a large diameter liquid grid compass and chose a Space Age echo sounder with an advertised range of over 100 fathoms. We mounted the transducer inside the wood hull and still receive steady and reliable echos between 2 feet and 60 fathoms. The first set got wet when Mantis IV heeled over without her 'wings' and a new unit had to be purchased as it is not waterproof. It sometimes works above 60 fathoms and as one of the least expensive instruments, I am well satisfied with it. Tripple Arrow was fitted with Brooke and Gatehouse equipment and I understand that this survived immersion without fault. We could probably buy five echo sounders for the price of theirs but there are no chandlers shops out at sea and when you approach the coast in fog or obtain a single bearing, you need a sounder to obtain a position.

The seafix radio direction finder was satisfactory when we had tuned to the transmitting station. The tuning knob was very difficult to use when fine adjustment was needed and if buying a new set this would be an important point to watch for.

The wind speed and direction meter with the off course alarm, kindly lent by Victor Navigation Co. was tried on the Crystal Trophy eace but unfortunately suffered from immersion and was sent for repair. As this was a prototype, no replacement was available but the repaired unit was ready for posting to us at Lowestoft.

The Future of Mantis IV.

After returning in good time to Plymouth, David Chinery and I sailed Mantis to the A.Y.R.S. meeting at Poole and most members had a short sail in the harbour. There was a brisk breeze and they seemed impressed by her ability to sail upright. We now hope to enter for the M.O.C.R.A. race to Horta next summer.

Extract of a letter from John Morwood, dated 28th October, 1973.

I have been going over some articles with Harry Morss and have some extra information:—

(Ex. Edmund Bruce 1 and 2).

1. The floils should NOT MAKE WAVES and must be big enough not to do so. I think you will agree with me about this.
2. For light winds, the floils should have a vertically projected area of 4 per cent of the sail area. In strong winds, the area has to be about 8 per cent, which you now have.
3. There should be very slight weather pressure on the tiller of a floiler with the tiller between 3° and 5° to lee of the centreline. The reason for this is that ALL THE SIDE FORCE of the sails should be on the floil and virtually NONE on the rudder. This also makes the boat self steering and saves the lee floil burying on bearing away, to some extent.
4. For use in weed infested waters, the leading edge of the rudder, and foil and floil should all have a sweep-back angle of 30° to shed weed.

5. The streamlined cross beam is tremendous. One of the first things learned about catamarans was that, when the hulls were connected with lattice work cross beams, the boat would hardly go to windward. When they were boxed in, windward per formance was good. Round tubes have a lot of windage in light winds below 14 m.p.h.

6. FLOIL THICKNESS. Obviously, you will want as much buoyancy in the floils as you can reasonably get. Perhaps (to be argumentative), your 12 : 1 floils of last year were merely too small. If you take Edmonds figure of 8 per cent for the floil area, the floils are adequately big. I think you should decide on a floil plan form first and gradually increase the thickness until it becomes too thick (or 12 : 1).

7. You will see from what I sent you in my last letter how near you have come to a versed sine—trochoid curve, with your present floils. You may, of course, opt for a lower aspect ratio than I on a span 2/ area basis. However, it would be nice to try a floil 'by the book' for a start.

8. The span of the floil has to be increased by the cosecant of the cant angle from the 1 aspect ratio to give a 'projected vertical aspect ratio' of 1.

9. Floil section can be 'ogival' (flat on outside, arc of a circle inside). Or it can be lens shape in section. I prefer the ogival for a start. (**Mantis IV floil are now lens shaped**).

10. **Thickness:** You now have 40 : 1 I do not believe that the water will know the difference between that and 20 : 1. From some thought about the hulls of the article by Edmund Bruce "The Running Resistance vs Speed of Multihulls" (ex. The AYRS book on SAILING HYDROFOILS), I agree that 12 : 1 is too thick. Even 16 : 1 seems to start making waves at a $V\sqrt{}$ L of 3. (**Mantis IV now 20 : 1**).

Conclusion: (which may be wrong) is that the best section will be an ogival of 20 : 1 thickness ratio. If this makes waves, try 30 : 1. If it doesn't. try 16 : 1.

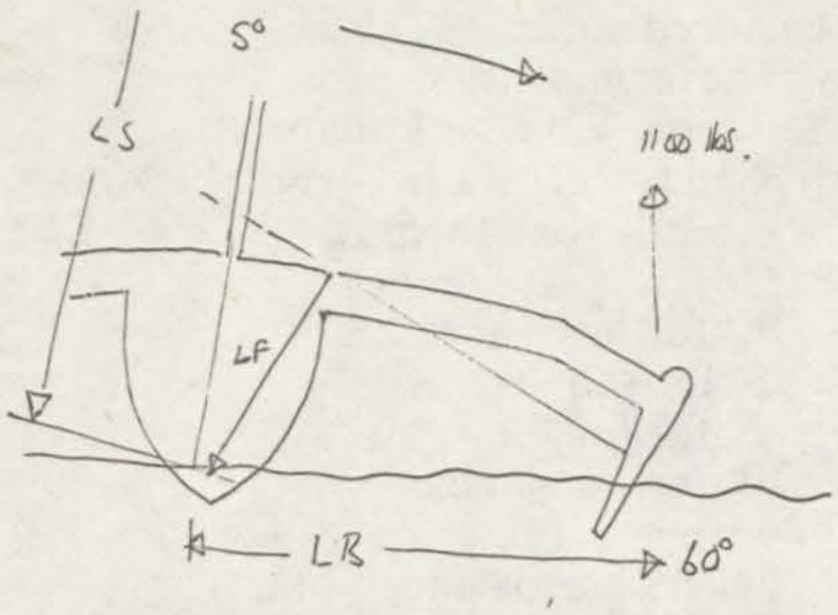
Foil Immersion: I think one would like to have both floils each immersed when the boat is on an even keel. This would, immersed on each side and even the 3 per cent floils would be 1 . 18 feet immersed. Both of these figures are half the vertical height of the foils and would bring them below the bottom of the main hull. This would not be tolerable unless the cross beam were pivoted at its fore edge at the main hull so that it could swivel to raise the foils when beaching.

The amount of immersion is very important as it decreases the length of the cross beam for a given angle of required heel. Or, it can decrease the amount of heel for a given length of cross beam.

For instance, the 3 per cent floils, immersed on an even keel, would need a distance from the centreline of 6.7 feet fully to immerse them at 10° of heel. (The cotan of 10° is 5.671). Similarly, the 4 per cent floils would each have to be 7.8 feet from the centreline.

Raising the floils up, means either increasing the heel angle or lengthening the cross beam, Lowering them would mean lessening the heel angle or cross beam length (or both) and having the weather floil always in the water.

The Angle of Heel. So far, we have only thought of a heel angle of 10° If 15° of heel angle should be tolerable, the cross beam could be reduced by about 34 per cent. (The cotan of 10° is 5.671. The cotan of 15° is 3.732). However, both the cant angle and buoyancy would be affected by such a change.



Sail force × LS — Foil force (Sail force) × LF = 1100 lbs. (LB)

Sail force (LS — LF) — 1100 lb!.

L .. For lever arm.
S .. For Sails.
F .. For Foil.
B .. For Buoyancy.

"MANTIS IV"
By David Chinery (Designer)

"Mantis IV" achieved two objectives. The first rather personal.

1) Satisfied the ego's of Peter Chinery and myself.
2) **Proved** that foil stabilised craft are seaworthy and suitable for **comfortable** offshore passages.

Michael Ellison was instrumental in persuading us to build "Mantis"—he has explained how this came about. But it's worth recording my personal feelings, when it became quite obvious to me that Michael was in deadly ernest, and was going to sail her round Britain.

In short, I was fearful for his safety. Scaling up "Mantis III" presented no problems, but when the basic lines appeared I began to wonder.

How big to make the foils—What working angle ?

Reserve bouyancy ? How much (if any).

Most important—**Where** to locate the foils in relation to the hull L.W.L., deep or shallow immersion ?

I made my decision after weeks of some panic. Maybe the wrong one, but all the time 'safety' played uppermost in my mind. I kept them deeply immesed. This had advantages AND disadvantages.

On the Plus side:—

Good static stability.

Very low angle of heel when sailing

Both foils will provide righting moment when sailing.

On the Minus side:—

Large wetted surface of foil all the time.

More strain on the foils in a seaway. (as John Morwood put it—"The hull would be suspended like a monkey swinging by its arms").

You pay's the money and takes your choice !

The sailing characteristics are exactly as predicted. "Mantis" **never** heels more than 5 degrees to the surface and is a very comfortable boat to be on. Gone are the fears of a diagonal capsize—because the foils simply do not dig in—even when running in a following sea. This was Michael's real worry, and is why we provided an aft open cockpit which could be flooded to provide water ballast. It was never needed! Lesson number two.

It is sad, but "Mantis IV" is not competitive when sailed against the crack racing trimarans. (1) Her rig is'nt powerful enough and can not carry enough sail. (2) Her light weather performance is affected by this plus her foil design and wetted surface. She sticks like glue in light airs and really only comes into her own in higher winds—when the mast limits her.

I had a wonderful chance to see her perform in the M.O.C.R.A. 'Shambles' race. (120 miles coastal). This was her third race.

Peter and Michael Ellison helming and crewing in complete harmony, (I was just there for the ride) Force 5

I should think, raining and very dark. They were sitting in the cockpit with a massive torch, which they periodically shone on the mast. They told me when the mast bent more than 3 feet they would reef. We were carrying genoa, jib, mainsail and mizzen. They **never** shone the torch onto the lee foil—which was my inclination—to study the heel angle. For me it was both frightening and exhilerating. We finished 7th out of 8 multihulls but on one point of sailing, managed to overtake an Iroquois and another catamaran,—Michael took a photograph to prove it.

Foil Design

Perfect elipse 2 inches thick at the bottom, 8 inches thick at the very top. Lens shape in section. John Morwood tries to encourage me to make them simple triangles and raise them up. This will reduce the wetted surface, marvellous for light air sailing but will increase the angle of heel in a real blow, with the weather foil flying.

My conclusions are that the foils should be simple triangles each half immersed when stationary. They will be shorter than elipses and therefore produce less strain in torsion. THEY WILL BOTH BE BUOYANT. I will never put to sea in a foil stabilised boat with non-buoyant foils, relying entirely on dynamic stability. In light airs they will both work and help prevent leeway, and hopefully will **both** work in stronger winds, as dynamic forces are generated. **It is a fact** that the weather foil on "Mantis IV" provides as much righting force as the lee foil as witnessed when the lee foil comes clear in troughs, and the boat doesn't suddenly lurch to lee or heel more.

I have taken some extracts from John Morwood's letters to me, for without his help, Mantis might never have been built.

The difference between a **Floiler** and a **Foiler:**

Floilers are deliberatly underbalanced out.

The formula is:—

Sail force × LS — Foil force (=Sail force) × LF — (Foil buoyancy or) × LB. (Sail force LS — LF (—LB)

'L' for lever arm.
'S' for sail.
'F' for foil.
'B' for buoyancy.

Foilers are balanced out.

The formula is:—

(Sail force) × LS = (Foil Force) × FL.

Note: Foilers generally have shallow hull sections which are **not** necessary on 'Floilers.'

"MUD SLIDE SLIM"

6, Roa Island,
Barrow-in-Furness,
Cumbria.
23rd August, 1974

Dear Michael Ellison,

In reply to your questions, my first comment is to say how much wiser we are having sailed in this race, despite having to retire, and hope to be able to make a more successful attempt in 1978.

The boat was designed by myself in 1971, and at that time I had no intention of doing anything more in the racing field than our local club events. The boat was primarily designed as a moderately fast, but comfortable cruising boat, and with this in mind, I gave it a 5 foot waterline beam on the main hull and quite full sections aft. Our entry in the race mainly to prove the boat and ourselves.

The boat stood up very well from the structural point of view, suffering only gear failure. Our big setback early in the race was the loss of the main dagger board on the first leg just before reaching Crosshaven. This

MUD SLIDE SLIM — Dick Crowe

board was actually lost through the bottom of the slot whilst running down wind, and we were unable to recover it. The loss of this board I attribute mainly to my own negligence and lack of working up time i.e. time to arrange an efficient method of retaining the board in the fully down position and seal the slot effectively.

A second daggerboard was made in Crosshaven boatyard from a plank of 2 inch Iroco, which subsequently broke along a diagonal from the top leading edge to the lower trailing edge, which I find difficult to understand, since in my experience boards or rudders always break off fairly cleanly along the hull or rudder stock. However, we dragged the remains of this board to Castle Bay without fully realising the extent of the damage. (We were hard on the wind just about the whole way to Castle Bay).

In the early stages of the 3rd leg after rounding Barra Head and hardening up for St. Kilda with the wind right on the nose again we discovered the mast to be bending excessively and worse still flexing a large amount each time Mud Slide crashed in to a head sea. We decided that if the weather got any worse, we could be in real trouble, so with much regret we turned the boat down wind and headed for home, and then discovered that 78% of the mainsail slides had parted company from the mainsail.

Other gear failures included, 2 broken halliard winches, making tight luffs impossible, one genoa sheet, and one genoa sheet block.

I think now the two outstanding lessons learnt were:—

1) A boat entered seriously requires at least two seasons tuning up time. (We only launched Mud Slide Slim on May 4th, 1974).
2) To be competitive the race cannot be done "on the cheap," gear and sails must be good, which put another way means having financial backing or resources to afford the best, and also provide facilities for in port repairs and replacements.

Yours sincerely,

Dick Crowe.

BISHOP ROCK — Claus Hehner

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BRITISH OXYGEN
(Winner of R. B. Race)

Photo by Michael Ellison

TEHINI and TANE NUI alongside MANTIS IV before the race.

Photo by Michael Ellison

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