The Best of the Silhouette Builders

Contents

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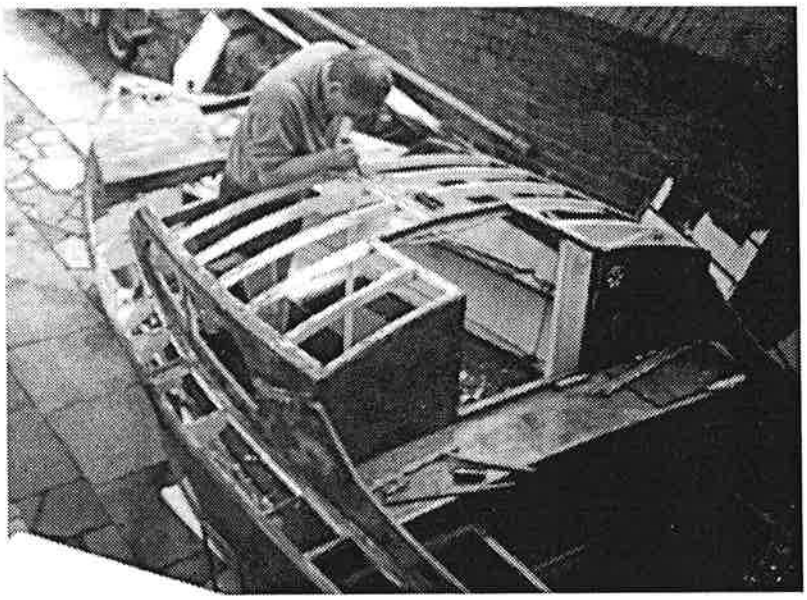


Foreword

In the early days there were several ways to go about building a Silhouette. You could buy a set of drawings from Tuckers and buy all the materials yourself. (Some professional boatbuilders did the same, building them speculatively or to order). Alternatively you could buy a part - built hull from Hurley Marine in Plymouth together with all the pre-cut pieces need to complete the decking, cabin and interior. (Latterly, a grp hull became available the same way). Or you could buy a complete boat and trailer from Hurleys. For a while there were other builders such as Beta Marine also offering both completed and kit boats.

This resulted in some considerable variation in detail and specification of the SII's produced during the 60's and 70's and accounts for the number of enquiries we regularly get from members saying *"Why is mine different?"*

Although few Silhouettes are being built from scratch at present, many of those which werebuilt in the 1960's and 70' are now being renovated and restored, and the boats are now regarded both as classics, and as very affordable and satisfying yachts to work on and then to sail.

Consequently, Tuckers still get requests for sets of SII plans, and the Association receives regular enquiries regarding the techniques involved in carrying out restoration projects of varying degrees.

This booklet is a compilation of articles by past SOIA members who built Silhouettes and is intended to provide the nearest thing to a building or rebuilding manual. There is no absolutely right way to do it, people devise their own individual approach to the job, or are able to modify tools to help in a particular way, and these are the valuable sorts of wrinkles that have been passed on through the Journal over the years.

It is prefaced by Tucker's 'General building notes for chine boats', which were issued with his sets of plans to builders of Silhouettes, Debutantes, Caprices, Ballerinas etc, all of which shared the same constructional features and characteristics.

The articles which follow illustrate the different approaches to the job, and even if you are not building from scratch, but resurrecting a boat from the frames upwards, you will be able to pick up on the appropriate stage of the job, and hopefully glean some useful information.

If you are stripping out a sound hull and simply rebuilding the interior, then you need to wait for the 'Make and Mend' booklet which will be published in Autumn 1996, and will deal more extensively with interior modifications and fittings than this publication does.

Whatever the extent of your project it is a good idea to make notes of your progress take photographs of key stages and features. It is especially appreciated by other members if these can be sent in for publication in 'The Silhouette Owner.'

Thanks to Bill Mc Creath Claude Lavender and Malcolm Maxwell for the photographs in this booklet

Ian Rodger
February 1996

General building notes for hard chine boats

Robert Tucker

Making the fames and stern

The sections should be lofted out full-size and the frames made to these patterns. Care should be taken with these as they control the final shape of the hull and any error here cannot be corrected in the finished job. For the Silhouette, the transom, aft cockpit, bridgedeck, cabin front and forepeak bulkheads will be made up and finished, and will serve as frames. Intermediate frames must be equally accurate, but can be made of scrap timber and plywood gussets. These frames will be removed when all the longitudinal timbers have been laid in place over them.

Frames towards the bow of the boat are often made of two pieces of timber joined at the centre line, and often with a deck beam included. But most frames are made of four pieces which are joined with plywood gussets at the chine and also at the centreline giving far greater strength.

Both sides of the frame should be made individually and one checked against the other to make sure that they are of identical shape.

Other points such as the gunwale and chine positions can also be established on the floor and the frame is then laid one half on the lofting and one half on the floor, lining up these points accurately. The frame can then be lightly tacked to hold it in position while gussets are attached, firmly establishing the shape of the frame.

The stern frame is made in similar fashion but the plywood stern should not be added at this stage as, in most cases stringers, gunwales chines, etc are let into the stern frame whereas they merely sit on top of other frames in many cases. It is far easier to cut the notches before the plywood is attached to the stern.

Most plywood boats are built upside down and this calls for the construction of a building jig upon which the frames can be set up accurately. Details of the building jig are given on the construction drawing of your plan and this is the next item to be built. It should be noted that the top of this building jig must be accurately level in every direction. At the same time first-class timber need not be used for the jig but the top edge of everything should be planed very accurately to ensure levels. With the jig constructed, a centreline (twine will do nicely) should be set up down the centre of the jig from which the frames are lined up.

From the construction drawings the intervals at which the frames are to be set up should be marked. At these positions small pieces of timber should be fastened accurately, after taking note whether the frames are to sit forward or aft of the stations you have just marked. These may vary from bow to stern and should be checked off your plan.

A midship frame should now be selected and set up in position, being careful to centre it with your centreline and also checking its upright position by use of a spirit level. This frame can be firmly braced in position, so it cannot move Other frames can be temporarily braced to it as they are set in position either by measurement or by use of a spirit level.

Care should be taken in setting up the stern frames if it is set at an angle other than 90° and often extra chocks of wood are needed on the jig to establish the angle accurately. Similarly with the stem post, often a chock is required at the stem head to position it and avoid any movement during the construction of the remainder of the hull framing.

Hull framing and bulkheads

With the stem, stern and all the frames set up in position, held firmly together with temporary braces you are now in a position to complete the remainder of the hull framework, which includes the addition of hog, chines, gunwales and stringers.

Often it is best to add the hog first as this provides a backbone which secures the whole. It should be fitted snugly to the cutout in the stem post and fastened as shown on the plan. It should also be fastened to each frame and cut off accurately at the stern frame. Care should be taken that fastenings used should be well countersunk in the hog as this member is one that needs bevelling to fair the hull prior to plywood planking.

Chines

The chines can now be added to the structure and these should be added together, bending one against the other. It is always best to fit the forward end to the stem post first, as in case of a poor join requiring a second cut if the chine member has not been cut too short it can be finally adjusted by cutting off snugly at the stern frame. When making the frames the chine notches should have been cut; but these are cut square and you will notice that as the chine lays around it, it may touch a number of frames on one corner only.

To obtain a good fit on the frame, the frames will have to be bevelled so the chine lies snugly for the whole width of the frame. To do this lay the chine around and if it touches the frame with say, a 1/4" gap at the after side of the frame then l/4" will have to be taken off the forward edge of the frame, either with saw or rasp, so that a good fit results. Care should be taken that where the chine is laminated from two pieces it is the outside edge of the second piece which should be finished flush with the rebate line on the stem post. So when fitting the inner piece an allowance for the second piece should be made when cutting it to fit the stem post. When Laminating a chine from two pieces, either clamps or temporary fastenings between the frames will be required to give

the glue good adhesion. If fastenings are left in the chine care should be taken to make sure they are not close to the top edge as the chine has to be bevelled at a later stage. The gunwales and stringers can now be added. When adding the gunwales in flared bow boats the rim pieces at the bow of the boat should be added first and the gunwale then fastened to the rim piece and bent round to the stern. The frame notches may have to be slightly bevelled for a good seating for the full width of the frame. When adding stringers in most designs you will find that these sit proud of the frame except for the stern frame where they are let in for the full length. Where these pass over the other frames they similarly may need slight bevelling but only at the position where the chine crosses the frame and not for the full length of the frame.

While stringers are placed at equal intervals on the frames, should they want to lay slightly one way or the other towards the bow it is best for them to take up a natural twist as their actual position at the stem post is not critical. The aft end of all these longitudinal members should be trimmed flush with the transom frame and the hull is now ready for fairing.

Fairing the hull

Fairing is a tedious job and one that should not be hurried. Fairing in fact entails the bevelling and trimming of the framework members so that the plywood planking will lie over the framework to give good contact on all surfaces without any humps or bumps.

It is probably best to commence fairing from the stern and one way to do it is to determine the amount of bevel required on longitudinal such as chine and keel at each frame. By using a smoothing plane these members can be faired from frame to frame so that a clean fair sweep results. The bevels should be continuously checked by a light bending batten or strip of plywood. It is essential to make sure that no low or high spots are visible in the finished hull after the plywood has been fastened in place. In bevelling the chines and hog you may strike the heads of some fastenings. This can be overcome by either repositioning or countersinking them further into the timber.

Plywood planking

Plywood panels are usually 8ft in length and these can be butted together on the job, so amateurs scarph sheets themselves into one full length piece, but it is preferable to butt the sheets as you go along as this gives a stronger finish. Care must be taken at the butt joins to fill the fastenings flush or they will be seen through the final coat of paint. It is usual to apply the plywood to the bottom of the boat before the side. If two bottom ones are to be cut from one piece of wood a paper template can be made of one bottom so that there is no wastage of ply. It is easier to fasten the sheet of ply against the bottom of the boat using two or three screws to hold it in place and these can be used later as location positions for final fitting of the panel. The shape of the panel should then be marked, then remove and cut slightly oversize. Now place the panel back in position and from behind stringer, chines and hog positions can be marked with pencil and all holes drilled for fastenings. Trim when all is fastened into position.

Special mention here of the joint of the bottom and topside ply along the chine. From the stern the bottom ply overlaps the topside ply but this joint alters at a position shown on the plan from a lap joint to a butt joint at a position marked towards the bow. The reason for this transition is that as the angle of the hull becomes deeper towards the bow the end grain of the bottom sheet would become excessive. The actual transition point is not critical. The side panel from the transition point forward should be left well oversize so that it can be trimmed accurately after it has been glued and fastened into position.

After drilling all the holes necessary for the fastenings the panel can be removed and glue applied to all mating surfaces. The gluing operation should be done rapidly. Replace the panel back on the job using a couple of screws towards the middle of the boat. The forward section should be fastened at intervals with the intermediate fastening added later, (screws placed 1ft apart with two ring nails between each screw). It is best to work the bow section first where the bottom ply butts against it and the fit here is more critical than that towards the stern of the boat; many G-clamps will be needed. As soon as the panel is fastened in position remove excess glue inside and out before it has time to set. Panels should be trimmed accurately along chine, stern and stem.

Deck Beams and Decking

The hull is now ready to be turned the right side up. Care should be taken because the hull is basically weak and with rough handling can be twisted out of alignment. The hull should be propped firmly in position when the level has been established. The deck line of the side panels should now be trimmed off accurately and the deck beams should be cut from the full size curves lofted out. The final deck framing will entail the inclusion of a king plank in the foredeck and in most cabin designs the framework for the forward hatch. The deck framing should now be faired in similar fashion to the hull framing and the deck covering of plywood fitted, glued and fastened in position. Plywood sheets should be laid over the deck and temporarily fastened. The outline is marked from underneath together with deck beams, king plank, etc. The hole is then drilled prior to the final fitting and fastening of the deck.

Recommended timbers:-

Frame: Utile, Agba and Khaya.

Hog: Opepe or Cedar.

Deadwood : Opepe or Iroko.

Floors: Iroko

Planking: Utile or Makore, (3 veneers).

The Building of *Aurora*

Ian Ritchie

February 1979.

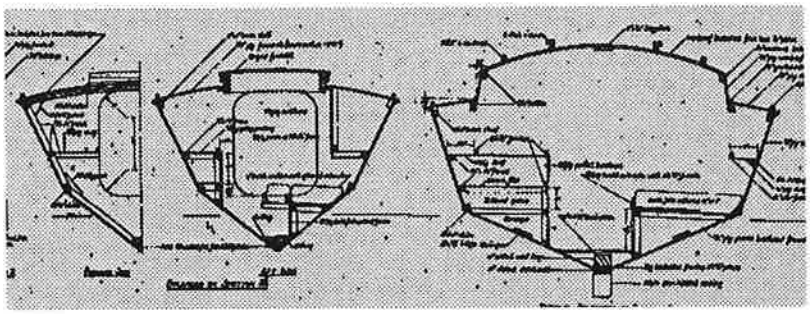
Bought a full set of plans for Silhouette Mk.II and part built framework comprising transom frame, stern and centre and forward bulkheads, stem and hog, intermediate frames (except at station 7), chines and deck beam shelves. The whole mounted on a jig.

Checked out measurements of work done to date. Built in frame at station 7, fitted 2 scarphing bolts at join of stem and hog Faired off framework. Cut and fitted bilge keel stringers—glued and screwed into place Measured up bottom aft ply panels, cut, fitted, glued and screwed. These were cramped in position while the glue was drying overnight. The same process was employed on forward bottom panels, forward side panels—taking care where they joined to the bottom panels—and the side aft panels. 2 pieces were then required at the after end, 1 each side, to complete the side panelling. The transom panel was then measured, cut to shape and fixed in place. Trimming up of the panels was then carried out, also fixing in place plastic beading on stem.

April 1979.

Turning the hull up the right way. After unfastening the frame members from the jig it took three of us to turn her hull upright—taking care not to place undue strain on the comparatively weak hull. Next came the job of chocking her up level on the water line, fore and aft also beam to beam. Trimming the side panels down to the correct level was then done, also the transom panel. Having had the bilge keels made up in March these were now bolted in place temporarily. The after bulkhead hatch cover was then made and fitted. Butt straps for the ply panels had also been cut to size and glued in position—prior to fitting the bilge keels.

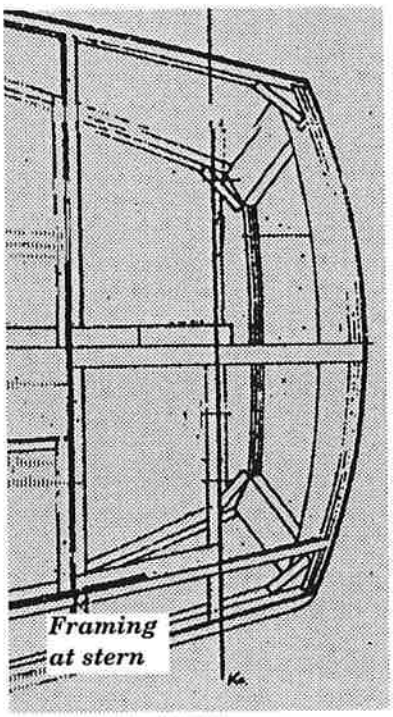
Wood for the completion of the boat had been ordered and was waiting delivery. Also a



Silver Century Seagull Plus with long shaft had been bought second-hand. Application for mooring in Bordeaux had been filed—required from Easter 1980.

June 1979

Sorted out wood and labelled up. Made and fixed in place cockpit sole frame and fitted cockpit deck. Cut out and put after king plank in place—but did not glue and screw it. Started to fit forward king plank in place, also cut and positioned king post. Began cockpit locker framework. Put in position the two outer carlines, but not yet fixed permanently. All wood for completion was now at home with the exception of mast, boom, tiller handle and marine ply for deck and coachroof.



Framing at stern

Placed order for sails, No. 1 Jib and Main.

August 1979.

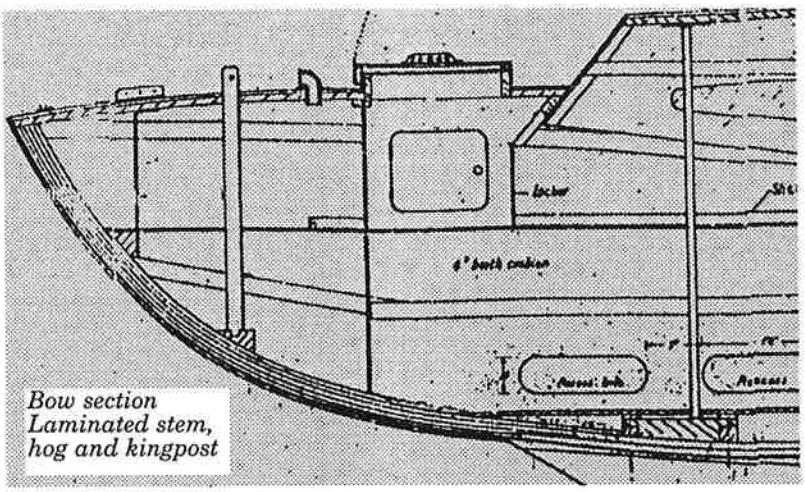
Cancelled order for sails! Scarphed the carlines and placed them in position, noted a slight twist—due to joints being cut upright on bulkheads as to angle of the sides. The side beams were then measured, cut and dovetailed into position giving the boat a much more solid feel. It was about now that I realised that the temporary moulds put in between bulkheads were permanent on my boat! having had the ply skin glued and screwed to them. The deck beam across the forepeak was next, laminated from ash (1 1/4in x lin) on a jig, it sprang about 1/2in on release—allowed for on making the jig—this was then put in place. The blocks for the foredeck strap and king post were fashioned from pieces cut from wood 2in x 4in glued and screwed together and shaped to fit the stem. Making the king plank for the foredeck was next, the time was taken up in chiselling out the housing joint in the stem for the king plank, the wood was rather hard, being teak. Cutting the king post (2in x 2in) of oak to the right length and jointing to fit in the stern block and through the king plank was good work with sharp tools. Now it was time to fit all these bits together and to glue and screw them into position. Laminating the ash beam for the forward edge of the bridge deck was the next step, then came the job of cutting out the ply for the deck and screwing into position temporarily. At last she was

beginning to look like the hull of a Silhouette. Before putting the ply on, the deck beam supporting the cabin front was cut and shaped from a solid piece of Iroko and then fastened in position, also the frame for the forehatch. Transferring measurements directly from the plans to the ply I drew out one cabin side, using this as a template for the other side, then also did the same for the front. The shapes were cut out with a small panel saw, with the windows being cut out by coping saw and keyhole saw. Once these were temporarily in position I was able to measure up and cut out the rear of the cabin top and the bridge deck.

Now I went ahead and cut out and jointed the framework around the top of the cabin on which the coachroof would be glued and screwed. After this came the job of making up the forehatch; my first attempt came out of square—due to cutting round the sides and then attaching the ply top. Second time round I made up the sides and glued on the ply top also screwing it down, as the curve of the top put on quite a bit of pressure, I used eight 'G' cramps to hold the top in position overnight, before cutting around to separate the top from the bottom. This time the hatch fitted in just right. At this stage I started on the framework for the bunks, one to starboard of the cabin and one on the port quarter. Using 1 1/4in x 1 1/4in I jointed up and placed the frame work in position. It was now that the deadwood for the keel and the skeg was cut and shaped to fit the bottom of the hull, using mallet and chisel to cut out a groove in both to ensure a close fit to hull.

October 1979.

Took apart the cabin front and sides and took off the decking, and using a wood primer painted the forepeak out with two undercoats and two top coats of ordinary gloss. Now I drilled the pilot holes for the foredeck ply, put in place the forestay attachment strap between the stem block and king plank, then proceeded to glue and screw the ply on to the foredeck. The side decks were now also glued and screwed down. It was at this

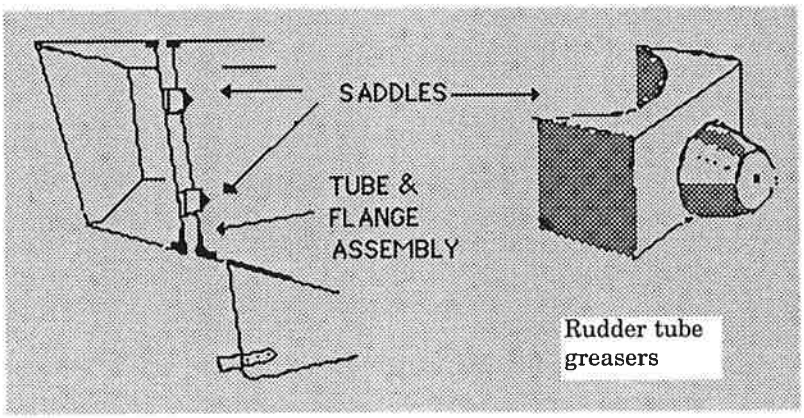


Bow section Laminated stem, hog and kingpost

stage that I went along to a marine engineer to have the rudder tube, pintle and tiller fitting made up, incorporating a grease nipple as shown in one of this year's S.O.I.A. journals. Whilst waiting for this to be done I got on with fitting the coach roof front in place, again glueing and screwing as necessary, then repeating the process with the sides and then the back. The bridge deck was also dealt with in the same way. Now came the job of fitting in permanently the framework around the coachroof top edges. Once this was in I took the measurements required and laminated up a cross beam of ash. Again it took me twice before I had it to the correct curve. With this beam planed and sand-papered it was glued and screwed into position, being used to support the after end of the coachroof kingplank and as the forward edge of the main hatch. The coachroof kingplank was now measured and jointed into place, then I went round all the edges of the coachroof, fairing them down to the correct angle so as to make a neat joint between the coachroof sides and the top.

November 1979.

By now the rudder tube, etc., was ready, but with the rudder fitments it had to be fitted from under the boat. The first job was to drill a hole, using a hand brace and extending bit, at the correct angle through the keel, then the after end of the boat had to be raised to a height of over four feet from the floor. This was achieved by using a car jack and ropes. As the stern of the boat was lifted to the full extent of the jack so the slack in the ropes, tied round the after bulkhead and carlines up to the beams of the shed roof was taken up. Then a block of wood was placed under the jack and the process was repeated each time raising higher the stern of the boat a few inches and the support on which the car jack rested. Once the stern of the boat was almost touching the shed beams, the rudder tube easily slipped up through the hole. Now the whole process was reversed, it took my father and me the best part of a Saturday morning to complete that job. To make the boat lighter for lifting I had taken off the bilge keels, until it was time to bolt them back in place perma-



Rudder tube greasers

nently. Each of the bolt holes in the hull had been measured up and drilled from inside the boat; it was a relief to find that the bolts fitted through and into the bilge keel flanges without too much fuss Each of the bolts and keels had been given coats of metal aluminium primer and a good layer of mastic was put between the bottom of the hull and bilge keel pads, also between the pads and the bilge keel flanges, not forgetting the bolt holes. It was a two man job fitting these keels. Once they were placed in position my father pushed the bolts up through the holes whilst I was inside the boat to put the steel plate washers and nuts on and tightening them all in sequence. The stern compartment was now ready for painting out, but first the hole in the king plank for the rudder was drilled and with the outer rudder tube in position the after king plank was fixed permanently in place. Again the painting was carried out the same as in the forepeak.

Now I was able to finish off the decking by glueing down and screwing the ply on to the stern deck. On completion, the job of planing down the edges of the deck ply to the surface of the sides was done, then half round beading was glued and pinned along the side and bottom chine join and also the deck and side join.

December 1979.

At this stage I continued the work inside the boat, making up the framework for the cockpit lockers and covering them with ply, though the tops of them were not to be fitted permanently till they had been painted inside.

While I was doing this my youngest brother was giving me a hand and also starting to put on the first coat of aluminium primer inside the hull. Now I got on with making up the remainder of the framework inside the cabin for the locker at the end of the starboard bunk, and the galley flat and shelves on the port side, then cutting to shape and fitting the ply coverings for these and the ply semi-bulkheads. The two longitudinal supports for the cabin deck were next to be cut, jointed and placed in position then I was able to shape up the deck panels and lay them down. This left a couple more shelves to be put up yet, and also the final fixing of the deck supports once the ballast keel had been bolted in place, to complete the cabin. Back to work on the outside of the boat, filling up all the counter sunk screw holes with stopping compound, then going round the joins of the cabin and forehatch with the deck, glueing and pinning into place three-quarter beading. While doing this my father was making up the cushions, one for each bunk and cockpit locker top, using leatherette and three-inch thick upholsterers' foam. The roof of the cabin was the next job, marking up and cutting out the two halves from 1/4in ply then using these as templates to cut out two more. The two layers were laminated on the roof, glueing and screwing them in place. At this time the skeg was also glued up and taken into a carpenter to have three 3/8 in holes drilled right through it, as I'm not fitting an inboard engine. The brass bolts I made up myself from old, solid brass stair rods and brass nuts. Again it was a two man job to fit the skeg in place, using plenty of mastic to seal between it and the hull bottom. Now I went back to the coachroof top to fair the edges down in line with the sides and front and to round off the corners of the two-inch overhang at the back of the coachroof. The runners for the main hatch were now made up and screwed into position temporarily and the forward end of the hatch drawn to pattern, cut out and slid into place.

My father and I measured up the depth required for the ballast keel to be cast from concrete with scrap iron ballast, by holding the deadwood in place and finding the length at each end of the deadwood down to the length of ply laid on the floor of the shed to provide an even surface. Whilst Dad went to work on making up the box, out of floorboards and scrap wood, for the keel to be cast in I got on with the main hatch. Making up the after end of the hatching by using the front end as a pattern, then cutting out the ply top and the two sides. The whole was now fitted temporarily in place, sliding along the runners—not too easily—and giving a good fit all round. In the evening I cut up the pieces of scrap metal to fit into the ballast keel and gave them a second coat of metal primer.

Dad cut up the remainder of the scrap metal and gave it all a coating of red lead paint. I got on and finished off the side of the port shelves at the end of the bunk. The wood cornering at the stern of the cockpit was shaped up ready for fitting into place. Bought the cement, etc., for casting of ballast keel.

January 1980

Mixed up concrete for ballast keel and cast it—mix of 1 cement: 12 sand: 2 siftings (small). The scrap iron was placed so that the weight was evenly distributed throughout the keel, the shuttering for which had been lined with polythene. This was left to dry out for four days when the box was taken off and then lifting up the keel it cracked—ah well—back to the drawing board. The main hatch was now complete and the sliding rails glued and screwed in place, the louvred doors (bought from a D.I.Y. shop) had been cut to size. Once the coachroof was painted and varnished the main hatch could be fitted in place. The coaming at the aft end of the cockpit had been cleaned up and raised an inch higher by glueing and dowelling an extra length on the bottom. The tiller had been cut and shaped—being laminated from four pieces of 3/8 in ply with a section of hard wood on either side of the rudder end fitting—and was now bolted in place. The long job of rubbing down he hull now began—before a primer of aluminium paint was put on.

March 1980

That first keel cracked on taking off the shuttering—possibly due to being left to cure for only one week and the temperature did drop below freezing. The ballast keel Mk.II was cast in a mild steel case well coated with metal Primacon, the holes for the keel bolts being allowed for by lengths of dowelling wrapped with polythene to stop sticking to

the concrete, the polythene being sellotaped to the dowel. The whole outside of the boat from coachroof top to bottom of the skeg had been coated twice with aluminium wood primer, the sides and stern had two undercoats and three overcoats with a rub down between each one. The coach roof had two undercoats and two overcoats. The deck had two coats of sandtex. The windows are 1/8 in plastic sheeting (not Perspex - time will tell whether it should have been), being cut out from templates with coping saw and screwed on with flat headed self tappers over a strip of mastic all round. The ballast keel was a two man job. though one man could have done the job with patience. Using a borrowed car trolley jack the keel was wheeled under the boat, the bolts already in place and the deadwood on top of the keel. Once the keel was correctly aligned the holes for the bolts were drilled through the hog, and with a bit of juggling the keel was gradually jacked up by my father whilst I was in the boat to put on the teak blocks and steel plate washers with two nuts to each bolt. The bolts were home made from a length of mild steel bar with a nut threaded and welded on one end. A piece of Iroko was shaped to a semi-circle for fitting on the flat front of the keel to streamline it. The cockpit had now been finished, screwing and glueing on the lid on the port side—quarter bunk underneath - after painting it out. On the starboard side the after end foot had been glued into place whilst the forward section was hinged for ready access. The whole of the cockpit had been varnished, using several coats of approximately 40% white spirits and 60% varnish, finishing off with three or four coats of neat varnish.

Details.

Carving out the handrails and toe rails from lengths of hard wood was an interesting job. Again they had the same varnish treatment as the cockpit. The handrails were screwed in place from under the coachroof whilst the toe rails were screwed from on top into the gunwhale chine. Afterwards the screw holes were plugged with dowelling. The forestay fitting attachment was welded up from a 6in length of T bar on a 4in base plate 4in x 6in. The pad for this was of hardwood carved underneath to take the camber of the foredeck, the same technique being used for the tabernacle on the coach roof. All cleats have plywood pads under them. Where it has been feasible, bolts have been used on fittings taking any strain, i.e. chain plates, fairleads, etc. Good use has been made of mastic between all fittings, their pads and the deck or coachroof or ship's side and stern. Always being careful to use compatible metals for attaching fittings, i.e. mild steel bolts with mild keel casing—also above the waterline. The mushroom ventilator was fitted into the coachroof above where the stove will be. The Main hatch was now fitted in place, also the cabin doors. Painting is now complete of the cabin roof inside. The flooring joists were fitted into place and all inside fitting out completed, including the ladder step into the cabin from cockpit. The last big job was the making of the beam to support the mast strain on the coachroof. First a hardboard template was drawn up and cut out, then minor adjustments made to it. From this three pieces of 1/4 in ply were cut and laminated to form a beam 4in thick by 3in deep.

The main hatch was now fitted into place and varnished, the top being only 1/4 in ply and I think that this may have to be strengthened to be able to bear any appreciable weight. The pieces of ply forming the bunks and locker shelves and side were taken out of the boat for varnishing—all eighteen of them—it seems to me the worst part of the boat to do all the painting and varnishing. It's not a job that can be skimped on, yet it is time consuming with having to rub down between each coat and progress appears to be relatively slow until the final coat is on; and dry.

I now wrote off for the Insurance having shopped around for the best quotation, not necessarily the cheapest. A Campari Tender Mk.VI was bought; it came with a Mariner 2 outboard. It appears that the cost of fitting out the boat is greater than that of building it. The standing rigging was soaked in the bath tub of boiled linseed oil, being galvanised wire that Dad had got that used to be for holding up tennis nets.

April 1980

The hardboard template for the main beam supporting the mast was drawn up, cut oversize then trimmed to exact shape and used for drawing up the shape of the beam on a lin sheet of ply. We were just able to get the required three pieces for laminating together from the one sheet. Once the beam had been finally fitted and placed in position four lin thick Iroko knees were fashioned. These were glued and screwed in place before the permanent fixing of the beam took place. The varnishing of the ply for bunks and lockers and shelves had now been completed and the step down into the cabin made up and also varnished, likewise the beading round the cabin and cockpit lockers. All the internal painting was now complete. The inside was then reassembled permanently and the varnishing of the inside beams and semi-bulkheads taken care of. Meanwhile the outboard auxiliary bracket was being made, fitted and painted the same colour as the hull. The metallic pink primer was applied and two coats of T.B.T. antifouling. The bilge pump, a Whale Gusher 8, was fitted on the forward bulkhead of the cockpit. The cockpit cover was also made up from a sheet of 9ft x 6ft P.V.C., double hemmed all round with eyelets about every foot with one at each side of each corner angle. The registered number was painted on the stern.

The pulpit, of 1/2 in galvanised plumber's pipe, was bolted in place with wooden pads in place to spread the strain on the deck. Then the last of the hooks for the cockpit cover were screwed in position and the bolt and hasp and staple for the cabin doors and main hatch cover were fitted. Also a wooden hold for the outboard handle on the stern deck. With a boat hook made from a 7ft length of 14in dowel and the head from my grandfather's boat hook and the last bit of deck painted the night before

and Aurora was finally ready for launching. That evening at 19.00 she took to the water like a duck.

May 1980

The mast was made up of two eighteen foot lengths of Sitka Spruce and two three foot lengths. As the mast is 19ft 3in a 3 foot piece had to be butt-scarphed, to produce the required length of mast, to each eighteen foot length.

The boom was made up first, being easier to handle at only 7ft 9in. A groove was chiselled out the length of each half, to take a foot of the gail and well rubbed down to prevent any snagging on the sail's foot. The two pieces were then glued and clamped together. After 24 hours the clamps were taken off and the sail foot ran along the groove to ensure a free movement. Now came the shaping up of the boom—mainly rounding off the corners along its length. To finish off six coats of varnish were used and then the boom end fittings were screwed and bolted into place.

The butt-scarph joins in the mast were glued and screwed before chiselling out the luff groove and a centre groove to run a cable up for a mast head light should I choose to fit one at a later date. Borrowing extra 'G' cramps as well as my own I was then ready to glue the two halves of the mast together ensuring they were level on the shed floor to avoid any permanent "bends". Cramps were used at 18in intervals. Now came the job of planing off the corners and shaping up the taper on the top part of the mast, also the throat of the luff groove. Cutting the bottom of the mast to fit the tabernacle and drilling the two holes for the tabernacle bolts was next on the agenda, prior to checking that the sail ran freely up and down the luff groove. It didn't! So sandpaper was used and this cleared the blockage, then on with the varnish. As with the boom, four layers thinned down with white spirit and two top coats of neat varnish. The cross trees were made of Sitka Spruce shaped to my own design (they were metal on the plans) and glued and dowelled into place on the mast with brass plates to ensure extra length.

'M' day—the mast was stepped by my father, cousin and myself, only to find that I had drilled the tabernacle bolt holes the wrong way round. Once redrilled, the foot of the mast proved an exact fit for the tabernacle then we were able to fit the standing rigging (ex-tennis net galvanised wire, left to soak in linseed oil for some weeks previous). *Aurora* was complete!

SILHOUETTE Rigging specifications

The table below is measured from a wooden Mk II Silhouette with a 19' 6" high mast and the forestay running from masthead to the stemhead of the boat. Measurements should be the same for grp MkII boats which often had an alloy mast, but these varied in length, up to 21', and in exceptional cases, 23', which was the length of mast fitted to the SIII. Very early wooden Mk II's had a mast height of 19' 1" with a shorter forestay running from the Hounds to a fixing point 12" aft of the stemhead. Lengths for these are not shown. There were also other hybrid arrangements. Therefore these tables should not be assumed to be the same as your own boat!

	Length (SII)	(SIII /IV/V)	Material	Terminal	Diameter	Breaking strain
Forestay	21 ft3 in	24 ft 8 in	I x 19 S/S.	6mm R.S.	4mm	2,600 (lbs)
Lower Shroud	11 ft3 in	13 ft 1 in	I x 19 S/S.	6mm R.S.	3mm	1,900
Cap Shroud	21 ft0 in	24 ft 4 in	I x 19 S/S.	6mm R.S.	3mm	1,900
Backstay	22 ft 0 in	26 ft 4in	I x 19 S/S.	6mm R.S.	3mm	1,900
Jibhalyard	44 ft 0 in	50 ft 0 in	P.T.	shackle	3mm	1,100
Mainhalyard	40 ft 0in	45 ft 0 in	P.T.	shackle	8mm	1,100
Main sheet*	40 ft 0 in	40 ft 0 in	Terylene		8mm	2,200
Jib sheet*	26 ft 0 in	26 ft 0 in	Terylene		8mm	2,200
Topping lift**	44ft.0 in	48ft. 0 in	Terylene		6/8mm	1,100

Note:
Apologies for the mixed metric and imperial measurements.

P.T. = prestretched terylene S/S. = stainless steel wire; R.S. = rigging screw.

*Main and jib sheet lengths shown are approximate. The exact length will depend on how the sheets are led to the cockpit

** Topping lift length is based on height of mast plus backstay length, but individual cleating arrangements will determine actual length required.

The standard rigging screw found on Silhouettes is of forged manganese bronze with fork and eye terminals, Cat. no. SD24, from Messrs Brookes & Adams, Shady Lane, Kingstanding, B'ham B44 9DX. Tel: 0121 360 1588. Probably about £ 10 each now (1996).

Starting from Scratch

Peter Wicks SII 2083 *Maria II*

Our Silhouette, *Maria II* wore her crisp new suit of sails for the first time in a far from nautical setting of yew trees, small conifers and blossoming almonds. These graced the almost devastated front lawn which had witnessed the four seasons of her building. Seasons because she was built entirely out of doors, and four because weekends and some holidays constituted the only times available for this single-handed labour of love. The garden was not my own. The benevolent capacity of mothers is well known, but those with sons addicted to boats but lacking suitable gardens are likely to be severely tested. Mine, bless her, stayed the course and even helped to dig the messy hole which was to allow the rudder and tube to be introduced from below. My wife and teen-aged daughter, during their visits, came in for such chores as removing festoons of wood shavings from surrounding trees, the transportation of tools, glue and coffee, and the planning in detail of really important matters such as the colour of curtains and cushions and the quantity of distress flares.

I should try to find something clever to say about God and Mammon, for this boat was built upon a holy framework, yet millions of pounds must have passed over her cockpit sole. In my search for timber for temporary moulds I was offered some very old church pews, and then the counter of a bank which was being modernised. This counter was inch thick teak and provided a slightly heavier than planned sole, and bilge stringers, rubbing strakes and toerails into the bargain. If a bank manager will not grant a loan to cover building, it might be an idea to appraise his counter on the way out.

Materials

Memories of the early weeks of building are mainly of hours of poring over the excellent set of drawings obtained from Robert Tucker and of selecting the best timber for particular members. I decided upon some of the better African mahoganies for all frames, the slow-growing and very flexible 'Siberian' pine for the stem and deck beams, and Columbian pine for hog, chines, sheer and carlines.

Most of the timber was transported on a small and valiant car, a scissors type crutch on the front and rear bumpers supporting longer timber, while marine ply in 8ft. x 4ft. sheets went on the roof. The only safe way of securing this was by drilling small holes in the corners of the sheets and lashing outwards and downwards to the bumpers. On one occasion, driving with the maximum safe load of three sheets (into the wind) the forward lashings were too slack and the car became very slightly airborne at a hump-back bridge.

The Frames.

One of the problems when building out-of-doors is to provide a rigid base for attaching frames, bulkheads and moulds. A good framework of 3in. x 3in. timber, 2ft. wide and cross braced at 2ft. intervals and extending from the first frame to the transom was levelled and supported on other timber just clear of the ground and bolted to deeply driven stakes. Even on waterlogged ground this was to remain rigid and true. Such timber must be well seasoned: joists from demolition contractors provide suitable material.

A datum line for erecting the inverted frames and moulds was easily provided. Two quite massive steel posts were to hand. They were 8ft. high and flanged at the base. They were planted in the ground to a depth of 2ft., spaced 19ft. apart, their tops spanned with galvanised fencing wire, while pegs and wire guys held them vertical. A thin prestretched terylene rope at a suitable height was tightened to its limit, thus giving an accurate inverted datum line with scarcely any sag in the middle.

These steel posts were to prove even more useful as time went on. The galvanised spanning wire was inserted through a length of garden hose, and a strongly eyeletted heavy transparent polythene sheet of about 12ft. x 18ft. thrown over it. On fine days the sheet could be rolled to one end; in rain it was strung to convenient supports—trees or house—and when lashed down its high ridge made it extremely weatherproof, whilst allowing good air circulation.

While the boat took shape at East Grinstead, as many components as possible were being made at my own home in Brighton. At one stage the skeg was in the hall, the transom pretended to be a bed-head-board and my wife and I shared a bedroom with the forehatch, deck beams and stem. The latter sounds innocent enough, but take its ice-breaker construction, its 9ft. length, and the size and weight of its jig and you begin to have a storage problem.

As many components as possible were made during the first Summer and Autumn and the frame not erected until the following Spring, when warmer weather allowed glue to cure out-of-doors.

Building techniques

In building the Silhouette, no major problems were encountered, other than the frequent need for more than two hands and at times for super-human strength. Plenty of strong rope, cramps and wedges and the 'Spanish windlass' system ensures that even the most. stubborn chines or carlines can be persuaded into place. It is important to bend chines or sheer members together as opposing pairs, particularly in the early stages, to equalise stresses on the framework. Owing to the double reverse sheer there is a tendency for these longitudinal members to twist away from or into the

frames while bending. This twist is more than can be corrected by the pull of the screws used as fastenings to the frames, and the strain at the point of drilling can easily snap the wood. Large G-cramps on wooden pads at points either side of the frames in question provide good leverage if rope and Spanish windlass is attached to the winged part of the cramps. Awkward longitudinal members, if left for a week or so cramped and lashed in position will retain much of the bend and they can be detached, drilled and reassembled without the danger of breakage and with little physical effort.

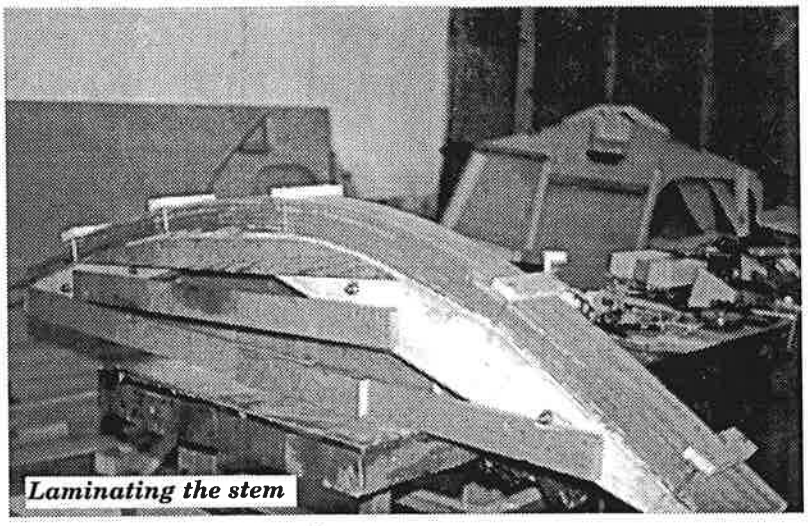
Chines sometimes tend to spring out too far at points midway between frames; they can be restrained and a fair curve preserved by lashing of rope at this point.

Laminating

My laminated stem, on being released from the jig on which it was made, sprang back just lin. at each end. By sheer luck I had allowed for just this amount when making the jig, which, incidentally, has to be quite massive in order to withstand the considerable stress imposed on it. It sprang no more during the months of its storage. Laminated deck beams also sprang about the same amount on release. Only one jig is required for the deck beams: the jig of largest radius is made first, then planed to a tighter curve and shortened for the next beam, and so on.

Notching the Stringers.

My teak bilge stringers presented a problem. Their ends finish between frames, and it was obvious that if they were fastened to the notched frames before the ply bottom was applied, the ply would be prevented from taking up its proper shape in the region of the



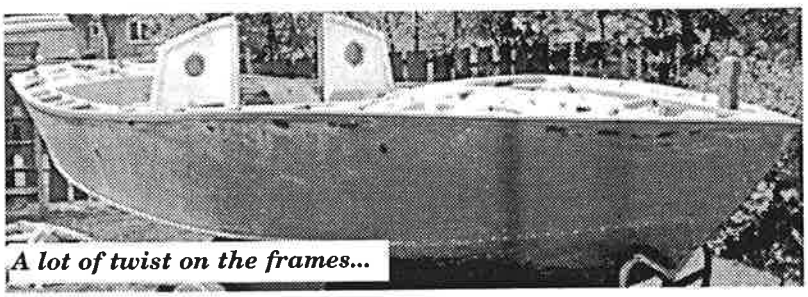
Laminating the stem

stringer ends. Therefore the notches were cut to twice their intended depth, the ply bottom fastened on without the bilge stringers, and these were later inserted by bending and sliding them through from aft. Wedges raised them temporarily from the skin to enable gluing, and then the bilge keel flange bolt holes were used for temporary bolts and wooden pads to pull the stringers into contact with the skin. Finally, carefully fitted wedges were glued and knocked into the oversize frame notches. These, in the case of the aft watertight bulkhead were tested and found to be truly watertight.

Turning her over.

When the hull, after skinning, was to be turned the right way up, an amusing problem was encountered. Frames and temporary moulds were strongly stayed from my building platform. These had to be released and the only way to reach some of them was from well under the hull. There was just room for me to wriggle under, but some of the staying timbers, when released from the platform were bearing the weight of the boat on their ends—and the ground was soft. The hull gradually descended on me, and I was very nearly faced with the need to dig myself out.

Turning a Silhouette hull the right way up can be a struggle for a single-handed builder. It is not advisable to let the sheer take all the weight at the halfway point as the hull at this stage has insufficient lateral stiffening. My steel posts again saved the day. The method—at least in theory—was childishly simple. You hoist bow and stern with block and tackle from the posts until it is four feet clear of the ground, then rotate it. It is an advantage at this stage of the proceedings to know the weight of the hull. I did not. I had only two large single blocks available, so could gain no mechanical advantage. These were lashed to the tops of my posts and ropes rove and taken to pairs of G cramps fastened very tightly to transom and stem head. I heaved—and then swung—on the stern rope. The boat just moved; it was exactly balanced by my own weight. I tied a few heavy objects to the rope and tried again. This resulted in two bricks falling on my feet. I then tied what I thought was a bowline high up near the block, I climbed a step ladder to the top of my pole, put one foot in the bight and stood poised. Bending down and grasping the pole, I pulled myself slowly downwards, reached the ground and endeavoured to make fast the end of the rope. But this meant letting go with one hand at least. At this stage the bowline ceased being a bowline and tightened around my foot. The boat descended and I shot to the top of the pole, head jammed between the supporting



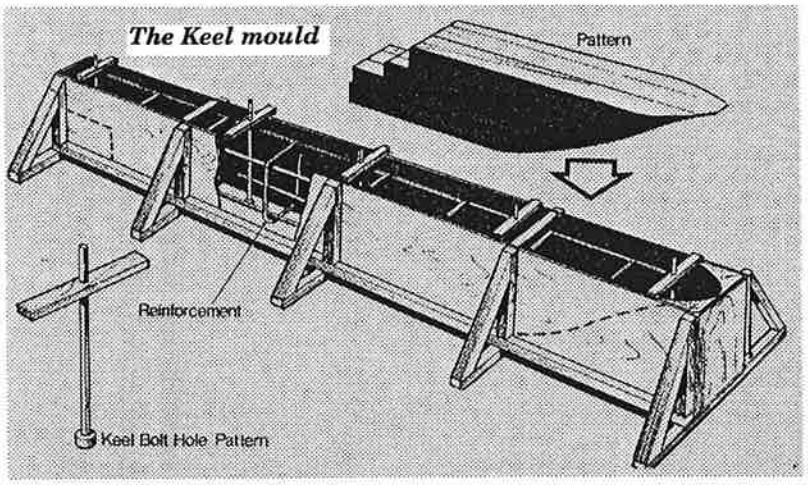
A lot of twist on the frames...

stays. Some people passing by appeared most interested in this high speed pole climbing technique, but a careful descent and a proper bowline avoided any further demonstrations. Once the hull was up, turning was relatively simple, with check ropes to prevent its rotating too rapidly.

A few mods

Our Silhouette's hull lines are strictly as designed, but a few minor changes were made in other respects. Instead of ventilators in the after end of the cabin, a pair of opening rear quarterlights were fitted which had been removed from an Armstrong Siddeley Sapphire, those being of precisely the right size and shape they are made of chromed brass, so no corrosion problem exists. The increase in the amount of light in the cabin is considerable. Extra strengthening around the cut out portions and an inside frame avoided any weakening of the ply panels. The forehatch, if hinged according to the design, cuts off vision through the forward cabin windows when it is raised; also it does not lay back far enough to be proof against slamming shut in a strong wind. My hinge consists of a raised horizontal brass bar rotating in nylon bushes which are housed in two heavy, through-bolted brass pillars, the bar carrying a pair of angled arms to which the hatch frame is fastened. The hatch, when opened, now rests well back on the cabin roof and there is a clear view through the windows.

I raised the main sliding hatch nearly two inches more than specified. This admittedly small amount is appreciated when straightening up to pull on one's trousers. The two single berth and additional port quarter berth layout was used. We fitted the normal all-round shelf with thin shock cord zigzagged across its open front to help retain gear in a seaway. Mild steel of 1/4 in. thickness was more easily available than 3/8in. for the bilge keels. I decided to use it, with



3/8in. flanges as specified, making up the lost weight with a calculated amount of steel bar riveted to the bottom edges of the fins. The weight is thus slightly more effective, the fins appear amply strong, and in the event of a severe grounding one would prefer to find a bent fin than a strained hull. The slightly greater bottom area against the river mud or soft sand when dried out on a mooring is also a point in favour.

Making the keel

The ballast keel is even less orthodox, made as it is of reinforced concrete and small cast iron and lead scrap. Steel tubes to which short projecting rods were welded were cast in place to take the compressive load of the keel bolts. Projecting reinforcing rods were threaded at their ends to take the wooden streamlined capping pieces at either end of the keel. I knew that substituting concrete and scrap for solid iron would lose weight, but precisely how much could not be determined theoretically, and it was impossible to tell just how much scrap the mould would take without weakening the concrete. A line was drawn on the plans well above the iron-to-wood fillet join to allow for a fillet as thin as possible. The cast keel was found to be some 80lbs short in weight, so the wood fillet was dispensed with. The keel was hung by its bolts in the designed position, the area of the hull to be contacted was lightly greased and the entire space filled in with more reinforcing rods and concrete. An estimate of the weight of this addition was now possible, and it seemed that, as little extra weight was now needed, some underfloor ballast would suffice. It was simple to lower the keel on its bolts when the added concrete was set, to mastic the now very accurately fitting surfaces and bolt up tight. Resin filler was used over the recessed bolt heads below, and the whole keel given several coats of thick bitumen to keep out the salt water.

The Outboard motor

Being unable to find a good second-hand Seagull Century, and hearing that some owners had found them even slightly more powerful than really necessary, I bought a new Forty Plus longshaft. I was concerned at the prospect of the screw coming out when pitching, so I mounted the motor on the side, at the point of least freeboard. This was simple enough with a cut-down Century side mounting bracket. The result was interesting, but the only point in its favour was the continuous immersion of the propeller. Vibration, noise and fumes are all worse than normal, the motor cannot be swung, and its re-fitting to the lower bracket when at sea can be hazardous. Some pessimists predicted the boat's going round in ever decreasing circles, but in fact the steering was the least of its problems. It was soon moved to the stern, where its greater driving power was also appreciated. It is in a central position, on a normal permanent mounting, and I won-

der if anything is really gained at the speeds in question by an offset mounting. Perhaps someone can comment on this from experience of both positions The stipulated propeller depth is just attained—unless I am standing well forward and my crew not perched on the stern. We make about 4 knots at full throttle; perhaps another owner with more experience can advise whether this is good, bad or indifferent. The Seagull reversing attachment is a great advantage in our situation and means that we do not have to swing on our mooring when there is little room for this.

Rigging

In rigging the boat I made no startling deviations. But I did not care for the spreaders being attached by a threaded and bent brass rod through the mast, so I made a brass mast band to which 1in. square section steel tube was brazed at the correct angles. The outer ends of these tubes are plugged with solid hard p.v.c. inserts, slightly tapered and forced into the heated tubes.

This causes the plastic to form its own shoulders and makes a watertight seal. The plastic is also kind to the shrouds, which spring into grooves through an undersized notch.

I have a fondness for rope-stropped blocks and for the mainsheet fitted one to either quarter and to the boom. I belay my double ended mainsheet to small samson posts fitted in the angles between side and Stern cockpit coamings. These are also handy for other purposes. The tack of the standard headsail has been raised some 8in. above the forestay fitting with a wire pendant. Vision is improved, sheets are less likely to foul and the sails appear to set better.

The Cockpit

The main function of a Silhouette's cockpit drain appears to be getting rid of rain water—one problem with a boat permanently on moorings. One drain was fitted well forward using a standard large bath waste fitting with the little webbed piece sawn out of the hole, emptying through a copper bend and plastic pipe and a similar fitting on the starboard side. A bung is available for use in a seaway.

Spars

At first a fisherman type of boom crutch was used, but this got in the way and added precious time to sail hoisting. I have no topping lift, but the tang now carries a shackle and the boom end a small cleat on one side. A slack terylene span between the twin backstays and a small block allows a line to top up the boom, the line being uncleated and held by the crew when a rapid hoist of mainsail is required, whereupon it is completely unrove with a tug.

I found pleasure in making my own mooring cleats and fairleads. The fairleads were made from glassfibre and resin castings, in moulds of a proprietary plastic material poured over wooden models of the fairleads.

I fancied a large steering compass but was rather upset by cost. From an ex-R.A.F. bomber grid compass I removed case, suspension and bellows and mounted it fully in gimbals. I made a compass card by printing photographically from a prepared negative on anodised aluminium sheet, removed the four rod magnets from their cradles and hung them in new cradles below the card. There are some pitfalls in this, but given time and patience the idea is worthwhile. The discarded outer compass housing when inverted suggested a deck ventilator in shape and it was duly converted to this. Its polished brass is protected with varnish and the R.A.F. plate still proclaims its origin.

Cooker

Another interesting item of homework was the stove. The cooking locker, under the bridge deck to starboard is large enough for a two-burner stove but the commercially available types with laterally swung frames connect to cylinders, and I wanted to avoid housing a cylinder and worrying about leaks from joints. Two Veritas Clansman picnic type stoves were bought and the hinged arms which support kettles, etc. were removed. A frame was made out of Dexion of the angle and the flat variety and from a spanning piece of the latter two appropriately spaced holes were cut out on one side to form notches into which the burners slide, being supported just below the large hexagon of the jet assembly and held in place by a retaining bar. The bases of the two expendable cylinders are supported by a length of shock cord on which are threaded square plates of aluminium with their sides flanged upwards to fit these cylinders. A normal size frying pan and kettle can be accommodated together, and even a pressure-cooker. There is still room in the locker for a cutlery rack and a container behind the stove for pots and pans.

As *Maria II* has no engine inboard, the bulkhead below the bridge deck has been made totally watertight. It is therefore necessary to pump from two places: below the cockpit and the cabin soles. The bilge pump, situated in the cockpit, draws through a pipe which runs through the bulkhead just above the cockpit sole level. To a threaded union projecting on the inside is coupled either of two reinforced nylon pipes, one of which loops back through the bulkhead to a strum-box below the cockpit sole, the other one running below the cabin sole. As these pipes are transparent and no bends are permanent, blockages should be easily detected.

Now that tools have been exchanged for sheets and tiller I can look back and honestly say that I have derived more pleasure and satisfaction from building *Maria* II than from any other long term project, as well as looking forward to many more hours of enjoyment afloat.

Right from the start I photographed every significant stage of building, and these pictures did much to smooth the way for him in the early stages. And another convert to our breed is on the point of submission.tire. There is only one thing better than building a Silhouette, and that is building ***two*** Silhouettes.

Building at Home. I

Derek Birse

The Options.

I wanted to build my Silhouette for three reasons:—

(a) I knew that I would get a great deal of enjoyment and personal satisfaction from doing so.

(b) Providing I didn't cost my labour I would save a reasonable sum of money—at least sufficient to buy an outboard motor, anchor, anchor chain and warps.

(c) I would have something to keep me busy during the non sailing months. -Having decided to build, I could: (a Purchase a set of plans, buy all my own timber and materials, and build from scratch. (b) Build from a kit of parts, or (c) Buy a partially completed hull with all the necessary parts to finish the boat. I considered the first method would be the most expensive, one would be paying retail prices for all timber and materials, and one would obviously waste more timber in cutting than the manufacturer of kits, who buys at wholesale prices. It would also have been necessary to buy special tools, and there were certain jobs I didn't feel capable of tackling myself, for instance, casting ballast keel, and cutting and welding bilge keels.

Had I not been a member of the Royal Air Force method (b) would have been my choice, but because I couldn't risk being posted half way through the process of building the hull, I was forced to adopt method (c). Having reached this decision it remained only for me to find a place in which to build. I suppose I could have found a suitable building somewhere on the camp, but experience had taught me that unless one can find a place close to one's residence, the journey to and from the selected place becomes a great deterrent during cold, wet weather.

My garage measures 16 ft. x 9 ft. x 7 ft. 6 ins. and, providing that I did my building on a road trailer so that I could move the boat into the open during fine weather, and when extra room

was necessary to do certain jobs. Because the garage doors would always be open a few inches, to accommodate the odd 9 ins. of boat, I rigged a canvas cover to fit over the partially opened doors. Not only did this canopy protect the boat during the building period, it also made it possible, with the aid of an oil stove, to keep the garage temperature above 50 degrees F. when using Aerolite glue.

Getting started.

As a road trailer would be essential, not only for the collection of the hull, but as a future building platform, I started to build this at approximately the same time as I placed my order with Hurley of Plymouth. This would, I thought, give me.ample time—about four weeks—in which to build the trailer. Little did I realise that wheel manufacturers were quoting six weeks' delivery for wheels and brakes. I ended up by buying an ex WD fire trailer trailer pump chassis, complete with 5.50 x 16 tyres, override brakes, springs, towing hitch, etc., for £10. By so doing, not only did I save quite a bit of cash, but I was able to take delivery of my hull more or less on time. The finished trailer is a little higher than I would otherwise have liked, but it tows quite satis. factorily, even if I do need a few extra inches of water when launching.

I collected my hull (3 berth version) on October 8, 1960. This was, I understand, the first occasion on which Hurley's had sold a boat in this particular stage of completion, and to assist me in finishing the job the marine manager provided me with a list numbered from 1 to 79 showing the logical sequence of operations from the stage at which I took delivery. I also spent a couple of hours with various members of the staff—all of them were tremendously helpful—looking at Silhouettes in various stages of completion, and getting advice on any possible snags. During my discussions with the staff, I mentioned that my only criticism of the Silhouette was the tendency to carry too much weather helm, whereupon I was made aware of the masthead rig; and on expressing my desire to have the new rig, everyone went into immdiate action to provide the new mast, sails, and rigging required. Having now experienced the very great advantage of the new rig, my appreciation of the efforts of Mr Hurley's staff is boundless.

It is not possible in an article of this length to go into details of the 79 operations required to complete the hull, but, broadly speaking, the sequence of operations is:—

(a) Cockpit, rear deck, rudder tube and all parts aft of the main bulkhead .

(b) Main bulkhead, bridge decking, cabin floor blocks.

(c) Bunks, galley, lockers, shelves.

(d) Main deck beams, forward deck beams, king plank, sampson post. (e) Cabin top, carlins to gunwhale straps.

(f) Decking, hatches, tabernacle,

(g) Rudder, skeg, toe rails, hand rails, windows. (h) Mast, boom, rigging, fittings.

(i) Varnishing, painting.

Apart from a certain amount of apprehension when drilling holes for the rudder tube—it is essential that it should be vertical and at the correct angle to match up with the trailing edge of the rudder skeg -I ran across no major snags, and found the sequence of operations as supplied to me to be perfectly satisfactory. I would, however, emphasise the following points: As parts are not cut exactly to size, and require fitting, it is essential to 'offer up' all parts before doing any cutting. This will involve the temporary positioning of parts in advance of the laid down order of assembly; for instance, before trimming locker sides, it is important to find the exact location of this by temporary fitting of locker bulkheads. The old adage, " Measure twice and cut once," is worth remembering at all times. Do as much inside painting as possible during assembly; for instance aft locker before fixing deck, quarter berth before final fitting of cockpit seat. By working most weekends, and doing a few hours during the week, I completed the job in time to launch my boat at Easter—a little under six months. Quite a lot of this time was spent sitting and pondering over the next job, not to mention a certain amount of day dreaming. There were also occasions when I had to wait until the garage temperature was raised to over 50 degrees F. so that I could start gluing operations, but in spite of this I had most of the carpentry finished in approximately three months. The rest of my time was spent painting, rubbing down, and varnishing until I was convinced it was the Forth Bridge I was painting, and not a Silhouette. However, there was never a time when I was not completely happy about the way things were progressing, and having successfully launched Blue Jay at Beaumaris at Easter, my conclusions are: Anyone capable of using the normal range of carpenters hand tools, and prepared for a bit of hard work, can build from a partial assembled hull.

While not quite as self satisfying as building from a kit, one does avoid major snags which might lead to sleepless nights.Providing that one doesn't cost one's labour, one will save money

I would do it again. PS. A Surform file is, in my opinion, an essential. PPS. I receive no commission from either Hurley's, or Surform!

There are a number of publications on building plywood boats, notably one published by the Eventide Owners Association 'Building Chine Boats' (new revised edition), price £8.00, available from Dave Wright 18 Maylands Close Maldon Essex CM9 7YR.

Building at home. II

D. S. Perrin

Starting from a Hull.

My own boat, *Temeraire,* SII, 1425, was built from a bare shell obtained from Messrs. Hurley's yard. There is a considerable advantage in working from a shell. I have previously built a 22ft. J.O.G. hard-chine sloop from scratch, and found that a great deal of time and labour was consumed in just producing the bare shell. The Silhouette, by virtue of its considerable beam relative to its length, has considerable curvature in the hull. This will make for difflculty in bending hog, chine stringers, etc., without a steambox. I also found that the retail cost of timber, plywood, bilge keels and main ballast keel, together with glue and fixings would consume a considerable part of the £100-odd cost of the bare hull from Hurley's. I considered that the £30-£40 difference was well spent. Also, Messrs. Hurley very kindly lent me a trailer to take the hull back to Kent, for free. The hull contains the fo'c'sle bulkhead, bridge deck, cockpit sides and stern locker bulkhead. It is planked to gunwhale level in ins. ply, and has a coat of primer. The bilge keels and main ballast keel are securely bolted in place. Incidentally, Hurley's like to include the bilge keels, in order to line them up with the correct toe-in.

Plans & planning.

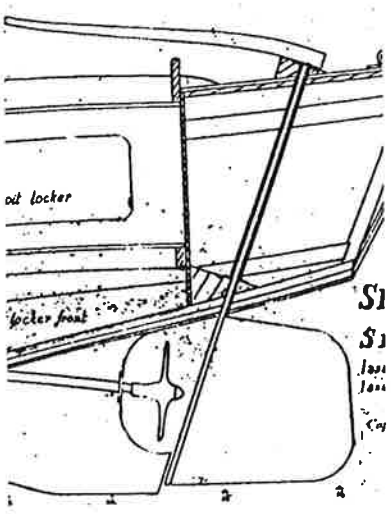
Obviously, one will have a set of drawings from Robert Tucker. These are well-drawn and concise, although those with little experience in boat-building should make themselves thoroughly conversant with each stage of construction by careful study of the drawings. Time spent studying drawings is always well spent. I also found that if possible, the study of a professionally built Silhouette is a great help.

I built up the decking, cabin-top, coamings, etc., piece by piece, but I understand that Hurley's supply the cabin-top ready fabricated, or alternatively, a complete kit of parts. My work on the hull was generally as follows:

Deck beams & foredeck

The deck-beams, of parana pine, were cut from wide boards, for the foredeck and sterndeck. This timber is easy to work and finishes well, and although not durable in exposed conditions, is quite suitable for internal joinery when treated with preservative and painted. Incidentally, the whole of my boat is treated with clear " Cuprinol ". She was built outside. with just a couple of tarpaulins for protection from the weather, and I soaked the hull internally with preservative, as soon as I got her home.

Having fixed the deck beams by notching into the gunwhale stringers, well glued with " Aerolite " and securely screwed in place, I next erected the aft cabin bulkheads and fitted the carlins. I used 1 ins. x 1 ins. for the carlins. and not 2ins x 1 ins. as shown on the drawings, as this section is too heavy to bend without steaming. With the bulkheads erected, and the hatch-framing in position, they acted as strong-backs for the coamings. The forward part of the cabin-top was carefully positioned and fixed dry to its deck-beam beam before the beam was fitted, so that the raking angle was more easily determined. This particular beam. was not notched into the gunwhale, but was supported on a hardwood knee glued and screwed to the topside planking. at each end. The cabin front was then removed and the king-plank notched into the beams. Note that the plans show the king plank cambered along its length. This I found difficult to obtain as shown, but did get some camber, by putting a temporary prop under the plank. I fixed a good solid knee to the stem and the king-plank was bent over the prop, and glued and screwed to the knee. The prop was retained until the decking was completed. The drawings show 3/8 ins. ply for the deck, which I used, but 5/16ins., I think, would be much easier to bend and fix and I would recommend it. The 3/8ins. ply makes a very strong foredeck, but is hard work to pull down over the deck beams. The cabin-front was then fixed permanently and the cabin-top king-plank held with a temporary brace across the hatch opening. Thus the cabin bulkheads were restrained, and the ply cabin sides were fitted, one at a time.



The cockpit.

I have elaborated on the fore-deck and cabin construction. as there was a lot of work entailed. The side decking was easy and the cockpit also followed without difficulty, as the cockpit sides were already in position. I made the three-berth layout in my boat, so I fixed the port cockpit seat permanently. The cockpit is watertight, and the starboard side is a locker with the seat removable. I did not fix the cockpit sole and framing until the rudder skeg has been completed. Hurley's make the rudder skeg out of plywood, about 1 ins. thick. I used 2ins. cedar in 8ins. or 6ins. widths to get the required area, and through-bolted and glued the skeg onto the hog with 1/2ins. mild-steel bars, with a nut run on each end. I used the thicker timber not because I wanted an inboard engine installation, but because

the boat is likely to sit back on her skeg when she dries out. I have seen Silhouettes sitting on a firm beach with the rudder blade partially supporting the weight of the boat. This is bad. The 2ins. thick skeg on mine is below the rudder blade, and should avoid this trouble. The cockpit sole framing was completed next, and the whole of the bilges, etc., under the cockpit was completely painted. Then the cockpit sole was screwed to the framing, and bedded on " Sylglas " tape, with " Secomastic " to fill the joint at the edges. Thus the cockpit is water-tight, but I can always remove the sole when necessary. Ventilation through the space under the cockpit is provided by boring large diameter holes through the stern bulkhead and bridge deck bulkhead.

The rudder.

Before fixing the stern decking, the rudder tube was fitted. The shaft and tube unit was obtained from Hurley's. It was well galvanised, but I was horrified to find that brass screws were supplied to fix the rudder blade to the shaft. I obtained stainless ones from a local chandler. Galvanized steel screws would be ideal.

The tube was too long, and so was cut to correct length, with due allowance for the deck thickness, and also the hardwood block at the tiller head. The lower end of the tube was partially threaded. The hole is bored through the hog, and the tube is made to cut its own thread into the timber. The plans show a hardwood block at this point, and this I fitted, as I had assumed that there would be a small flange welded to the tube to fix it. Consequently. I had to extend the thread on my tube and screw it through the block and the hog. I needed to use a " Stillson " pipe wrench to turn the tube into the hole, and I used paint on the threads to make a water-tight joint. It also requires some care in positioning, otherwise the skeg and shaft will not allow the lower pintle to operate. After this, the stern locker was painted completely, and the stern decking glued and fixed into position.

Fixings.

At this point, I think mention should be made of the fixings which I used, namely 'Tower gripfast' nails. These are made of silicon bronze in a variety of sizes and gauge numbers, both flat-head and countersunk. They compare favourably in price with brass screws and are superior in durability and speed of fixing. The nail shanks are rolled with annular rings which make them act as screws. They can be obtained from most good chandlers, or direct from the manufacturers, The Tower Manufg. Co. Ltd., Central Works, Worcs..

Bearing in mind the damaging effect of salt water on brass screws, with which the hull had been made, I double-fastened all along the hog, chines and gunwales. (It should be noted that Hurley's will use gunmetal screws for a small extra charge if requested, but as this would have meant a few weeks' delay at the time, I couldn't wait !). Nailing is a very rapid way of fixing planking, cabin sides, etc., and due to the serrations on the shank, they do not back out of the timber when driving adjacent ones.

Cabin top.

Now, turning to the cabin top, this was made in two layers of ply with the joint along the kingplank. I ignored the hatch opening until the last, and fixed the ply to the hatch framing, so that the ply would retain its camber each side of the opening. It is possible to make both laminates of the cabin top from one sheet of 1/4 ins. ply. Glue generously between the layers. I also used some 3/8 ins. long brass screws to pull the two laminations together during glueing. They were removed afterwards. and the holes pegged and glued. Nailing along the framing is ideal for this sort of job, which requires to be carried out rapidly.

I cut out two small portlights in each cabin side and omitted the forward portlights indicated, as I felt that the area of glazing shown on the drawings was a little too large. I glazed them with '1/4 ins. Perspex, bolted to the ply and bedded on "Secomastic".

Hatches.

I also made the forehatch hinged as shown on the plans and not sliding as Hurley's do. I made mine watertight by putting a self adhesive strip of foam polythene inside the hatch to close on to the coaming. The main hatch was quite straightforward, and is made with two layers of 1/4 ins. ply. as the cabin-top. Many items such as this were made of scrap ply.

By this time, the boat was really taking shape and the tabernacle chain plates, etc. were made by a local small engineering firm in mild steel and galvanised. This seemed to be well worth while, as the material is so small in quantity and section as to be virtually scrap. and the cost is really only in the labour involved. I also included a sheet-horse made from 1/2 ins. diameter bar.

Accommodation.

So far as internal work is concerned, my boat has a canvas quarter-berth and ply berth to starboard. Hurley's include the berth front, cupboard shelving long locker front under the bridge deck and the stern locker hatch. I have still to complete the galley, chart-table. etc.

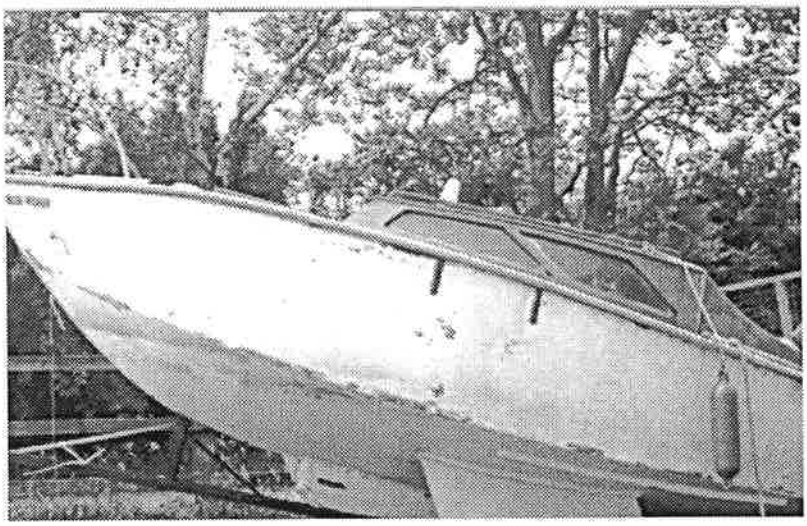
The mast and boom were straightforwtrd, and presented no problem. My mast is solid, as shown on the plans and I obtained the timber from Messrs. Morgans, of Strood, Rochester, Kent. They carefully select the timber, and will do any machining, grooving, etc.. which is required. For people living in North Kent, as I was at the time, they are a useful firm to know, as they have a wide variety of excellent timber. and supply many firms, including boatyards. No doubt there will be some who will insist on having a hollow mast, but for a boat which is to be used for cruising, and in which the mast can be easily raised and lowered easily as it is, I think the saving in weight is of little advantage. The mast fittings shown on the plans were a little elaborate, and I simplified them. I also made my struts of spruce. as they look far better than the aluminium tube indicated.

Major Salvage Work

K. D. N. Smith SII 4 *Luana*

A bit of a Wreck!

I found my boat, a quarter berth Mk. II, by accident in a strange town some 20 miles away last January. Merely an open hull, nose down on a trailer and full to the brim with foul black water and the leaves of at least three autumns. Negotiations were concluded in early February—"£40 for the trailer and the rest is yours"—and Granada was towed home, still full of water, over snow-bound roads by a friendly Land Rover.



Drying her out.

It was impossible to stand the smell of the stagnant mess long enough to bale out, so I bored a 12in. hole forward of amidships and got soaked in the process. I later bored two more holes at the deepest part of the hull when I jacked it up to a horizontal water line level. After building an open-at-both-ends polythene sheet tent, I allowed several weeks for preliminary drying out. I was pleased to find that in the main the plywood of the hull. The shavings from the hole boring operation were dry at the start.

Assessing the damage.

The three bulkheads were all approximately 50% rotted but not sufficiently for the hull to have distorted. These I repaired and where important to keep waterproof I fibreglassed both sides. In every case where rot or delamination had occurred it was at or adjacent to thin plywood offcuts used as shelf ledges or thicknessing pieces at angles, etc. These I have replaced one by one using strips of mahogany ripped from old pieces of furniture, table tops, chair legs, picture frames and the like, set aside over the last ten years or so for such a purpose. This, after having peeled off any delaminated plys of the hull skin and rebuilding with 12 oz. per foot random chopped strand glass mat, resin and hardener.

Curing leaky joints.

Having noticed on this and other Silhouettes that the first sign of the ingress of dampness on a poorly maintained boat is at the joints between roof and cabin sides, cabin sides and deck, and deck and hull, normally protected by quarter or half round beading and having got into the business of fibreglassing (sticky fingers and all), all joints are now resealed.

I have rebuilt the cabin and decks and for the sealing have used approximately 2in. wide tapes cut from 12oz. glass mat, with extra attention and resin to those parts which will finally be varnished. All this is virtually like building a mirror dinghy. Roof and decks are being covered in non-slip deck material and the quadrant beads will be fitted in places for neatness, knowing that the topsides are waterproof without them.

The topsides.

Along approximately 50% of the length of the gunwales the ply sides of the boat were found to be delaminating up to lOins. down, in most places only three or four laminations thick but in three places right through to daylight. These latter were laid up from both sides and the remainder built up to original thickness plus, and ground down to a fair surface with a Black & Decker with a sanding disc. Final imperfections were filled with resin paste or decorators' spacktel and a new gunwhale rubbing strake of 12 in. x 2 in. in Sapele was fitted.

I feel that the quarter berth will be a bit claustrophobic for either my 6ft. x 15 stone or my crew's 5ft. x 5ft. x 16 stone, so I propose to use it for bedding storage by day and adapting the cooker area and galley top level for dual purpose.

I have noted with this boat and some others that no drainage has been allowed for from the outboard motor well, and in my case this has resulted in a rotted and weakened transom. The new well is now glassed in and drained outboard.

Having so far got a boat on the cheap, I am contemplating using a spare Enterprise mast which I have collected. This will be suitably modified but perhaps some member could give me some advice on safety and possibility.

Silhouette (with variations)

F. Dunmore

The original idea was to get a cheap lifeboat hull and convert it. After practically living in the pages of *Verney's Practical Lifeboat Conversions* and similar tomes, viewing rotting hulls in obscure boatyards, and listening to awful warnings from experienced friends. I had a windfall of £150, and realised that, with care, "This was it". I easily resisted the temptation to settle for a dinghy—no, it had to be a seagoing cabin cruiser that would sail. (An engine headed the list of non-essentials). Preferably bilge-keel, (we dry out), self-righting and stiff (I'm a coward). Also I have a young family.

With fingers crossed. I sunk most of my slender capital in a Silhouette hull. (Keels and stub fitted, plus loose skeg and rudder) £100 plus £10 delivery (4 years ago). £40 left!

Customising the design.

I had no idea how a Silhouette was constructed. A few were on the 'hard', wrapped up for winter, difficult for detailed study. With the aid of any, and every book and magazine showing small cruisers, I picked out what I considered their most desirable features, then, on a scale drawing of my basic hull, I drew the decking and cabin detail as I hoped the finished boat would look. I preserved the distinctive lines of my hull's elegant sisters. Basic differences—cabin sides extended to gunwales, with a good amount of " slope in", thus cutting out side decks, and giving 1ft. 6ins. extra cabin width. Cabin stepped at front end, and continued at half main cabin height to about half length of foredeck, giving headroom forward, and vastly increasing cabin cubic space. Hatch placed in raised portion, giving headroom for small lavatory forward. As the cabin top carried all traffic, this was strengthened by lattice ribs inside.

Materials

Thanks to acquiring the wood at cost, this work was completed for about £30. Mast support and rudder trunk were made from galvanised water pipe of hefty gauge, red leaded and painted, also hawse pipe.

The great moment finally arrived when she emerged from her nest of shavings out of the garage, and as she was slowly rolled outside, for the first time I could see all of her at once. I invited inspection by a deep sea yachting friend, he grinned, " Rig her, and I'll take her to Cherbourg ".

Rigging & sails.

Next problem—how to rig her, for £10 ? A racing friend offered me a choice of three broken masts. I put in an alloy tube (they were hollow), and scarph jointed one. Abandoned the idea of a tabernacle, and fitted a mast on the cabin roof. As I could not use a backstay I moved the forward chainplate aft, and rigged her like a dinghy; but doubled the shrouds. The same friend, via club notice board, managed to produce a set of National 12 sails for £7 lOs. Main 60sq ft., jib 35sq. ft. Undersailed by 20sq. ft., helped by willing hands, and via an engine trolley, I was in! Date: June 9th, five months after delivery of raw hull.

Performance

My sailing is small beer after your usual contributors, but members may be interested in the performance of this unorthodox boat. I later got a standard Silhouette foresail and sailed this rig for 2 years with no engine out of Christchurch. Upwind performance is better than conventionally rigged models. Racing, she has comfortably overtaken masthead rigged Silhouettes, and appears to sail closer to the wind. Once, due to unusual circumstances, she petrified me by planing a full 200 yards into a boat-filled harbour ! I have tried to do it again—but no luck.

I am converting to masthead rig this year, so it will be interesting to see how this affects performance. If I sound a trifle proud of my Seventh Summer you must excuse me, as the only thing I had built previously was a rather lopsided cupboard. So take heart, you who contemplate similar labours. Perhaps you, too, this year will be greeted by the slightly puzzled query, "It ***is*** a Silhouette, isn't it ?"

The Building of Girl Pat II

R.J.M.G.

Two at a time!

In the summer of 1962, I decided that a Silhouette was the boat for me. I ordered the plans and persuaded a friend of mine that we should build a pair of SIIs together.

The general scheme was to build one hull at a time in my garage, making two of everything as we went along, so that when the first hull was turned over, the frames could be set up again immediately and the second hull produced.

How long?

The first hull was 8 months from setting up to turning over, the very bad winter of 1963 bringing us to a standstill for about 2 months. The second one took 4l months, which time included a month lost during summer holidays. A check in my log shows that about 330 man-hours were taken on the first bare hull.

How much?

The hulls, unpainted, without masts, sails or fittings, but otherwise complete, cost approximately £140 each. To this basic cost must be added the fittings, 90 per cent of which I made myself: sails £20; rigging, anchor and chain £17; paint £9; and timber for the mast and boom £3. Say £190 for a basic sailing Silhouette.

In addition, I built a trailer (£20), and an 8ft. Pram dinghy for £8 including oars. A 6 h.p. Johnson cost me £35 secondhand, and I suppose I spent some £15 on cooker, lifejackets and bits and pieces.

So around £270 and a bit of hard work which was great fun anyway, has got me an outfit which would cost at least £575 if I bought it in the conventional way. All timber was bought in bulk from a local timber yard. I cannot quote quantities ordered, but if anyone is interested I could knock up an approximate bill of quantities. All the marine ply to BS1088 was bought at our benefit from one source. We used 15 sheets of half inch ply and 4 sheets of quarter inch ply for each boat and dinghy.

Timber.

All beams, stringers, and internal framing was Columbian pine. Mahogany was used for all visible varnish work, such as cockpit framing, hatches, handrails, gunwale rubbers, etc., and also for the laminated stem, log and bilge keel stringers. Iroko was used for the deadwood, skeg and all knees. The floors and tiller were oak, and I used Columbian pine for my mast and boom. Each boat consumed about 401bs. of Beetle A Cement.

Fastenings.

Silicon bronze screws were used for all structural work. Thee cost about 40 per cent more than brass, but will not dezincify like brass. The keels were galvanised and bedded in red putty. the keel bolts were luted with tar soaked in linseed oil and red lead. All external joints on the hull were glass fibred, and the hull was treated liberally with Cuprinol.

I think it might also be worth while giving details of some of the tools I found most helpful, as some are not usually mentioned in home boat building books. A set of Footprint combined wood-screw drill and countersinks is essential.

An electric drill, with a jigsaw attachment. is far more use than the usually recommended circular saw attachment. If you are feeling flush and want to speed up the job a power screwdriver attachment is a great help; but if not a brace and bit and good ratchet driver with the correct sized bits wil! do.

That, I think, gives a general picture of what I built my boat of and what it cost me. There were snags and difficulties, none of which proved insuperable.

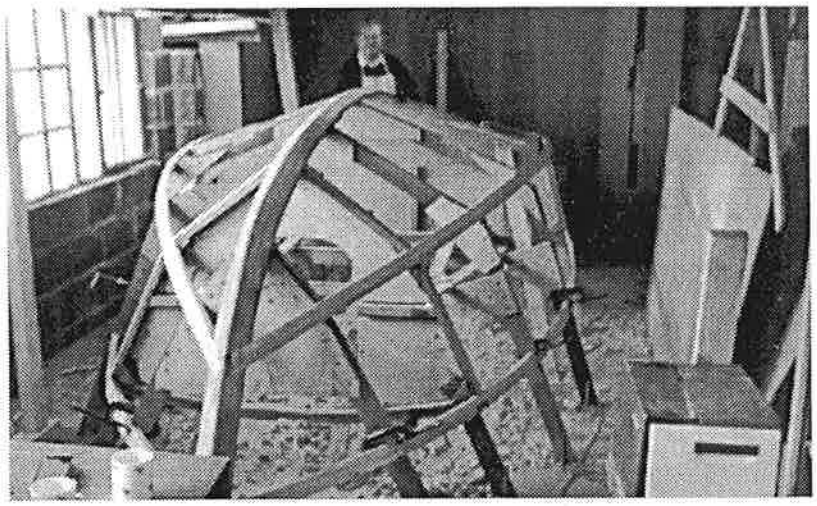
Building from Plans in 1991

Bill McCreath

Bill Mc Creath, who built a MkII Silhouette over a period of three years up to 1992 has kindly given the Association a duplicate set of photographs of the project. Anyone contemplating building a Silhouette is welcome to borrow these from the Editor. He also mentions that anyone needing to cast an iron ballast keel for a Silhouette is welcome to borrow his wooden mould.

Bill reckons that painting is the most frustrating bit, and has deliberately done a lot of the painting as he has gone on, priming and undercoating the hull while it was still upside down, and doing all the internal painting and finishing before the decks and cabin roof were put on. After making the cabin lockers, sole, galley unit etc. he took them out and French polished them instead of the usual varnish treatment. Now permanently fitted in place, they fairly glow against the white paint of the cabin sides.

Some members have had difficulty obtaining a suitable rubber fixing section when replacing the cabin windows. Bill has found that a local auto windscreen company can supply the right thing to fit into the 3/8" plywood cabin sides, and so this may be a source worth trying.



I would be pleased to talk to any interested builders, though to put a price on the material required to build a Silhouette is difficult. I think that I have been destroying bills so that I would not find out how much it's cost! Nevertheless I'll have a go:

My first bill was for wood, it was £501 and the best of three quotes. That was for iroko and marine ply. The iroko was planed. I have spent another £300 on marine ply and extra iroko - so over the last three years for wood - about £800. Fasteners. stainless steel, about £200. Glue - Cascophen and Cascamite about £100. The iron centre keel, cast by a friend, was free. The bilge keels I got from Renshaw & Milner (address below), and I have bought a pulpit from the firm mentioned in the Journal (address below also).

I have put in an air cooled diesel. My best guess at the cost is: Engine £300+, gearbox £300, propeller and prop shaft £300, coupling £150, plus bracket which I made for about £30, comes to a total of about £1100. All the ironmongery I have made myself - as you know, chandlers' fittings are extortionate. I have had much more expense on a stainless steel sink £40, hose clips etc £15, skin fittings and navel pipe £20!

For the mast and boom I got wood at £70, and all the fittings will be home made. Quotes at the Boat Show for for standing and running rigging plus mast and boom ranged between £1500 and £2000. Of course I rejected them. I have not priced the sails yet.

An overall guess at the building costs would be: For the boat without engine, but with all new components, not lavish, would be £2,000 to £2,500, which is about ten times the cost in 1954. Cost of engine, from an outboard at £250, to an inboard at say £1250.

At least my workshop is far better equipped than when I started three years ago!

Useful addresses:

Bill McCreath,
53 Newfield Lane, Dore, Sheffield,
S. Yorkshire S17 3DD
Tel: 0114 2363482.

Bilge keel suppliers:
Renshaw & Milner, New Forge Works, Main Street, Claypole. Newark. Notts NG23 5BJ.
Tel: 01636 84234.

Pulpit suppliers:
Phoenix Marine Ltd. 2, Marrowbone Slip, Sutton Rd, Plymouth PL14 OHX Tel: 01752 267428.
and
Steel Line Ltd,
Shepherd Street
Sheffield S3 7BA.
Tel: 0114 220298.

Traditional chandlery:
Davey & Co Ltd.
4 Oak Industrial Park, Chelmsford Road, Great Dunmow,
Essex. CM6 lXN.

Timber for mast and boom:
J. Brace & Son, The Sawmill, Mill Lane, High Ongar,
Essex CM5 9JG.
Tel: 01277 364629.

Marine ply:
Best prices were from Jewsons Builders merchants. (Not all the branches stock marine ply).

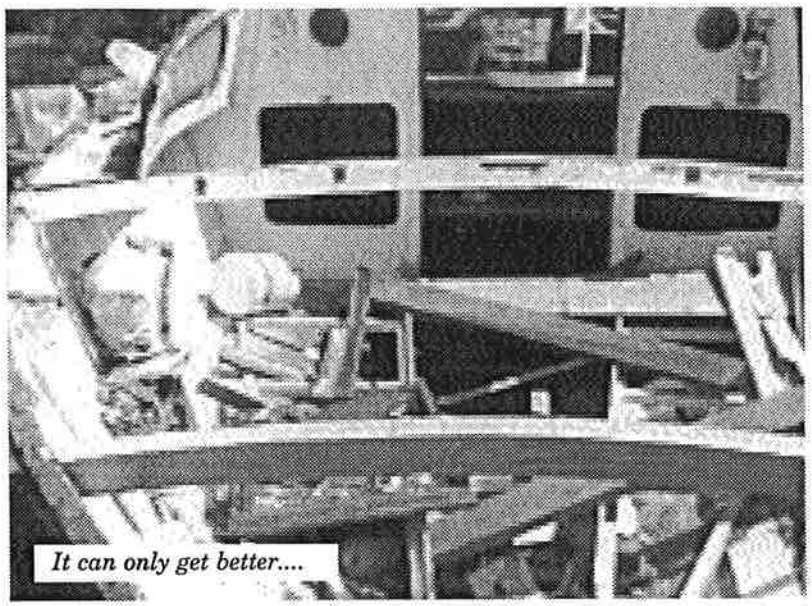
Sails:
Dawson Sails
The Quay, Port Dinorwic,
N. Wales LL56 4JL
Tel: 01248 670103.

The Story of a Silhouette

Malcolm Maxwell

When you buy a dilapidated Silhouette, is it best to begin by doing the minimum repairs necessary to get it on the water, have a season's sailing, and then do a bit of work on it each winter, or is it best to take the bull by the horns and strip it right down to the frames and do a complete rebuild?

There are cases for both ways but Malcolm Maxwell took the first path, and then found that circumstances demanded a more drastic approach. Read on....



It can only get better....

I promised, all of you devoted readers of 'The Silhouette ownern, to continue the tale of woe concerning Sll 577 *Windsong.* Well then, if you're sitting comfortably, I'll begin.

To recap the story so far, Clive and I bought a Hurley built Silhouette in the middle of winter. With the coming of Spring, she began to thaw out and fall apart! We had to replace just about everything that sticks out of the water before we dared to try to sail her, and at the end of my first narrative we were finding out which bits of string did what, on what was left of our summer holiday in Scotland.

Late inOctober, I took *Windsong* to Norfolk for a week ofday-sailing on the Broads. When John Royal came on board at Horsey to help sail her back to Hickling, almost the first thing he said was "What's all this water doing in here ?" - and I knew that The Leak had to be sorted out before *Windsong* went back to sea.

As 1986 turned into 1987, *Windsong* sat on her trailer in Clive's driveway under the cover we had bought, except when the wind blew it off. With the new season looming ever closer, we finally lifted the hull clear of the trailer, using some very traditional oaths, props, blocks and a couple of hydraulic jacks.

Incidentally, did you know that the point of balance of an empty Silhouette is about four inches forward from the after end of the centre stub-keel, on a CALM day ?

We managed to remove the ballast, learning about six different ways of extracting the four bolts in the process, all of course being traditional, and invoking the Norse god Thor (the one with the big hammer), the Saxon God Aleus (cures dry throats, remember ?) - assorted drills, chisels, lumps of iron, bruised thumbs and a saw.

We carefully dried out the whole area, then sealed the joint in the skin with glassfibre tape and resin. This is another process that seems to require a good command of boatyard vernacular, particularly if you're working under the hull, and get an eyeful of resin. However, plenty of water and a large glass of scotch were found to effect a cure, in Clive's case at least! There's more to this sailing lark than meets the eye, we hope. Well, Clive does !

With the hull integrity now restored we refitted the ballast, using new bolts and plenty of very expensive mastic sealant, which I was assured would be seawater proof. A quick rub down and a coat of paint finished the job, we were ready to go sailing again. We planned to take our daughters to Scotland at Easter, we were going to show them there was some point to all the effort, and that sailing is a GOOD THING! We were well prepared, after all we had done it before, and this time Clive had prepared a barrel of home-brew ! We arrived at Kippford late on Thursday evening with *Windsong,* Clive's Mirror dinghy, and the inflatable, now called *Dolly,* for some reason which I won't go into. The home-brew survived the trip quite well, but really needed to stand for a while before being sampled again . The boats weren't so lucky ! At the slipway on Friday morning everyone was busy getting our little flotilla ready for sea. An hour or so later, we were all back at the caravan again

Windsong was leaking so badly from a crack at the after end of the starboard bilge keel that we could see water running over the bottom. So, with a light lunch inside us, Clive and I went to Dalbeatie and on to Dumfries in search of materials to make some sort of repairs. We took off the starboard bilge keel and fitted a patch over a largish crack that seemed to be the worst culprit as regards water being

where it shouldn't be. We put the keel back on with new coach bolts - the correct countersunk head type being unavailable. We painted the repair, and made good the edges with a cheap mastic sealant, then as it was 'half-past late', we retired for the evening. What was left of it, and drowned our sorrows thinking tomorrow must be a better day. - It wasn't !

When we examined the hull in daylight, we found water dripping from the joint in the plywood skin all along the keel, and further investigations pointed to the fastenings having failed from bow to skeg. Still, we had our guitars, and a barrel of home-brew. What would you have done - So did we !

So - Back home again, there was little need for discussion, we knew what had to be done, and by now, how to do it. First, get her off the trailer, second, remove the ballast keel. The mastic we had used held the keel up when we removed the bolts -it's called 'Hayseal' by the way. Third, remove the bilge keels. Then came the interesting bit.We took off the tabernacle and main hatch cover, removed the tiller, then pushed and shoved her sideways on to the neighbour's drive, and, with his kind assistance, rolled her over. She finished up back where she started, but right way (wrong way) up, and standing fairly secure on her hatch coamings. Now seemed like a good time to maker a sacrifice to 'Ale Us' again, just to keep the Gods on our side. (It's not that we actually like drinking, you know).

Getting the old plywood off the frames was fairly straightforward, using methods that have been described in a variety of books and magazines. We then found that our fears regarding the fastenings were well founded, but also, horror of horrors, the hog was delaminated, and from the cutwater to aft to the rudder post, quite rotten ! There were several other areas of damage do to one reason or another, so we put eighteen feet of some mahogany type wood into the hog. Glued with 'Cascophen', and doubled at the butt, just forward of the rudder post. This, being very rusty, was also renewed with a suitable lump of steam pipe, and drilled and tapped to take a greaser. The bilge stringers were also replaced, and all the framing checked for security, and faired ready to take the new skin.

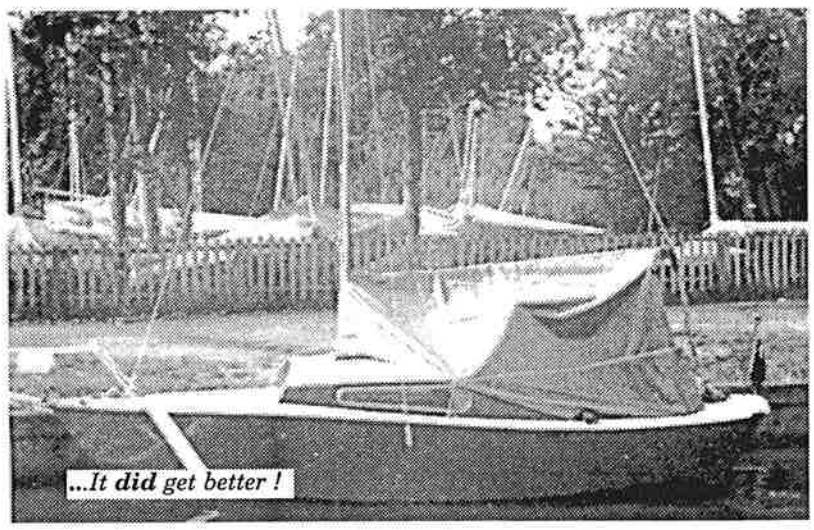
Just a point here. If you ever have to spring a a largish piece of wood, say four and a half by one Inch by about ten foot into place, make sure that BOTH ends are well fastened before you let go. The speed at which assorted friends, wedges etc. can vanish, possibly for ever, has to be seen to be appreciated. I wouldn't recommend it as a social pastime. There is one regret I have about this period of Windsong's history; that I didn't take enough photographs of the work being done, and I'm certainly not going to do it all again just for the pictures.

Back to the boat yard again. Well, Clive's driveway then. We carefully marked out some more plywood sheets, then even more carefully cut them up, no, not with our little metal knives, but with electric saws. A jigsaw for the curly bits, and an absolutely brutal circular thing for the straight ones. It might not have been brutal to the wood, but to our ears, oh dear ! Then we glued and screwed all the bits of wood together with 'Cascophen', gave all the joints a finishing touch with glass-fibre tape and resin, followed by lashings of primer undercoat and then the enamel. We had used all the blue paint last time, so all the hull was finished in red, well, we had lots of that.

Tip no. 96. Don't mix different kinds of paint, they can 'argue', and cause a lot of extra work. While the hull was upside down we gave the interior a good soaking with 'Cuprinol'. I've no doubt there are better preservatives, but that's what we used, probably 'cos that's what we had. We made a new skeg out of two plywood sheets with slots routed out forthe fastening studs, and then glued together. The we rolled her over, put all the ironwork back on, made a new sailing strut, and

I sailed in the sun; I sailed in the mist. I even sailed in the showers, but when I got caught in one of the thunder storms and sailed up somebody's front garden, then spent an hour or two drying out the boat and her gear, I nearly gave up. Mother to the rescue this time -well, my parents live in Norfolk, and Mother has one of those nice electric sewing machines that does all those fancy stitches. So Mum, my daughter and I spent a few hours making a BOOM TENT !! Now the summer could fall on me as much as it liked, and I didn't have to pump out after it. As an added bonus, I now have standing headroom (just!) under cover, in the cockpit, at least whilst moored. What a difference that makes to a Silhouette. I made more use of the new boom tent in October of last year, and found living on board for a week much more pleasant than in the past.

So there it is folks, the story of a Silhouette. I hope I've managed to entertain you, perhaps inspire a few, and give hope to those involved in similar work. It can be done. If Clive and I, a teacher and a motor mechanic can, then I think any moderately practical chap could do the same.



...It did get better !