San Diego Ship Modelers Guild

Volume 3 Number 12 DECEMBER 17, 1979

Notes from the November Meeting

Andy Anderson restated that the plans for Langley were coming soon. In Bill Bensons absence Doug McFarland chaired the meeting. The subject of the December meeting came up and it was decided that the Christmas party would be held as usual aboard the Star of India but no formal meeting would be attempted. Members are still invited to bring models. The final order of business was the auction. The general feeling was that it was a rousing success, and that we should have an auction next year. It was suggested that there be a viewing time prior to the sale for the inspection of the merchandise. The results were as follows:

Seller		Item	Asking	Received	Buyer
Ed White	*	Rosewood	$2.00	$3.00	Bob Brady
Ed White	*	Rosewood	$3.00	$3.00	Bob Crawford
Doug Smay	*	Mabutchi motor	$----	$5.75	John Woodard
Doug Smay	*	Gear Drive	$----	$1.25	Al Lheureux
Al Lheureux	*	Speed Control	$1.00	$3.50	Doug McFarland
Dave Bash	#	Rattlesnake	$25.00	$30.00	Ed White
Tom Hildebrand		Volante	$25.00	$----	-----
Tom Hildebrand		Harbor Tug	$18.00	$18.00	John Woodard
Tom Hildebrand	*	C.W. Morgan	$-----	$2.00	Vic Crosby
Bob Crawford	*	X-acto Knives	$.15	$.15	Al Lheureux
Bob Crawford	*	C-clamps	$----	$3.00	Ernie Hernandez

*Entire procedes donated to the club
#Procedes to the Dave Bash Memorial

Models Present:

Doug McFarland	Krabbenkutter	Kit	Plank Hull
Bob Brady	Arethusa	Scratch	
Bob Crawford	Hawaiian Merchant	Scratch	Solid Hull
Vic Crosby	Mayflower	Scratch	Solid Hull

December Meeting

The Annual Christmas Party is our December meeting. It will be held on the Star of India and should be a beautiful evening. Wives, and/or girl-friends, families, dates or what-have-yous are invited. Contributions in the munchie department would be welcome but the Bubbly will be provided by the Gray Whale. BRING A MODEL!

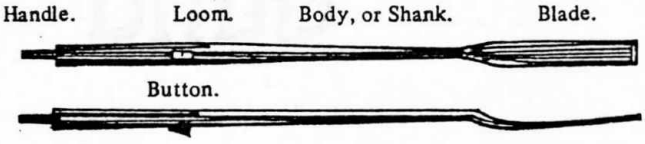
Due$

January is the time to renew your membership or you will be Keel-hauled at the February meeting. Fair warning.

Nautical Research Journal

Ed White donated the following notes from the Nautical Research Journal which I think you may find interesting reading.

Sculls for wherries, skiffs, &c., for choice and make are similar to wherries' oars.



DIMENSIONS OF SCULLS FOR WHERRIES, SKIFFS, &c.

Breadth of the Barge, Wherry, or Skiff	Lengths					Loom		Blade				Handle
								Broad		Thick		
	Sweep	Handle	Loom	Body or Shank	Blade	Thick	Deep	Inner End	Outer End	Inner End	Outer End	Diam. of
Ft In	feet	ft in	ft in	ft in	ft in	in	in	in	in	in	in	in
5 6	14	0 - 4½	2 - 4	7 - 9	3 - 6	3	3½	2	5½	2¼	½	1¾
5 3	13	0 - 4½	2 - 2	7 - 2	3 - 3	2⅞	3¼	1 7/8	5 3/8	2¼	½	1¾
4 9	12	0 - 4	2 - 0	6 - 8	3 - 0	2½	3	1¾	5¼	2 1/8	½	1¾
4 6	11	0 - 4	1 - 11	6 - 0	2 - 9	2¼	2¾	1 5/8	5 1/8	2 1/8	½	1¾
4 3	10	0 - 4	1 - 9	5 - 5	2 - 6	2 1/8	2 5/8	1½	5	2	3/8	1¾
4 0	9	0 - 3½	1 - 7	4 - 10	2 - 3	2	2½	1 3/8	4¾	2	3/8	1¾

N. B. Oars or sculls made of fir exceed the dimensions in the above tables one-eight of an inch. The price of fir oars is seven shillings less than ash oars, and fir sculls three shillings and sixpence less than ash sculls.

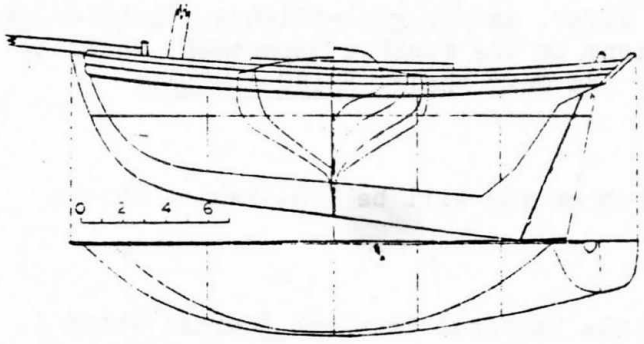
SHOP NOTES

SCRATCH BUILDING THE SOLID HULL

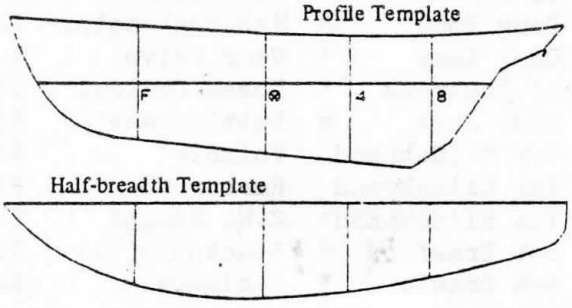
Occasionally it is desirable to describe the basic processes involved in ship model construction. Model making is based on conventions which have evolved over many years. Early American naval architectual works discussed the use of models for design purposes and outlined methods, materials and use of the model, which was termed a "half-model."

To a large degree, the half-model was the forerunner of the solid scratch built hull model of today. However, the methods of constructing a half-model employs only one of several methods useful for the solid hull form now constructed.

Basically, the block model is the simplest form of a solid model. The block should be of sufficient size so the length, breadth and depth of the ship's hull can be traced on two of its sides. The block must be squared so that it can be easily bisected by a pencil line drawn on the top, both ends, and bottom of the block. Perpendicular to this center line the various station lines must be constructed to provide essential measuring points during the carving needed to shape the block.



Basic plan of the Bermuda Boat *Corsair* built in 1807, after a H. I. Chapelle drawing in *American Small Sailing Craft*, page 235.



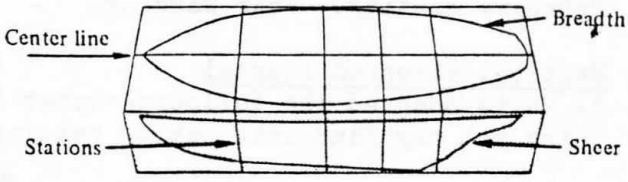
Initial templates required for shaping the hull block.

Once the block has been properly squared and the center and station lines have been drawn, several patterns should be made to guide shaping of the block. The first two patterns required are 1) the hull profile, and 2) the outline showing the greatest beam of the hull.

The hull profile template should indicate the load water line and each section to be used to shape the hull. These marks should coincide with the lines drawn on the hull block.

The template of greatest beam should have lines indicating the centerline of the hull as well as the section lines needed.

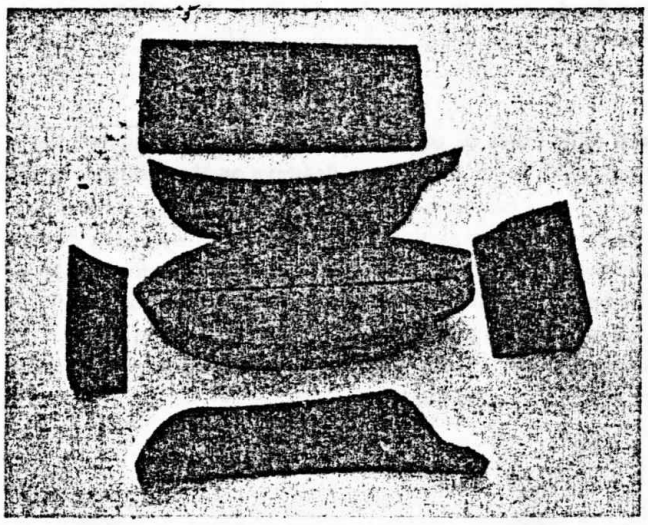
After both templates have been made, transfer their outline to the prepared hull block. The block should look like the following illustration. *(Text continued on page 100)*



The block is now ready to be cut.

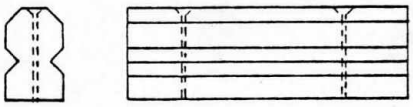
A bandsaw is the most useful wood working machine to cut the profile and main outline of the block. The profile should be cut first and both the top and bottom cut segments retained. After remarking the center line and sections in the cut area of the block, the cut segments can be securely tacked on to the block before the outside beam is cut. By doing this, the block retains its squared shape making the drawn outline shape accurate for cutting.

Again, using the bandsaw, cut the outside beam of the hull. You have now secured a hull block which has the major shapes required prior to carving the hull. All wood cut from the block can be discarded.



Hull block cut to shape and ready to carve.

A piece of 2" x 3" hard wood cut to the shape shown is most useful to hold the hull block securely while it is being carved. Drill two holes to take long screws so the piece can

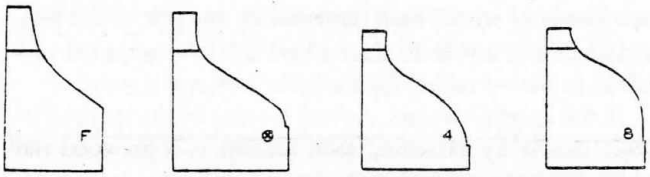


be attached to the top of the rough cut hull block. The tapered shape of this wood enables the hull block to be secured upside down in your vise for carving the hull block to final shape.

Your section patterns must now be made. These can be cut from 1/8" masonite, stiff cardboard, acyrlic sheet or aluminum sheet. Each will represent a one-half section of the station lines used to form the final hull shape. Each template should show several guide lines which include the load water line, the sheer line as well as the hull center line. These items are essential so the template can be used as an accurate gage during the carving process. Each template is made from oversize sheet so the centerline can be accurately indicated, and sufficient material retained for handling purposes. When the templates have been made, each should be checked for accuracy on your plan.

The template openning will be governed by the method required to finish your hull block. If the final hull block represents planking on the frame, the template shape will be larger than if it represents the outside of the frame. Should the template represent the frame size, you will have to plank the carved hull block after it has been formed and shaped.

Most of the plans found in the Journal show the hull to the outside of the frame. Planking will be required to provide the final hull shape. It is for this reason that scantling tables are useful for these indicate the various sizes of plank used to sheath the frames. Thus, a garboard strake can be 2½" thick, while the main wales will be 4½" thick, giving, especially on eighteenth century hulls, definate steps and mouldings on the outside of the hull.



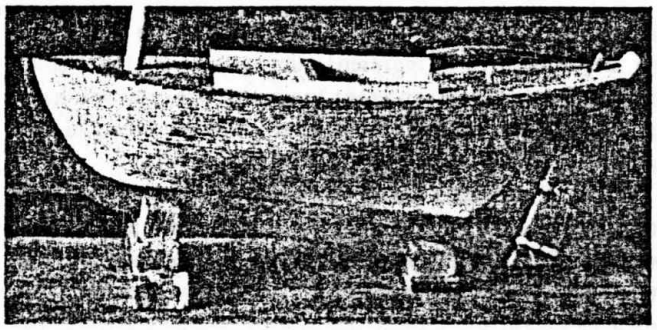
Section templates required to shape hull.

Once the templates have been made and checked for accuracy, carving of the hull block can begin. Using a plane or spoke shave, knock off the excess wood in large chunks. You will use the section template for the midship section first to control the forming of the block. Work the entire length of the block and not one section at a time. Work can proceed very rapidly at this point as long as you maintain control with the use of the midship section template.

Once the initial cuts have been made, and much excess wood has been removed, check each station with its template to guide carving off the additional wood. It is wise to provide yourself with some carpenter's chalk (blue, red, or green) which can be rubbed onto the inside surface of each template then transferred to the hull block as you carve it to shape. The chalk on the templates will indicate high points of the wood which must be cut away. This is done for each station at the same time so that the cuts can be long and even. As you progress, the chalk line will lie on greater segments at each station as the hull block assumes its final shape. Make certain that the template approaches the center line of the hull at each station, otherwise your hull will develop a twist. As each chalk line becomes longer, take less wood away, for you will be approaching your final hull shape. Garnet paper should be used for the final finishing.

Some individuals use files for taking off excess wood. This is satisfactory if you expect to plank the outside of the hull after shaping has been completed, but should not be done if the hull is not to be planked. Sanding is more useful for this latter form of hull. I prefer the use of spoke shaves, planes, gouges and chisels for shaping purposes as these leave a smooth surface if the tools are kept well sharpened.

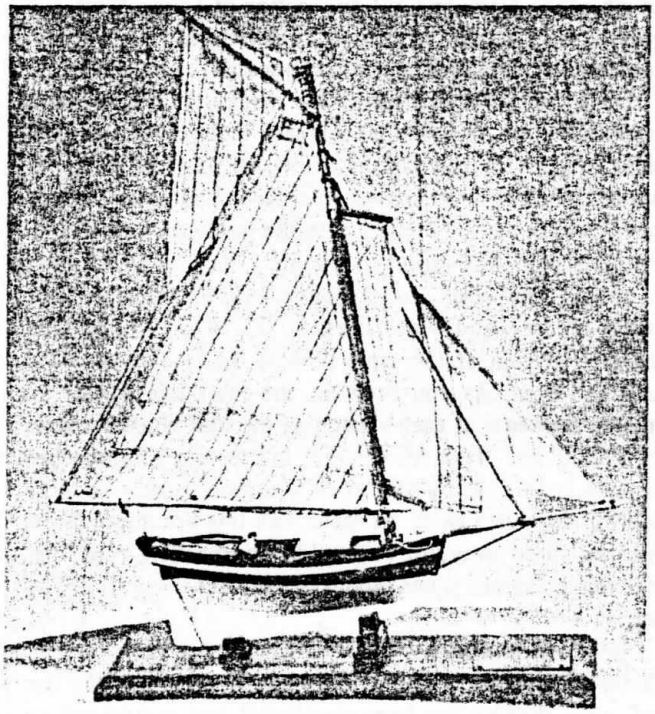
Be certain that corners are kept sharp. The plane on which the stem, keel and stern post rests can be protected by dummy pieces during the carving period. These can stand battering along their sides and top as long as the surface of the hull block is not cut or damaged.



Hull shaped with stem, keel, stern post and rudder added, cockpit cut and deck laid.

You may find and desire to assemble a block hull from two pieces of wood, each representing one side of the hull. In this case it is wise to place a keel block between the two halves to form a rabbet for the stem, keel and stern post.

If this method is used, carving control of the hull can be made simple by attaching each section to a plywood flat which has been marked with the proper lines – load water line and each section. The templates made for this setup are formed less one-half the keel width with shoulders on each side so they can be set over the half-hull block on their respective line. This will provide an accurate guide during hull carving and both sides can be completed in a similar fashion with few problems.



Completed model of *Corsair* at a scale of 1/6" = 1'-0".

This is a simple method of hull construction. It works fine for small models and can be adopted to hulls up to a foot in length. Though larger hulls have been made by this system, they are subject to abnormal stress and strain as the hull absorbs or looses moisture. Though the interior of a large hull can be hollowed, the stresses still remain and are difficult to control. (Merritt Edson)

SPACER FOR THE UPPER DEADEYE

After two and a half years of evening hours spent on my model of the clipper, *Flying Fish*, it was finally time to start the rigging. Having read all the usual books which every modeler has in his library, I was eager to use the little devices mentioned therein to help me rig the deadeyes.

This being my first model, I thought that the wire spacer normally discussed would allow me to speed through this tedious work. So, bending a wire to the correct shape, inserting it in the correct holes, looping the shroud round the deadeye and pulling it taut was only the start of the work. To my surprise, no one ever mentioned that the upper deadeye was going to spin around in the eye of the shroud. The problem was clear, how to maintain tension while keeping the deadeyes in their correct position? My solution was to modify the wire jig to answer the problem.

The modification required the addition of the same gage wire bent in a "U" shape round the wire jig to fit the left and right holes of the deadeye. I then silver soldered the U shape wire in place, leaving a deadeye on the assembly to assure proper positioning. By doing this, I was able to maintain tension while applying a throat seizing where the shroud crossed. Before using, the ends of the cut wire should be filed so they will not bind while mounting a deadeye. Or, if you wish, epoxy a deadeye on the jig itself and press fit another deadeye into the eye of the shroud after having applied the throat seizing.

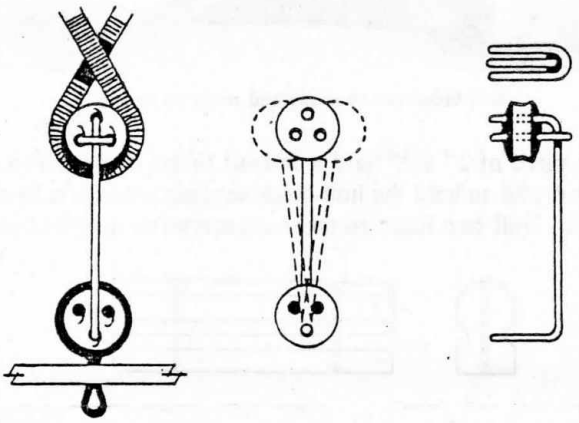


Figure A Figure B Figure C

Figure A shows an outboard view and method of wrapping the shroud round the deadeye. Figure B shows the ability of the unit to pivot to the correct angle and represents an inboard view. Figure C is a side elevation while above it is a top elevation of the wire spacer as modified. I suspect that one could apply the same "fork" to the lower deadeye, but the metal strops held the deadeyes in position through the entire procedure. (Dave Drosd)

SHEET ACRYLIC FOR TEMPLATES

I cut all my templates from acrylic sheet which I find excellent for this purpose as I have been able to make them with great accuracy. I can buy offcuts very cheaply from the manufacturers. (Keith M. Hobbs)

SHOP NOTES

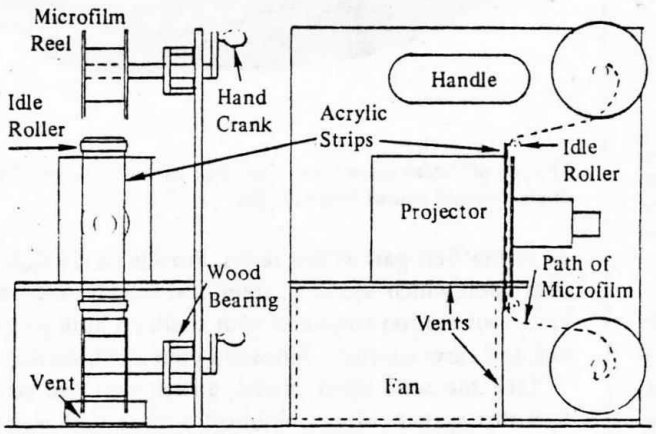
A MICROFILM VIEWER

As we all know, NRJ is available in 35mm microfilm and unfortunately, microfilm viewers are unusually expensive. I have found, however, that a satisfactory substitute can be made using an old 35mm slide projector. A good, readable image of the original page size is displayed at approximately five feet.

The modification required will depend upon the type of projector used, but the principles are simple.

First, convert or remove the slide handling mechanism to take a guide through which the film may move easily. Second, arrange spool spindles above and below the guide and place idling rollers to give a smooth lead to the film. Additional cooling may be necessary to protect the film.

I used an Agfa Opticus 100 single shot vertical feed projector. The film guide is made from 1/16 inch thick acrylic



plastic. Use two strips 2 inches wide seperated by a gap 1/16 inch by 1-5/8 inch. The ends project an inch or so above and below the projector housing. This fits firmly but can be removed for cleaning. The spool spindles are of 1/2 inch dowel, shaped to fit the spools. They turn in simple wooden bearings 1-1/2 inch long and are provided with cranks. Idling rollers are 2 inch wide plastic cotton reels. A fan made from an old 78 rpm record player was added to provide extra cooling.

Fabric screens have been found unsuitable for microfilm reading since the grain is often coarse and the surface hard to focus on. Hardboard painted flat white or something similar is more suitable. (C. B. Collingwood)

SCRATCH BUILDING THE SOLID HULL - PART II

In former years, the most used method of scratch building for a solid hull was the waterline plank system, where a single wood plank was used for each waterline shown on the lines drawing. This system was used by early 19th century naval architects to provide a simple and economical means of forming a three-dimensional half-model representation of a hull and could be called "design by sculpture."

Lauchlan McKay, who wrote *The Practical Ship–Builder*, New York, 1839, stated "As vessels are almost universally built from models in the United States, and as it is much the most accurate and preferable method, I shall commence by showing that mode of construction." McKay than proceeds to outline the drafting of a suitable plan, including sheer, sections, and waterlines to be used as a guide in forming the model.

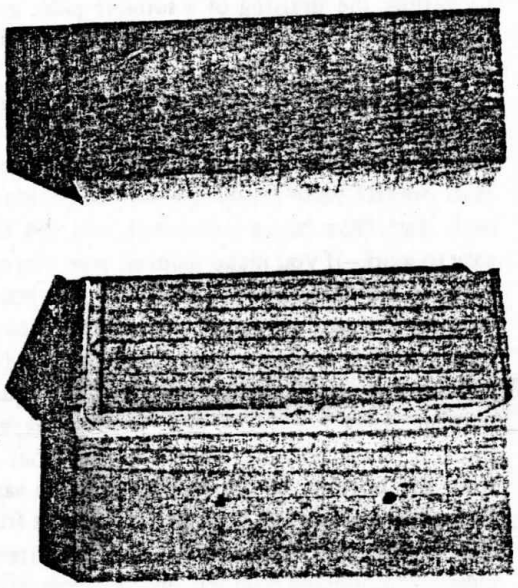
He continues ". . . Having done this the body plan is complete. You will number the [water] lines 1, 2, 3, 4, beginning at the first line, or the one nearest to the base, and then prepare your boards–pine and Spanish cedar are the best, the colors being contrasted, and the stuff soft, and easy to work–if you make them all pine you cannot see the form of the lines. Be very careful to face your stuff, and it requires the greatest pains to get the stuff out, of the same thickness as it is drawn in the sheer and body plans. When you have it all of a thickness, joint and square one edge; number them 1, 2, 3, 4, &c., putting the narrowest and shortest in the bottom, and commence your numbers also from the bottom, to correspond with the same heights in the body plan; you will then take the widths from the waterlines levelled out in the body plan, and transfer them to their corresponding numbers on the pieces of boards; gauge and plane the boards parallel from end to end. Proceed in this way with all the waterlines and sheer-pieces; you can obtain their length from their corresponding height in the sheer plan; and can fasten the whole together with screws or keys observing to keep them square from the bottom upwards as you secure them. The better plan is to put them in a bench screw, observing to square and keep all the edges out of wind before you tighten the screw. This being done, bore three or four holes through the whole, and treenail them together. Then face the midship part of the model, observing carefully to square it; for if it is not exactly square and out of wind, it may be liable to great error, and very difficult to lay down. . . ."

These instructions of McKay outline the assembly steps taken to make a waterline half model. The genesis of this form of model appears to have occured in the late American colonial period, though few examples have survived to the present period. The waterline half model method of design became popular and was practiced generally during the nineteenth century and contributed to the methods evolved for construction of full hulled ship models later in the century.

A waterline lift model enables the scratch model builder to use planks which are more easily obtained than a solid block. These are assembled in several lifts to construct a full hull replica of a vessel. Templates used for this type of construction are basically the same as those required for the solid block model, but requires addition of a template for each waterline needed to make the hull, with the exception of the half breadth template used for the solid hull, which acts as one of the waterline templates for this form of construction. Using the lines of the Bermuda Boat *Corsair*, we find that one additional template representing the trace of the load waterline is required to make a lift block model.

The *Corsair*, therefore, can be made from two lifts. The planks for both should be smoothed, squared, then marked with a center line and the section lines as shown on the basic

plan. The lower half of the hull is seperated from the upper half along the load waterline. After marking, the two halves

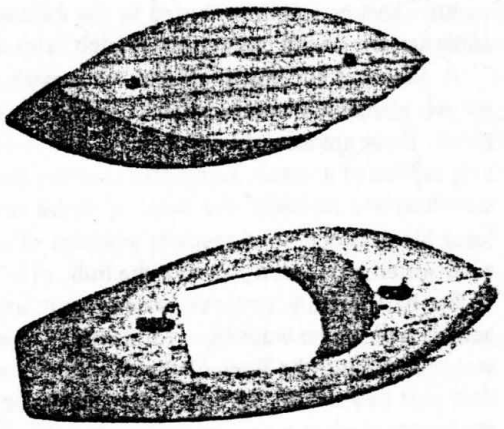


Upper part of this photo shows a solid block marked with centerline, stations, outboard outline, and sheer. Lower portion shows the two waterline planks required for a lift model. Sheer, stem and stern pieces have been sawn away from the upper lift. Lower lift shows location of holes for treenails to hold upper and lower lifts together during the gluing-up process.

should be clamped tight and holes for two pegs drilled to hold both portions in exact position during the gluing process. After the pins have been fitted, the lifts can be seperated and their waterline cut, either with a coping saw, on a jigsaw, or on a band saw.

After cutting the outside outlines of both pieces, the lifts should be reassembled. It is now possible to tack on the cut sides so final shaping cuts of stem, stern and sheer can be made.

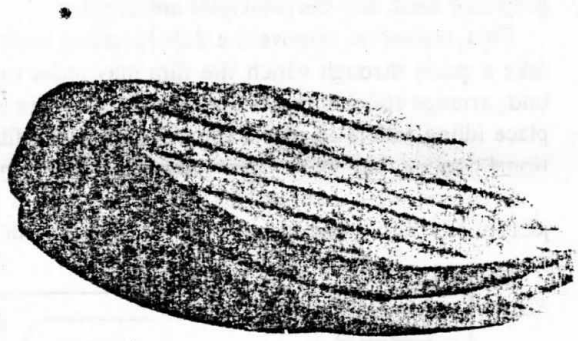
Corsair has an open cockpit, so this was cut into the top



The two lifts of the *Corsair* model disassembled to indicate shape, treenails and cockpit cutout.

lift by means of a jig saw. Since the inside of the cockpit was finished with strip wood, sufficient wood stock was removed at this time to provide room for the staves. Because of the small size of the model, no attempt was made to hollow the interior of the hull other than this cockpit cut. On larger lift models, this extra wood removal should be done as it provides a lighter and more stable hull.

The lifts can now be glued, clamped and set aside to dry. When satisfied that the glue has dried, carving of the hull can commence. The carving process is similar to that outlin-



The lifts of *Corsair* assembled. Upper half carved, lower half indicates original square cutout shape of lifts.

ed in the first part of this series. Provide protection for the flats upon which the keel, stem, and rudder posts rest. Use your four station templates with chalk on both sides of the hull and carve carefully following your chalk marks.

Like the solid block model, a keel plate can be used. i find this system when combined with a keel plate to be more difficult to assemble as the lifts must be butted into the keel plate and secured in position while the glue dries. However, it can be done, and the use of a keel plate provides a definite location for the keel, stem and stern post which can be secured easily after the hull has been carved. (Merritt Edson.)

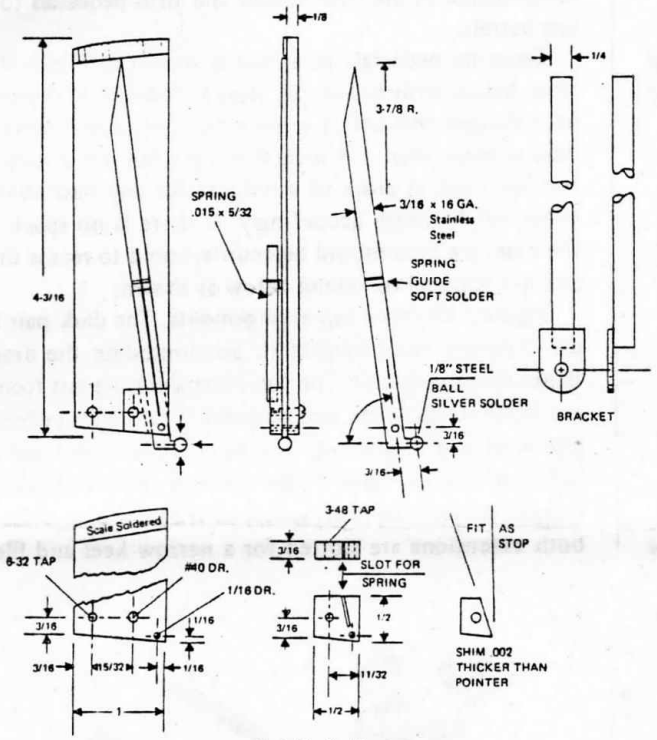
AN INDICATOR FOR LATHE WORK

A short while ago Dana McCalip and I were discussing truing up round stock in an independent four jaw chuck on the Unimat lathe. A commerical test indicator would be the ideal instrument to check for run-out, of which there are many types.

This brought to mind a very old primitive lever indicator I saw many years ago. While explaining its simple principal with rough sketches, I decided it could easily be made with few tools, from bits and pieces by the average model builder.

Actually, it took less time to make than to make the attached drawing and composing this article. My choice of material was predicated by what I found in my scrap box.

First the pointer was cut and filed from a piece of 16 gauge (approximately 1/16 inch thick) stainless steel, the pivot hole drilled and a 1/8 inch steel ball silver brazed in place to provide a smooth, hard curved rub surface. Instead of the steel ball, a bulb shape could be filled on the end of



Set Up Indicator

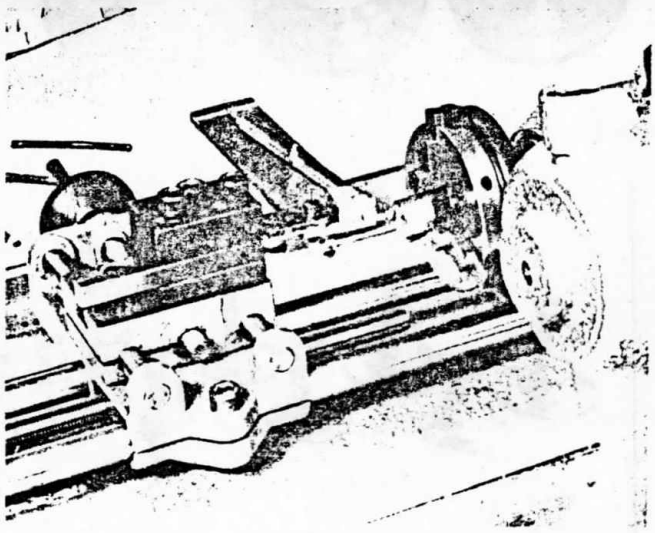
lever, but that would not be quite as good. The angle and sizes are not critical.

A small angle piece of sheet metal is slotted and soft soldered to the pointer to provide a guide for the flat spring. Actually a piece of spring wire about 1/16 inch in diameter would work as well as the flat spring.

Next the bit of 3/16 x 1/2 x 1/2 brass was drilled and tapped, a slot cut for the spring, then mounted to the 1/8 inch steel plate. If taps are not available, a screw and nut would serve as well.

The 1/16 inch diameter hole for the pivot pin can be drilled through the assembly.

The shim between the two pieces should be slightly thicker than the lever so that the lever moves freely without wobble, it can be cut to provide a stop for the pointer at maximum deflection.



Indicator in place on Unimat checking face run-out of a turning.

The spring is a force fit in the slot of the brass block or it could be soft soldered if loose.

The arrangement of the ball permits checking run-out of the outside or inside diameter as well as the face. It would also be useful for checking taper or misalignment.

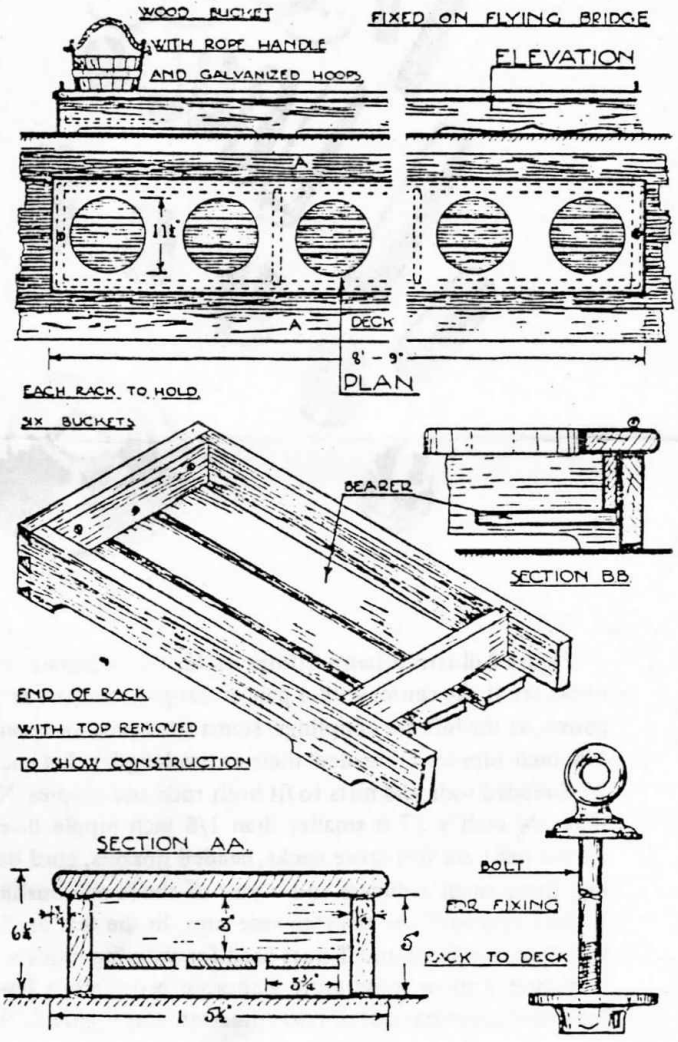
By actual measurement, .001 inch movement of the ball deflects the pointer 1/64 inch so I soldered a short piece of scale to the 1/8 inch plate to provide graduations.

The accuracy of the graduations is not too important because run-out or misalignment checking is only a matter of adjusting or correcting until needle twitch is eliminated.

With a suitable bracket this indicator would be useful on any machine tool. Sketched is a bracket that would adapt it to the Unimat. (J. P. Sorn)

BUCKET RACK – 19th-20th CENTURY DETAIL

The drawing presented here appeared in S. B. Duckworth, *Ship Joinery,* Dutton, New York, 1924. It provides a working drawing for a bucket rack found on merchant sailing and steam powered vessels of the mid-nineteenth through the early twentieth centuries. Two base designs are shown in the elevation. The brass eyebolt is the only metal fastening shown, though screws were used to lock the wood members of the base together.



MOUNTING YOUR MODEL AND OTHER IDEAS

Lamp parts make attractive, versatile pedestals. The steam lighter model shown in Figure 1 is supported on a pair of lamp neck fittings; with attaching bushings they cost barely over $1.00 for the pair.

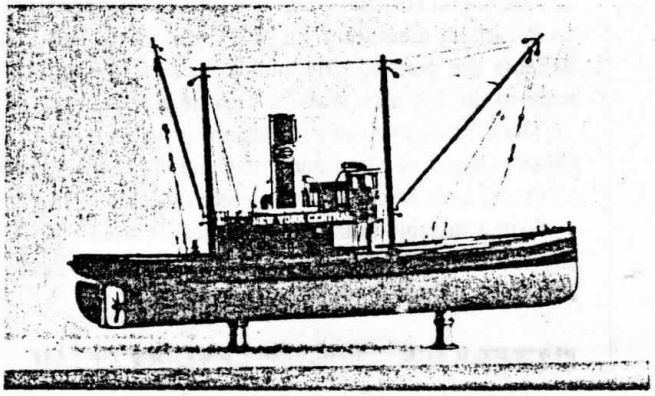


Figure 1

resemblance of the first, fourth and fifth pedestals to windlass barrels.

Securing pedestals to a base is shown in Figure 4 (seen from below with board cut away). Pedestal at right is held by a flanged reducer; it requires a deep counterbore if the base is more than 1/4 inch thick. At the left a nipple and nut are used in place of a reducer for any base thickness; select nipple length accordingly. If there is no space below the base, the base should be counterbored to recess the nut, and not allowed to extend below as shown.

Figure 5 illustrate top arrangements. The dark pair at left use different neck heights to accommodate the drag of a Baltimore clipper hull. The top extensions are cut from slotted lamp stems (note one removed from taller pedestal) to grip keel and deadwood. The second pair is for the steam lighter shown in Figure 1: the forward one is extended by a flanged reducer and short spacer of 1/2 inch o. d. brass tube; both extensions are slotted for a narrow keel and filed for

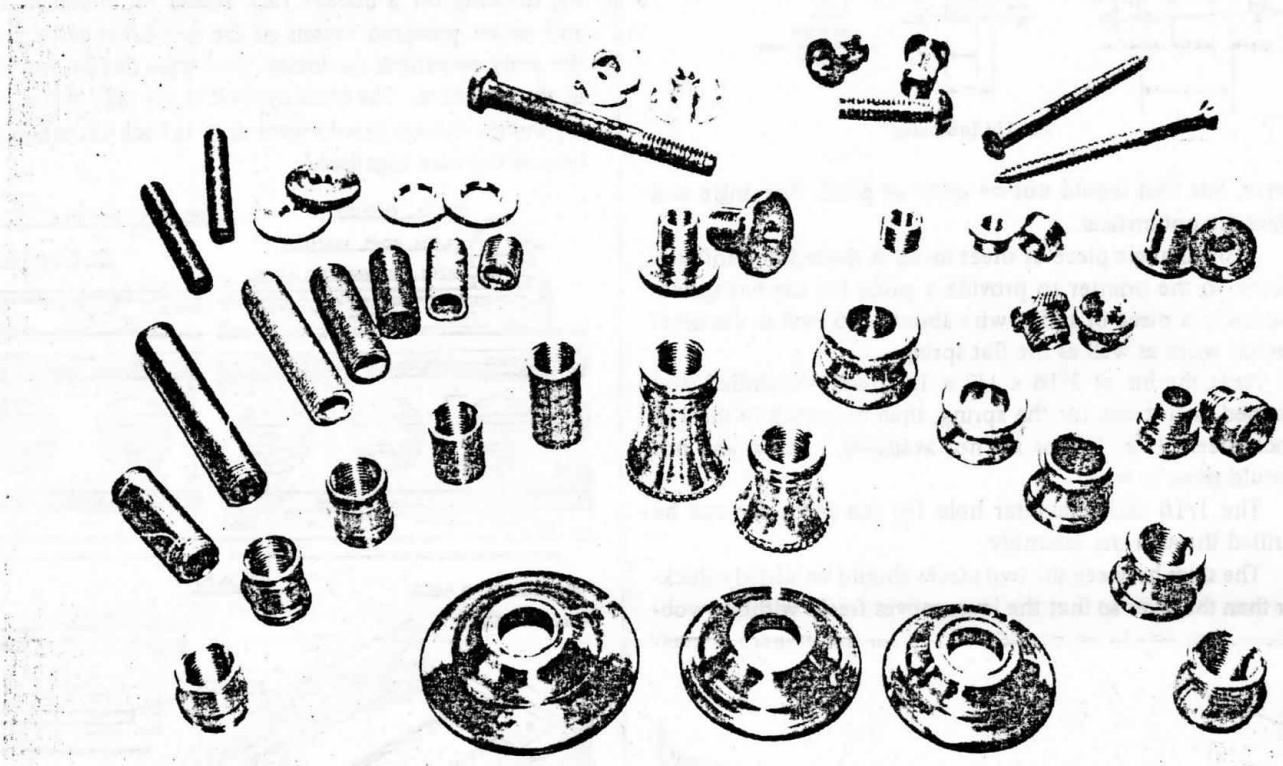


Figure 2

Figure 2 illustrate lamp fittings useful for pedestals: basic necks are at the center with a pair of flanged reducers shown above. At the left are couplings, stems (threaded ends only), 1/8 inch nipples (threaded their entire length), 1/4 inch x 27 threaded rods and nuts to fit both rods and nipples. Note that 1/4 inch x 27 is smaller than 1/8 inch nipple thread! At the right are five more necks, beaded nozzels, cord bushing, three small reducers and a pair of shade rest bushings. In the foreground are assorted vase tops. In the rear are long wood screws, bolts and T-nuts used for securing models.

Figure 3 show some more elaborate pedestals, a few of the many combinations of parts illustrated in Figure 2. Note

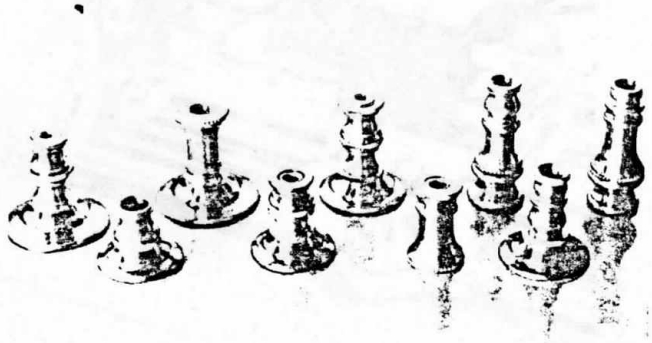
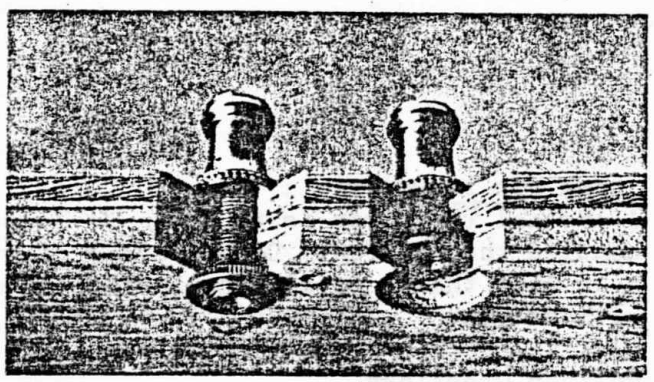


Figure 3

slight deadrise. The third pair show extensions made of lamp couplings which may be slotted and filed to any length or shape. The seventh pedestal has a reducer and 1/4 inch x 27 rod which can be passed through a hole in the keel or in a hollow hull; the nut will secure it inside the model. The last pedestal is similar but uses a nipple instead of a rod so wire may be led into the hull for lighting or animation. Any of these schemes may be used with any of the pedestals shown in Figure 2.

Plan, make and fit the base and pedestals as soon as the hull is carved, before any detailing, spars, rigging or even paint are added. This avoids possible damage when doing heavy work or upside-down drilling on the finished model.



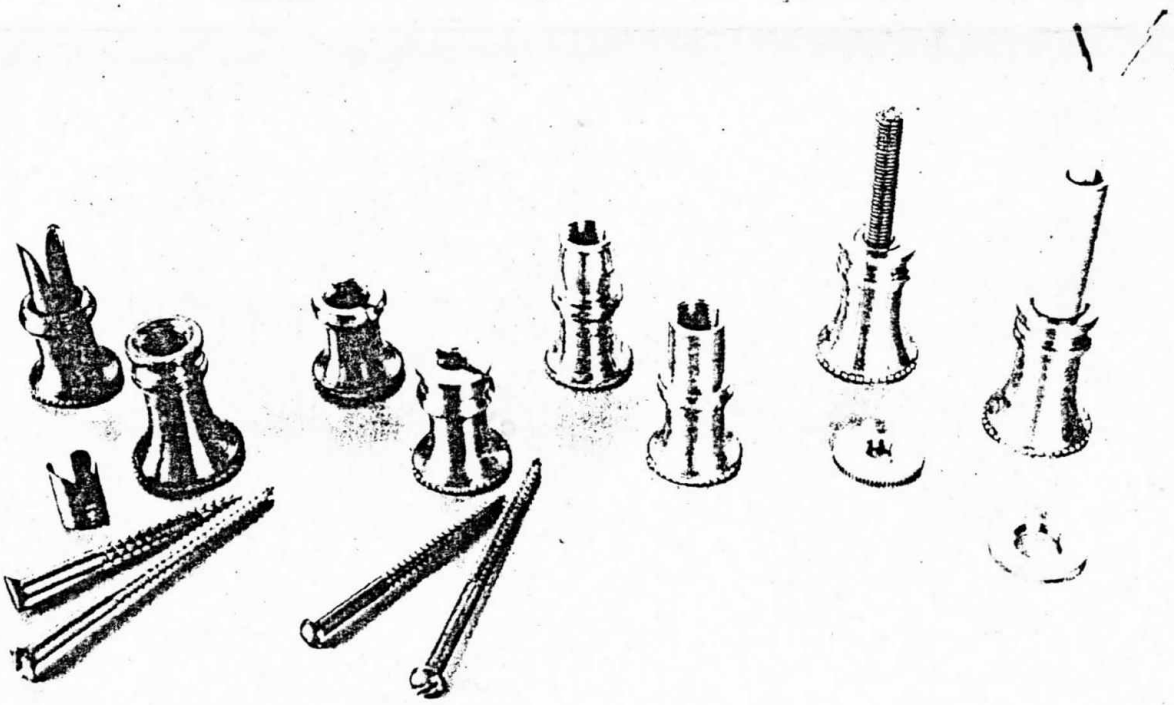


Figure 5

Install the model on a permanent base as early as possible to avoid need for transfer and handling of the finished model. The model can be handled easily when on the base, which is protected by wrapping and padding thus preventing harm to finish during later work.

Make the baseboard longer and wider than the extreme dimensions of the model, including the width of the spars, even if no case is to be fitted. This larger base protects the model from damage if it is slid against a wall or furniture.

Use the longest and the heaviest possible screws or bolts consistent with pedestal design. Penetrate at least one inch into a solid hull or use T-nuts inside, so that the fastenings are secured and well locked into place. (Alan D. Frazer)

Note: This material was prepared and presented to the Long Island Ship Model Society by Mr. Frazer. Because of its interest, it was felt members of the Guild would find it of use.

AMERICAN SOCIETY OF MARINE ARTISTS

The American Society of Marine Artists, under the auspices of the National Maritime Historical Society, was chartered on March 31, 1978 to encourage public awareness of the richness of our maritime history and the value of the sea, lakes and rivers as a source of artistic expression.

Anyone serious about marine art is encouraged to join. It is not necessary to be a marine artist to do so. Annual dues are $25.00 until one becomes an artist member, and then are increased to $50.00. All members will receive periodic newsletters, membership lists, information about exhibitions, invitation to the annual exhibition and its catalog.

Membership checks should be addressed to William G. Muller, 116 Cedar Lane, Ossining, New York 10562. Correspondence should be addressed to Peter W. Rogers, Secretary ASMA, 44 Pearl Road, Hahant, Massachusetts 01908.

Thank You in Order

A special Thank you is in order to Doug McFarland for the fine spirited way he handled the auction. Doug's sense of humor always brightens the evening. Also a special thanks to all the participants in the auction. It wouldn't happen without you.

Holiday Greetings

We'd like to extend a special Holiday wish of Merry Christmas and a joyous New Year to all the friendly Boat builders and their families from the Editor and typists, the Crawford family. See you at the Party (meeting).