

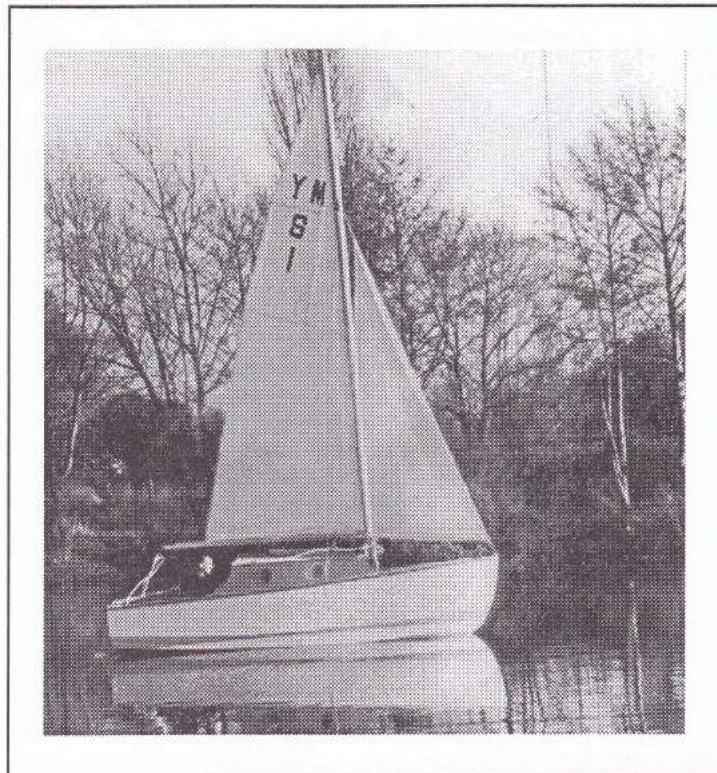
# We Built a 'SENIOR'



The Eventide Owners Association

# We Built a Senior

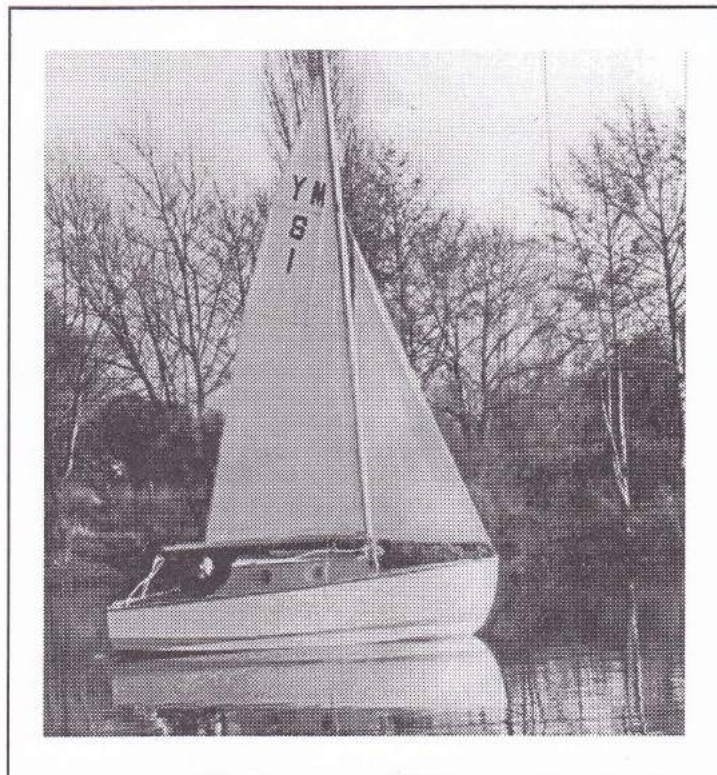
First published January 1997.  
1st update March 1999





# We Built a Senior

First published January 1997.  
1st update March 1999



## Foreword

The pages that follow are, in the main, reprints of articles that have appeared in the Eventide Owners Association Bulletin over the last 30 odd years. Their purpose is to show how other E.O.A. members built a Senior and to help you avoid some of the pitfalls that can befall the amateur boatbuilder.

Some of the articles cover the 'Senior' specifically, whilst the remainder are on general topics that pertain to all of the wooden Y/M sponsored designs.

Two of the most common questions the potential builder asks are : *How long will it take to build a wooden 'Senior' and how much will it cost.* My questions to you are : How many hours a week can you devote to your 'Senior',. Will you be able to maintain a sufficient temperature during the winter months to continuing building and more specifically to continue gluing. What quality of materials will you be using ?, a sheet of BS 1088 plywood varies in price considerably, depending on the quality and composition of the laminates. Will your frames be Oak or Iroko or ..... You will see they are not easy questions to answer.

I feel it would not be out of place to comment on just one of the subjects covered in this booklet, namely 'Stainless Steel Keel Bolts' and would liken it to the following. An old man of 102 years was asked what he put his longevity down to. He said that he smoked 40 cigarettes a day and drank 4 pints of ale every night down the pub.

Read both articles and decide which way you stand the best chance of reaching 102 !

Finally, if you do decide to take up the challenge to start building a Senior, remember you are not alone. The E.O.A. are there to help you, many of its members have built their own boats, from the humble Junior to the Riptide and Waterwitch. There is nothing quite like that first moment when you step aboard the boat you have built yourself.

The three E.O.A. officers below ably helped me put together this compilation of articles. This went from proof reading, to grammatical corrections to re-typing up the original articles and most importantly whether the articles would be suitable at all..

|                 |                  |      |
|-----------------|------------------|------|
| John Williams   | Secretary        | 1996 |
| Mike Mildren    | Plans Secretary  | 1996 |
| Charles Portway | Committee Member | 1996 |

I would also like to single out Martin Lewis from amongst our contributors to this Booklet. He is one of the E.O.A. biggest champions of the 'Senior' and whose contributions to the Bulletin over the years have helped make the 'Senior' our biggest seller of plans at the present time.

If the reader cares to notice the forenames of our contributors, there must be something in the name Martin and the building of a 'Senior'.

**It should be emphasised that the information contained in this book is given in good faith, but times change, new ideas come forward, new products come onto the market.**

**Some of the practices followed by members, the melting of lead for example, would not be acceptable in Industry today where the Health and Safety Executive lay down certain requirements, the COSHH regs have to be considered etc etc etc.**

**Because of this neither the E.O.A. or any of its officers necessarily support or can agree with any of the ideas, processes or methods used or suggested in these articles.**



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unless otherwise indicated.*

**Front Cover** 'Lazy days up a West Country River'  
**Senior 779 'Mikros' built by Geoff Fynn (photo by Geoff Hyde-Fynn)**

## Article by Martin Lewis

### In the Beginning

In 1954 Kenneth Gibbs designed the Yachting Monthly Junior, a 13' 6" double chine, half-decked general purpose dinghy for home construction. It found a ready market; the enterprise was quick to latch on and proved a grand little boat for picnics and cruising with camping gear, which was exactly the idea behind it. Then the young enthusiastic YM Junior owner uttered his classic wish *"What a pity it is not quite big enough to have a proper cabin with two real berths"*. Hey Presto! Kenneth Gibbs waved his magic wand and, a mere 2' 6" longer overall, the YM Senior appeared in all its glory with the plans first published in Yachting Monthly, December 1955.

It was in the summer of that year that I had cruised from Pin Mill on the River Orwell in my 14ft half decker "Kpeting", navigating the Roach up to Rochford, the Thames up to Teddington and the Medway up to Rochester, partly with my friend George Bell, and then on the return trip, single-handed. It was then we both realised that we had outgrown camping ashore or squeezing asleep under the thwarts with a sail draped over the boom. We wanted boats with lids on. Well, that is why George built himself an Eventide and why I, Ten years later, got Harry King and Sons of Pin Mill to build me my Senior.

The Senior was one of the first of what is now a vast tribe of pocket cruisers - my private definition of a pocket cruiser being 18ft LOA or less, and she remains for me a standard of comparison for all the breed both for performance and looks. To my mind she is a very pretty boat; her proportions are right. Her 16ft length is the minimum it can be for the maximum headroom she has allowed herself. There are smaller 2-berth boats such as the Wavecrest and the Sunspot but their cabins and their crews loom top-heavily large over their little hulls. Of course, there are plenty of pretty 18 footers but that still leaves the Senior as the smallest, handsomest pocket cruiser around the anchorages.



E.O.A. Bulletin Spring 1985

David Keith has contacted me as Senior Rep. with all sorts of queries and ideas he's dreaming up over his Y.M.S. 1553, and all these thoughts lead to the basic query as whether it is wise to depart from the basic plans of the original highly professional designer. -The answer for every Y.M. design builder is "Yes" - but how much?

### Shall I alter the Basic Design ?

**SMACK RIG** . Davids drawing looks pretty, doesn't it? He acknowledges his debt to Martin Guppys article on 'Sequin' (see elsewhere in this publication) for setting him off onto gaff rig

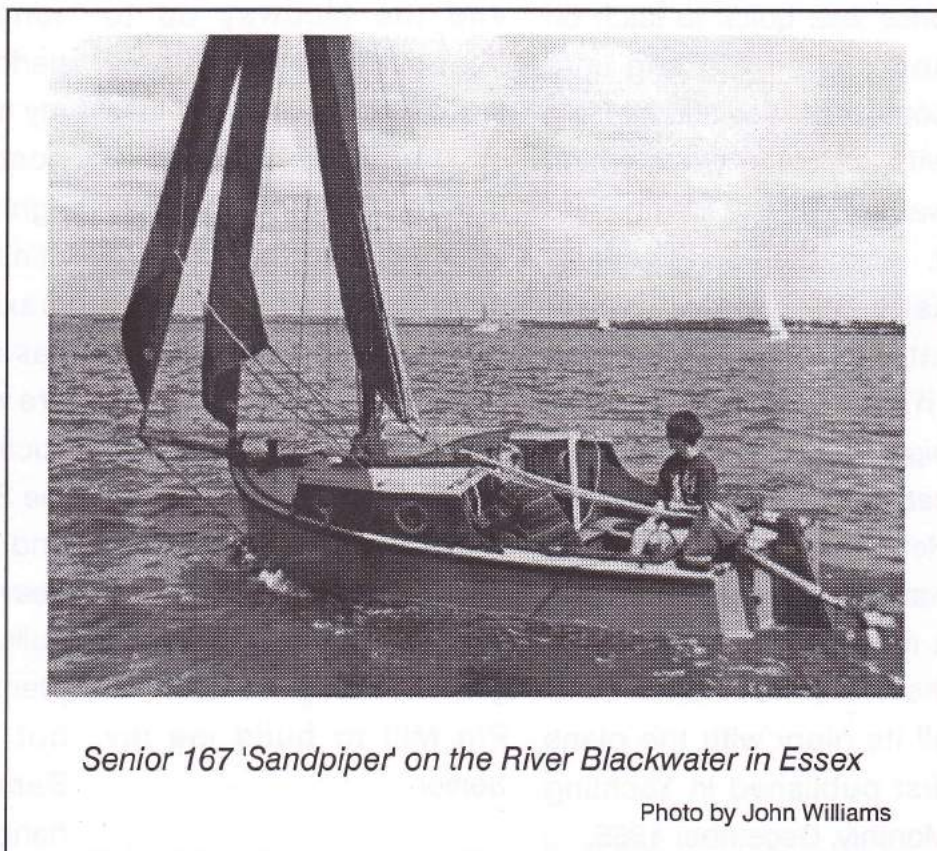
admirable for those of us who dwell within the gaffer-rich creeks of the Thames Estuary. The rig plans show No.1 and No.2 jibs, the standard alternatives and a No.3 sail, a Genoa too. But couldn't the forestay go to the extended topmast truck and keep a forestay from hounds to stemhead - and make her

**TWIN KEELS** The three keels of the bilge keel version mean a lot of underwater hamper in such a small boat as a Senior so his first modification turned to thoughts of twin keels. This is a question of basic structure : The design (Bilge or 3 keels) is built round a keel and the weight of the boat when she settles on shore or trailer is taken on the keel; the bilge keels of the 3 keel version are mere props to keep her upright not to take the full weight.

So for twin keels there must be structural mods too to take the weight of the boat through the bilge keels.

(and not just Gunter gaff) and from there he went on to tops'l, loose footed main and a bowsprit. All wholly

cutter rig - for light airs and beam winds or better at any rate? Perhaps that would be overloading it a bit.



Senior 167 'Sandpiper' on the River Blackwater in Essex

Photo by John Williams



**STRETCHING** Here we know is the eternal temptation. You choose a small boat design for depth of pocket, ability to build, capacity to trail, ease of handling, capability of sailing solo, pushing off mud, etc. etc. - and then crave for something just a little bit bigger. (Funny thing is, there was a bigger' Senior, the Yachting World Rambler, 1966 I believe. David has gone for the classic stretch 13 inches to the foot, or 1" extra to each frame makes 16ft. into 17' 4" - just that little bit extra length for greater interior comfort, better performance and for the bigger sail area planned. David has gone for outside lines becoming inside lines - and added 3/4" to 1" he reckons.

#### **RAISED CABIN TOP**

Every Senior owner knows the literal meaning of keeping our head down, and Kenneth Gibbs resolutely kept his lines right for a 16 footer and refused to give any extra inches of cabin height, which would duly increase windage and decreased windward ability. However, once you've stretched her by some 8% that should allow an inch or two of more valuable headroom. David reckons 2" more to topsides, 1" to cabin top sides and 1" to cabin top crown. I'd put 2" to the cabin top sides, you sit back on the bunk to relax, this is where the

headroom is needed and leave the cabin top crown its standard curve. Within the cabin gets all those extra inches on the rise from cabin sole to bunk level. My 6" on "Pau Amma" means doubled-up knees and a constricted stomach, not comfy for eating. Four extra inches would make all the difference here.

#### **AHOY THERE!**

Are there any stretchers in the great wide sea world around us in the world of Seniors? Did it spoil the look of her? You'll never admit it if it did. Did it improve the accommodation enough or were you like the old woman in the vinegar bottle and. did you want to go one better again? (Have a Wild Duck). Were sailing qualities impaired or improved?

#### **THE BASIC DESIGN QUESTION**

Out of all this I can see why Kenneth Gibbs has opted out of Senior design queries. He designed a 16 footer. He weighed up all the compromises and came to the basic version, CB and 3 keels, with two different rigs, Bermudan and Gunter. These were his considered judgements and the variations allowable within his terms of reference and according to his rights as a professional yacht designer using all his knowledge of principles and using all his experience as a master of

his craft. Then every Tom Dick and Harry (me too) writes to him questioning that judgement, supporting modifications and so he is subjected to a constant bombardment of implied criticism - amateurs challenging his professional skills. This is why I think he quit. This is my design. Take it or leave it. If you modify it, blood be on your own head.

But I am glad I got my extended bilge keels out of him first.

**Martin Lewis.**



E.O.A. Bulletin Spring 1995

Many of the timbers used in building chine boats such as Eventides will benefit from steaming, so that than they will take their finished shape without to much brute force, and with the minimum risk of breaking. Traditionally steaming takes place in a large steam chest fed by a fixed boiler. The basic equipment I used for my 3" x 1 1/2" mahogany toe rails and the slightly smaller Iroko rubbing strakes for my Eventide should suffice for most needs.

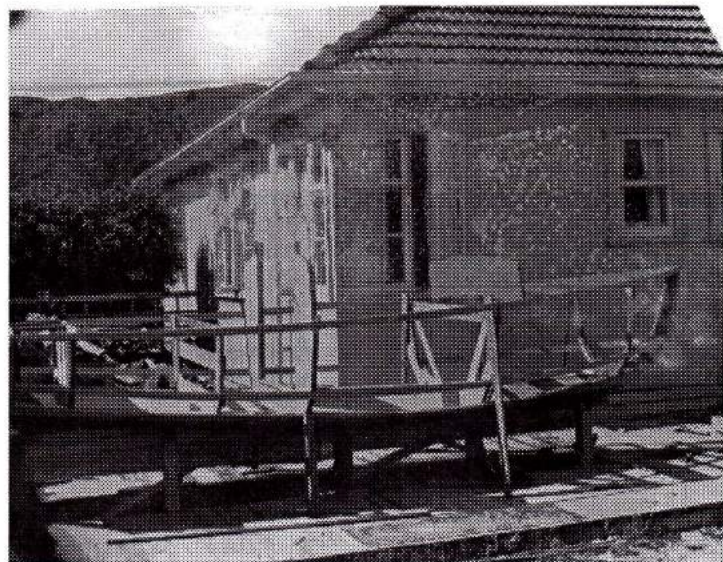
It may be possible to put the steamed timber straight into position while hot, however this may not be compatible with the use of modern glues and sealants, or you may want to work the steamed timber to achieve the best possible fit. In this case, first measure the profile required at about 500mm intervals, and drive a number of stout pegs into the ground to duplicate this profile, as close as possible to the steam chest. Don't forget the pegs should be on the inside of the curve, apart from one at each end. The basic steam chest is readily available, although for some reason Wickes and others describe it as

### Steaming Timbers

PVC drain pipe. A 3m length will not be too expensive. Standard diameter is 100mm, which should be ample. Other sizes are available. Cut the pipe so that it is just long enough to take that part of the timber needing steaming. One end should be plugged with 12mm ply, with a hole in it just big enough to jam a length of car heater hose in. The plug at the other end of the chest will want a hole in the centre to allow the timber to project beyond the

steam chest. To make withdrawal of the timber easier, make this plug in two halves, and do not make it too close a fit, so as to allow steam to escape.

Support the steam chest in its working position, close to the boiler. It will need 3 or 4 small holes drilled in the lower surface to allow water to escape as the steam condenses. Cover it with old bits of carpet, blankets or anything else handy to provide a measure of insulation. Load the timbers, with the occasional support tied on to keep them off the bottom of the chest, and also with spacers between timbers to



*Building the 'right way up'*  
Senior 'Sea Wyf' built in New Zealand by a Mr C H Parks.



allow steam to circulate all round each one. Plug the open end of the chest, connect your pre-heated boiler, and start steaming.

Your exact arrangements will depend on circumstances. My boiler was a pressure cooker, filled with boiling water, with the car heater hose jammed on the lid where the weight normally sits. This was heated on our domestic cooker, conveniently close to the window. Note that the normal ships gas cooker would not provide sufficient heat. The steam chest rested on a ladder supported at one end on the ledge of the open window, and at the other end on a stepladder.

Start timing when steam issues from the end of the chest furthest away from the boiler. For most timbers about two hours should be adequate. For light sections, lesser curves, or soft timber, less steaming is necessary. Much above two hours can degrade the timber, so don't overdo it. If your boiler needs topping up during the process do it with boiling water so as not to allow the timber to cool.

When you judge the timber to be ready, make sure everything is ready, and wear protective gloves. Knock out the plug from the end of the steam chest, pull out the timbers, and quickly bend them around your pegs in the ground or on the boat. Speed is important, as the timber must not

be allowed to cool too much before bending.

After cooling, the timber will be curved to the desired shape, or near enough to allow fitting cold. It will require a good sanding to clean up, and if, like me you have used the pressure cooker this will also need a good clean-up, preferably before the wife returns home and finds out what you have been up to!

The PVC drain pipe will be slightly deformed around the supports, and fit for further steaming, if not for its original purpose.

**Terry McMEnamin.**



## Article by Terry McMenamain

WEST and the similar SP system epoxy are extremely penetrating two part products with an incredible range of uses, from gluing to waterproofing, from making up structural members to filling and fairing. Epoxy cures quickly and is about eight times as waterproof as polyester resin (grp to you and me). Epoxy and hardener are sold together, and it is advisable to buy calibrated pumps so that the correct proportions are measured out.

The neat mix of epoxy can be used directly, with foam roller, brush or to wet it prior to gluing or glassing. With Colloidal silica it can be thickened to almost any consistency for gluing and structural work, and is quite up to retaining screws for engine bearers and other heavily loaded items. For filling and fairing micro balloons are mixed in, to give a lightweight and easily sanded filler.

Details of applications and use are published by WEST, and their booklet is well worth its price.

My surveyor persuaded me to use WEST for KINSMAN'S refit, WEST gave good

### The West System

advice on the phone, and when the time came a phoned order was delivered the next day. I have since used SP with equal success.

The first application was for some new skin panels. After cleaning up the mating surfaces, the new panel was fitted up dry, and all screws driven home. The panel was removed, given three coats of neat epoxy at about one hour intervals. The mating surfaces were then coated with neat epoxy. Next, a mix of epoxy was made with colloidal silica, thick enough to stay on all the vertical faces, and plastered in place. The temptation to mix too much epoxy has to be resisted, otherwise the heat generated by it will cure the mix in the container. Two strokes of the pumps is the maximum at any one time. The panel was then put in place, and every third screw driven in as quickly as possible, followed by the remainder. Working in summertime, there is not too much time

to spare on a large panel before the cure takes hold. There was just enough time for a short breather before cleaning up the surplus with a wooden scraper.

A problem area was 'KINSMAN'S' deck edges, where the original glue had failed. The surveyor recommended scraping out the glue from between the beam shelf and the deck, and refilling. Easier said than done! I drilled a row of 5mm holes, about 30mm apart, through the deck ply, just touching the beam shelf. Where necessary to pull the ply home, a full screw hole was drilled. A small mix of neat epoxy was made, and drawn up into a standard medical syringe.

This was injected into each hole, to penetrate every nook and cranny, and then followed up with a mix thickened with epoxy to fill all the gaps, the screws being driven home as their holes were treated. It was possible to work along each side progressively in the same session which gave a very satisfactory result to a potentially difficult problem. It would have been very



much better had the papers under the deck edge been properly positioned to catch all the inevitable drips of epoxy!

After this, the bare deck ply was allowed to dry out under a cover (open both ends for ventilation) before glassing. Glass mat from WEST, which is treated to stick to epoxy and not to polyurethane as most glass-mat is, was cut roughly to shape. The deck was coated in neat epoxy before placing the mat in position, and wetting it out with more epoxy. This was worked in with a squeegee, and all air bubbles worked out, before moving on to the next area. WEST show how to tailor the glass without an overlap, but I found wet glass quite difficult enough without such refinement and left a small overlap of two thicknesses of mat. Nobody has commented yet, so it's not that important! The purpose of the glass is to give abrasion resistance and additional waterproofing, hence I didn't bother with it for the topsides. I simply rolled neat epoxy on to the bare ply, working round the boat. By the time one coat was complete, it was time to start the next, rolling onto part cured epoxy. Three coats went on in one afternoon.

After about a month to fully cure the epoxy was rubbed down and given two coats

of two-part polyurethane. This is necessary to protect the epoxy from ultra-violet light which will cause chalking.

The strength of the work is such that when KINSMAN dried out alongside & larger boat, which leaned on her so hard she bent the stanchions double and twisted the stainless steel base-plates, there was no damage whatever to the deck or the hull.

Most of the work was done outside - It must be said that I was lucky with the weather, in that temperatures were close to the 15 recommended by WEST. However later on I fitted new engine bearers in February, simply warming the epoxy containers slightly in warm water before use. The result in this critical application has been totally successful, despite the lack of any screws through the skin, resulting from my desire not to disturb the Cascover sheathing.

Housings for stern tubes etc can be made by coating a piece of wood or plastic pipe of the right size with cling film, and winding glass on layer by layer, soaking it with epoxy as each turn is put in place. The cling film allows the cured item to be parted from the former, and a few layers of glass will give a surprisingly strong result.

In conclusion, from initially being horrified by the price of epoxy, I now tend to consider its use as a matter of course. It banishes any fears of deck leaks, glue failure or similar horror. Maintenance is minimal, being confined to an occasional check for any scratches deep enough to reach the timber. Small ones are treated immediately with Araldite (near enough the same material) and more substantial damage has me reaching for the repair pack always carried. It is important to act quickly to seal any damage otherwise water will wick into the wood and be unable to escape. This is the only disadvantage of epoxy that I can think of.

Terry McMenamin



E.O.A. Bulletin Autumn 1980

There is so much that could be said on the subject I could fill the Bulletin so must restrict myself to the one glue that I am most conversant with, RESORCINOL especially Aerodux 500 and 185, manufactured by CibaGeigy, though I have seen just as reliable results with CASCOPHEN, by Bordens which has the advantage of being available in small quantities from chandlers.

Aerodux 500 and it's hardener 501 makes a thick treacly purple stodge and the colder it is the stodgier it becomes. 185 is similar except the hardener is a white powder 155. 500 is supplied Fast (f), Slow (s), and Medium (m). I used 500(m). If stored in a cool place it has a shelf life of at least a year and in practice, longer I have found this most useful and convenient, mixing equal parts together.

185 has a shelf life of over two years, though less simple to use as the powder gets everywhere, but is Just as strong for; all that.

To obtain the very best results the moisture content

### Gluing Wood

should be in the 12-15% range. Timber bought as kiln dried and stored under cover will present no problem although RESORCINOL glues are more tolerant than most and will work well with 25% with only a 10-15% loss of strength.' Epoxy glues would almost certainly fail if used with wet timber.

Perhaps as important as the glue is the preparation the faying surfaces, especially for oily timbers, Teak, Iroko etc. Timber direct from machining have a slightly glazed surface and the surface fibres are compressed by rollers etc, far from ideal and it is essential that the surfaces to be joined should be ridded of this unwanted smoothness. For this I favour the old fashioned smoothing plane which looks like a wooden smoothing plane except the iron is vertical, the iron has fine vee incisions cut vertically into it's face and when sharpened in the usual way produces cutting edge of sharp points. It has no back iron, mine dates from tender

youth and veneering by hand with enormous cast iron pots of scalding hot Scotch glue. The use of this tool produces a surface with a faying area increased by at least 200%, coarse glass-paper hacksaw blades etc can of course be used, albeit not as effectively. Plywood must be, treated in the same manner oily timbers benefit from degreasing and I used Tricothylene (ch) purchased from a friendly chemist. Two 3 litre flagons saw the boat launched. In practice, after tothing the faying surface was dusted with a bristle brush, then wiped over with a clean rag soaked in 'tric', this became a habit whatever timber I was using, as it not only degreased but dusted. As important as preparation, is working in the correct temperature and that means, within reason, as warm as possible, certainly not below 60F and 70-80F I found ideal. In summer in a polythene covered shelter the temperature was often over 90F, it was more a matter of working at breakneck speed, pressure must be applied before the glue gels. Even in the depths of darkest winter it is



possible to achieve local conditions of high temperature. For example, when laminating beams, a heater was placed under the jig which was supported on two trestles, a mild steel plate on top to act as a diffuser and then an insulation of mineral wool sealed in polythene, was draped over the work after the cramping was complete.

At higher temperatures the glue becomes much less viscous, easier to apply and seems to penetrate the timber instead of laying on the surface, also a better glue line results, for the best results both surfaces of the joint should be glued. I used Turkshead glue brushes and 2" paint brushes for larger areas. Use good quality brushes that are not forever shedding hairs. Surfaces once glued should not be exposed to the air for any length of time and in practice I found the only operation that presented any difficulty in this matter was when planking with large sheets of ply and my son was press-ganged into assisting, with one gluing the framing, the other the ply, the surfaces were brought into contact in a matter of minutes. Once in contact one has a reasonable time for pressure to be applied, either by clamp, screw or bolt, varying from hours at 60°F to an hour at 90°F, but obviously the sooner the better. Do not over cramp, it's possible to

starve a joint this way. Just bring the surfaces firmly into contact.

I found that the removal of surplus glue was best carried out when the glue had reached a jelly like stage, just before it went off, it comes off readily and doesn't stick to anything. If one attempts to scrape off the surplus whilst still runny, it can be a very messy business indeed, rather like model making with black treacle. On the other hand if the glue sets hard it will prove very arduous to remove it and from awkward places almost impossible.

There are commonsense precautions to be taken whilst using Resorcinol glues, though the literature supplied lays down very stringent and daunting prohibitions, aimed at the industrial user, having much of the pessimistic foreboding of an Admiralty Pilot. I found that by using cheap polythene gloves, hands could be kept fairly clean, however as the glue sets very quickly on warm hands I sometimes found it necessary to resort to methylated spirit to remove it, despite the manufacturers advise to the contrary, I suffered no harm. The glue, especially when the weather is warm, gives off pungent and fairly unpleasant fumes and if one became hooked on sniffing it, I feel it could do you no good, if you are particularly sensitive it

would be sensible to use an industrial mask, but with spasmodic use of the amateur boat builder no ill effects are experienced. Brushes were suspended in meths and washed with soap and water. The only other adhesive for wood I used was a tiny quantity of Cascamite which was found useful for odd jobs but in general Urea Formaldehyde glues, Aerolite, Cascamite, are not satisfactory for oily timbers where maximum structural strength is required.

In conclusion I can report that my boat has been sailed hard and often and during the most horrific ten minutes of my life, suffered being bounced with crashing force on the concrete hard sands of the North Buxey, with never a sign of glue failure, in fact any modification I have carried out has meant the virtual destruction of the timber involved. This of course could prove a major drawback to anyone addicted to constant alterations to their boat.

**Tony Sykes**



E.O.A. Bulletin Spring 1968

It all started when I was sitting by the river one day. I thought if I had a boat my family could join me on the river and we could enjoy the fresh air and relax away from it all for a while.

My wife and two small daughters (5 and 7) were enthusiastic about the idea so I started by hunting through boating magazines and books. After a trip to the Boat Show I decided I would like to sail.

The ideal boat was a sailing cruiser as we wanted a cabin to adjourn to on wet days. which, lets face it, are quite frequent, and also somewhere to sleep if needed. It would have to be as small as possible to keep the cost down, and being a cabinet maker I would obviously save a lot by building myself.

A 16 footer was about the smallest that could accommodate us at a pinch. We wanted a safe boat and the YM. Senior Mk 2 looked like a possibility. A look at the plans decided us and a start was made in Feb. 1967.

The problem of somewhere to build was next and this was solved by erecting a

### Birth of a Senior

light wooden framework covered in heavy polythene sheet on our patio, an idea which is being used by many boatbuilders I believe, amateur and professional.

I have laminated the stem and transom knee in iroko, and the cabin beams in mahogany. The stringers and hog are B.C. pine, also the floor members. The rest is African mahogany, except the bilge keels which are keruing because it is strong and durable.

It is now a year since I started and the hull and deck are planked. In between times I have been doing spare time work to make boat money ! I hope to install a Stuart Turner 1 1/2 h.p. with reverse if possible to enable us to cruise on the upper Medway this season (providing I get it finished of course), this will give me next winter to rig the boat for sailing, so spreading the cost over two years. I have made some alterations to the plans to suit our requirements. These include a for-

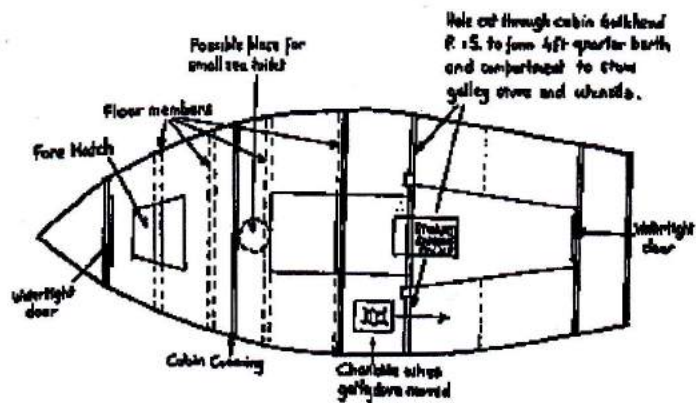
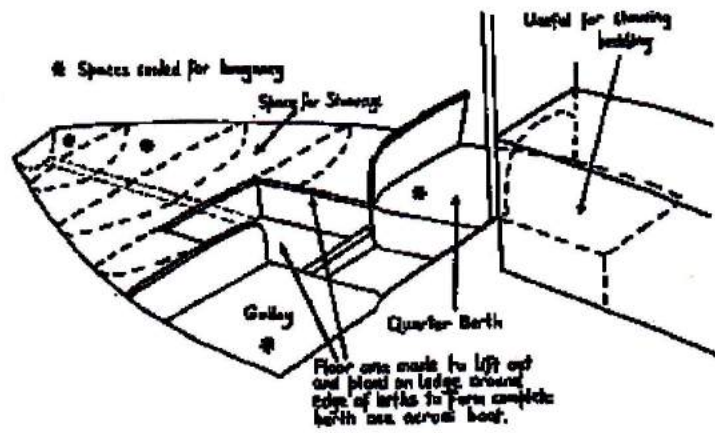
ward hatch to allow the children to see without falling overboard, and the wife to get forward quickly to drop anchor or untangle the jib sheets etc. The companion way and hatch I have made 20 inches instead of 36 inches and the bunks are laid out as shown. I also intend to make watertight doors on the aft and forward compartments as more buoyancy will be gained by scaling up the area under the bunks and filling them with flotation material or foam that can be pumped in.

The quarter berth will be small but large enough for a 5 year old. The 7 year old will sleep between the berths or in the proposed cockpit tent. Opposite the quarter berth will be built in a similar manner but will be used for a portable galley stove, which can be stored in the compartment under the cockpit seat leaving a flat area for a chart table.

Providing there are no objections I shall be naming her KYRENIA to remind me of the blue Mediterranean around Cyprus.

COLIN COOPER, YMS 913

Spring 1968





Article by Martin Lewis

E.O.A. Spring Bulletin 1986 page 26

Since "Pau Amma" was built I have sailed her extensively in the waters of the northern part of the Thames Estuary from Havengore and Rochford to Butley Mills and Snape Maltings. I've sailed her a lot single-handed, which has made me work upon her for utmost ease and efficiency of handling, but we have had family cruises too and this has made me make her as flexible as possible. My most notable adventure was in 1973 when I made a single-handed passage across the North Sea to Ostend and then on to Flushing, from whence it was a somewhat hairy 60 hour passage back to Harwich. This story was printed in Yachting Monthly, Jan. 76. The following are some notes on "Pau Amma"'s design and construction and modifications to the basic design made either at the outset when I had her built, or as a result of later experience.

I am always surprised at the number of people who can buy a boat off the peg and accept her so unquestioningly that they do not dream of modifying or adapting it

**Shall I Modify Her**

to their own particular needs, beyond deciding the colour of the cushion covers. For me, half the fun in sailing is trying out new devices and arrangements and it is one reason that I prefer wood or plywood to fibreglass - it's so much easier to screw in this or that, to saw a bit here or change a bit there. I had the plans some three years before she was built and, while I accumulated funds, I pored over them and mulled over ideas and particular wants and needs. The process has gone on and in the years since she was launched, I've continued to work things out. Well, here are some of my comments on these ideas, the thises and thats.

The plans for the Y.M. Senior were first published in 1955, in response to Y.M. Junior owners and others who required a slightly larger boat. It was in the summer of that year that I had cruised from Pin Mill in my 14ft. half-decker, partly with my friend George. It was

then that we both realised that we had outgrown camping ashore or squeezing asleep under the thwarts with a sail draped over the boom. We wanted boats with lids on! Well, that is why George built himself an Eventide and why I, 10years later, got Harry King and Sons of Pin Mill to build me my Senior. The Senior was one of the first of what is now a vast tribe of "pocket cruisers" - boats of 18 ft. LOA or less - and she remains for me a standard of comparison for all the breed both for performance and for looks. To my mind she is a very pretty boat; her proportions are right, unlike some smaller craft whose cabins and crews loom top-heavily over their little hulls.

**KEELS** - These are the first options to decide between; centreplate, bilge keel or fin keel, and they all have their points.

**Centre-plate** - Since the Senior rose out of the Junior, it is not surprising that the first conception was still that of a centreplate boat. The Juniors' 13'6" length became 16', the 8" draft was increased by a mere 2" for the Senior with

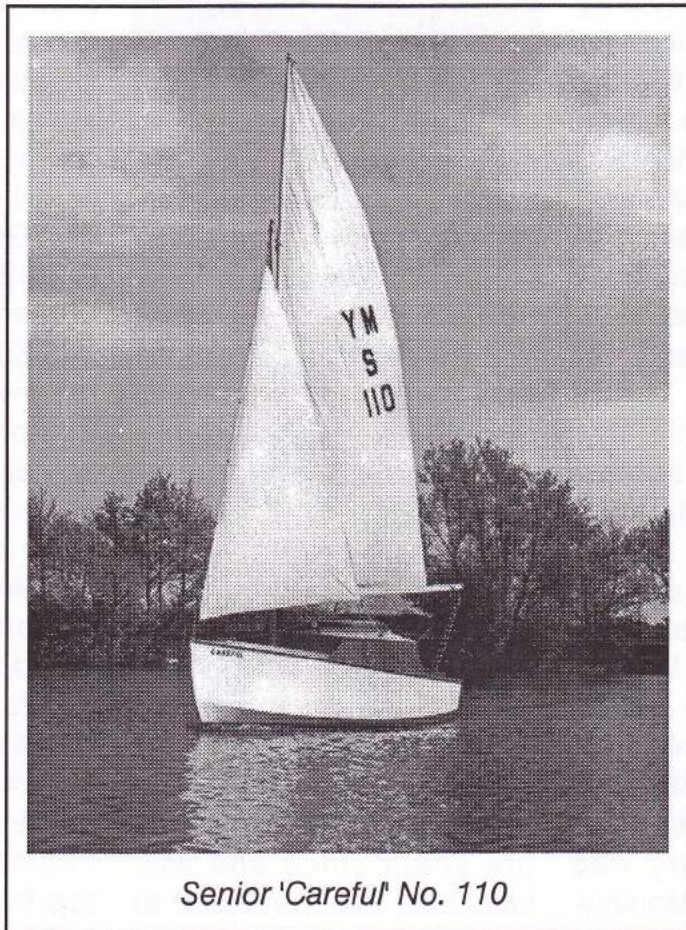


the plate up while, with the plate down, it remained the same 3 feet. She lived up to her every expectation. I've seen one outsail an Enterprise (under cruising rig) and I remember how impressed I was to see another come up alongside the hard at Pin Mill and her crew jump ashore dry shod. If you want to explore the tiniest of creeks what could be better than the centre plate version? A few inches of plate is the best of instant depth sounders with the built in safety factor of being retractable if she does touch. Added to this of course, she can take the mud at low water and sit at a half tide mooring or lie afloat on the edge of the channel. However, for me, centre plate was ruled out on two major counts.

First I was a cruising man and wanted cabin space and that plate case is powerfully space consuming. Secondly, I had had plate trouble with my two previous boats, the first with leaks around the plate case, the second with jamming stones and broken plate wires.

**Fin Keel** - Now a fin keel avoids these troubles and

gives full cabin space while maintaining a beautiful windward performance. A fin keel Senior cornered the 'Small Cruisers' cup in Pin Mill Regatta for several years. But this too would be no good for me, because my cruising delight is ditch



Senior 'Careful' No. 110

crawling, not deep water passages. I wanted to explore every shallow creek I could find. I like to be able to take the mud, to use anchorages that dry out, rather than to be banished miles down river to the nearest deep water mooring - which is anything but near.

#### **Bilge Keel**

Having designed the basic Senior as a scaled up Junior

with a centre plate, Kenneth Gibbs, realising the limitations of a plate, designed the alternative bilge keel version. These were the early days of bilge keels, so again the Senior was pioneering new ground, soon to be widely copied. A

160lb. ballast keel was supplemented by plywood bilge keels, increasing her draft a mere 4" more than the Mark I with the plate up. So the cabin is empty of plate case, she can sail in flooded fields, she can sit it out on the mud at a half tide mooring, or anchor in some remote hideaway. There's no vicious little slot in the keel for stones to jam in or through which water can seep. Of course, if you do go aground,

you're aground on all three keels at once but if the water is shallow enough, you can hop over the side and give a push. However, the chief disadvantage is, of course, windward performance - that dreaded 90% of sailing time. A keen sail against wind and tide in a plate or fin keel Senior becomes a grim struggle in the bilgekeel version.



**Extended Bilge Keel-** Having heard of one particular incident when a standard bilge keel Senior has sagged so far away to loard in a Club cruise that she'd actually had to be taken in tow, I decided to see what further compromise could be effected and I wrote to Kenneth Gibbs. Mr. Gibbs declared he had not heard of any complaints from bilge keels owners so maybe the case I have just quoted was exceptional, but nevertheless he gave me specifications for a 6 inch wooden skeg between keel and ballastkeel and deeper bilge keels to match in 1/4" mild steel instead of marine ply. So this is my compromise and it works well. I have cabin space. I am reasonably shallow draft. Fully laden with all cruising gear I draw not much short of 2ft., but this has been plenty shallow enough for me and "Pau amma" has been in her element poking in and out of the tiniest creeks, cutting across saltings on the top of spring tides. Of course, sometimes I've put her on the putty and sometimes, waist deep in water, I've pushed her off- even on a falling tide, and sometimes I haven't and I've stuck, but nicely upright. "Pau Amma" is satisfactory to windward; I play my tides carefully with contrary winds on coastal passages but, being caught with wind and tide against, she'll still make ground in all but light

airs. On the other hand, the lower keel and extra weight of the metal bilge keels make her a very stable craft in rougher weather. It's not that I seek anything above a 5, but being caught out there and properly reefed, I've been comfortable enough in more than one force 6 and probably a 7 too. I won't say I haven't been scared when nasty gusts have pushed us over to squirt water into the cockpit over the coamings, but I think that's the point; although she has gone to MY gasping point, it has not been hers; she's responded and righted each time. Yes, she's a good sea boat for her size. Finally, on the advantages of extended bilge keels are two quite nice beneficial side effects:- "Pau Amma" has a one piece rudder and can dispense with the drop rudder of plate and standard bilge-keel versions and her Seagull longshaft engine has depth enough to bite the water without being deeper than the keel, as it would with the standard Mark I's and II's.

**Martin Lewis**



E.O.A. Bulletin Spring 1996

On thinking back over building my Senior 'Flycatcher' there are some things that I'm glad I did and, inevitably, a number I might have done differently. Among the better things was a small investment in three sheets of hardboard to cut up for trial planking and to serve as patterns when cutting the plywood. Another was to take some care making sure that the stringer for the building board and keel (Flycatcher was the right way up) was dead straight and level, and thoroughly braced all ways as advised in the plans and in Building Chine Boats. The photo of the keel, hog, stem and transom assembly shows

how I did this and my homemade clamps, made from scrap wood and threaded rod cut to suitable lengths. These were very handy when assembling the keel and hog; by adjusting the tightness of the two sides the hog can be levelled crosswise.

I was fortunate to have a timber framed car port in

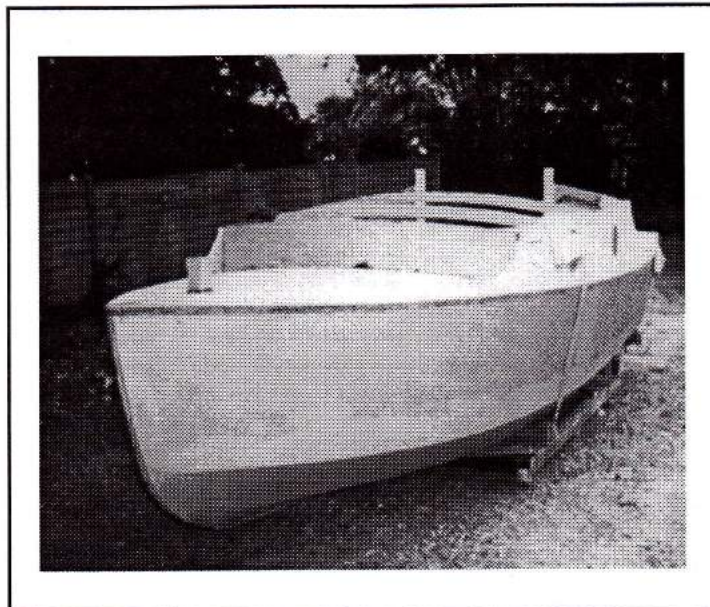
## Flycatcher

which to build, so was able to fix an overhead stringer of 2" by 2" timber above the centre line and from this to brace the frame, bulkheads, moulds, transom, and stem (photo). The principles are well illustrated in B.C.B. for the Wild Duck, except that until the gun'1 battens are fixed it is important to brace in a third direction (see brace in the photo) to prevent the moulds etc. from turning about their centres. All this effort paid handsomely by preventing any distortion in the hull

shape caused by the pushing and shoving needed when fitting the chine battens and planking. The hardboard patterns then served for both sides with the minimum of adjustment. Bear in mind, of course, that the sides are mirror images of each other, especially when bevelling their edges at the chines.

The planking joints at the upper and lower chines, as shown on the plans, are of simple construction but require quite a precise angle to be planed on each of the meeting edges if the joint is not to expose the ply laminates for water to enter. Even if this is achieved the chine angle in the hull

shape is very liable to abrasion at a weak point in the planking on the ply edge along the grain of the surface laminate. There are several methods of making chine joints which are more wear resistant but involve more complex wood-

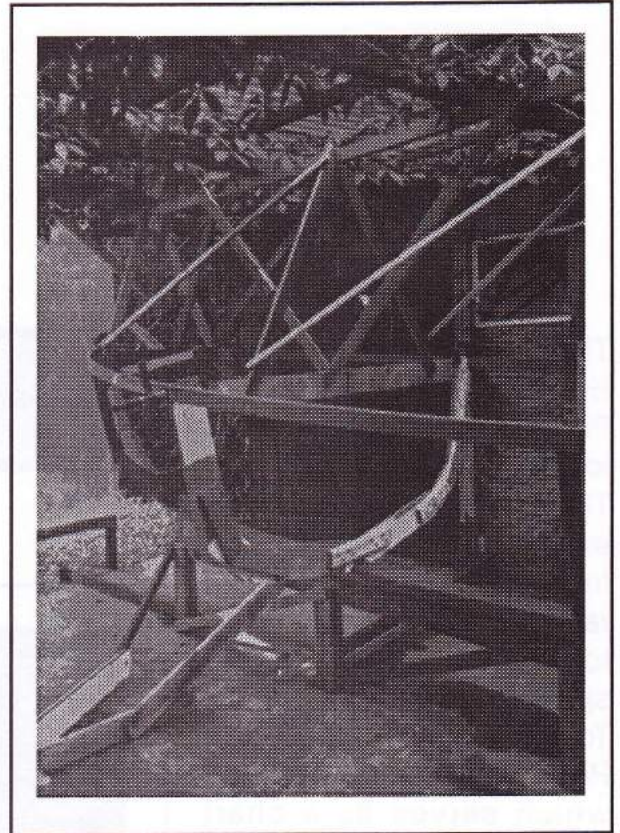




work (see Michael Verney Boat Repairs and Conversions).

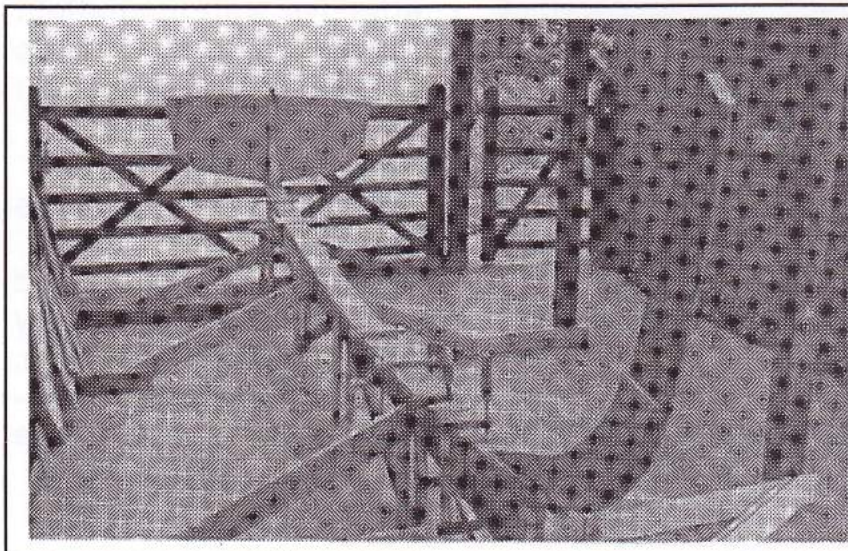
My solution for was to sheath all the outside joints on the hull, after rounding them slightly, with 2" wide glass tape bonded with epoxy resin. This was not an expensive or difficult job unlike sheathing the whole hull. The tape was stippled onto a wet coat of epoxy with a further two coats on top. Any weave then still showing was fared off with epoxy filler. After the priming coats of paint the taped joints were almost invisible (see photo). This treatment has proved very effective as any abrasion on the chines has only been 'skin deep', i.e. through the paint only. This has led me to further thoughts on chine joints. If the angles planed on the plank edges are not equal, one edge will project and not be fully protected by the meeting edge. This will not matter if the chine is taped (Fig. 1). Carried to the logical conclusion this

leads to the suggestion that it is easier to plane each plank edge to the same angle as the chine batten (Fig. 2). But this necessitates a changeover in the joint structure near the stem where the chine angle becomes very small. Another possibility is to make quite a rough joint at the chines between the plywood plank edges and then to fill any gaps with epoxy filler and tape the surface (Fig. 3). I would probably adopt this method if ever building another Senior. A final thought on chine joints is to dispense with the four chine battens and replace them with an epoxy fillet using the stitch and glue method to



join the adjacent ply 'planks' as used in constructing the Mirror Dinghy. The hull shape would then be dependant on the shape of the plywood panels used for the planking.

**Tony Dench, Senior 1607**



*All photos in this article by Tony Dench.*



THE CABIN ON FLYCATCHER (YMS 1607)

Photo. 1. The general layout looking forward.

The bunks are of 1/2" (12 mm) exterior ply on a softwood framework of 4" by 4" which rest on the floors. To port are lockers with two Trangia spirit camping stoves.

To starboard, a locker for a Porta Potti with a 1/2" ply top which serves as a chart table/general table/seat for the cook.

The large nets in the fore-peak are for storage of clothes sails etc. to keep them off our feet. Smaller nets slung below the ports on both sides are used to hold small items.

The striped lining to the

Inside Flycatcher

Photo 1

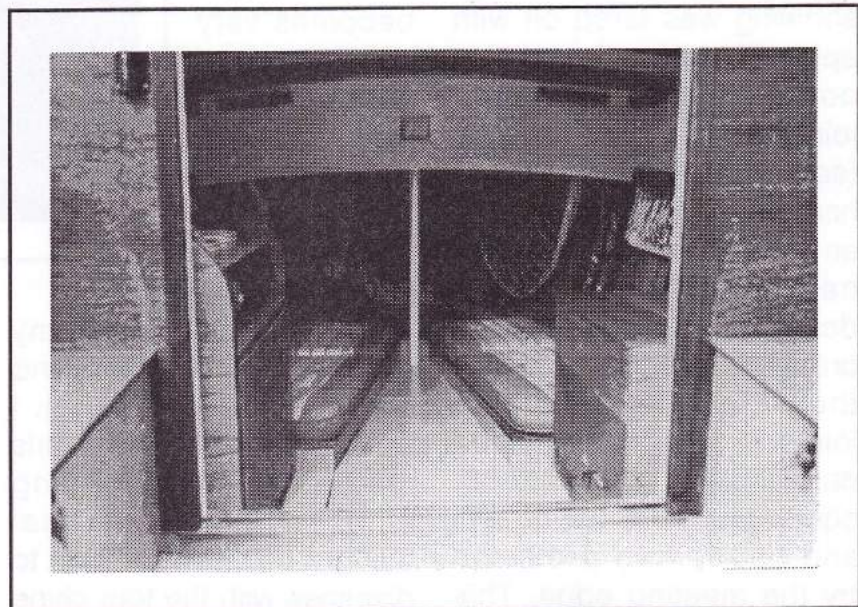


Photo 5

cabin is strip patchwork quilting made by Mary who is a patchworker. It is very effective wall insulation. Carrymat used by campers to sleep on is an alternative I believe.

Note : the hatchway is 30" wide, narrower than in the plans.

Tip. I should have tapered the hatchway to be slightly narrower still at the bottom. This would make the washboards much easier to take out and put in.



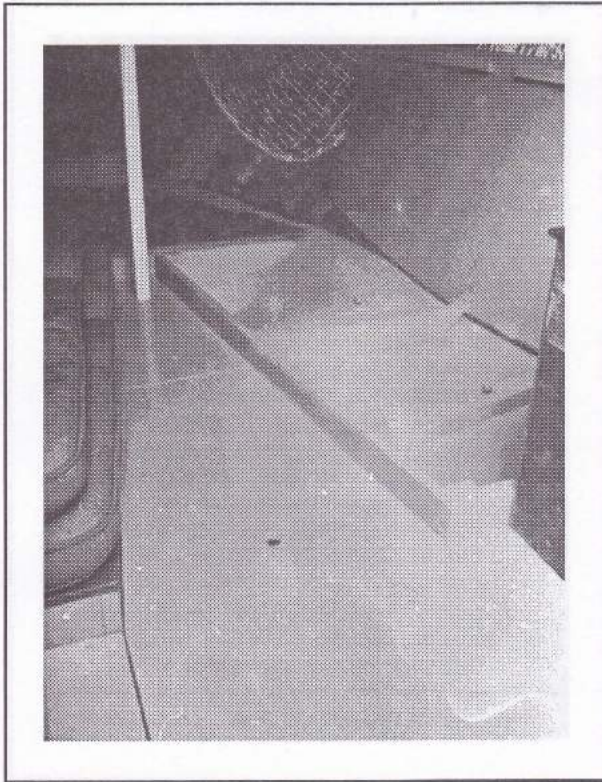


Photo 2

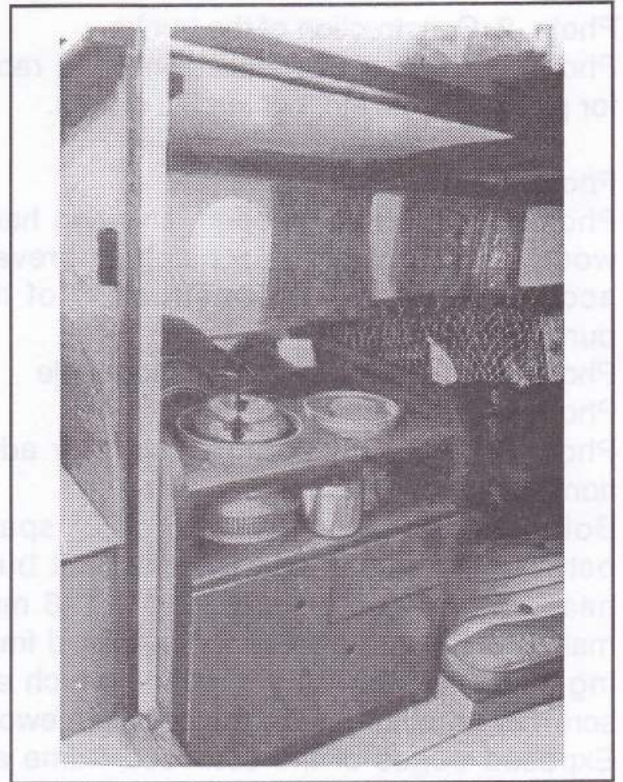


Photo 3

**Inside Flycatcher**

Photo 4

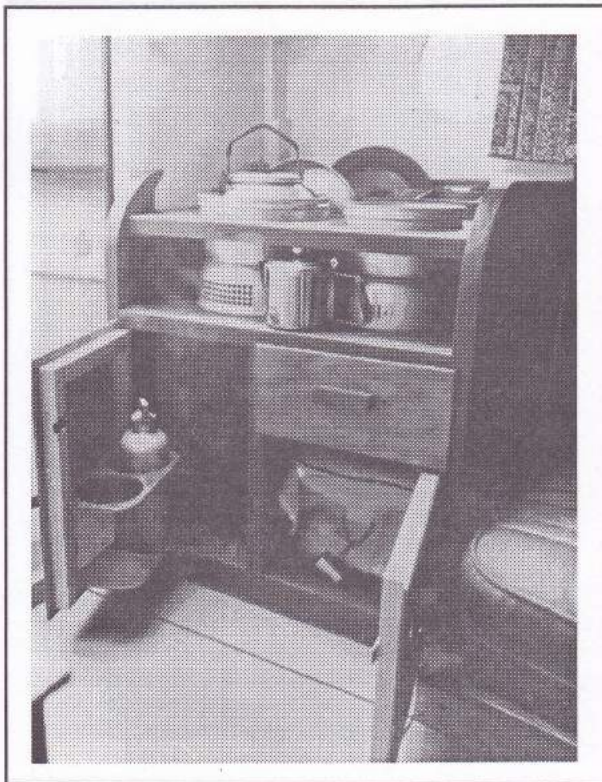
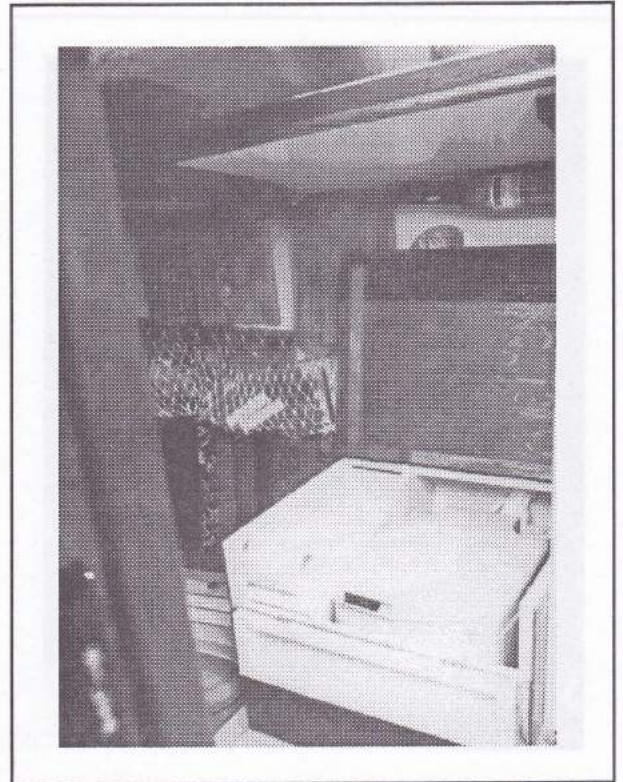


Photo 6





*We built a SENIOR*

Photo. 2. Construction of the bunks.

Photo. 3. The cooker locker showing racks for plates, mugs, etc. behind the stoves.

Photo. 4. Ditto doors open.

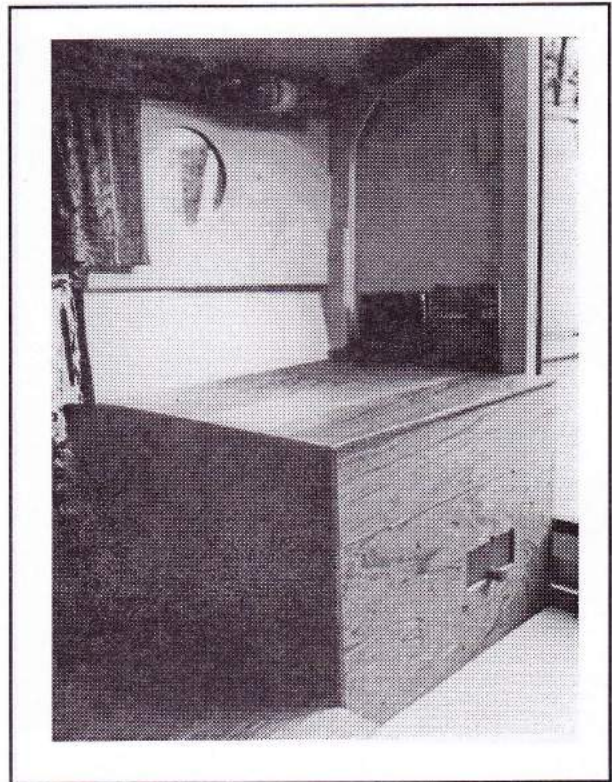
Photo. 5. Ditto drawer open, showing hardwood runners with liftup catch to prevent accidental opening. Construction of the bunks is also visible.

Photo. 6 & 7 Toilet locker with chart table

Photo 8 & 9 Ditto opened.

Photo 9 shows side compartment for additional storage.

Both the locker units fit into a 22" space between the bunks and the cabin aft bulkhead. They are constructed of 4 " (6 mm) marine ply glued to 1 "by 4 " softwood framing , and are made in sections which are screwed together and to the boat framework. Exposed edges of the softwood frame are disguised with ironon mahogany edging strip. The whole lot can easily be taken out if necessary by taking out the screws holding the parts together and to the boat.



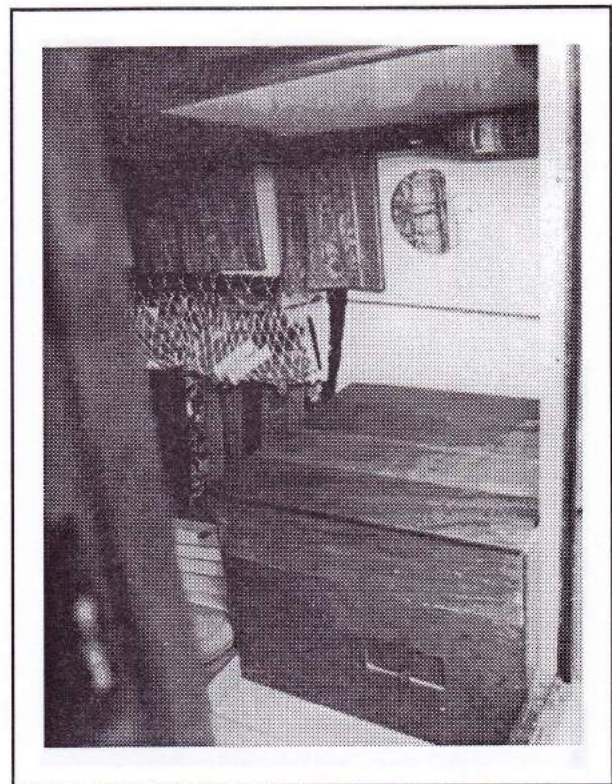
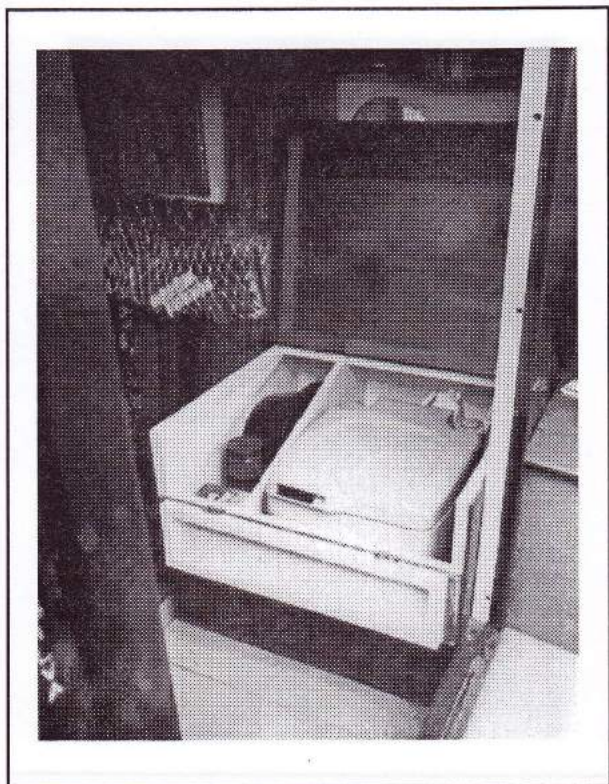
*Photo 7*

**All photos in this article by Tony Dench**

**Tony Dench**

*Photo 8*

*Photo 9*





Article by Gerry Loveridge

E.O.A. Bulletin Spring 1978

At the January meeting of the E.O.A. I was talking to other members about boats and fittings, when the subject of finger holes came up, the prices mentioned made me go cold, as I made mine in a couple of hours.

A lathe, if you have one, will be very useful, if you haven't, you can get away with an electric drill.

I made up my drill into a temporary lathe by fastening it rigid to my bench and making a tailstock and tool-rest from scrap wood.

This was my method; Turn a piece of wood in your lathe???? to one inch dia. by about six inches long, then I took a piece of mahogany about the same length as the turned piece, and one and three quarters square. I drilled a hole one inch dia. through the middle then made the timber into an octagon.

The next job was to push the turned piece through the drilled hole and put a short screw through the mahogany into the turned piece, to ensure that both pieces turn together. Return

**Finger Holes**

both pieces to the lathe, ensuring that they are put back the same way as the original piece.

I then turned the mahogany to one and half inches dia. and marked off with a pencil the lengths of the wall and flange, then turn down the wall to one and a quarter inches. It was a simple matter to remove the wood from the lathe and from the turned piece and saw off the lengths close to the flanges, then remove the inner corners and sand.

Drill a one and a quarter hole in the door to be fitted with the finger hole, a little glue, smooth off the back and you end up with a job which is as good as the bought article and very much cheaper.

For turning, an ordinary wood chisel can be used, but only sharpen it on the bevel face, leaving a burr on the flat side.

Another job I made much easier whilst building my

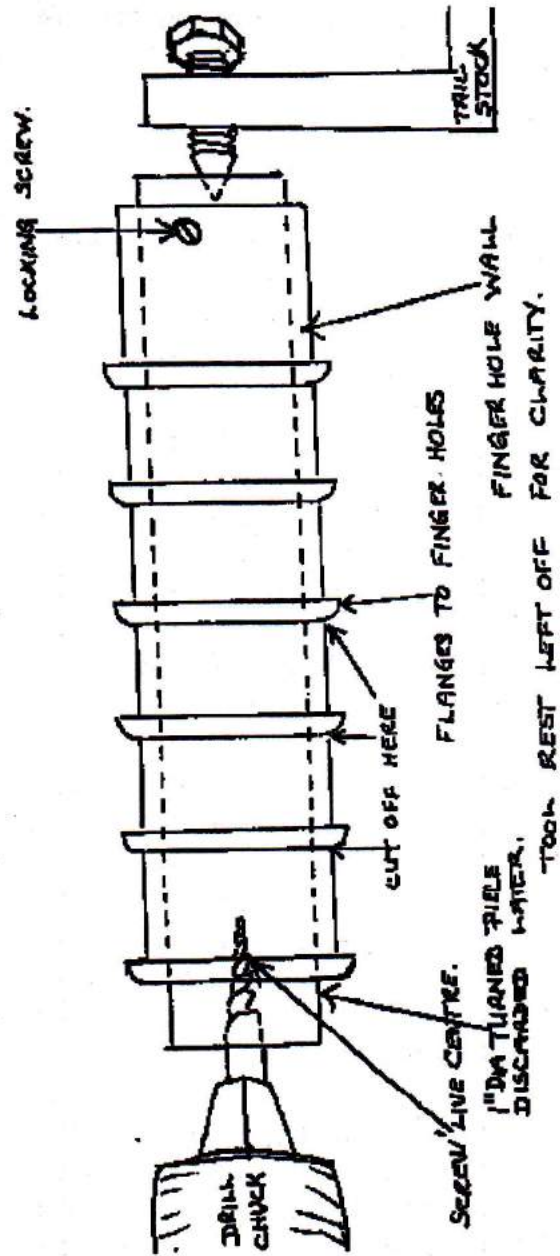
own boat was that I cut all my decks and coachroof and after fitting temporarily screwed them down. I then drew round all the deck beams, carlins etc. and removed the deck again. I then put masking tape all over the marked areas and painted the decks as one piece. When the paint was dry I removed the masking tape and glued the decks permanently, just think of the time and temper saved trying to cut in round the beams.

I hope these two little dodges may help members who have not got to these stages yet.

**GERRY LOVERIDGE.**

**Goosander 'Goosey'**







E.O.A. Bulletin Spring 1985

Article by Humphrey Hahn

With the standard in-board steel rudder and a plate to fill in the gap between the end ballast keel and stern very well and can be spun round in that own length (almost literally) under engine. I have never thought of changing to a transom-hung rudder as the existing one is so efficient.

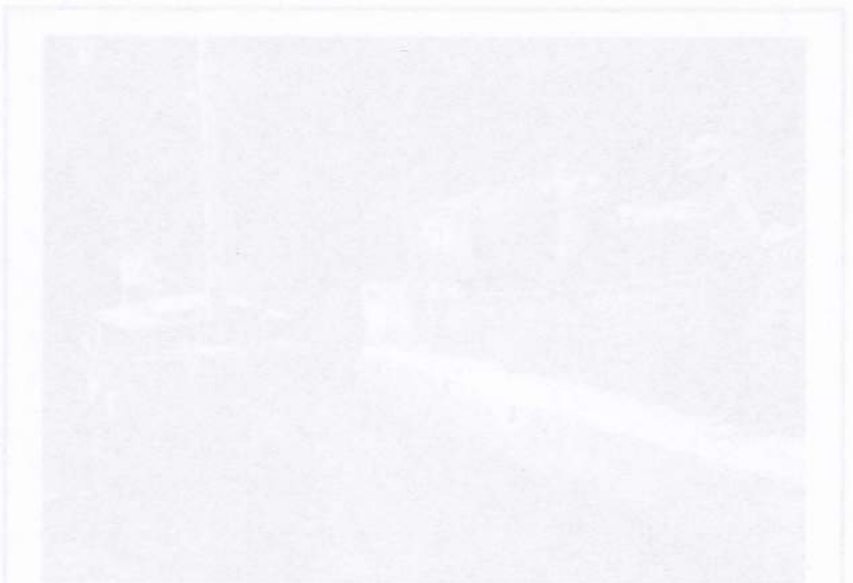
The hull was built with good quality B51088 on loko frames. Glued with Cascophen, it has remained leak-free. Unfortunately, I made the bad mistake of using some cheaper B51088 on the cockpit, and a few places in the cockpit. This was a false saving in expense and after 4 seasons I started to have problems. I would want builders against the interior plywood is the stuff with thick white laminate in it between the thin grown layers of mahogany. The white wood is soft and turns to a horrible pulp after a few years! I expect it contains fungus spores which eventually germinate. Avoid it like the plague. The good stuff is well worth the small extra cost.

Humphrey Hahn



In the main she has been a great success and, although confined to the Solent, I have had much excellent sailing. She is cutter rigged and, for a very small boat, goes to windward quite well provided there is enough wind. In less than 10 knots she is very sluggish and

My little Everilde "Phylaxer", YME 1841, is still going strong, built in Farham Creek. This is the end of her 8th season and I hope to bring her ashore for a month needed rest in a few weeks' time. It may be of some interest to owners/builders if I make a few comments with the benefit of hindsight. I built "Phylaxer" at home, between 1982 and 1985.



Senior Mr. J.P. Fisher, builder Mr. D. Bishop  
The bottom wet for first time!

difficult to tack without the engine to push her round. On the wind she will do 7-8 knots with ease in a bit of a

when I launched her for the first time. She was completed in winter 88-87 and her first full season was 1987.



## Article by Humphrey Hahn

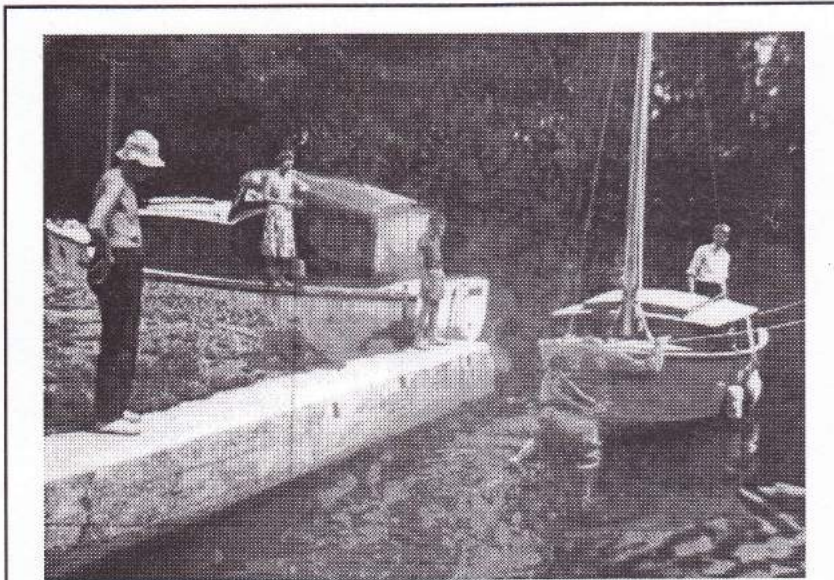
My 24ft Eventide "Privateer", YME 1841, is still going strong, berthed in Fareham Creek. This is the end of her 8th season and I hope to bring her ashore for a much needed refit in a few weeks' time. It may be of some interest to owners/builders if I make a few comments with the benefit of hindsight. I built "Privateer" at home, between 1982 and 1986,

### Cheap Plywood !

In the main she has been a great success and, although confined to the Solent, I have had much excellent sailing. She is cutter rigged and, for a very shoal draft boat, goes to windward quite well provided there is enough wind. In less than F3 she is very sluggish and

With the standard in-board steel rudder and a plate to fill in the gap between skeg and ballast keel she steers very well and can be spun round in her own length (almost literally!) under engine. I have never thought of changing to a transom-hung rudder as the existing one is so efficient!

**The hull was built with good quality BS1088 on iroko frames. Glued with Cascophen, it has remained leak-free. Unfortunately, I made the bad mistake of using some cheaper BS1088 on the coachroof, and a few places in the cockpit. This was a false saving in expense and after 4 seasons I started to have rot problems. I would warn builders against this. The inferior plywood is the stuff with thick white laminate in it, between the thin brown layers of mahogany. The white wood is soft and turns to a horrible pulp after a few years! I expect it contains fungus spores which eventually germinate. Avoid it like the plague. The good stuff is well worth the small extra cost.**



Senior No. 30 'Pat-Ria' Builder Mr D Bishop  
'Her bottom wet for first time'

when I launched her for trials. She was completed in winter 86-87 and her first full season was 1987.

difficult to tack without the engine to push her round. Off the wind she will do 7-8 kn with ease, in a bit of a blow.

Humphrey Hahn



Article by Martin Guppy

E.O.A. Bulletin Autumn 1970 page 28

When I started to build "Sequin", I aimed to produce a cruiser as comfortable and seaworthy as I could for the money and very amateurish skills available. Although the character of the hull was to be retained, a number of modifications seemed necessary and desirable.

First of all, size. She measures seventeen feet over all. Fore and aft measurements were multiplied by seventeen over sixteen (not such a difficult job but I expect there is a better way). This length was determined by the maximum size of the timber then available. I have tried to keep the transom up by shortening the cockpit and providing a large afterlocker for light, bulky gearbowls, buckets, sailbags etc. The sidedecks in the way of the cockpit are wide enough to stand on with comfort and safety as one steps up on to the cabin top. The cabin sides come right out to the topsides to give a little more room below and to simplify the construction. The coachroof has been brought forward to the leading edge of the mast so that the mast

### Building Sequin

itself could be stepped on a strong bridgebeam coaming construction that eliminates the need for a stanchion in the cabin. Here it might be relevant to say that, thanks to the absence of the stanchion, the two orthodox transom berths can be converted to a very adequate double. The advantages of this in our coolish summers don't need explaining or emphasising.

There is a little more headroom than in the original

design, which has been achieved by increasing the deck camber mainly. Headroom may be important but it's not worth spoiling the lines of a boat for. The hatch has been reduced in width by a foot to keep the weather out.

The rig has come in for the most drastic treatment because "Sequin" is a Gaff sloop, complete with a small topsail. The reasons for this would fill a small book and would have me sent to the galleys for heresy, so I am not going to broach them. There is no ban on private discussion, however and no



Senior No.68 'Yama' A Fin Keel version.  
Seen with her builder Col.D Cran



end to it, as at least one galling E.O.A. member knows !

The bowsprit, made necessary by the moving aft of the mainsail's centre of effort, is a cantilever device that also holds the stem head roller. There is no bobstay, so to cover any possible bowsprit failure, two of the four shrouds lead forward.

Below the water line, I have fitted a skeg for two reasons : one, to give a little more stability when running, and, two, to increase the efficiency of the rudder, which is less deep than in the design. The standard ballast and bilge keels are moved a few inches forward to bring the centre of lateral resistance back to its original position, though I doubt very much whether the CE/CLR relation a critical one in boats of this size and type.

Ballast poses a problem in plywood boats. There just aren't enough timbers and floors to rest short, chunky pigs on and even sash weights or fire bars are difficult to place exactly where they are needed. Using shingle, as in Nelson's time, is one good solution, but messy. Another, the one I am going to experiment with, seems more promising. I have made pebble-and-oldnylon stocking sausages each weighing about twenty pounds each.

They look and behave like lethargic slugs. If they take up rather more room than one can conveniently spare, at least they don't roll far when the boat heels and they certainly won't knock a hole through the delicate stressed plywood, even if they are allowed to rest on the skin.

Now I have written all this about her, I do hope that the experiment pay off and that "Sequin" will be the comfortable, seakindly minicruiser of my plans and dreams. This will be discovered in all its naked reality at Easter when she is launched. It may be that the whole conception is false and that she will be a complete failure. She looks much too pretty to me, at least for that ! But if she should be well, I have already had from her much more than she has cost, in terms of exercise, brain-teasers and fun !

**Martin Guppy.**  
**Senior 772 'Sequin'**



Article by Martin Guppy

E.O.A. Bulletin Autumn 1971 page17

The building notes that appeared in the Summer 70 Bulletin were written with a mixture of hope and apprehension, a hint of a crunch to come being mentioned in the last paragraph. When the time of the launching came, however, we were too busy to wallow in the thought that the boat might go straight to the bottom. I imagine this is the case at most launchings.

"Sequin" did not sink. She floated gracefully well above her marks, we stepped the mast and sailed away to our mooring within an hour. Through the rather cold and blustery April, we sailed her whenever we could, often with two reefs down. When the warm weather came along, she was seldom on her mooring at weekends and at the end of the season we had clocked up nearly two hundred hours of time under way. This to my cautious mind is sufficient to enable me to give a reliable report on the effect of my modifications.

There were and there still are, some problems. Some of the chine seams suffered from glue starvation and leaked. This, I think; was due to a surfeit of muscular enthusiasm with the screw-driver when fitting the bottom panels. The moral use

### Sequel to 'Sequin'

plenty of good thick glue and don't screw down too hard. We took her out of the water, bunged up the obvious gaps with resin putty and covered the seams with G.R.P. Also, we could not persuade the topsail to set nicely except on the starboard jibe. Next season, there will be a full length jackyard and the sail will be offset to port so that it clears the main halyard blocks and the gaff as far as possible. Apart from these faults, everything has proved, I hope this doesn't sound smug, entirely satisfactory.

The boat was not built to have a particularly good windward performance in terms of pointing well into the wind. Indeed, I wonder if this is in any practical way possible in such a small light displacement craft except in smooth water. I did hope, though, that she would keep going at an encouraging speed in any conditions, rough or smooth. This she seems to do at about the same angle off the wind as a traditional gaffer. For those who haven't tried it, there is an awful lot to be said for the ease and comfort of such

modest windward progress. The motion is kinder to ageing bones, and one doesn't get the bucket of cold sea that more weatherly craft regularly throw into one's face.

Running and reaching are both comfortable evolutions thanks to the skeg that was fitted. Weatherhelm is always positive and perceptible but never a problem, except when an extra strong gust lays the lee rail down to the water. Even then, the leverage of the four foot tiller makes recovery a painless business. The skeg does damp her skittishness when manoeuvring but here again her response is absolutely positive. A racing type, I suppose, might scorn this quality as sluggish but we appreciate the steady movements, which give us plenty of time to tend the headsail sheets.

Perhaps the most endearing of "Sequin's" characteristics is the ability to heave to like a pilot cutter. The headsail is weathered the mainsheet nipped in hard and there she stays with the helm left free, quietly forereaching while she is reefed, or unreefed, or while the crew makes a cup of tea very useful virtue in a cruising boat.

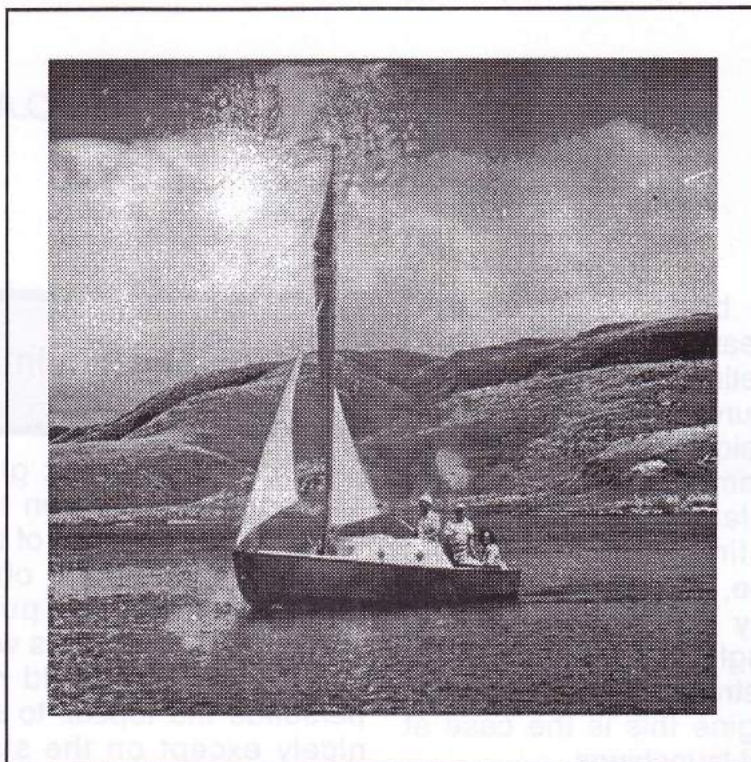


## *We built a SENIOR*

To clear up odd details, the stocking and pebble ballast worked very well and we shall continue to use it next season. We have a Seagull 40 Plus as an auxiliary, which is quite adequate for our needs, giving a speed of about three and a half knots. There is also a rowlock fixed on the transom so that the boat may be sculled with an eight foot oar, less speed but much less noise where only short distances are involved. The simple Gaff rig is a joy to handle and the cantilever bowsprit, contrary to the expectations of the head-waggers, is still firmly in place. The double berth, combining as it does the maximum temptation with the optimum amenity, is very satisfactory.

I cannot conclude this self-satisfied effusion without saying a word or two about the hull design. I chose this Kenneth Gibbs hull because it seemed to give good, flowing lines and the maximum "boat in the water" for the length. After a season's experience, I would say that it is at least as good in the water as it appears on paper. As a form capable of development (with a waterline of about sixteen feet and a very good sea performance) I would recommend the Y.M. Senior every time.

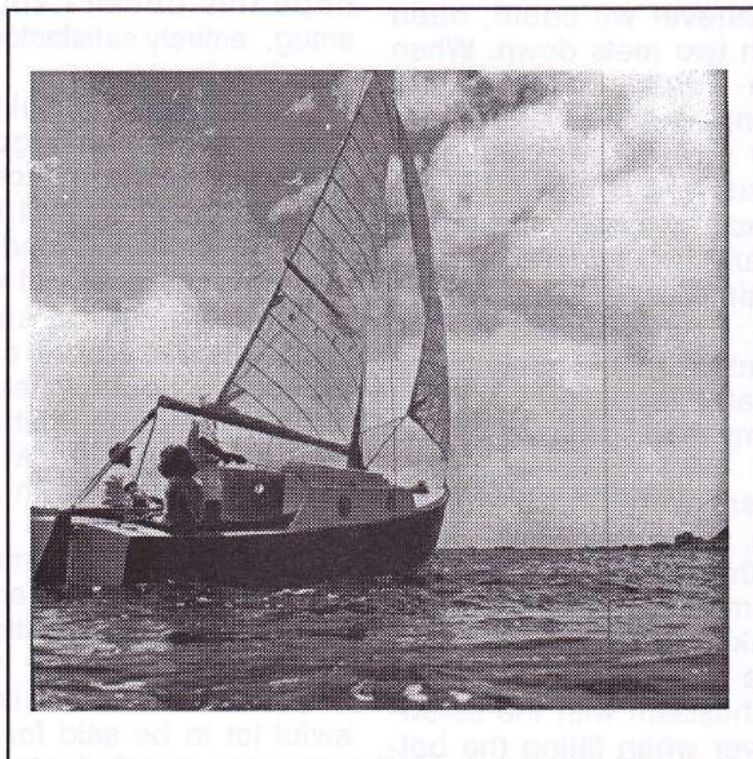
**MARTIN GUPPY.**  
**Senior 772 'Sequin'**



*Both photo's are of the same Senior 'Sea Wyf' which was built in New Zealand by a Mr C H Parks.*

*Sail No. unknown.*

*This boat was featured in 'Yachting Monthly' August 1957 page 82.*





## Article by Atila Tarman

E.O.A. Bulletin Autumn 1991 page 20

Back in the summer the Editor wrote to Atila asking him if he would like to tell our members what it was like to build a "Senior" in Turkey, accepting that the climate must be fabulous for such a hobby, but are the materials easy to come by etc.

If you recall, Atila sent us the article which appeared in the summer 90 Bulletin, on his almost completed Senior.

Atila replied with the following.

Dear Editors

Thank you very much for remembering me I am always happy to talk about my boat.

First some history: I fell in love with the Y.M. Senior after reading a book called "Building your own boat" by Graham Bell. It has been a long search for me to acquire the plans from the E.O.A. First, I searched whatever old issue of "Yachting Monthly" I could find, but to no avail. Then I located your ad in P.B.O., unfortunately the address of the E.O.A. was missing from the ad, but an English friend located your address from the name. I became a mem-

### Boat Building in Turkey

ber and proud to be so. I bought a plan every year, I have a Storm, Junior, Senior, Eventide, and will buy Wild Duck this year.

Now to the building, I converted all dimensions in the plan to metric. Seniors dimensions allowed me to use single length boards for Keel, Hog, Chines and Bulwarks, these are Luan (a relative of mahogany) which is imported into Turkey. I used Luan throughout except for the Transom and the Coamings. The Stem is laminated. After building the bulkheads, transom, stem and temporary forms, I assembled them according to the plans, everything fitted in finely. After the assembly of the longitudinal elements I covered the hull with 10mm Marine Plywood, manufactured in Turkey. I considered building the hull upside down, but the bulkhead with cabin door will make the assembly to high to work comfortably. The cockpit, decks and cabin were quite straight-forward jobs, I stumbled a bit on the

sliding door (successful at the third attempt), when a 10mm piece of ply was laid on it, it deformed in the middle as the middle frame was thin. The only way was to reduce the thickness of ply to 6mm.

Inside the cabin I covered the floor with ply as per the plan, but could not understand seatbacks. I am yet to furnish the cabin. I used Brass screws (no copper rovings found here) and epoxy adhesive, Ciba Geigy, at all joinings. I covered the hull and decks with fibre glass cloth and on top painted a gelcoat layer, smoothing it down with a rotary sander. Over that the hull is painted with white polyurethane above the waterline and below with primer plus antifouling. Cockpit, cabin sides, coamings and interior painted with clear epoxy and polyurethane varnish

About alterations, I chose the fixed keel version but lowered the keel about 6" after reading of this in an E.O.A. Bulletin. I added steel bilge keels like Storm's, they have the same depth as the keel, but short-



## *We built a SENIOR*

er than the original Mahogany ones. I am at the midst of opening a small hatch forward of the first frame to store the anchor.

About the rigging: The mast and boom are of drawn Aluminium and made in Turkey, the stays are 4mm stainless wire with ordinary thimble terminals. Sailing hardware is very limited in Turkey and I designed and supervised fabricating all the stainless fittings except blocks and shackles. I have a mainsail with 3 reefing points and a jib with one reefing point.

I finished my boat in two years, with on-off spare time work, I made lots of mistakes, remedied most of them but costed me time and money. I liked every minute of building my Senior (still nameless, but probably I'll name her "Ankara", the city I live in and an improbable place to build a boat).

It is her second season in the water, she doesn't show any signs of strain, with a 6hp Johnson outboard she makes about 4 knots. Under sail she is very lively, I think to sail long passages and open seas my Senior needs a deeper and heavier keel. With side winds she drifts considerably, I think this is due to too short bilge keels and I plan to change the keels this winter and maybe fit a skeg.

All in all, I love my boat and am very happy to be a member of the E.O.A.

Atila Tarman Senior 1603.  
Ankara, Turkey.



## Article by Martin Bailey

E.O.A. Bulletin Autumn 1994 page8

### Why build a boat?

I suppose there is a good reason to spend quite a chunk of money and an even greater chunk of time building a boat, but I am not sure that I realised what it was when I started.

Like many, I had owned and sailed for many a year and had even built a simple sail boat, Ian Nicholson's 'tonga', and had started doing the RYA evening classes. I had also had the odd days in friends' cruisers. I then saw the E.O.A. article featuring the Eventide in *Classic Boat*. Without too much thought I sent for the plans. Fabulous, I thought and started doing some simple costings but despite some encouraging correspondence and past copies of the Bulletin I thought the family budget could not run to the expense. But I had been bitten and the support of an association that were builders as well as sailors made me look at the Senior. Another set of plans were bought.

### The start.

I am lucky in having a 18' x 10' workshop and reasonable collection of tools plus access to my school's work-

### 'Freya' 1647

shops. Yes I am a teacher of Technology which is very handy.

I bought the all important marine ply from a local timber merchant, imported and stamped BS 1088, but not kitemarked, so a sample of the first sheet was boiled, baked and boiled again prior to completing the purchase. I managed to get a discount by ordering all the sheets needed but only bought a few at a time. The initial 'Seal' brand changed and some sheets were sent back when visible voids were seen at the edges. They have proved consistently good after that.

Michael Verne's book advocates building the right way up and this is how I planned to do my building. Everything in my workshop was decanted except a woodwork bench and a building board was constructed and nailed to the floor.

I had already made the transom, two bulkheads and permanent frame. The timber was some English Oak I

had kept in stock and the transom was second hand Iroko (an abandoned school table top, with the chewing gum removed). This was butted and strapped with ply to make up the width required.

The glue used throughout was Resorcinol from Wessex Resins of Southampton, I used almost 5 litres on the whole project. It is a nice glue to work with, easy to clean off, but critical as to temperature. Follow the instructions, but remember pot life is reduced when the glue has been spread, it soon starts to go off in higher temperatures. Localised heat can be applied using a fan heater or other form of heat with old blankets or tarpaulins over the area being glued.

The bulkhead ply was fastened with Gripfast nails. Screws throughout the boat were silicone bronze, buy these in bulk from specialised suppliers to get a discount. I waxed them before inserting and checked pilot holes in test pieces of the same material, use the reference books as a guide only. Temporary frames were



made from the sound part of an old garage door, screwed together. A very useful tool proved to be a home made 5' long tee square in combination with a 36" steel rule. The only change to the plans was to reduce the hatch to 22" and raise the step by 2 1/2" This would, I thought, be less vulnerable to a heavy sea coming aboard and increase the bulkhead walls for internal storage. The latter is certainly true but I would give serious thought to building a bridge deck if starting again. Geoff Hyde-Fynn's 'Mikros' has this modification, among many others.

Making these manageable sized bits is a good winter time occupation because they can be bought in from the workshop to cure by the fire at bedtime, or do I mean Pub-time. The next job was building the hog and keel, I used some second hand Iroko for this, again with the chewing gum removed. It seems to be a habit of public authorities to replace well made traditional furniture with laminated chipboard, still one mans loss, as they say. These were not long enough and several lengths with carefully offset joints were used. I considered scarfing these but given the bulk of the material and the fact they were laminated I settled for butting the joints, resorcinol glue and some very expensive screws held the whole thing together

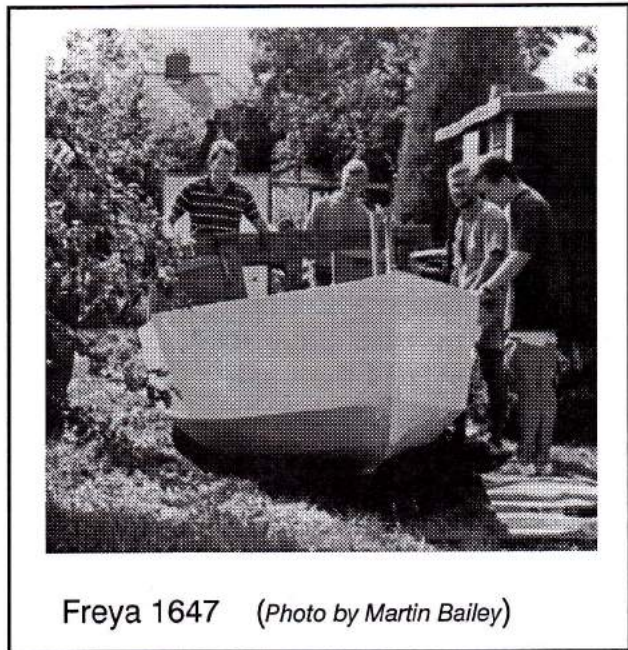
and every owned and scrounged cramp held it to the building board to cure. The Oak stem had been made and was set in place using the recommended copper nails and roves, naturally the holes were pre-drilled.

The stringers came next and I had a plank of Idigbo cut down by the local timber merchant, on the understanding that it was a light weight, resistant equivalent to Teak. This proved to be one of the few poor purchases I made, it had the holding power of blotting paper when I came to try some screws in it a test piece. So I bit the bullet and bought Brazilian Mahogany as a replacement.

I then put the whole thing together with clamps, string and sealing wax. With imagination it could be visualised as a boat, but what I could not visualise was how I was going to plank it! There was very little space for anyone working underneath and I could not figure out how the inside worker would balance or move around.

It had to be turned over!

Well to be exact it had to be taken to pieces and reassembled but I had no data for this. The solution lay in a piece of string and a spirit level. Luckily I had a piece of string that had been tested for straightness and this was stretched taut from one end of the workshop to the other a few inches above the cabin bulkhead. I then put temporary extensions to stem,



Freya 1647 (Photo by Martin Bailey)

transom bulkheads and frames at two points either side of the centre line. Horizontal timber were screwed across these, their tops lining up with the string. The sketch may help in understanding this. The distance between each frame extension was recorded. The whole thing was then taken to pieces and frames bulkheads etc. now on their extension legs, were sat up vertically, hog keel stem assembly, put in



place and all the other pieces added. It was all done on Saturday by myself and my son Sam who at the time would have been 16. If you do a trick like this I recommend doing it all in one go without any interruption. Is this why Freya measures 16'3" ? ask my wife. "Certainly not darling, I just used generous scantlings!"

All the bits that rested on the floor were substantially fastened down, I did not want that lot falling over.

### **Planking.**

This is the fun bit. Oh no its not , well not in a building 4 ft longer and 2 ft wider than your boat. In these circumstances the ply planking was butt strapped, after it was in place, you would need a very large working area to handle ready scarfed material. It is a sad fact that all the books recommended starting with the forward bottom planks. Whilst these are not big pieces (an advantage) they are the ones where locating screw holes so the screws don't appear inside the boat is most difficult. This is due to all the funny angles at the sharp end! Patience and a few spare pilot holes was my eventual solution. Of the various methods of fairing the plywood at the chines the Senior uses the most difficult. It requires great patience and many trials (and errors ) to get it right. Spilling and various other systems are all very well ,but my golden rule became

"Don't fasten up in the evening,even if you think you have a good tight fit, have another look in the morning and if its okay then go ahead. Despite this moan it must be said that a well made joint with the vulnerable end grain nice and snugly glued up takes some beating. You will have to use temporary screws to hold the inaccessible edges or planks, and clamps elsewhere when gluing and nailing. Always mark out all the places for pilot holes carefully, use a marking gauge and dividers to step off the spacings for speed and accuracy. A useful little tool for this sort of work where you do not have a fair edge can soon be made. (see drawing) It works very well.

I used copper nails and the resorcinol glue for all work except the top of the side planking for which I used grip fast nails. I now wish I had used them on other planks as well. There are numerous articles about turning nails. I confess I never acquired the skill to do this, mine are clenched ie. bent at right angles so they rest partly indented into the stringers. When planking up you need two people. One of whom should be deaf to withstand the hammering noise whilst they are inside the boat, but with good hearing so they can hear the shouting of "next but two forward" etc. Copper nails, even with pilot holes, can splinter stringers

as they go through. The system I adopted was for a dolly (a heavy piece of steel) to be placed over the inside end of the hole until the copper nail hits it. Then tap gently on the nail. The outside of the nails were sunk in sufficiently for a decent dollop of filler to be applied. The outside of the nail is supported while the inside is turned after being snipped off.

The butt straps were glued and nailed in the same way, they don't look very pretty and I would consider using nails and roves as an alternative, screws would be very short in 3/8 ply.

After the last plank went on a bottle of red wine was consumed by my wife, Liz, and I (her hearing is improving all the time by the way), approximately nine months after work began.

Faced with all those nail holes I decided to use epoxy based filler and whilst at it to coat the hull with epoxy and glass fibre and epoxy the chines. Although it is still early days I have already noticed the benefits when bumping into things. I tended to use evenings and some of the weekends rather than holidays for most of the work but there were a good number of jobs around the house by the time I'd finished Freya and my golf handicap had deteriorated by two shots.

**Martin Bailey**

**Freya 1647S**



E.O.A. Bulletin Spring 1986

Your correspondent David Keith, (Autumn 85 Bulletin) proposes fitting a gaff mainsail with the proportional 7:8:9 (head, luff, foot) and the head at right angles to clewthroat diagonal. These proportions have indeed been traditional since the days of straight stemmed cutters, oyster smacks and other types. They produce a broad mainsail which has great drive with wind abeam; on the quarter and aft; furthermore a yard topsail could be set if desired. But this shape of mainsail is

### Thoughts on Gaff Rig

not at its best when close-hauled, while especially in shallow draft yachts it tends to produce excessive weather helm, to cause the boat to gripe.

While I don't wish to decry this long favoured shape of mainsail, over the years I have come to prefer a sail more akin to the traditional Dutch sail as used on boeiers, bidders and lem-meraaks, with a short gaff

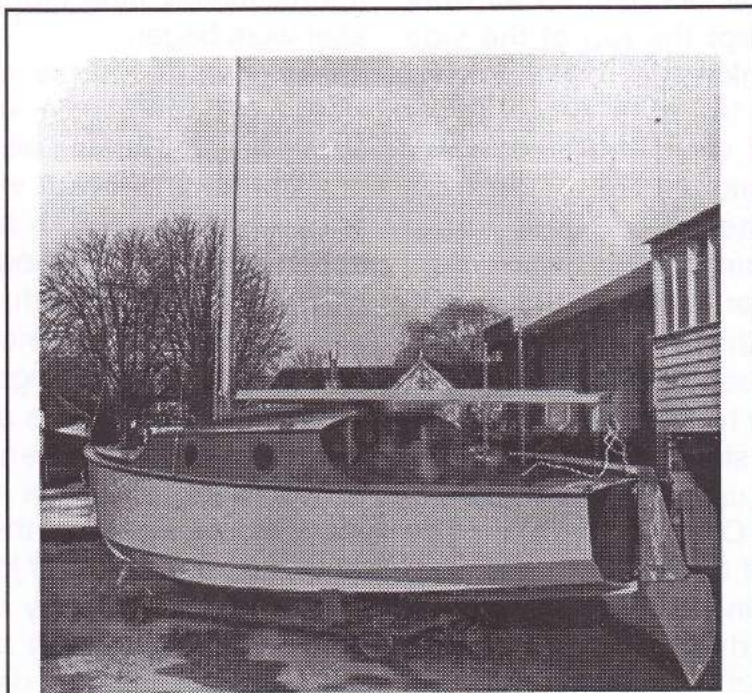
and a luff longer than the foot. This makes a much handier sail with light spars (especially when gybing) and with less tendency to heavy weather helm.

Diagrams A and B show a comparison of the two types, namely proportions 7:8:9/90 and 5:9:7/110, to the same scale and both having the same sail area: In either case the sailmaker should cut the sail so that the boom makes a 6 degree angle to the horizontal when the sail is properly set.

If with this rig slab or traditional points reefing is used, and not roller, twin topping lifts can be taken to the crosstrees each side of the mast from a position on the boom which is forward of the gaff when stowed. With or without lazyjacks the twin lifts keep the sail under control, and both setting and lowering is made much easier.

I offer the above hints in case any members may contemplate rigging their Association designs with a Gaff mainsail, and may be wondering what shape would be best for their boat.

**Maurice Griffiths**



*Sail No. 110 'Careful'  
Standing in Kenneth Gibbs yard*



**Article by M E White**

*E.O.A. Bulletin Spring 1969 page 32*

I built my boat 'Tanti' in a rented garage, and she was built the right way up and very much as plan. The keel was set up in Easter 1965, but with the distractions of summer little else was done until November. It was during a summer thunderstorm that the garage was flooded and much of the timber stored therein was sadly soaked. Some of the marine ply stored on edge became soaked and this shows now, in that the butt joints at the sides are not perfectly flush.

Paying rent for a garage and doing nothing is rather futile, so I got down to it properly in November with the intention of launching by Easter of 1966. Easter came, went, followed by Christmas and still not finished. The new year came in, followed by the owner of the garage wanting to know when I proposed to move out. I told him February, but managed to hang on until the end of March. These last 3 months seemed like a jail sentence to me, I don't think that I would build another boat, it uses up good sailing time.

**Building in a Rented Garage**

She was built more or less regardless of cost, the hull covered in fibreglass right up to the gunwales, the deck and cabin top covered with Dunlop 'Trakmark'. The transom having a pleasant grain, was varnished. Due to the flooding, the two boards forming it are little warped but this does not show in the finished boat. Extra stiffening in the form of 2" x 3/4" oak strips were screwed and glued around the edge of the transom and along the joint. The ply finished 1/2" from the end and a 1/2" x 3/8" mahogany strip prevented the end grain showing.

Most of the work was done single handed with some help from interested local residents and a few friends. As a result of much single handed work, most of the ply is screwed to the stringers and frames. Fibreglassing the hull is, in my opinion, not very successful, due to my own inexperience and not due to any fault of the materials. The glass matting and resin were sup-

plied by Solent Marine Plastics of Solihull Warwickshire, and were an excellent and most comprehensive outfit. I laid the matting longitudinally and with the hull upright it was difficult to work underneath. Getting the garage warm and dry enough to work in with a minimum temperature of 58 degrees F. was not, easy during February. The bilge keels are of English oak and the hull is stiffened with a 3" x 3/8" marine ply planking in the way of the keels.

The cockpit seats are not as plan. I did not care much for the plywood lockers, and a flat seat is not very comfortable in a choppy sea, so I fitted a fixed ply top sloping to the centre of the boat to shed water quickly and then screwed wood slats mounted on shaped bearers (as sketch) to give a more comfortable seat. The space beneath the seats is open and used for storage.

The stem, floors and transom are of English Oak and came from a 1" solid oak mortuary shell which I bought some years ago for 5 Shillings! (I am by way of



being the local Funeral Director). The frame, deck beams and some other odd parts were cut from a fireplace surround and overmantel. The cupboards, and the seat supports are from solid pitch pine church pews which I bought when a local Methodist Church was demolished.

The main (cabin) bulkhead is framed with Honduras mahogany which was originally from an old four poster bed, and that was cut down to make a fireplace surround and overmantel. This was presented to me gratis when I admired it, as the owners were having a tile fireplace fitted. This piece of timber is, I fancy, really antique.

The cabin interior is spartan and consists of a piece of 1/2" marine ply laid over the floors. The distance from the 1st frame to the end of the ply is 6'2", the remaining length each side of the cabin is used for lockers. A small area just under the hatch is the "living space". Portside cupboard area for books, radio, etc., and locker beneath for cooking utensils. Starboard side cupboard for food and other essential stores with 2 burner Primus gas cooker. The portlights are rectangular (almost), these I made up from odd strips of brass, with framing inside to make a rebate to take 32oz. glass. I am not very pleased with

the aesthetic appearance but it is watertight and strong.

The mast and spars (Gunter rig) are of Sitka spruce which I bought from the sawmill, prepared, grooved and rounded myself. Having a long bench made gluing the spars easy, with 3" x 2" blocks nailed to it and a dozen pairs of folding wedges made from wastewood, cramping was no problem. A very good finish was obtained on the spars and mast with six coats of varnish, each one rubbed down with wet or dry paper to produce a surface like a glass bottle. The sails of Terylene by Tratman and Lowther of Bristol. The Gunter yard heel fitting was a problem so I fitted a stainless steel Gibb dinghy gooseneck fitting into the end of the yard, rivetting it through a brass collar. There is not much clearance for the heel of the yard when it is hoisted and the brass collar rubs a little against the mast track. Short of fitting gaff jaws and a lacing I can't see another solution.

Standing rigging is of 'Seaprufe' plastic covered wire with S.S. bottle screws and 'Talurit' splicing. The boom is fitted with the Barton Roller Reefing Gear and there is a stemhead fitting in bronze With a roller fairlead and bronze fairleads at bow and stern. All

blocks are by 'Gibb' in Tufnol with S.S. eyes and plates. Running rigging, warps, are in synthetic fibre. The anchor is a 15lb plough type by South Western Marine Factors and with 3 fathoms of "short link chain", it holds largely by virtue of its weight. 6 fathoms of Nylon warp added provide enough scope for the kind of cruising I do.

The rudder blade is of 1/4" high purity aluminium and the rudder cheeks are of 3/4" mahogany, culled from an old flap table this time, and the tiller arm is of Jarrah cut from a 7" x 4" cage guide from a local colliery. A Seagull outboard motor is fixed to port. A 1 1/2" x 1 1/4" rubbing strake of pitch pine with Dunlop D section rubber all round makes a very stout fender. The hull is painted a royal blue with a 3" white strip along the gunwale. The bright work is of 'Spinnaker' varnish which is very good indeed. Inside the cabin is painted white up to the gunwales and pale primrose above. The bilge is protected with 'Danboline' paint.

Someone once described this type of boat as a micro cruiser, and no doubt she is too small for extensive cruising but I am well content with my little cruiser..

M. E. White.



## Article by Paul Baker

E.O.A. Bulletin Autumn 1984

I am completely rebuilding "Cherokee", my 24ft. Eventide, number 442. The reason for such drastic action is the fact that the scourge of all wooden boats, rainwater, has had its play causing considerable rot and delamination. I have been working on the boat for about 18 months now (Eds. note: this was written in March) and all that time I have been wondering just why owners allow their boats, a capital asset if nothing else, to deteriorate so.

A number of reasons for rot are very often built into a boat in the first instance - especially when built by amateurs such as ourselves, some of whom undertake the venture with very little practical sailing experience. My boat was a veritable trap for rainwater everywhere: the floors with too small limber holes, the bilge stringers with no limber holes at all, and chine strakes not faired off inside to allow a fall for water, both condensation and rain which finds its way in.

When you are cruising, the family love to swim from the beach or take runs ashore, quite naturally.

### Avoid The Rot

Every time they go ashore they pick up sand, mud or stones on their shoes and socks, and 'Sods Law, decrees that it all finishes up (or down!) in the bilges, clogging up the tiny limber holes and trapping rainwater - allowing it to start its work by soaking wood in out-of-the-way places, causing rot in a very short time.

Another fault that I discovered was dry rot running through the middle veneers of the ply on the topsides. This was caused by rainwater seeping down the butt joints and into the end grain. In the case of my boat, it had spread about four feet into the sheet, making it necessary to remove completely and renew. There was no sign of this in the hull when I bought her, the ply had a lovely 'ring' when tapped lightly with a hammer. The only tell-tale was about one square inch of flaking paint.

The joint which I have always employed for joining sheets of ply is shown in the diagram (at the end of the article). This enables you to

get a good scarf with the backing of a pad. It has never let me down.

Decks were the other area where there was serious deterioration. The scuppers were much too small and suffered from The-Boat-is-Always-Afloat-and-Level Syndrome. Well, this is not so! Most boats on swinging moorings dry out and God made the beds of rivers and harbours to include all sorts of shelving banks, so that when your boat dries out, normal draining provisions are useless, causing puddles to lie in corners such as cockpit seats and between deck and coamings. A good fall on the decks, and scuppers "larger than you first thought of" do help. All cockpit seats should have a good fall to a self-draining cockpit. If the sole of your cockpit has lifting boards, then make sure all rainwater can collect in the bilge, where it can be pumped out. And do it regularly! **A cockpit cover is a wonderful investment.** If it fits properly and is supported so that rainwater does not form a puddle. It will not only keep out the rain but protect the brightwork as



**We built a SENIOR**

well.

So, if you want to prevent rot, DON'T let rain-water or condensation collect anywhere - make sure it either goes over the side or into the bilge where it can be pumped dry. And remember to keep the bilge clear of all rubbish!

**Paul Baker**



## Article by Larry Coghill

E.O.A. Bulletin Spring 1974

We would not have tackled this project if it were not for Mr. Michael Verney's article, taken from the May 1963 edition of 'Yachting Monthly', titled, 'For the Amateur Boatbuilder No 3.' - 'Casting Ballast Keels'. This gave us the advice on how to go about such a task. (This article is reprinted in Michael's book, 'Boat Repairs and Conversions. J.W.).

Our caldron was a length of scrap 3/8th steel irrigation pipe, 24" x 15" deep. We welded a sloping bottom to it and attached a 2" barrel nipple for an outlet. The caldron was built into a furnace, the bricks being laid with a mixture of pit sand and soil taken from a white ants nest!! for mortar. On top of the furnace wall, about 3" above the caldron we placed a 3/8th steel plate with an opening for a 12 foot chimney, and another for feeding ingots of lead into the caldron. A lid was placed over this hole when the caldron was full.

Our furnace proved most efficient, taking only 3/4 hour to complete the task. For fuel we used logs of local timber, 'Mopane' (Colospospermum) and

### Casting a Lead Keel

coal.

For the building moulds we were able to purchase a quantity of timber, 10ft x 5 ft", planed to a fraction under 3/4" for a song, the left over timber was used to make the keel pattern. Ten planks were screwed together in sandwich fashion. The final measurements were 9'7" long, as per the plan but only 5 ft" wide at the top and 5" at the bottom, allowing for the one in twenty slope as in Mr. Verney's article. It was 7" deep.

Along the top were attached six by 1 1/16th" diameter core prints where the bolt boles will be, as per plan. Six by 2" core prints along the bottom of the pattern to accommodate the heads of the bolts. The fastenings will be drawn 'brass'. (Note. this should be bronze. J.W.) We spent hours sanding down the pattern to a glass like finish, finally completing the job with several coats of shellac. Smooth!

We dug a hole in the ground for the mould box. The 'stabilised sand', Mr. Verney's

article, is a mix of fine quality pit sand and Portland cement at 15 : 1, using very little water to obtain a 'dry mix'. The mixture was rammed in all round the pattern.

Now the moment of truth. Would the pattern come away without damage to the mould? My willing helpers, see photos, all gave a concerted jerk and away came the mould slick as a whistle. Eureka! We had been working in nearly 100 degrees F. all day, the iced beers that were served rounded the day off with sighs of much satisfaction. We will use the pattern later to position the bolt holes along the keel, as well as to guide the auger bit whilst drilling the holes.

The mould was allowed to dry out thoroughly and then painted with a mixture of shellac and graphite powder. The steel cores were also painted with this mixture and then positioned along the bottom of the mould in the holes left by the 2" diameter core prints. Over the mould a 3/8" steel plate was placed, holes having been drilled to correspond with the spaced steel cores which now stood proud of the plate. In an



open type mould this steel plate is needed to flatten the lead meniscus, otherwise, without it a convex meniscus would have resulted, requiring many hours of filing to obtain a flat surface.

Before pouring the lead, red hot coals were placed on top of the steel plate to warm up the mould, steel cores and to dissipate any moisture around the mould. After pouring the lead we allowed a week for it to cool down before digging it out. The result was near perfect. Unfortunately the steel plate on top of the mould buckled in a couple of places due to the heat, allowing the lead to spill. However, a spot of filing soon trimmed off the unsightly areas. On giving the steel cores a sharp whack with a 14lb hammer, they popped out like champagne corks, the graphite powder being the magic ingredient. The finished lead ballast weighed 1,454lb. (The latest plan weight is 1,660lb. J.W. 1996.)

We have finished the hog, gluing together three runs of 3/4" Iroko. It was a time consuming job as they were 10 foot lengths. The making of the scarf joints took a long time (for me anyway), to fit perfectly. I think more progress on the boat can be made now that the hog has been completed.

Mr. J.H.Goss has given me food for thought after reading his article in Y. M. the July 1973 edition. In stalling

a 'Fairey Hydraulic Drive' immediately abaft the keel, this allows the area of metal skeg to be increased. (In the latest version of the plans the keel and deadwood is continued aft to the rudder. J.W.) This improved the performance of his vessel without unduly increasing the weight of the craft.

'Chala' is at the stage of construction where a decision must be made as to any keel modifications. As I do not wish to increase the weight to any great extent, but I never the less would like to carry out any modifications to improve the performance.

**Larry Coghill.**



Article by John Williams

E.O.A. Bulletin Spring 1978

Looking through the last six months mailbag we have noticed that we have had quite a few letters from people who tell us what they have fitted, or are going to fit, in the way of keel fastenings. However, we have not had one letter about a keel-bolt that had been withdrawn. Could it be that owners do not draw bolts anymore? We have had alarming tales told to us of owners fitting stainless steel bolts underwater, and of how, for some 'unknown' reason they have wasted away in a season. 'Couldn't understand why, best quality marine grade 316 Stainless', one chap said. Now I do not claim to be an 'expert' in these matters, but I believe I am reasonably well informed and I possess a few decent reference books and no way, under any circumstances, should any type of stainless steel be used as a fastener underwater.

(As an update to this, an owner has sent me a sample of his 'Stainless Steel' keel bolts. If anyone would like to see what I'm on about, come and have a look at the amazing sight of

### Keel Bolts

what looks like a severe attack by a metal eating worm, and a fat one at that!!! The owner has now fitted 'proper' mild steel bolts...)

The corrosion of stainless steel is caused when Oxygen is excluded from the surface of the metal. The ideal way to do this is to enclose the steel in wet timber, the deadwood or keel. To make the point, I removed keelbolts from 'Bluenose' this winter, she has a 560lb cast iron keel and is fastened with 5/8" mild steel bolts.

After removing the wooden block in the under side of the keel, scraping off the thick layer of waterproof grease, I exposed the first bolt, all bright and clean. When drifted through the rest looked just as good. Not bad for a boat that had been afloat, summer and winter, except 1976, for fifteen years! So builders beware. If you are using cast iron or steel and concrete, or whatever, don't

believe me, or what'sname, look around in the boating press, buy or borrow good books on the subject. That magic stainless is fine for above deck work, but below, then beware builder, beware.

John Williams



E.O.A. Bulletin Autumn 1978

In common with a hundred other things, keel Bolts have been very much on my mind of late. At about the time of the South Coast meet I was torn between mild steel and blacksmith forged bolts and I had read your article in the Spring Bulletin. When the South Coast meet arrived I could have gone out and taken part in the 'Quiz' but decided to go with Fred Green in 'Ebeniste' who that day was doing Stake Boat duty. We got talking about Keel Bolts and I can tell you that Eventide owners do draw their Bolts. Fred had just done it in order to drop his keel 8 inches.

He told me that not only had he withdrawn his bolts but also that they were stainless and in perfect condition after seven years use. A fortnight later I visited Fred at his house in Croydon and can substantiate that his set of stainless bolts, removed from 'Ebeniste' are still as bright as they must have been when first fitted seven years ago. Fred had made himself two more sets of stainless bolts of differing lengths, one set is now fitted in 'Ebeniste' and the other new set (slightly longer than

### Keel Bolts

those removed) I now possess and intend to fit in 'Forward' So, if anyone wants to see a mint condition of of stainless keel bolts after seven years use then Fred has got them. By the way, if anyone is looking for a set I'm sure Fred would be prepared to help. One additional precaution has been taken in both 'Ebeniste' and 'Forward' the complete keel is now fibreglass protected

**W.G. Ward**

If you have ever seen a set of stainless bolts that have self destructed I am sure you would not be so keen. I too heard from Fred, he is the only owner, to my knowledge. who has removed his keel bolts recently. I believe the reason he has not suffered any corrosion is that, by his own admission he made pretty sure that they would not get wet at all. From my own experiences trying to water

proof vastly different materials under water, I would never trust it. Still it's your piece of mind, if you are in any doubt I suggest you telephone one of the top boating magazines for their view

John Williams .



## Article by John Williams

E.O.A. Bulletin Spring 1980

When we purchased 'Bluenose' she came complete with a bowsprit, a wooden pole, 3 ft. 3 ins. overhang, and brought inboard to the samson post. We used Bluenose for five years, the only mod. to her bowsprit being a brass hook screwed to the port side just out from the bow, so that we could get the anchor ( C.Q.R.. type ) off the deck.

During the last two years, whilst refitting and refurbishing, I decided to replace the pole with a plank. This now enables us to stand on it for sail changing, or anchor work, or even going ashore in marinas. I also extended the sprit 3 ins. out to make it 3 ft. 6 ins. overhang, just to keep the two forestays parallel ( only for looks). I had toyed with anchor storage ideas and eventually it dawned on me that not only could it be stowed there but worked from there as well. The result is a pair of rollers, port and starboard, about 1 ft. out from the bow in which the anchor, a 30 lb. plough is stowed and retained by a drop nose pin. Another set of rollers is on the stem head itself, together with the attachment for the forestay.

### Bowsprits

A chain pawl is fitted to the port roller for anchor work. The starboard is left clear for our mooring chain.

The advantages of the outboard rollers are numerous. It allows the anchor to be self stowing. The roller, a trailer roller made of rubber, being wide enough for the shank and pivot of the plough and no mess brought on deck. The rollers being a foot outboard mean that the chain does not grate along the hull scraping off the paint. Neither does the mooring chain. In really strong wind over tide conditions a rolling hitch can be put on the chain and the other end secured to the bowsprit end. This keeps the chain totally clear of the topsides. We normally leave her like this on her mooring and have not lost any paint since adopting this idea ( See Cruising Under Sail ).

The inboard pair of rollers are nylon, the outboard rubber. This was done mainly for noise reduction. As we have lost some of our

samson post by butting the heel of the sprit against it I have fitted a cleat on top of the sprit a little forward of the samson post.

All my bowsprit fittings are welded flat bar and galvanised. I have secured everything with stainless nuts & bolts. I have found that the galvanised nuts and bolts I previously had used were not a success, the galvanising wore off too quickly and they were difficult to undo as well as weakened by rust on the threads. The stainless and galvanised seem to be alright together above the waterline.

The top of the sprit is painted with non-slip deck paint and the rest with Teak Oil. We have had enough of varnishing.

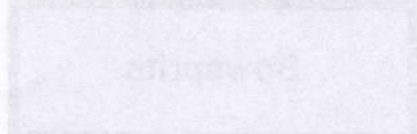
The reason for the sprit is the usual weather helm. The bowsprit is a complete success on Bluenose, indeed she looks bare without it. She carries a nicely balanced helm up to about F.3. and a slight weather helm from there up. We have fitted Wykham Martin gear to our Staysail ( inner jib ) and to reduce sail we furl this first, from the cockpit, leaving the the jib set on the sprit, like that the helm



remains almost balanced. When we can afford it roller reefing gear on the jib and a large genny will make the sprit even more useful, and not needing any bowsprit shrouds we should find mooring easier too.

John Williams.

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Article by John Williams

E.O.A. Bulletin Spring 1994

'FIDDLERS GREEN', our Eventide 26, (actually 27'3" if we are forced to admit it!), has just been fitted with a new 17 b.h.p. 'Beta Marine diesel. This has raised a few eyebrows and queries about the extra weight; size etc. Before I quash those queries, maybe I best give some of the background to my decision.

Those of you with long memories may remember back over 20 years to when I was sailing an Eventide 24, 'BLUENOSE'. I replaced her ancient inboard with a lovingly rebuilt Stuart Turner, that was older than me! At 8 b.h.p. it was a perfect job. Others with the same engine could not touch us for speed. Why? Propeller sizing.... Using a much thumbed set of computer tables, I ordered a prop, slightly less in pitch than the manufacturers recommended. Result, engine revs spot on.. Speed 5knots (just over), which is what I'd expect from a 24. Lesser horse powers may also give similar results in calm conditions, if the prop sizing is correct.

In theory b.h.p. needed can

**Engine Size**

equal the length of the waterline in metres and give the same numerical speed in knots. ie. 5 b.h.p. in a boat with 5 metres waterline will give a speed of 5 knots. Which as a rule of thumb for our size of boat is not far out. However; as soon as a breeze on the nose is encountered you may have to double the power to get any where. This is because of the wind resistance, Over about 40 m.p.h. vehicles use more power overcoming wind or air resistance, than anything else.)

If you want to work out the maximum speed of your boat there is a way. . . . The Square Root of the Waterline length, in feet, multiplied by 1.3, gives the Speed, in Knots. It works. Any more on your log than that and it's time to check the log, or you are surfing down big ones and a reef may be prudent!!

Back to 'Fiddlers', when launched, she was fitted with a new and unused Stuart Turner 10 b.h.p. ( it

had been in store for years) . With a suitably matched propellor speed was logged at 5.8 knots, in still water. Not bad.

However whilst in the Netherlands in 1992 we had to motor against a head wind on one of the tideless inland seas. Our speed was dropped to just 2 Knots. That was just wind, not sea. It was obvious that more horse power was needed. Over lunch with Maurice, on several occasions recently, the subject of engine power has come up. Maurice commended the new lightweight Japanese diesels, indeed we were both driving excellent Japanese cars. Maurice is inclined to say that, if he were sailing today he would fit a powerful modern lightweight diesel, and for the Eventide 26, 15 to 18 b.h.p. would not be out of place. With today's crowded moorings it may well be difficult, if not foolhardy, to sail back in the old style, also with the pressures on us now, to be there yesterday, we do need that extra speed sometimes. So the 17 b.h.p. engine for 'Fiddlers is not so far out. But what of the weight and



size???? Well at 98 kilos, it is 15 kilos LIGHTER than the old Stuart. It is also smaller, considerably so, 4" in length and 2" in width. Height about the same. As yet, January 94, I have only run the engine ashore for about half an hour, running from a bucket of water, fed by hose. This has enabled all joints and seals to be checked and the powerful purr to be appreciated! Three tiny pistons gives a smooth sounding exhaust.

I was also able to check out the ADVERC battery management system, it really does produce 55 amps, for at least 20 minutes. (I had not charged the NiCad batteries since last May). During this time however I could not throttle back fully or the engine would have stalled, so great was the power demand of the alternator. As the demand slackened however I was able to get the, now nicely warmed up, engine to tick over beautifully. I was amazed at the quantity of water passing out of the exhaust, I can now see why I was assured that any mud from my creek would be fast ejected by the water pump. All the careful work seems to have paid off No leaks or loose bits, I'm looking forward to launch day, and about 6.5 to 6.75 knots, which is the top speed I achieve under sail. Those who have sailed in company with us will vouch that she is

no sluggard!! Because of the drag factor of the bilge keels, speed under power is normally slightly less than under sail, also if you reach that, so called, 'hull speed' and continue to pour on the power, the stern will squat, causing more drag, and wash!! but little extra speed.

As a result of all my delving into powers, may I recommend the following: E.24, between 6 and 12 b.h.p. E.26 between 8 and 18 b.h.p. Don't forget to allow for the manufacturers power losses in pumps, gearboxes and alternators. Our 17 b.h.p. reduces to approx 14 at the prop. That is the starting point for our computer tables, we shall see if it works out later. Incidentally the engine manufacturer must use the same program, as independently, we have arrived at the same prop!) I'd encourage builders to think seriously and put an appropriately sized engine in, in the first instance, rather than year or two later. . . . . ( like me) .  
John Williams 1387E  
'Fiddlers Green'

As a post script to this article we have now had two seasons with the engine, we are overjoyed. Top speed is about 6knots, as expected, but we can still keep up speed when motoring against stiff head winds. Fuel economy is a litre an hour, not a gallon, as with

the Stuart. People who watch us motor in and out of our marina ask if we are solar powered, so quiet is the engine.

**John Williams.**



Article by Ray McNaughton

E.O.A. Bulletin Spring 1995

I had decided that the dodgers on my Golden Hind had seen better days, they had been white canvas once but were now decidedly grey and the stitching was becoming a little 'iffy' in places, so the purchase of new ones appeared to be on the horizon, by the way the first tip I can give is that dodgers shrink if put in the washing machine, which is another reason for considering new ones. I hasten to add that I had considered the shrinkage possibility before committing them to the washing machine, but as all other ideas on cleaning them had failed I figured I had nothing to lose.

At the 95 boatshow in London I was given a variety of estimates for new dodgers, the cheapest was £70-00 + VAT, and this I thought could become a little flexible when I mentioned that 'did he realise the bottom of the dodger was not a straight line as it needed to follow the curve of the deck as on the Eventide'.

Just for curiosity I thought I would find out the price of 'canvas' that would be suitable for making them myself, after all if I could build an Eventide making

## Dodgers

dodgers would be a doddle !!!! (For the pedants, by the way, the word 'canvas' has almost become a generic term covering all acrylics etc). I decided against going to the sail making company's for a price for two reasons, one, most think us 'Yachties' are all millionaires and charge appropriately and secondly I felt they would much rather sell me the finished product than a DIY kit and their price would reflect this.

By a circuitous route I found a company that sold a 'canvas' called Lyntex which is a 12 oz material but not 'cardboardy' as some acrylics can be, but relatively soft. 9 oz would have been perfectly satisfactory for dodgers and cheaper but the company did not do this weight.

Prices -:

A roll or Bolt, as is the correct name, is 91cm wide and 100M long and costs £2-43/Metre exc VAT. If you buy it cut to length you pay an extra 40p/Metre, but if you have the good fortune to buy an end of roll,

as I did, you make quite a saving. I should add that the company sold 'canvas' for considerably less than this price but in my opinion not of the quality of 'Lyntex'.

The dodgers on my Golden Hind are 72" long X 30" wide approx, so allowing for folding over the edge, the wife says this is called a hem !!, 2 Metres for each was more than adequate.

The price excluding eyelets was £6-00 approximately per dodger, add 25 eyelets and a couple of reels of button thread and it works out to under £10 per dodger (Feb 1995). I was becoming quite excited not realising I had any scottish blood left in me.

Now for the making, being careful to protect my macho image when describing the using of the sewing machine.

An ordinary domestic sewing machine will sew up to 5 or 6 layers of 'Lyntex' providing the correct needle and thread are used. I used Button thread with a number 18 needle and it was perfect.

Problems experienced and tips to follow.

Getting the correct tension



for the bobbin and needle threads was not easy, but by trial and error on some scrap canvas this was soon found.

Have as long a stitch as the machine will allow.

Following a straight line down the hems took a little practice, my first attempt looked like the route I follow from the local hostelry to my home. But practice makes perfect.

In doing the corners DO NOT MAKE THEM TO THICK, although the sewing machine will cope you may find the eyelets will not be able to go through excessively thick material.

In cutting the material to

needed, but I have been so pleased with the results I am now going on to make a new Mainsail cover and a shower cover over the cockpit. The remainder I will consider selling to anyone who also wishes to take the plunge.

The letters I bought for my dodgers are 12" high and are stuck on, but my supplier strongly recommended sewing them on as well, which I have done. The current price is £1-00 per letter, making me pleased I do not have a long name for my boat. (KWAHERI)

Finally you may need a pair of ear defenders if the other half is present when using HER machine.

In case you have difficulty in finding suppliers I can honestly recommend the following, by the way I have not received any back-handers for so doing, unfortunately.

Lyntex 12oz. (Mid blue and Light Green only) + all

ets as replacements.

Letters. 12" and 9" £1-00 and 90p each respectively.

Valiant Marine, Stock Chase, Heybridge, Maldon, Essex, CM9 7AA.

Books

There are a number of books available on canvas work, I did buy one, but they all seemed to gloss over the tricky bits, making me wonder if some of the authors had actually ever done what they were writing about. I realise I also have glossed over a number of points, so if you get nervous drop me line and if I can help I will. That is, unless you are a millionaire and want to help the poor sailmakers.

**Ray McNaughton,**



form the corners use a paper template to ensure no expensive mistakes are made in the cutting.

Use a steam iron to form the seams and crease the edges of the dodgers.

Cut and stitch the edges as per my diagram to keep thickness of cloth to a minimum.

I actually bought 70M of Lyntex, much more than I

other types of 'canvas' Andrew Mitchell & Co Ltd., Hainault Rd, Little Heath, Romford, Essex, RM6 5ST. They tell me they are the largest supplier in the country and will also make to measure marquees to dodgers to lorry sheets.

Eyelets. As the company above but only in boxes of 500. Try your local chandlers, some sell small pack-



Article by John Williams

E.O.A. Bulletin Winter 1991

Since first designed the Eventide has suffered from excessive WEATHERHELM, ie the need to pull the helm hard up towards the weather side of the boat when sailing anything other than downwind. I must point out that some weather helm is needed, so if things do go wrong and you let go, the boat will naturally round up into the wind and stop. If at present this force is so strong that you have to lash the tiller up to hold a course, the weather helm is too strong. Or if one of the opposite effects takes hold, ie the boat continues in a straight line or bears away to sail down wind, then things are sadly out of control.

What are we looking for, when sailing close to the wind in a force four, under our working sail, ie main and Genoa, is there should be a reasonable amount of weather helm, a child of about ten years of age should be able to steer the boat without a struggle, an adult just resting his hand on the helm with a slight pull up wind. Letting go of the helm should result in an immediate slow turn to

### Weatherhelm

windward, until she stops head to wind with the sails flapping or tacks and stops hove to, still in the water. Yours doesn't? Two hands on the tiller, foot braced to the lee side? Wont sail with the helm tied slightly to windward?.....

#### LETS SEE WHY.

Weather helm is caused by the sail areas centre of effort being to far behind the hulls centre of lateral resistance. Finding the centre of the sail areas can be done, in theory, by finding the centre of both sails, and drawing a line between them and calculate how far along that line the centre should be in comparison to the size of the sails. Sounds more difficult than it is.

Calculating the approximate centre of lateral resistance of the hull is determined by cutting out a drawing of the underwater section of the hull from a piece of card and balancing the result on a knife edge, by moving the shape 45 degrees either way as well as 90 degrees

to the water-line you can find the actual centre of lateral resistance. There is however a large area of error due to the fact that we have been working in two dimensions, ie we have not allowed for curves in sails or the fact that the boat will also be pitching, rolling and yawing, so any result you obtain must be treated as approximate only.

This was only part of the problem that faced the designer therefore most designers worked on the side of safety and most boats ended up with far more weather helm than is absolutely necessary.

#### THE SIMPLE ANSWERS

(1) Check the mast rake. With the boat at rest on its mooring, in normal trim the mast could have as much as 18" rake on the E24. Try shortening the forestay and lengthen the back stay and shrouds as necessary. This should take out most, if not all the rake, the main hal-yard hanging loose from the masthead on a calm day, will show how such rake there is in your mast. This has the effect of moving the centre of effort of the sail



forward. (Make sure the boom still clears the back stays.)

2) Try reefing the main-sail.

3) Try using a larger foresail. All the above involve simple, non structural alterations. Still no luck? Better but not perfect?

Modifications on deck. Fit a bowsprit. I know you don't want one, the marina will charge more and you don't want holes in the deck etc. Well try lashing a spinnaker pole or similar, along the side deck forward, so the end of the pole is about 3 or 4 feet in front of the bow, set a sail flying on it, feel the difference.

We have suddenly shifted the centre of effort about a foot further forward, so scratch your head, find a suitable plank and fit it between samson post and stemhead fitting with a 3 to 4 foot over hang. You will have to fit a bobstay chain or rod from the end, down to the bow, so a hole or two will have to be made through the stem, but this is a good way to combat weatherhelm. Don't want a bowsprit?

Then there are alternatives. Reduce the main sail by cutting 1 or 2 feet off of the foot. (a job for the sail maker). This has the same effect as reefing the sail, but by doing it this way we keep a better shaped sail and this

maintains our sailing efficiency. While on the subject of mainsails, make sure yours has not gone baggy, it should have a shape similar to an aircraft wing .

If due to old age or cut yours is fuller further aft, your boat will heel more than others.

Heeling is another reason for excessive weatherhelm. As the boats under water shape changes by heeling, the boat tries to turn on its own. So flatter cut sails will also help.

This is about all we can do without hauling out, but there is one last trick, check the weight of your ballast keel, is it the recommended weight for the boat?? An up to date Eventide 24 should have 1020lbs+. The Eventide 26' 1660lbs+, Waterwitch 3300lbs+. You don't know the weight of your keel?

Well the Eventide 24/26 should sail at around 15 degrees of heel and carry full main and genoa in a force four wind. Look over the side you should see about 6" of hull still clear of the water, if not try adding weight along the centre line of the boat, lead blocks painted iron pigs or gravel or sand in strong polly bags. Then take her for another spin, I think you will be pleasantly surprised, if this works, fix it all in posi-

tion until refit time.

Well we have tried all the above and we have had some success. We now have to decide, do we live with it as it is or do we continue, if we decide to go further we must take the boat out of the water and be prepared to do some work. If you have an early boat, pre 1973, with lighter ballast and you added ballast on the inside, and it worked, now is the time to look at the question of weight and add that weight to the ballast keel. This puts the weight in the best position, on the bottom and also deepens the keel by about 3", which will also give the boat a better bite in the water.

A 3 to 4 inch deep, steel box filled with steel and cast iron and bonded with cement will weigh somewhere around 300-400 lb. A cast lead section to bolt on to your existing lead keel of the same dimensions will weigh about 500-600 lb. Do not mix your metals, steel with steel and lead with lead). Note, it is not advisable to use stainless steel for any underwater fittings or fixings, as stainless only keeps its good qualities, when in contact with air.

Now the trick is to fit the box that you have made between the hull of the boat and your existing ballast



keel, don't be put off, it is not as difficult as one might think. This method has been used on 'Bluenose', my old Eventide 24 and 'Fiddler's Green' my new Eventide 26. On both occasions the hull was suspended above the ballast keel by jacking up the boat from underneath it's bilge plates and using supports fore and aft. Note, use strong blocks, not bricks and use battens to hold these blocks in place, ie nailed across.

### **EXTENDED KEELS**

Weather helm is not only helped by the addition of the weight and the additional draft, ie the 3 or 4 inches we have talked about in the previous paragraphs, but great improvements have earlier been made by moving the sail area forward in relation to its keel, therefore we can leave the sails where they are and move our keels aft!! By this we do not mean that you unbolt every thing and bolt it back up 6" further aft but make the best use of wasted areas. There is a considerable space on some boats between the skeg and the ballast keel. If we fill this space in we will have made the keel longer and therefore its centre will have been moved further aft. Resulting in a very noticeable effect on the weatherhelm.

There are two ways that have been used to great

effect on many boats. The first, if your skeg is steel, then it is quite simple to make up a template in cardboard and have a piece of sheet steel cut to fit, about 3/8" thick. Remember that this will add weight only in one place and cause some imbalance in trim, which you will have to compensate for, by trimming the forward end of your vessel with a little internal ballast.

The second way of doing this, if your skeg is wooden, is to laminate a filler in 1 inch thick layers, epoxied (glued) and screwed up to the hull, faired off either end, the effect is the same but without the additional weight.

### **TRANSOM HUNG RUDDER**

You already have a bowsprit and a long keel?? One or two possibilities are left, one is to move the mast forward. This, I think, is over the top, the second is to use a transom hung rudder, which is part of the boats under water area, and if moved aft, has a similar effect on weatherhelm, making the long keel we talked about earlier, even longer, therefore enhancing the effect. The keel length for this purpose can be measured from its forward point back to the end of the rudder. As you will see we have yet again moved the centre of lateral resistance aft.

Fill the space in front of the rudder, extend the skeg, to support the base of the rudder, but watch out for the prop, as we do not want to have to buy a longer stern tube and shaft. This may mean that we have to have a space in front of the new rudder. This is alright, but under power in a sharp turn the prop thrust may miss the rudder, and you will have to resort to filling in that space, this was done on Bluenose, my E.24 by placing a plate cut from marine ply in the area. This was supposed to be temporary, but was still in place some ten years later. The effect was a marked increase in manoeuvrability, plus a further reduction in weatherhelm.

### **EXTEND THE AFT EDGES OF THE BILGE KEELS**

Not often tried, but it does work. This will normally involve the removal of the bilge keels and a trip to the local engineers, and then a trip to the galvanisers. The amount you add is optional, some have only made the aft edge vertical, others have raked the aft edges to match the forward edge, but beware if you drop back at any time onto an obstruction, you may hook onto it, or a line or chain. It is unlikely but the chance is there.

Make sure your bilge keels extend about 1 1/2" less



## *We built a SENIOR*

than your main keel, this will ensure that you sit on the main keel first and don't topple too far over when drying out on the hard either.

It is not suggested you should do all the things that have been mentioned at once, you may find that just adopting one idea will be sufficient for your particular boat, but I hope most of the options have been mentioned here.

Once you are sailing, sail trim is very important. A sail over sheeted will produce weatherhelm by causing the boat to heel too much, thus changing its underwater shape. Yachting Monthly produce a very good booklet by Bunty King, entitled, 'Sail Power' a few pounds well spent will bring you a mass of information, from mast rake, to the setting of spinnakers. The pleasure one can get from watching the antics of the crews aboard modern tupperware boats, as your 'old wooden tub', pass them by!!

**John Williams.**



## Article by John Worthington

*E.O.A. Bulletin Autumn 1985*

Well, things are looking good with my Y.M. Senior, infact she is nearly finished. I am going to miss sorting out all those problems, trials and errors. I have deviated slightly from the plans, in that I have raised the bunks to 9" and have now got ample stowage beneath, and sitting headroom with foot well with two-part floor, see sketch. The well that is exposed is used for a stainless steel bucket holder (exact fit) and the bucket top is just 1" lower than the bunk tops. A purpose made toilet seat (marine ply) then slots across the port & starboard bunks. I then have a comfortable, private, fully ventilated toilet compartment when the wash boards are in place and the hatch is open, much more sensible that some of the larger boats' heads I have squeezed into. The ceiling over the starboard locker serves as a chart storage shelf, it hinges on webbing hinges on the cabin sides and drops down on shock

### Nearly Finished

cord. The stern locker has a bolt-on waterproof door and no limber holes, and the tiller is shaped (laminated) so as to clear the main compass which is sighted in the centre of the cockpit coaming. I have also fitted a pushpit and canvas dodgers held on lifelines, with quick release shackles on an eye from the main bulkhead. It is truly amazing how much comfort and shelter these dodgers bring. I have done away with the samson post and installed a hefty deck cleat in place and, of course, this bolts through a 1" x 5" mahogany king plank. I have been on a 9-metre yacht of glass sandwich construction when the anchor has been under terrific strain (no samson post) but not a sign of the cleat tearing out, so I can use the space more fully.

Senior 1499 'Anuthee'

John Worthington



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The standard rig of a Gunter Senior specifies a single halyard hoist from a fixed point on the gaff appropriate for full sail and this seems to be the rule for many small Gunter-rigged cruisers. The trouble with this rig is that as soon as one takes in a roll or two of reefing, the gaff sags away from the mast and efficiency is impaired under conditions where the best most seamanlike hoist of sails is required, a tight not sloppy rig and the more one reefs, the greater the sag and the poorer the sailing qualities.

First I went to 2-halyard hoist and so provided myself with a gaff stop - or bar in my case, designed and executed by a friend. The bar eliminated even the shallow 'v' into which a wire stop stretches under pressure.

However, I do have a conventional wire stop as well reaching to the very end of the gaff in case I want to reef even further than the gaff bar allows (this has only occurred once) (Fig 1.).

But I still wanted to see if I could solve the problem of

**Gunter Rig with Single Halyard Hoist**

reefing with a single halyard hoist because it is so much simpler only to have one halyard for hoisting or lowering sail. So, having got a gaff bar/strop, I led "Pau Amma" 's halyard from the lower end of the gaff through the ring on the gaff bar and so through to the masthead sheave. As soon as I tried to reef, the gaff bar ring slid to the lower end of the bar and the gaff sagged away in the unapproved manner.(Fig 2).

How could I keep the gaff bar ring at the right place on the gaff bar then? Quite easily, really. I tied a length of cod line from the upper end of the bar and I can check the ring at whatever point I want. There is very little actual pull on it and I have never had to renew the cod line although it has been in use for a good ten years now. I have, in addition, marked the gaff for every half roll of reefing up to 4 rolls, which is the limit of the bar reefing capacity.(Fig 3).

The only drawback is of

course that I have to lower sail to reef in order to change the length of the restraining line and, since by definition it is going to be pretty rough if one has to reef or reef some more), it is not a very comfortable operation in a very small boat in a rough sea. However, I can report that I have accomplished it on 2 or 3 occasions.

In effect of course I rarely need to as I have kept my options open. For most of the season I keep "Pau Amma" on single halyard hoist, set the amount of sail for the conditions of the day and keep her like that. If I suspect deteriorating conditions I shift to twin halyard hoists. The gear is all there.

So it was that all my experiences suggested the only way to reef gunter rig with a single halyard hoist was by lowering sail - till I met John Dunne from Alresford at the 1978 East Coast Meet Bradwell. Now, on his Senior "Mallard" he can reef without lowering sail. The lower end of the gaff slides up and down a mast track



(standard Senior design). A separate slide runs in the track above it. The halyard leads from this to the point on the gaff for full sail rig and up to the masthead sheave. When reefed the slide slips down to a point opposite the halyard fixing point and when the halyard is hauled tight this brings the gaff in to the mast. John admits that the gaff does sag a bit and also that it does not come down all that smoothly. Nevertheless, he has used this arrangement and is satisfied with it. (Fig.4)

However, I am not happy about mast track for gunter rig. "Mallard" has had no trouble. Whilst "Pau Amma" did. The mast track pulled away from the mast during the first season and, after one re-renewing which didn't last very long either, I abandoned it altogether and went to old-fashioned gaff jaws and lacing. (Perhaps I could have left the track for the luff slides, but I didn't). In correspondence with PBO, the Editor, Denny Desoutter, indicates he shared my reservation concerning the strain on the slides and track. If one really wanted to keep the slide, he suggested that it might be better to have the block on the mast fittings instead of the gaff. However, his real recommendation to test and try out was that it would probably be simpler, cheaper and stronger to have a

traveller in the form of a metal ring around the mast which again returns to the old-fashioned way of doing the job (Fig 5).

Martin Lewis



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How Much

### How much does it cost?

This is a question I've been asked several times since my Senior "COMPASS ROSE" was launched in March 1995. I've always replied with a "ball park" figure of about £7,000 "on the water", but have often wondered where all the money went! Fortunately, I kept a very careful log of expenditure and time spent over the three years that building took, From this record, I have compiled the following breakdown which I hope someone may find useful.

|   |              |              |
|---|--------------|--------------|
| Timber  | £            | £            |
| Hull  | 393          |              |
| Superstructure, decks, cockpit                              | 161          |              |
| Interior  | 176          |              |
| Ply   | 635          |              |
| (9 sheets marine 3 sheets exterior grade)                   |              |              |
| Spars   | 133          | 1498         |
| Glue  |              |              |
| Epoxy, 5 gallons  | 181          |              |
| Mastic and other glue                                       | 28           | 209          |
| Fixings   |              |              |
| 2,700 screws, mainly bronze                                 | 255          |              |
| Bolts and other fasteners                                   | 161          | 416          |
| Keels   |              |              |
| Ballast keel (ferroement)                                   | 34           |              |
| Bilge keel (steel)  | 170          | 204          |
| Rigging   |              |              |
| Standing  | 67           |              |
| Running   | 95           | 162          |
| Paint, varnish etc.   | 253          |              |
| Blocks, cleats etc  | 224          |              |
| Sails   | 813          |              |
| Deck fittings, portholes, rudder and cabin fittings         | 299          |              |
| Chemical toilet   | 75           |              |
| Berth cushions  | 230          |              |
| Ground tackle, warps, etc                                   | 364          |              |
| Laid teak deck  | 253          |              |
| 4 HP outboard, incl. alternator and bracket                 | 748          |              |
| Chandlery   |              |              |
| Log, e/s, compasses, nav lights fenders, oil lamp, VHF etc, |              | 876          |
|   | <b>Total</b> | <b>6,624</b> |



Frightening, isn't it. But, anyone who has started, or is contemplating building, take heart. A perfectly serviceable Senior, with quite adequate equipment could, I estimate, be built for around 50% of this figure. The following points explain how. I reckon you could realistically save the following figures in each area:

£200. All joints are bronze screwed. The plans call for nails and they're a good deal cheaper.  
£100. The steel bilge keels were expensive. Wooden one are much cheaper.  
£100. I used International Paint and lots of it. Frankly, I think its overpriced and I used more that I needed to. Repaints will be with Dulux, now that a good base has been established.  
£230. "COMPASS ROSE" is gaff rigged. Save lots of money on string, wire and blocks by making yours Bermudan or gunter.  
£600. The "standard" rig means you can probably find a decent set of second-hand sails, but even new, they would cost much less than £813.  
£190. Avoid bronze fittings. Galvanised or nylon are much cheaper.  
£70. Don't buy a loo, use a bucket, or as Maurice Griffiths would have said "Galvanised sanitation".  
£180. Second-hand berth cushions can be found. Valiant Marine, for example, at Heybridge Basin in Essex often have them.  
£254. The teak deck was a real extravagance, both in terms of time and money. Deck paint works just as well.  
£260. My ground tack is over size. shop around for this and/or buy second-hand.  
£750. My "chandlery" cost me £876 but I bought a lot of things that can be done without if you aim is to get afloat as cheaply as possible. Be careful here, it can mount up very easily.

£400. A second-hand outboard can save lots of cash. Speak to John Williams about this!

So, you could easily build for around £3,300. All told that's a saving of £3334, achieved without compromising on the quality of your timber, ply or glue - if you're going to go through the trouble of building, then you really owe it to yourself to make these the best you possibly can. After all, a cheap deck fitting is relatively easy to replace, but a plywood panel that's delaminating is another story. cheap ply, above all else, really is a false economy (my exterior grade was used for bunk tops, etc). In addition to this "COMPASS ROSE" has quite a lot of extra floors, frames and other woodwork, all of which added to the cost.

No doubt, it's possible to spend much less, but do bear in mind that, even with the above savings, the cost of the "Woodwork" is only around 45% of the total at best.

"COMPASS ROSE" took 2000 hours to build, spread over nearly three years. It's a lot less expensive than a "family car" and a heck of a lot more fun to own.

To all those that say "It's more economical to buy a second-hand boat", I'd say this: there is nothing to match the joy of sailing a boat that you yourself built, but building it comes a very close second!

Finally, to all you builders/restorers, good luck and keep at it. It really is all worth it in the end.

**Andrew Michel      Senior 1544. "COMPASS ROSE"**

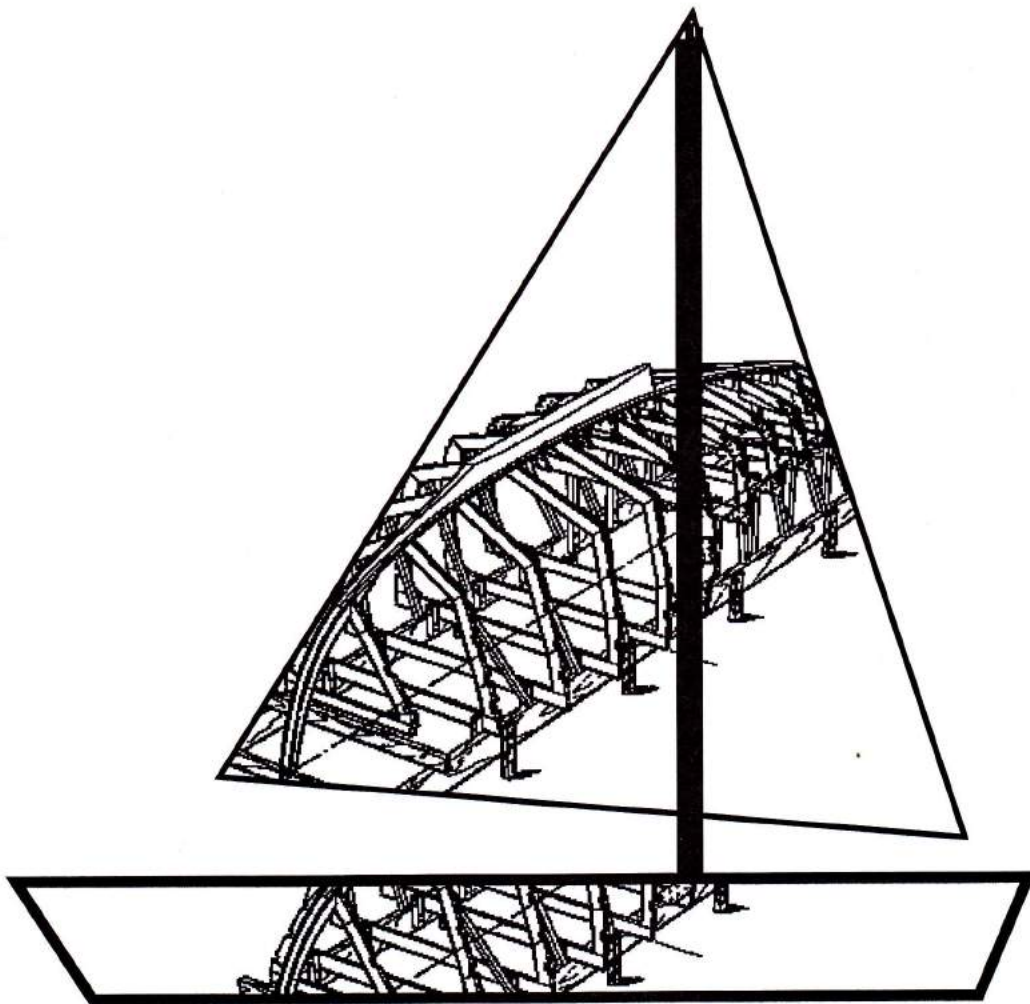
*Ed. note year of build when comparing prices    March 92 to March 95*



# Building Chine Boats

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