

JUNK RIG AND ADVANCED CRUISING RIG ASSOCIATION

Newsletter 28



Wind Tunnel Project Starts

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COVER PICTURE

The Lochen Dory "Jambaea" built by Bernie Bruen in the Sultanate of Oman was conceived by him and drawn up by C. Waite. Originally Bermudan rigged, converted to a junk (Sunbird designed and supplied) for Bernie's homecoming voyage. Photo shows her on a windless day. Luff and leech lines for quilting not yet fitted.

"Jaembea is very comfortable with the new rig, which works well to windward even with three reefs in and no foresail. In consequence I have now removed the engine and fuel tanks and therefore will have a lot more room for stores when I sail for Cape Town, West India and Europe in January next year."

LOA 30'6" LWL 22'6" Beam 8'3" Draught 2' - 4'6" (two centreboards & long keel)
Sail Areas: Main 145sq ft Mizzen 124sq ft Jib 70sq ft Hull Construction: Marine Ply
Masts: solid timber 4" O.D. stayed in tabernacles to keel

BOATS FOR SALE - MORE ON PAGE 20

Atlanta Viking 8.5m "Hui-Mar", Twin Keel, Launched 1986 (see newsletter 23) Junk Rig, Kubota 17 hp diesel, Mahogany and Ash interior. White hull respray, double & pilot berths. Taylor cooker and cabin heater, re-upholstered, Echo Sounder, VHF, Ashore - S. Brittany. Asking: - £ 15,000: offers invited
Contact: Mr & Mrs Leigh-Ford 0625 - 828423

Hunter Horizon 27

Twin Keel, 1990, Swing-Wing Rig by Sunbirds (see newsletter 25), 8hp Honda In/Outboard, Alloy mast & battens. Handles like a junk and better windward performance. Echo Sounder, Log, Autohelm, Decca 2000, VHF, 6 berths. Moored: Newton Ferrers. Asking: - £ 19,500 ono

Contact: John Tattersall, Waddles, Underhill Lane, Clayton, Hassocks BN6 9PJ

From the Secretary

Research and Development at Exeter University

Following the October meeting reported in N.L. 27, Dr Francis Chin was unable to interest any of the Erasmus Project students in investigating the Junk Rig, but instead he has two final year Engineering Students who are keen, experienced sailors and will be working together on the project. Bunny Smith and Michael May gave them a sail in Jillie in March so they now have a good understanding of the Junk Rig. The students have made their model for the wind tunnel, on which there is a separate report in this issue, and will be carrying out their tests during the coming University term.



Robin on board Hans Schaenble's new "Golden Wind"; see page...

All the arrangements for our Summer Rally and AGM have been made for the weekend of June 18/19th at the new Warsash Sailing Club and the UK and European members will be receiving their invitations and programmes shortly; I and the other committee members look forward to welcoming you and hearing of your projects and cruises.

Overleaf is a sample membership application form that you may use should you happen across a potential member in the course of your voyaging; our numbers continue to increase, particularly following the publication of Annie Hill's book "Voyaging on a small income", in which Annie very kindly listed the JRA, but more are always welcome to increase the diversity, influence and resources of the Association.

Robin Blain

JUNK RIG

President: Jock McLeod
Chairman: Gavin Dalgligh
Hon. Secretary: Robin Blain
R. and D. Sec.: Maurice Donovan



AND ADVANCED CRUISING RIG ASSOCIATION

Committee Members:-
John Melhuish
David Tyler
Geoff Turton (Rallies)

373 Hunts Pond Road, Titchfield, Fareham, Hants, PO14 4PB

Tel: Titchfield 0329 842613

The JRA was formed in Britain in 1980 with the aim of furthering the development of the rig in its various forms, and of creating an international community of people with an interest in the rig to share their experiences and ideas for mutual benefit and enjoyment. The Association expanded its title some years ago, and now embraces people with an even wider diversity of interests, giving them the opportunity to extend their knowledge of the design, construction and performance of all types of cruising rigs based on battened sails and/or unstayed masts, and to exchange ideas and recount experiences of practical cruising.

Total novices to sailing, seasoned cruising folk, famous pioneers of rig innovation and lone circumnavigators mix together through the pages of the biannual Newsletter that provides the core of the JRA's existence, and meet together to try the real thing at one of the Rallies that take place each year. The comprehensive Membership List enables members to make contact with others in the same county, country or hemisphere, and a range of services such as Fact Sheets, Book Loan and Association Insignia supply are available to members - see opposite.

If you would like to join, please complete the form below and send it to me with the subscription and joining fee; you will receive the current year's Newsletters, even if joining part of the way through our membership year, subscriptions are due for renewal in January.

1994 Subscription: £10 plus £3 Joining Fee payable with first year's subscription (or with subscription renewals received later than the AGM). Payment to be made as follows:- U.K. Cash, cheque or postal order payable to 'J.R.A.' Non U.K. Sterling draft or Eurocheque (with card number on reverse and 'Swanwick' written above the date) payable to 'J.R.A.' Alternatively, cash (international currencies), or cheque - but cheque must include an additional £3.50 sterling (equivalent before conversion) to cover charges. I look forward to welcoming you to the Association.

To:- Robin Blain, Hon. Secretary, 373 Hunts Pond Road, Fareham, Hampshire PO14 4PB, U.K.

I would like to become a member of the Junk Rig Association
(BLOCK CAPITALS PLEASE) Name _____

Address _____

Boat Name (if any) _____

Construction _____ Type _____

Home Port _____ Rig _____

Date _____ Signature _____



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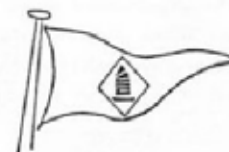
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JRA Wind Tunnel Research

Project Proposal - March 1994

During the meeting on the second of February with members of the Junk Rig Association it was decided that the effect of the battens on the flow of air over the sail was of primary importance and interest. The effect is most apparent when the craft is sailing upwind with the battens on the leeward side of the sail.

We have come up with a model for the wind tunnel which allows us to model a section of a sail which is close hauled. The model whose design is enclosed in this proposal will be able to simulate both the leeward and windward sides of a sail with the following characteristics:

Maximum depth of the sail can be varied from 40 to 50 percent of the chord measured from the leading edge.

The thickness to chord ratio can be varied from 0 to 15% (at the point of maximum depth).

Modelling the following conditions:

Air temperature: 10C Wind speed: up to 20 knots Relative humidity: 65%

The model, whose scaling factor will be 1:2.54, is based on the lower sections of the sail designs for the boats Capricorn and Fenix whose lower panels have a chord length of approximately 16'6". Although the lower panel is being modelled this does not prevent us from experimenting with different batten angles although the model will not allow the simulation of the top batten (the gaff).

The experimenting will be done using the oil visualisation technique. This is where the surface of the sail which is black is painted with a white oil. Once the wind tunnel is turned on the oil will show the flow patterns of air on the surface of the sail and the effect of the surface battens will be seen. Whilst the wind tunnel is on, a stethoscope connected to a fine tube may be used to detect turbulence, vortices and separation points to give a more three dimensional image of the flow over the sail. This will be repeated with varying thickness to chord ratios, position of maximum depth and varying batten angle. On the same model the effect of the mast on the flow over the sail will be studied, its position will be fully variable so the area upwind, and its angle of attack may be altered.

The estimate of the cost of the parts for this model is approximately £65, the design and a costing spread sheet have been enclosed with this proposal.

News and Letters from around the World



from Sam McCreery

Thank you for your letter in which you asked for more information about our latest trip.

We sailed from Poole, to Le Havre, where we had our mast stepped, and prepared "Bernard-M" for the canals. Our main concern was for the mast but with plastic buckets and small tyres at either end, no serious problems were encountered, despite the large overhang. The worst thing was being charged for the length of the mast instead of the length of the boat in the Paris Arsenal! Our 4'8" draft caused no great problems, although we sometimes had to moor off using planks to get ashore, and occasionally touched the bottom when too close in. One other boat we met also had a 5ft draft, and managed in a similar way.



"Bernard M", Sam McCreery's Sunbird 27, in Le Havre

The whole trip was a delight, with numerous free moorings, many including electricity, hot showers and a play-area for our 14 month old daughter Jessie. We chose the Bourbonnais Route (canals de Loing/Briare/Lateral-a-la-Loire, Roanne e Digoin/du Centre) because it had fewer locks and better depth than the other main routes. None of the locks caused us any problems and the lock keepers were helpful and happy to advise on mooring places with sufficient depth. Our last month was spent in Tournon because the Rhône was in full flood, and unnavigable, even to commercial craft. In fact we had to extend the support piles on the floating pontoons and boats being washed away downstream. Quite an exciting time. Overall it was a very easy and beautiful route through France, which we thoroughly enjoyed.

I recommend the "Carte Guides De Navigation Fluvial" as helpful for the Seine, Saone and canals, and the "Vagnon Guide to the Rhône" as essential. These can be bought at the Chandler's bookshop in Le Havre, or better still from returning boats.

"Bernard-M" is now wintering at Valence, and we hope to return there in the Spring to carry on towards Greece.

from Annie & Pete Hill

Many thanks for your Christmas card. The Newsletters seem to be catching up on us thick and fast. No's 25 and 26 arrived in December and No.27 was in our last batch of mail. I'm sorry not to have written for so long, but people will probably be relieved to have a rest from Badger's doings.

We loved the catamaran issue. As you know, we used to have one of Jim's (Wharram) TANE designs and still have a very soft spot for his designs, especially the new PAHI family. Indeed, the main reason that we did not build a catamaran when we built Badger was that we wanted Junk rig more than a cat and didn't have the guts to experiment (if it had gone wrong, we could hardly change the hulls and keep the rig!). Oddly enough, DRAGONWING was a name that we had thought of for another boat. I hope that the article will inspire Jim and Hanneke to think about doing something similar to one of their designs - I know that Jim is a great aficionado of junk rig. Now Jim, if you read this, if you could manage a PAHI, about 36ft, with a sit-round saloon, you might find us very interested....

It was lovely to see the photographs of the new JESTER, looking splendid in cold-moulded wood, with a bright finish. I'm not surprised that they could not bring themselves to paint her green. Yet. How did Mike get hold of an original Hasler gear, do you know? I think it's a pity that no-one has started to make them again. I'd be interested to know why Mike Richey used a servo-pendulum rather than a trimtab on the boat - no doubt that's what Blondie originally used. We're thinking of changing to a trim-tab on Badger; apparently they are not as powerful, but round here we find that

the servo paddle and the kelp don't get on. I suppose the reason why the new Jester seems lighter and more tender than the old is that the wood in the hull is perfectly dry.

We were delighted to hear that Sir Henry is off again. In Newsletter No.27 it sounded as though he had decided to call a halt at San Francisco. What a shame, we were rather hoping that we might both be here at the same time. Two junks in the Falkland Islands would be something to celebrate!



Sir Henry Piggott's "Glory" in San Francisco Bay

The news of the two dismastings is a bit of a shock. By now, no doubt, you have ascertained the causes. [See Robin Blain's article in this issue - Ed.] I know that both Pete and I are rather prejudiced on this matter, but have you gone to Nobles or some of the French mast builders for quotes on wood/epoxy hollow masts? Wood is not known to fatigue and with epoxy and good paints, there should be no need to worry about rot or maintenance, for that matter. In 75,000 miles, Badger's masts have only been repainted once. Admittedly, they are looking a little scruffy at the moment, but they don't need painting for any reason other than to look smart, at present.

We were delighted to hear about 'Passepatu'. Nick Skeates, WYLO II's designer, is a great friend of ours and I know that he would be very pleased to hear of the philosophy by which Lex built his boat. [Note: Nick Skeates is the speaker at this JRA Summer Rally - Ed.] We shall be very interested to hear the results of the hinged battens in the long haul.

Rig Experiments...

We've been following the Super Junk features and FENIX's progress with interest and Pete decided to have a go at altering our sails on the lines of the Blue and Reddish sails in previous issues. After due consideration, he decided to alter the foresail first, as the tendency of the mainsail is to turn us up into the wind, anyway. He decided to reduce the length of the luff by 8 inches in each panel, by sewing in two, four inch darts per panel. The after section of the sail were left alone. We were very lucky that a couple of days later, we had F3 headwinds, the very conditions in which we would appreciate improved performance to windward. With high hopes, we carefully adjusted the sheets and examined the sails. Apart from having amazingly taut luffs, the foresail didn't look a lot different; there was more shape, but it didn't seem to be doing a lot. The speedo read 3.76 knots; we tacked through 85 - 90 and in fact she sailed absolutely as normal. Somewhat disappointed we tried her on both tacks and with slightly different sheeting tensions, but found her sailing absolutely as before.

Just to check that we didn't have enhanced memories of Badger's previous performance, we took a knife and cut the darts open. On re-setting the sail, she continued to sail in identical fashion. So there we are. All we feel that we can do now is to await the results of the wind tunnel when maybe, the boffins will be able to design the ideal cut, without mechanical battens, or battens of different lengths. We don't understand why the alteration made no difference, but suspect that it could be something to do with the Acrylic being so stretchy, that it tends to camber anyway, under wind pressure. To be honest, we are pretty satisfied with Badger to windward, by and large and don't feel that she'd perform an awful lot better with Bermudan rig.

Intrusive Note from Editor

Dear Annie and Pete: from my limited understanding, it would have been pretty surprising if you had noticed the difference. The substantial total improvement in Fenix and Jillie's performance are achieved by a combination of factors that are, crucially, linked together i.e. in isolation, they don't necessarily have any effect at all, and a lot depends on what you started out with. Without going too deeply into the question of why the 'tucks' seemed to work for Arne Kverneland but not for you, the significant point may well be that you were already achieving the same pointing performance as Arne before you made the change, so the scope for improvement was limited. From memory, the sails on Badger are high aspect ratio and virtually horizontally-battened apart from the top, so the effects of increased camber are going to be small (from my experience, it's not purely the ratio so much as the absolute foot length that helps the effect). Adding to that your own observation that you had camber anyway, it is most unlikely that there would be much change. (I see also that Arne's Force 3 was on Boxing Day, so you are talking about very dense air that would help him a lot - from your letter you might have been anywhere from the Equator to 50degrees S so I don't know what sort of air you were using!). From my own experience of the FENIX development process, serious improvements in windward

performance at low wind speeds only came in the later stages when the whole concept came together - planform, battens, 'sail sculpture', control systems, mast/sail position etc. From memory, Arne's 'McLeod' sail had already benefited from some of these e.g. sail/mast relationship and control systems. Of course, if you had to take radical measures to get a little more light weather windward performance out of Badger, you might be throwing the baby out with the bath-water - as Bummy Smith says, 'stick like glue to the McLeod/Hastler sail' for general ocean-going requirements and cruising robustness - which is what I think you are acknowledging in your last paragraph. Now if you still had Missee Lee and were doing some estuary sailing...Ed.

Aubrey Hinchcliffe...

We were pleased to read Aubrey's account of what happened to UPIK. We had not heard from him for ages, apart from a Christmas card, and had wondered about his eventful voyage. Aubrey fitted out UPIK at Glasson Dock, where we built Badger. He bought her part-completed and by the time she left Glasson, she looked to be everything a cruising boat should be. For several years, we had spent many a night together taking it in turns to cook dinner for one another and setting the world to rights while the smoke from our respective pipes swirled and the level in the bottle dropped ever lower. It was my privilege to launch UPIK and it is a matter of great regret to us that we have never had the opportunity to cross tacks with Aubs since we went our separate ways. His handling of his problems were carried out in all the best traditions of seamanship and it must almost have broken his heart to be forced to ask for assistance having so nearly made it. Reading his article brought back his image as though he was there with us - it is so typical of him to have decided to save his last can of beer for a celebration and I was pleased to hear that Famous Grouse is still the favoured brand. We gather that Aubs has temporarily swallowed the anchor while he stays with his brother and he and UPIK recover from their ordeal. We hope that he decides to remain in Capetown until we get there, but, as we have not heard anything from him for over a year, fear that he may have moved on.

Aerorig...

We were also fascinated by the Aerorig articles, having seen St Kitts in Madeira. We have been speculating as to whether it would be possible to design a more lo-tech version - wooden spars, the booms rotating around the mast and with lower aspect ratio (less windage at anchor and more access to inland waterways). As ever, we would like to see low costs and amateur building capabilities! With the hi-tech version being so incredibly efficient, I think that even 10% loss in efficiency would be very acceptable in exchange for low cost and simplicity. The fact that you have to reef from the mast is not that much of a problem when fitted to a cat, but on a monohull, could you not move the cockpit to the mast and have an enclosed shelter? If you're going to be different, why not do it in style?

/Cont...

Sheeting system...

There seems to be a lot in the Newsletters about twist in junk sail, when close-hauled. Pete devised a sheeting system for our sails which seems almost completely to eliminate twist, so much so that on several occasions, people have mentioned to us that they wondered why we dropped both sails, only to raise them again moments later! I shall have to get a photo to prove this, but in the meantime, for those interested the arrangements are as follows:

The Book...

Thank you for your kind review of my book. I'm glad to see that you are selling it at a discount - even though it does mean that I get less!! Certainly, there is very little chance of my writing "Voyaging on a Large Income" from the proceeds, although I'm pleased to say that it is due to be reprinted both in the UK and the US. In case you're wondering what this means - the first total run was 5,000 copies.

Terylene or Polyprop?

We recently replaced some of BADGER's running rigging. We use hemp lookalike made of polypropylene. It would not perhaps be of interest to sailors in temperate waters, but we found that our Terylene (and Marlow at that) had to be replaced due to UV at fairly regular intervals. This polyprop lasted 3 years and about 30,000 miles. None of it had broken, but we replaced it before coming into the Roaring Forties; the small sizes are looking pretty weary and the mainsheet is getting very long-jawed. We only replaced that which would be impossible to change at sea, i.e. the topping lifts, mast lift and halyards. We will change the rest this winter. Three years may not sound very long, but between 1983 and 1989 we had had two main halyards and the boat had been out of commission for a year. One of the terylene topping lifts fitted in 1983 snapped in a gybe in January 1990, which we took as a hint to replace them. As the terylene is considerably more expensive than the polyprop and goes harder over the years (the hemp-type polyprop goes softer), we feel that polyprop works out as a better deal. It is easy to splice or long splice, too and doesn't go that unpleasant grey colour as it gets older.

Brazil and points south...

Our recent wanderings have taken us down the Atlantic coast of S America from near Recife down as far as Golfo Nuevo in Argentina. We spent a total of six months in Brazil, nearly three months in Uruguay and just a few weeks in Argentina. Before we arrived in Brazil, we had almost been put off by the horror stories of its crime and violence, but found that, like most horror stories, the reality was rather different. Certainly the cities were best avoided, but then, in my opinion nearly all cities are best avoided. Because of the demands of bureaucracy, it was in fact necessary for us to visit a number of cities, including Rio, but we never had an unpleasant moment and suffered more from our imaginations than from any actions by the people around us. On the other hand, the risk is there, and one has to take sensible precautions, the most obvious being to try to blend in. Out of the cities, we found the country delightful and the

people extremely friendly and very honest. Because of the incredible inflation - 1% per day - one needs to change money at regular intervals and many people choose to use a bar or a shop (bakers on a Friday can be recommended) rather than a bank. Nobody we spoke to had ever been ripped off on these occasions - the owner usually rang up someone to establish the day's exchange rate and, of course, yachtsmen being what they are, everyone knew what it was anyway. The barkeeper was often quite happy to take your word. The dollar rules in S America - forget sterling.

Brazil is rumoured to be incredibly cheap. In fact it is merely extremely cheap, but to some avocados at 24c a kilo might verge on the incredible! In England we had had to dump our 8 year old Volvo petrol saildrive, having discovered that along with its chronic gear complaint, the aluminium exhaust manifold had rotted through. A new one would cost £400+ and VAT, of course. We reckoned that £50 a year was too much to pay for an exhaust manifold! Apparently we had 'neglected' it, but the dealer was unable to tell us how we should have cared for it. In its place we bought a Seagull Kingfisher which has done a very able job. However, all this cost money and so we were on an economy drive and living on US \$20 per week. It says something about prices in Brazil that we found this possible and without lowering our standard of living too much. Mail is the big problem - at least a dollar a letter, and I really need to write two or three a week to keep on top of our correspondence!

We stopped first at Fernando do Noronha and then sailed to a little village called Jacare, near Joa Pessoa, where an Englishman owns a boatyard and makes visitors very welcome. Brian lived up to his reputation, lending us the money for the train fare to JP (10c!) and giving us a little map to show us where to go. He also told us who to visit and in what order, together with the (eccentric) opening times of the various offices. In fact he did all he could to ease us over the culture shock of entering Brazil. Once we had got used to its ways, we thoroughly enjoyed ourselves. On entering, we were given a 90 day visa and this we could renew at a cost of \$10, for another 90 days. However, at the end of the first 3 months, we were in the middle of the Tropical summer and finding it far too hot for our tastes, so rather than renew, we cleared out from Rio and sailed down to the River Plate to have a look at Uruguay.

We found that the Plate estuary fully deserves its reputation for foul weather, but by cruising up the Rivers Plate, Uruguay and Negro, we escaped the Pamperos and found ourselves in a delightful country. Its way of life was slow and gentle, the clocks having apparently stopped about 40 years ago. During WWII, Uruguay enjoyed great prosperity being able to export vast quantities of corned beef to hungry armies and this market continued for some years after. However, over the years increased competition and reduced demand have had their effect and the country is now distinctly down-at-heel. We found this shabbiness rather attractive, in truth, and were fascinated by the obvious skill of the mechanics - fully 50% of the motor cars were over 30 years old and many pre-WWII. The shops were still serving from shelves behind a counter - very few supermarkets and away from Montevideo, a bottle was required for milk.

Even in that city, the small shops would sell butter by the 50 grams from a large slab and tiny quantities of most foodstuffs. Once again, we found people very friendly and happy to help. We saw gauchos and visited Fray Bentos. One thing that astonished us was the fact that corned beef cost twice as much in Uruguay as in the UK!

By June, the days were getting very short and we decided to go back to Brazil for a further 3 months. We went to Baía de Ilha Grande, just west of Rio and spent several weeks exploring its scores of islands and anchorages, the only real drawback being an almost total absence of wind. This area was one of only 4 where we came across any foreign cruising yachts, the others being Jacare, Salvador, and Rio. Even so, to our surprise, we only saw about 2 dozen other yachts all the time we were in Brazil. It is still waiting to be discovered and although the sailing may not compare with the Caribbean, it has many advantages over that area: friendly locals, cheap prices and no hurricanes, to name but three. One of my favourite stops was at Parnagua, at whose bar, Joshua Slocum lost AQUIDNECK, his barque. We visited Antonina, just up the river, where he built his junk-rigged dory, LIBERDADE, which he sailed back to the US with his wife and family.



"Badger" approaching Arch Island in the Falklands, November '93

Towards the end of September, we stocked up with all that we could afford and turned Badger's bows south. We made a brief visit to Uruguay (for wine) before continuing on to Mar del Plata in Argentina. The Yacht Club Argentino gave us a splendid welcome, giving us an alongside berth, gratis, for a month if we wanted it. Its members treated us royally and we were invited to homes for lunch and dinner, aboard a splendid yacht for

an 'English afternoon tea' and generally thoroughly spoilt. There was little we could do in return, apart from showing people over Badger, whose slightly unusual appearance seemed to fascinate them. We couldn't even take people for an afternoon's sail, as we would first have needed to obtain permission from the Prefectura and the Customs and the Lord knows what else. The bureaucracy in Argentina was the worst we experienced, which is saying a lot. It took a total of 6 days to clear in!



Gentoo Rookery, Beaver Island, Falklands Jan '94

Combined with hundreds of islands and anchorages, we have found it enough to make us decide to spend a year here, exploring the islands. Another sheet of paper will put me over the weight limit, so all the best

Annie & Pete

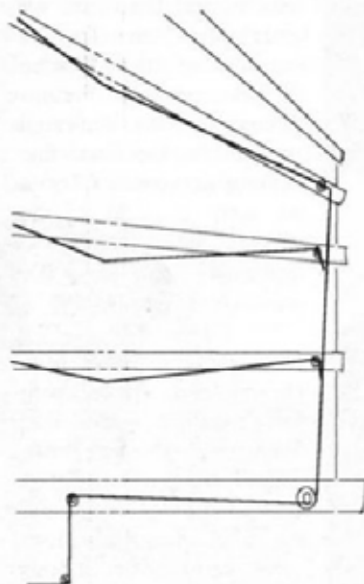
After a brief visit to Golfo Nuevo, where we saw Southern Right Whales, sealions and flamingos, we girded our loins for the crossing of the Roaring Forties and the Furious Fifties to the Falkland Islands. In fact, we had nothing worse than F7 until we were in sight of the islands, when the wind increased to gale force. We arrived on November 6th.

Since then, we have been cruising the islands, with the occasional visit at Port Stanley, a pleasant town marred by the lack of a comfortable anchorage and the 'fine' of £40 levied on each yacht. The islands certainly live up to their reputation for gales, but on the plus side are beautiful scenery, spectacular wildlife and wonderful, friendly inhabitants who always make us welcome.

More from Hans Schaenble on batten-bending lines

Dear Robin

Your remark, that you prefer to get the wind do the batten-bending and avoid an additional line is true. But unfortunately with strong wind they should bend little, with light much. So the idea of the Schmitt design was to have battens which bend slightly in stronger winds, which are the ones every one had so far. And in light winds he could - only when he wanted - give them more bend or no bend at all. And you are correct, this means, to let go the line before tacking and - if needed or wanted - take in the other side after tacking. The arrangement was so simple, I thought unnecessary to show:-



These batten bending lines are something for JR-sailors who would like to have the well known poor windward ability in light winds improved without having new battens or the complication of constructing joints in the battens, which certainly makes them vulnerable. These control lines can completely be ignored but allow you to bend the battens in exactly the way you want.

Again, I would like to acknowledge that the idea is from Gerd Schmitt and he calls them Rintintin - Rantantan (some word-play)

I doubt if I would like to have them for myself, but there are JR-sailors who are always trying to make their boat fast (to windward). Gerd Schmitt of Bremen was successful in Club races with these lines. He estimated a gain of $\frac{1}{2}$ a knot or more speed going to windward in light winds.

So if you refer to it in the Newsletter, make sure to call it the Schmitt - batten lines!

N.B. You could fit these lines only on the mast side, as in the drawing*, then choose your course accordingly in light winds...also for comparison.

Yours, Hans Schaenble

**Remembering that, on the other side, small struts extending from the battens are necessary to provide the leverage - see NL No.27. Ed.*

...And Hans Schaenble's new boat

- another "Golden Wind"

Hans Schaenble, our intrepid traveller and stalwart member of the J.R.A. from Freiburg, Germany, of whom you may have read in Newsletter 24 with his Liberty 23 "Golden Wind", searched the world for a similar replacement boat with more accommodation, but drew a blank, so he went back to the drawing board and persuaded David Thomas, who designed the Hunter Liberty 22 to redesign the accommodation for a Liberty hull with 6" more freeboard and a timber deck, coachroof and interior.

Next, Sunbirds were requested to come up with something different, a single sail junk rig rather than the previous two-sail junk conversions which fitted the Bermudan-rigged Liberty's mast positions. But that was not all, as the mast had to be easily lowered and raised for trailer-sailing and as light weight as possible. There was only one answer to that - "Carbospars", who were requested to supply a carbon fibre mast that pivoted at the coachroof with the lower part of the mast swinging up through the foredeck/anchor well.



The pressure was then put on by Sunbirds to not "spoil the ship for half a pot of tar" and to go for a carbon fibre yard, battens and boom as well and have them all finished in Carbospars superb, hard, gloss white to keep the ultra violet at bay, as well as looking very smart. The spars also matched the colour scheme of white decks and golden hull and sail and the picture was complete.



Hunter Boats had been persuaded to brush the dust off their Liberty moulds, as they had ceased building the Liberty, and to produce a hull and David Thomas found two shipwrights to complete the fit out; the date was then June 1993. Six months later, just before Christmas, the new Golden Wind was launched and rigged, and Hans and his wife prepared themselves for Christmas afloat, complete with a mast-top Christmas Tree



Trial sails were completed over the Christmas holiday and then it was over to Cowes for New Years Eve, the passage when the sailing photos were taken. Later, with the return passage of Cowes to Hamble completed, Hans set about adding some finishing touches to Golden Wind and then set off for Freiburg with Golden Wind happily following behind his trusty 4-wheel drive VW Camper.

By the time you read this Golden Wind will probably be cruising in the Med. and we look forward to hearing more of her passages in Europe.



THE LIFE OF A MAST

Robin Blain discusses recent mast failure reports

Since the two articles in newsletter 26 covering the loss of alloy tube foremasts, one of a Challenger 35 (8 years old) and one of a Sunbird 32 (12 years old), a number of members have asked me why this happened and if their own masts are in danger.

An alloy mast has a life span since alloy fatigues; however, the life span can be shortened by the way it is used. It is interesting that both these failures occurred in foremasts and in the case of the Sunbird I can offer an explanation which may also apply to the Challenger if I had more information of how it had been sailed during its life.

The first rule of mast use is: **do not have more sail hoisted than is necessary.** This may sound obvious, but often when a junk-rigged boat is sailing off the wind the wind will increase, but the boat's stability will not decrease, so the sail area is not adjusted and the boat ploughs on apparently quite happily. However the mast is probably not so happy and neither would be the skipper if he went up to the mast and saw how much it was bending over the bow.

The acid test in this case is to come up on the wind, set a comfortable amount of sail for that point of sailing and maintain this amount off the wind, which will be sufficient as we all know how efficient the junk rig is off the wind.

However, if the boat is hit by a sudden gust of stronger wind, the mast and rig rely on the hull heeling in response and so relieving the wind pressure on the sail and mast. If the boat is sailing to windward, the hull will heel sideways quite easily in response to a gust of wind. But when the boat is sailing on a run or broad reach then the hull is being asked to heel forward, which it will do very reluctantly and so not give the relief to the mast and sail that they need, hence the mast may be over strained.

The Sunbird 32 described in Newsletter 26 had cruised the Med. and Caribbean and was on its third crossing of the Atlantic when the foremast fell, breaking just above the deck at the point of maximum stress, where the manufacturers would expect the break to occur.

I know that the first owner and the present (2nd) owner had sailed a great deal under "foresail only" when off the wind; hence the foremast had experienced an extra amount of stress in its life. The temptation to sail under foresail only is understandable with junk schooner rigs when running, as the mainsail puts the foresail into its shadow and prevents it from setting. Also people remember the days of sailing a Bermudan rig under foresail only, with no problems, and often apply the same thinking to the junk rig.

This temptation must be resisted and the mainsail must be reefed as well as the foresail until they both set, possibly goose-winged.

The other matter to be borne in mind is that the foremast is situated close to the bow, which experiences more movement and pounding than any other part of the boat, so the foremast is also getting a rough ride at the same time, another life shortening experience for it. Single masted yachts usually become unstable and hard to handle when their masts are under excessive stress and the crew, also feeling uncomfortable, do something about it, like reducing sail.

The other conditions when masts have been lost are due to the mast being allowed to whip fore and aft excessively. One was a Westerly Konsort 29 which was being motored hard into a sea with no wind and full sail; another when a Coromandel with a Newbridge hinged mast was on an exposed mooring during a gale and the tabernacle bolts were shaken loose. Incidentally, these tabernacle bolts should be watched closely, as the same thing happened to a Virgo Voyager while underway, at night of course - Sods Law!

Another cause of alloy tube mast failure has been due to holes being drilled through the mast wall in the area of the deck, either to allow the exit of a cable or to secure a fitting. This is asking for trouble and is totally unnecessary, as cables can easily exit at the foot of the mast and fittings can be glued or clamped on. **The golden rule is that NO HOLES should be drilled in the mast walls between 12" of the foot and 36" of the head and certainly not anywhere near the deck, the main area of stress.** Rivets are sometimes used to secure sleeve tubes below deck, but these should be in the order of 1/2" o.d. The smaller the hole the deadlier it can be, as the tube will crack around the tube, like a crack in glass, so beware of hair line cracks as they are the beginning of the end. Broken tubes can however be joined together again, not by welding, but by gluing a thick-walled internal sleeve tube into the mast. Sometimes masts can even be dismantled and reassembled with either a new top or bottom section as necessary - so all is not lost.

BOATS FOR SALE

Kingfisher 20

Twin Keel, Circa 1965, Sunbird Hinged mast and Lt. Blue sail 1980, Autohelm, Echo Sounder, Compass Seagull 6hp O/B, Sprayhood, new toilet, Hull Epoxy protection. Ashore - Hythe. Asking:- £ 2,250 Contact: Pat Leach 0703 - 848071

Coromandel

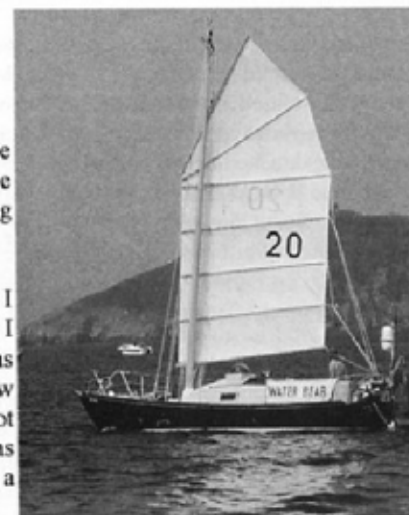
Twin Keel, 1986, Elite Spec. Hi-Power sail, Sunbird Hinged mast, Echo Sounder, Log, Hull Epoxy protection, Inflatable Dinghy, Negotiable Extras: VHF & mike, Evinrude O/B. Ashore - Monmouth Asking:- £ 4,900 Contact: Harry Elliot 0600 - 3805

From the Editor

The dream boat problem; it's done for me again. Four times in 14 years now; each time I get the boat I think I want, something happens to deprive me of it.

The first time was the best and worst, in that I didn't even realise I had the perfect boat until I sold it and tried some others. That boat was "Water Bear", later of OSTAR fame and now owned by fortunate JRA member Scot Gilchrist. It went because my family was growing, and a bigger boat seemed to be a good idea when it was available at a bargain price.

So to "Juliette", the only official Sunbird 28, little used since her delivery to Belgium, almost new, therefore, and just needing a good clean and polish. We sailed her back from Belgium between gales (North Sea), and during Hurricane Charlie (the Channel), despite her useless prop, then worked for a year on that 'bargain', on which every deck fitting, stanchion, deck joint bolt and window leaked and even the bilge pump was fitted wrongly. When 100 strokes were necessary to pump out one rainstorm, and mould grew everywhere, the truth dawned. Six months of work ensued, ripping down headlinings to trace and replace every bolt, not one of which had a backing pad or the right sealant. I ripped out the vast lockage which Jos Smolders had specified for the



"Water Bear" with new owner Scot Gilchrist



"Juliette with new "Superjunk" rig

liveaboard life which his new wife vetoed (understandable; she was a Vietnamese trapped as a child on a vessel sunk in the Mekong River). I rewired, reupholstered, repped, refitted the windows and re-equipped to charter standards to recoup the outlay, then watched with horror as the charterers fouled the upholstery, smashed the woodwork, thrashed the engine and stole equipment and charts.

She was a great boat; fantastically roomy and comfortable, unbelievably fast and weatherly. Some may remember our foray from Warsash to the East Coast Rally, with a brave crew of Pat Leach and two novices; starting Thursday night, we arrived in time for the Rally on Saturday, took people for a sail on Sunday, then set off to arrive back in Warsash on the Tuesday with a stop at Brighton. Oh yes, it was October; we were the only visiting yacht.

However, "Juliette" was GRP (not to my taste), the family was proving expensive, and jealous of the time I spent working on the boat. She was sold to become "Li Ti" (JULIETTE-geddit?), for her new owner, Chris Nunn.

And so to "Missee Lee". I was going to buy a dayboat, then I thought the kids would need somewhere to get out of the rain, so the little Westcoaster so prettily re-rigged by Pete and Annie Hill seemed ideal; newly refurbished, low running costs, just sailing on tap. Once I got her home, however, I found rot in the frames and bilge, leaks in the cockpit, discovered the rudder fittings were corroded to nothing, and felt I should investigate the hull bottom. It took me a year to strip her to bare wood. It was perfect, of course, so I needn't have bothered, but you can't tell 'til you've finished, can you! Half way through, determined to achieve long-term low-maintenance, I had decided to treat her to "West" epoxy, and you gotta remove every trace of paint. The three keels had to come off to fit the new pintles and replace the leaky keel bolts, so I blasted and regalvanised them. Having got that far, I decided to make the cockpit self-draining, and fit guard rails round it to contain small children. Then the insurers then insisted on a self-draining gas locker, which required near genius (!) to engineer.



Missee Lee and Tin Hau

In short, a total refit, but at least with the promise of years of freedom to sail with only minor maintenance. Finally finished, we took her to Cornwall for an idyllic holiday that included being the first junk in the 'Falmouth Classics' (crewed by the Aldis family as well as my own; seven of us in a 21-footer) and mooring alongside "Tin Hau", the Colvin 3-master then owned by David and Lynda Chidell. Missing the point about a dayboat, my wife announced that Missee Lee was too small, slow and tippy.



Chelema - the last dreamboat?

So much for long term planning. Shortly after returning from Cornwall, I spotted the next dreamboat.

"Chelema" seemed ideal; a steel and mahogany 28-footer of immense beauty and practicality, designed by De Vries van Lentsch, fabricated by Dekker and Zonen in Amsterdam, fitted out by Welsh craftsmen, and lovingly looked after (but little used) by a Southampton engineer for 17 years. When he retired to the South of France, Chelema moved with him to the Mediterranean before the unsuitability of age and location became obvious and Philip decided to sell. Not to just anyone; only an Englishman, preferably Solent-based, would be suitable. So I bought her, without survey, but...at a bargain price. I would have all the joy of a summer bringing her back through France, then of re-rigging as a junk, for which she is a perfect conversion.

Well, the trip back was fun, despite early loss of reverse gear and weather that threw horizontal freezing rain at us through the Canal du Midi (the family decamped when the coachroof started to leak). Admittedly, our exit from the Gironde was frightening; my brother, a lifelong sailor, got off the boat at the first port we could make and will never sail on the sea again, having suffered 28 hours of seasickness. Remaining crew Robin Blain was of sterner stuff, however, and proved he could remember how to sail rigs when I leapt overboard into the dinghy and asked him to sail round me while I

took photos. I had forgotten how difficult conventional rigs are to manoeuvre on your own, and witnessed frantic sheet-wincing and acrobatics as Robin tacked and gybed solo. Out of sight of land as we were, I began to wonder whether, and how, he would pick me up. Easy; just aim straight for me....(see photo)

The good news then: she sails like a witch (7 knots under working jib alone crossing the Channel!), has the best engine ever put in a boat (air-cooled Lister diesel), and gives the sea-keeping of a 35-footer. Plus she carries her way well enough to approach and pass 220 French canal locks with no reverse gear, often in strong crosswinds.

The bad news? All the epoxy paint fell off the hull, and the immaculate paintwork was hiding rot in several places including the rudder. When we cut open the cockpit to fix the gearbox, we discovered that both drain seacocks were simply resting on the hull, having entirely corroded their 'standpipes'. The accumulated antifouling paint had retained them there even when we fell off the top of 20ft waves in Biscay! (and the Alderney Race at springs - in the wrong direction). Oh yes, and the pintles were corroded..

Well, some people don't learn. I decided that never again would "Chelema" rot or leak. This time it has taken me only nine months to strip the coachroof to bare wood and "West" epoxy the whole thing (including the internal surfaces of wood in contact with steel), re-bed everything on Sikaflex, gritblast and repaint the hull and deck, rebuild the gearbox, cut out and replace the cockpit with access hatches in the floor, get the rudder rebuilt and rehung.....so that she'll last another 25 years with minimal maintenance and maximum useability. For someone else. Yes, the bank manager says that after all that (and partly because of it), I've got to sell her. So if you've got £20,000, and want the perfect junk.....would you let me have a sail now and then?

Gavin Dalglish

N.B. Now, if you've got some experience you want to get off your chest, how about writing it up for the newsletter? You **knew** there'd be a moral to this story!



From Our Man in China

At last we have found an opportunity to publish some of the material sent to us by our man in China. Commander John Hatch R.N. (Rtd.) OBE, has been able to send us some fascinating photos of genuine working Chinese junks, which are reproduced on the following pages with his notes. Before that, however, we must report on the 'dream-ship' project which Commander Hatch has been working on for some years.

Lecturing at Quing Hua University, Beijing, in 1989, John conceived the idea of "Xinxin" ("Confidence"), a three-masted 18metre LOA steel-hulled junk to be built in China, then sailed out from Wuxi, Lake Tai, cruising from Taihu via Da Yun He, Yangzi Jiang, Huang Pu He to the open sea and Hong Kong.

Computerized for radius chine construction by Bruce Roberts in '90-'91 and sinecised by the Marine Research Institute at Shanghai Jiaotong University in '90-'92, Xinxin has now been modelled by the Institute at 20:1 for rigging design and tank testing. Xinxin has an objective beyond providing enjoyment for John and his grandsons; she is to demonstrate the possibilities for an updated junk as a modern Chinese vessel combining utility, integrity and comfort. As John says, junks are now rarely seen, a state of affairs that he believes could be reversed by appropriate publicity for the Xinxin concept. Finance (750,000 Yuan RMB) remains a problem, but John, last heard from at Suzhou Railway Normal University, is committed to the project, and determined to take it as far as possible. We wish him luck.



The model of "Xinxin"

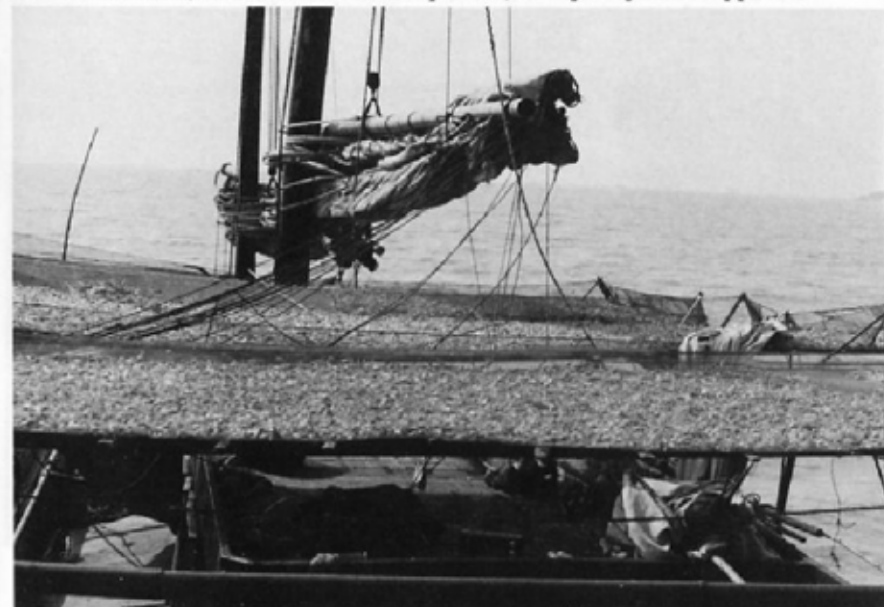


Taihu ferrocement three-masted fishing junks wait at anchor



Two junks work a net together, on opposite tacks pulling a heavy rope between them to scare the fish upwards. The starboard boat is rigged with battens to

Cont./ starboard, mizzen on starboard quarter; Port junk just the opposite.



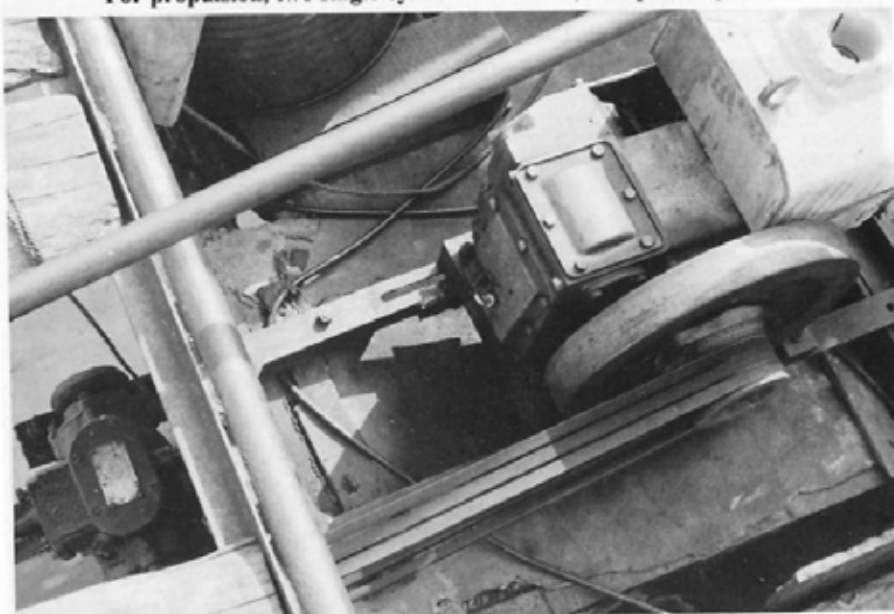
Whitebait dry on netting. Three weeks fishing allowed per year! Rich catch



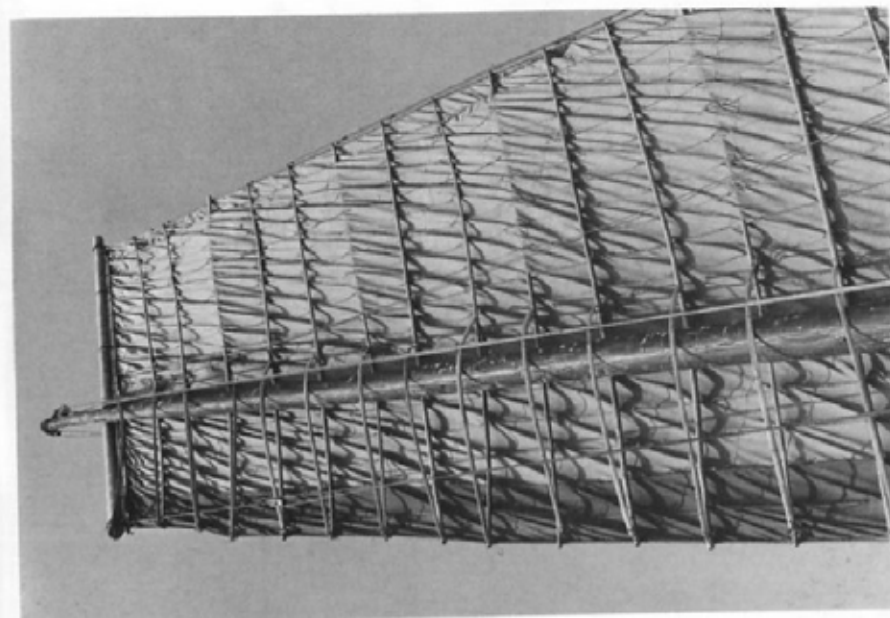
Accommodation is low; another similar room below



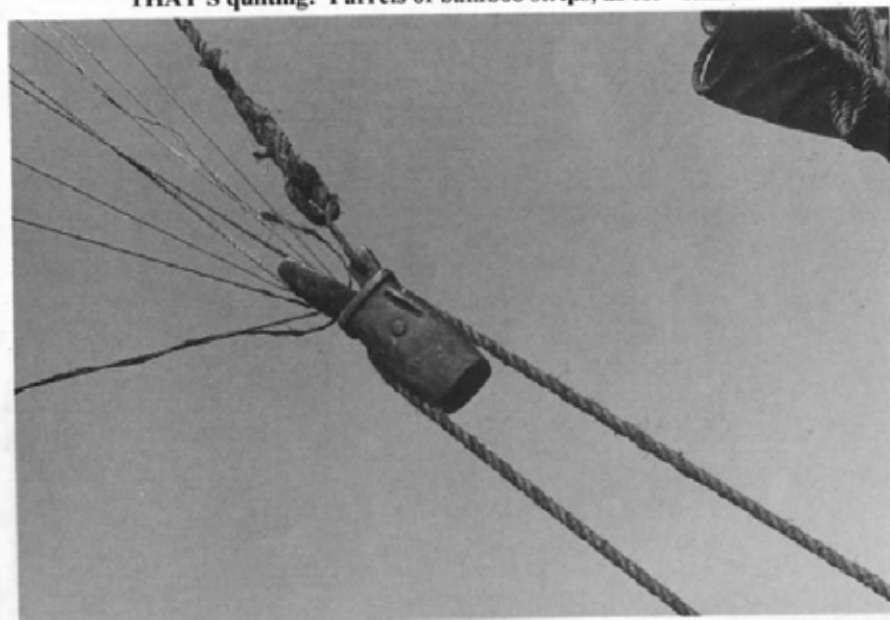
For propulsion, two single cylinder diesels. 2,600 rpm, 9h.p. total



Belt to gearbox at bottom left; vertical shafts down to propellers



THAT'S quilting! Parrels of bamboo strips, as for "Xinxin"



A "Euphroe" for nine battens, one other for the rest



Bend in battens, some woven into sail. One set of sheets to lower battens not sheeted home, one batten reefed



Sail stowed in lazy-jacks. Falls smoothly into neat folds.

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A Selection of Boats from our Brokerage Register

All Boats are Junk Rigged unless stated otherwise

(Some Newbridge Boats have Fan top sails, others have Hi-Power flat top sails)

COROMANDEL 21	1982, Fan top sail, Echo/Sounder, VHF	£ 3,500 ono
	1986, Hi-power sail, GRP Battens, E/S. Log	£ 4,375 ono
	1986, Hi-power sail, 6hp O/B, Log, E/S, Cradle	£ 5,000 ono
	1986, Hi-power sail, Inf. Dinghy, Log, E/S	£ 4,900 ono
NAVIGATOR 19	1986, Fan top sail, 5hp O/B, Log, E/S, Hull epoxied	£ 4,950 ono
KINGFISHER 20+	1978, Tan sail, 7hp Saildrive diesel, sprayhood, A/Helm, Echo/S, Log, Mahogany fitout, Road trailer, Very special boat	£ 5,000 ono
VENTURER 22	1984, Fan top sail, 8hp O/B, VHF, Log, E/S.	£ 6,250 ono
	1985, Hi-power sail, Hgd mast, 8hp O/B, VHF, Log, E/S.	£ 8,750 ono
	1984 launched '86, Fan top sail, 8hp O/B, RDF, Control panel, E/S, Log, A/Helm, Special fit-out, 2 owners, [Trailer £500]	£ 8,950 ono
VIRGO VOYAGER 23	1982, Fan top sail, 10 hp diesel, Log, E/S, VHF, 6' headroom, Awning, cockpit cushions.	£ 8,750 ono
	1982, Fan top sail, 10hp diesel, Log, E/S, Autohelm, Sprayhood, Cabin Heater	£ 9,950 ono
SWIN RANGER 22	1980, Sunbird Junk & hinged mast, Motor sailer, '85 Yanmar 12hp diesel, Cabin Heater, A/Helm, VHF, E/S, Decca Nav, Inf. Dinghy	£ 7,500 ono
HERMES 26	1978 S.M.S. Junk, Ply hull cascover sheathed, 10hp O/B	£ 7,500 ono
GALLANT 29	1987, Gallant rig, Wing Keel, 18hp diesel, A/Helm, Decca, VHF, Beautifully finished wood-epoxy hull and deck	£ 26,000 ono
HALBADIER 36	1984, Sunbird Schooner Junk, GRP hull, timber deck Has everything for blue water cruising from generator to windsurfer.	£ 45,000 ono
SRI DUYONG 54'	1977 Genuine Malaysian Schooner Junk, 50hp Iveco diesel, 8 berths, 2 heads. Constructed in Malaya in hardwood. In superb condition & well equipped.	£ 49,000 ono
FREEDOM 44	1982, Cat Ketch Rig, 50hp Perkins, Has everything from weather Fax to diving compressor. An exceptional yacht.	£ 99,000 ono

RIGS

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Gp. Capt. Smith.
Vertue 26 "Jillie" - as described in
this newsletter
Gazelle 42' - Canada
Lorcha 30' - Canada
Sunbird 32 - U.S.A.
Locken Dory 30 - Oman
Sunbird 28, Kingfisher 20+,
Coromandel and many others for
Sunbird Marine Services

We offer free quotations and
advice against your sailplans or
we will work in consultation with
Sunbird Marine Services if
further design work is necessary

