

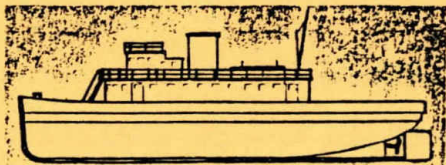


# San Diego Ship Modelers Guild

Volume II

NEWSLETTER --April 1978

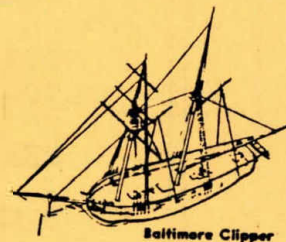
Number 4



A thing of beauty  
is a joy for ever....

---John Keats

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## NOTES from the Last Meeting:

The first item of business concerned a change of time for our meetings. It was proposed that our business meeting time be changed from 7:30 to 8:00PM. No one voiced any objections so future meetings will commence promptly at 8:00PM. Members may still come early and visit, gab etc. prior to the meeting. Perhaps maybe the Tom Lai dinner bunch will now make the meetings "on time." .. Our Purser, Bob BECKER gave a membership drive report stating that a lot of our members were slow in renewing their 1978 dues. Later, Bob gave a fine presentation on his model of "Endeavor" as well as bringing a small table saw and sander which he scratch-built; a most handy piece of equipment. Skipper Doug McFARLAND announced a "mini" regatta coming up on Sunday, May 7th (10AM-4PM) in Encinitas at the Lake Shores Trailer Park which has a fresh water pond and is located just off of Poinsettia Ave/St. Members discussing their models included Bob BECKER Don BERNSTEIN, Bob CRAWFORD, Vic CROSBY, Lew HARMELING, and Doug McFARLAND. W.M. Tompkins from the Los Angeles area gave a most interesting presentation on scratch building U.S. Naval ships of the WW I and WWII eras. Bill started as a boy and over a period of nearly forty years, has built over 120 different models each of which he drew plans for from collecting photos. During World War II, his models were of such accuracy in late detail, that he was contacted and queried by ONI --thats the Office of Naval Intelligence who couldn't understand how he did it unless he was some sort of a "spy." His models are now featured around the country for USN recruiting purposes. The five models which Bill brought were truly superb, and we hope to have him back again real soon. Thirty-nine attended this meeting.

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## MODELS DISPLAYED:

1. Bob BECKER - Endeavor -Scratch, plank on frame
2. Don BERNSTEIN - Cutty Sark
3. Bob CRAWFORD - Star of India (2), scratch in miniature Cutty Sark, Sergal kit
4. Vic CROSBY - Two ships in a needle eye--in a bottle.
5. Lew HARMELING - "Dreamboats; canoe & Friendship
6. Doug McFARLAND- Norske Love, Billings kit
7. Royce PRIVETT - Constitution
8. Bill Tompkins - Five WWI &WWII USN ships, scratch

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SAN DIEGO SHIP MODELERS GUILD

Elected Officers

CAPTAIN: Doug MCFARLAND

/redacted/

LOGKEEPER/  
EDITOR: Fred FRAAS

PURSER: Bob BECKER

STEERING  
COMMITTEE: Bill BENSON - Vic CROSBY - Al LHEUREUX

MEETINGS: 3rd Friday of each month at 08:00 PM aboard BERKELEY

MEMBERSHIP \$ 6.00 per year for members of the Maritime Museum  
DUES: Association of San Diego; \$12.00 for all non-members.  
Out-of-state residents may join for \$ 6.00.

Founded in 1971 by the late Russ MERRILL and Bob WRIGHT

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REGIONAL MODEL CONTEST AWARDS:

Members entering this contest walked off with a variety of well-deserved awards when the show concluded March 25th. Awards were as follows: Al LHEUREUX - Balao-class WWII Fleet Submarine (R/C Electric) BEST OVER-ALL (of entire show); John SANDS - USS OREGON (R/C Steam) - Trophy for Scratch R/C; Bob CRAWFORD - USS JENKINS (DD-447) - Trophy for Scratch Static; Don WESLEY -KATE CORY- Best Over-all for Static Sail. First Place for Sail Kit with KATE CORY and Privateer (tie); Dave BASH - First Place for Scale Kit with RATTLESNAKE; Earl SCHWEIZER - Second Place for his tug "ALEUTIAN"; Russ LLOYD -First Place for Ship in a Bottle; Vic CROSBY - BEST OVER-ALL for Ships in a Bottle Collection (Vic entered 13 of them); Doug MCFARLAND - First Place for Incomplete Kit with his NORSKE LOVE and First Place for Historical Application with SANTA MARIA and Royce PRIVETT - Second Place with his CONSTITUTION. Congradulations to all for the splendid efforts.

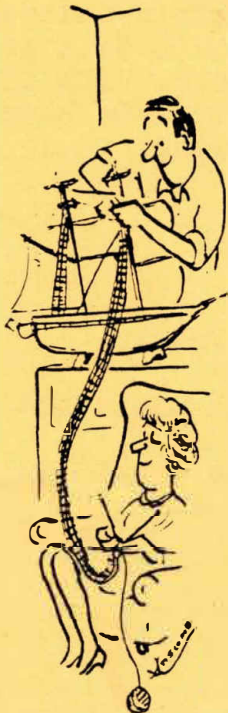
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FROM THE EDITOR'S DESK:

This months newsletter includes a two page 1978 club roster listing current members. We have a number of fine friends and superb models missing. Urge you to contact your missing buddies and invite them to rejoin. Equally important is their objections if they are no longer interested in the guild. (perhaps some more changes might be in order.) --Since this roster is also used for "cut-out" address labels, please check yours for accuracy and let me know of any corrections.

Finally, my special thanks to Roy NILSON for suppling the information listed in pages 6 thru 9 on fiber glassing and scale conversions. The "Fiberglass Fuselage" article is equally applicable to hulls or other principle ship parts/fittings. Roy also supplied an article "Build your own Vacuum Former" which we'll run next month.

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CAPTAIN'S CORNER:

Captain's log -- star date....oops! Wrong Captain.

First of all my heartiest congradulations to those of you who won awards at the Regional Model Show and especially to Al L'HEUREUX for his "best-of-the-show" trophy. Every member who entered the competition won something which says a lot for the quality of workmanship our people produce. Nice going!

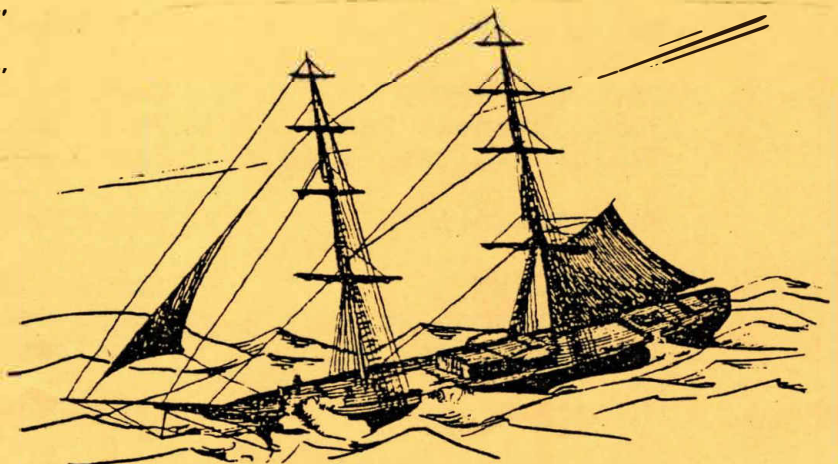
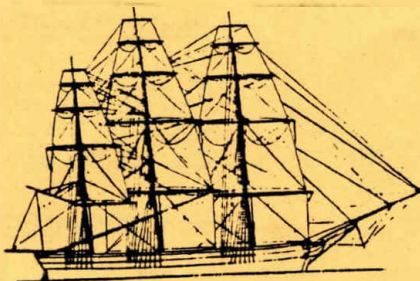
Dave SELLARS has brought to my attention a proposal for a fantastic club project. People from the Aero-Space Museum have expressed interest in building an aircraft carrier exhibit for the new museum. They would build the airplanes and we would build the carrier. The carrier will be the LANGLEY, converted from the collier JUPITER in 1922. Scale will be 1/72. Perhaps one of you might be able to bring some information on her to the next meeting. This would be a great opportunity for the club to perform a service to the city of San Diego. Think it over and we'll discuss it at the up-coming meeting.

I was spinning the dial on the "boob" tube the other night - I know I should have been working on a model - when I happened to see an "old" friend. Part of the Perry Como Easter Special had been filmed aboard the good ship "California." I guess those TV people have a little more influence than we do because the weather was sure a lot better than it was for our whale watch cruise.

Finally, the number of models being brought to the meetings seems to be dwindling rather severly. I sure hope you all haven't stopped building models. Our show & tell is probably the most valuable part of the meeting but nobody can learn anything if you don't bring something in. And remember a presentation doesn't have to be a model. We've had some fascinating pieces of historical interest brought forth in the past. See you all April 21st.

\*\*\*\*\*

Fractional Inch	Decimal Equiv.	Actual Size	Inch Foot Equiv.
1/16	.0625	1/192	1"=16'
3/32	.0936	1/128	1"=10'5"
1/8	.1250	1/96	1"=8'
11/64	.1665	1/72	1"=6'
3/16	.1875	1/64	1"=5'2"
1/4	.2500	1/48	1"=4'
3/8	.3750	1/32	1"=2'6"
1/2	.5000	1/24	1"=2'



BRIG UNDER STORM SAIL.

San Diego Ship Modelers Guild

\*\*\* MEMBERSHIP ROSTER \*\*\*

April 1, 1978

Andre L. ANDERSON

Dr. Wm.F. EADS

Michael LEEDER

Bill BARKER

Fred V. FRAAS

Albert LHEUREUX

D. David BASH

R.F. FRANKE

James K. LIKES

Phil HEADLEY

Bob BECKER

John L. HARMELING

William D. & Tom BENSON

R.A. "Dick" HOMECHICK

Donald BERNSTEIN

Bill KELLY-FLEMING

Bob BRADY

Gordon P. JONES

Dr. Bill BROWN

Carl R. JOHNSON Jr.

James LAHR

Vic CROSBY

Charly KOHLMYER & Assoc.

John C. "Chris" MATHews

Douglas McFARLAND 10607

Ann MERRILL

Roy T. NILSON

Arnold OTCHIN

Jack L. TIGHE

Bob & Alice De BOW  
(San Diego Argonauts)

Gerald W. PEARCE

Bill & Bette THORPE

R. Val PETERSON

Melville A. TRUELLE

Royce PRIVETT

Don WESLEY

SHIP MODELERS ASSN.  
Tom Palin-Logkeeper

SHIPCRAFT GUILD Abraham  
Taubman, Sec'y ll C

Frank W. MILLER  
Editor & Publisher  
MODEL SHIPS & BOATS 415  
L

P

Chuck RAUNER

E.F. WHITE

John SANDS

Bob WRIGHT

Edgar SANDS

George L. YOUNG

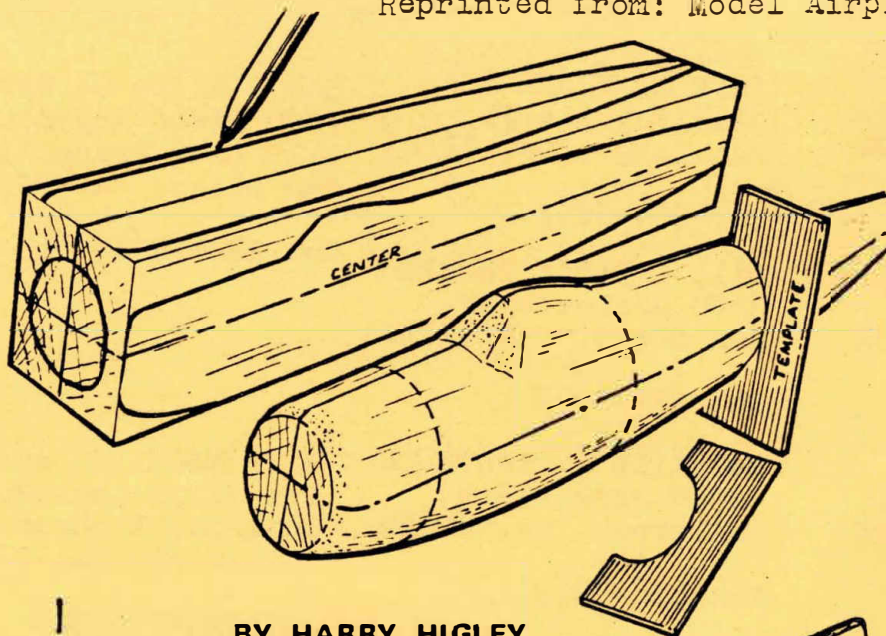
Earl G. SCHWEIZER

The Gray Whale

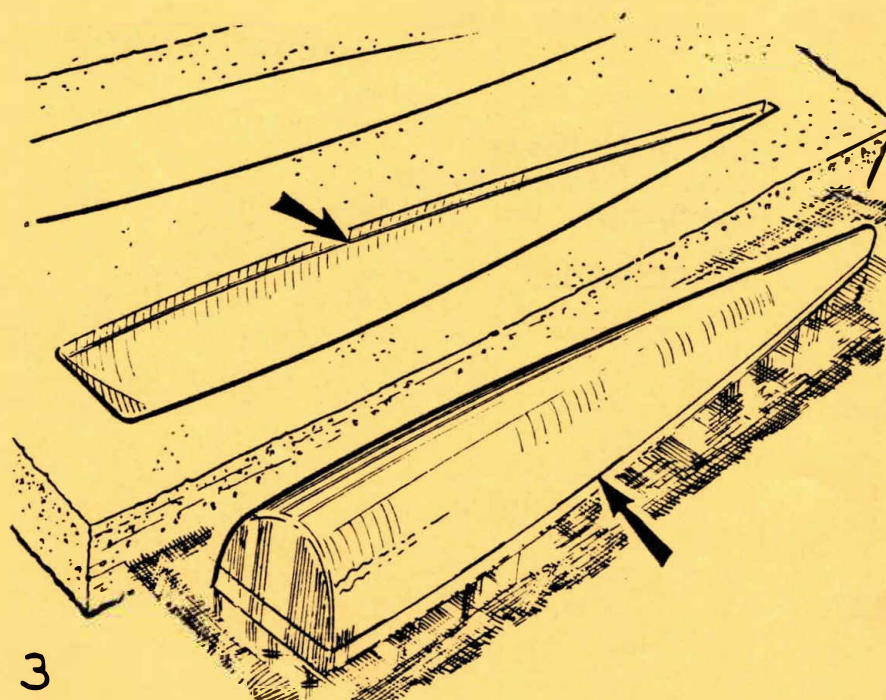
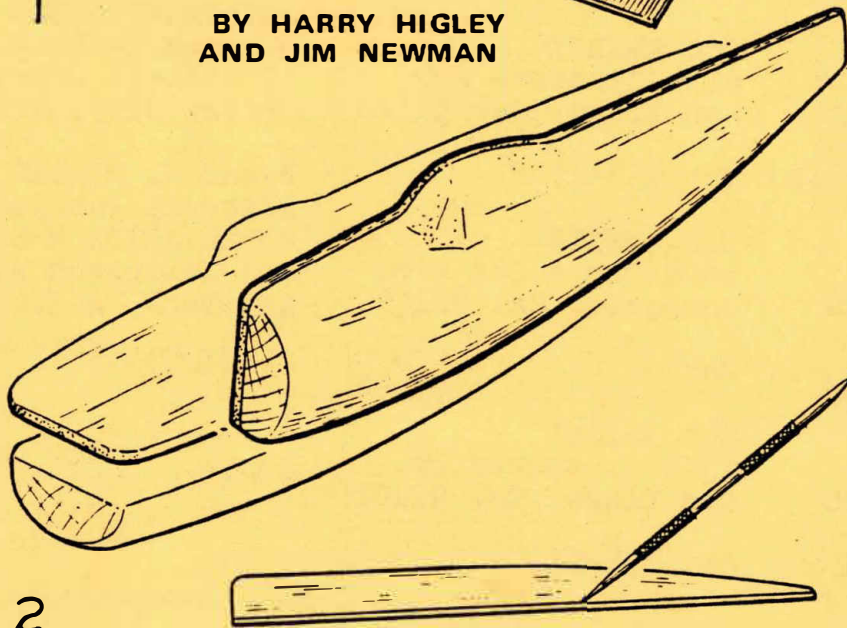
David F. SELLARS

Doug SMAY

# Fiberglass Fuselage



1  
BY HARRY HIGLEY  
AND JIM NEWMAN



Here's your chance to get started with fiberglass. The how-to's for this not too mysterious process of making the beautifully round or compound curved fuselage or cowls.

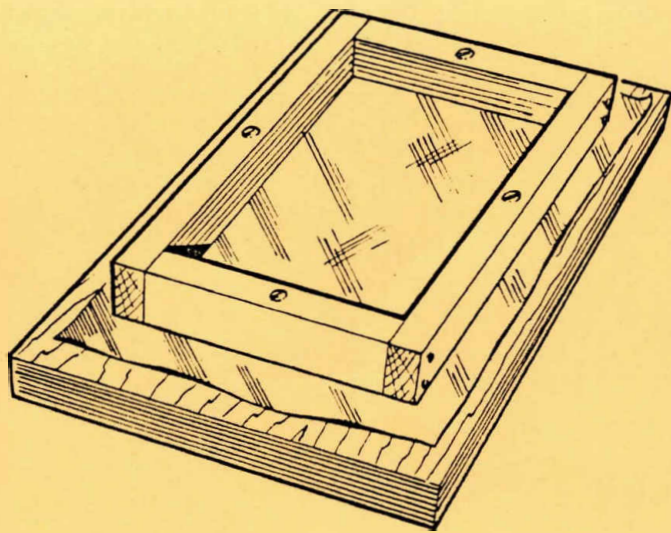
- This project came about because I have been making the same Navy Carrier airplane for five years and was becoming a little bored with the whole process. The fuselage is a crutch with carved blocks on the top and bottom that require a horrendous amount of work to shape and hollow. Some of my R/C friends suggested that these be made of fiberglass. I pointed out that a Navy Carrier flier cannot afford the luxury of a heavy plane, but they explained that final weight must only be enough to guarantee rigidity, and most commercially available fuselages are more rigid and hence heavier than they need to be. The weight also depends on the amount of resin used. Many commercially made units contain an excess of resin.

The following presentation will be divided into three parts: (1) The patterns or as they are properly called the "plugs," (2) The mold and (3) The finished pieces or moldings. Each drawing is numbered and these numbers will be referenced in the text.

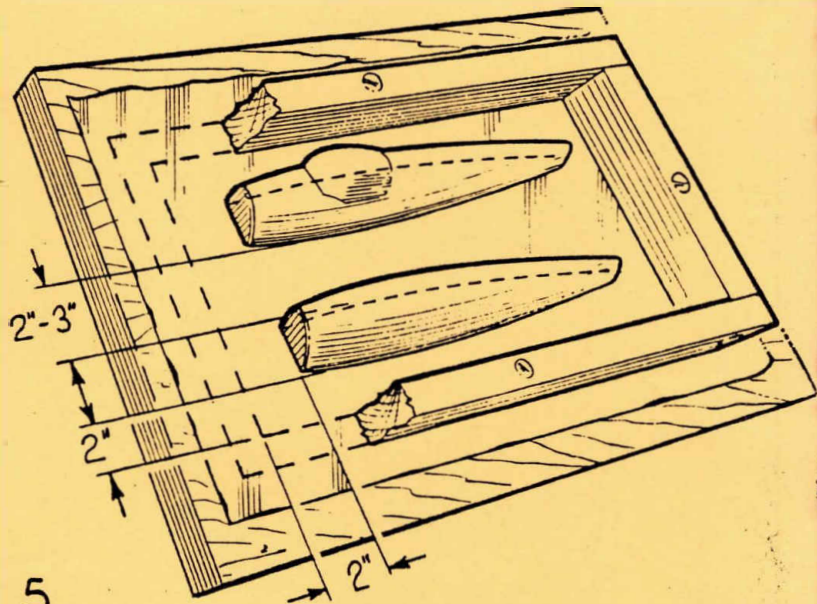
**THE PLUGS.** The fuselage is made in two pieces which may be split horizontally as shown in Fig. 10 or vertically as shown in Fig. 11. It is best to use a horizontal split on midwing ships like the Guardian or Avenger, while a vertical split lends itself well to low wing designs. The plug is carved from two pieces of wood that are tack glued along the split line. Basswood or white pine is the best choice of wood, though balsa can be used. The plugs are subjected to considerable force when they are removed from the mold, and balsa would probably be damaged. Fig. 1 shows the method of carving is exactly the same as that which is used to make a solid model.

The time spent in obtaining a good finish is well invested, because any defect in the plug will be faithfully reproduced in the moldings. Ten or 15 coats of dope will yield the desired result if the pattern is wet sanded between each coat starting with the third. The last coat should be rubbed with automobile rubbing compound until the finish is flawless with a glass-like texture. When the moldings are made, they will in-

(Continued on next page)



4



5

### FIBERGLASS FUSELAGES . . . CONTINUED

herit the texture of the plug, and finishing time will be minimized.

Fig. 2 shows a technique used by Jim Newman. After the plug is split, a 3/16" sheet is glued to each half, and the joint line is scribed. As shown in Fig. 3, a similar line will be cast in the moldings. This mark is a trim mark that is exact rather than the approximate location given by the edge of the mold. The technique of trimming to this line will be explained later.

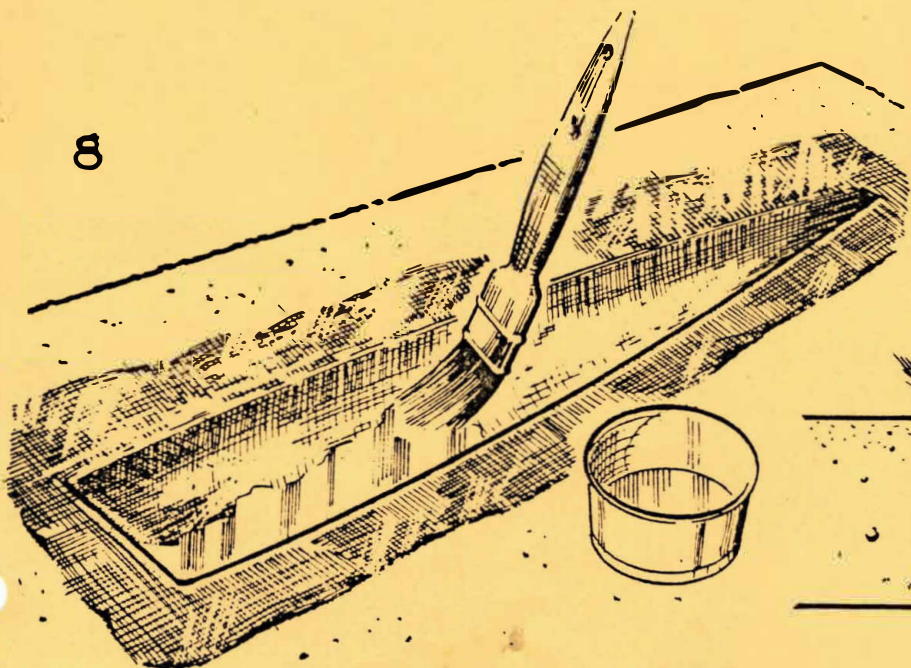
**THE MOLD.** Many modelers have tried making molds of plaster of Paris with less than satisfying results. A much better material is made by U.S. Gypsum Co. and

called Hydrocal B-11. It has about three times the compressive strength as plaster of Paris, and while this is not the physical constant we are most interested in, it is a good relative indicator. B-11 has a surface texture like granite. This material is available at a pattern maker's supply house, or any construction supply company that handles U.S.G. products can order some. The price is about eight dollars for a 100-lb. bag which is enough for even the largest body.

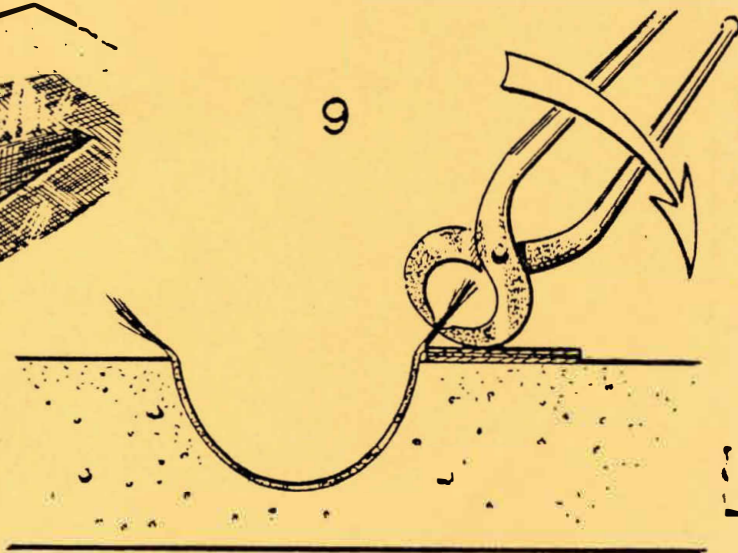
Fig. 5 shows the plugs placed in the mold frame which is assembled from "two by fours" and 1/2" plywood baseboard. The pieces are shown attached to one another by wood screws, so the frame can be dis-

assembled from around the mold. Waxed paper is used to keep the plaster from sticking to the baseboard. Fig. 5 also suggests some minimum distances. Since B-11 is so cheap, there is very little point in weakening the mold by making it too small. When the mold is made, the patterns must be coated with a continuous non-water soluble film that offers only minimal resistance to movement across its surface. A mixture of two parts of kerosene to one part of petroleum jelly will work well. This is easily applied with a soft, camel hair brush.

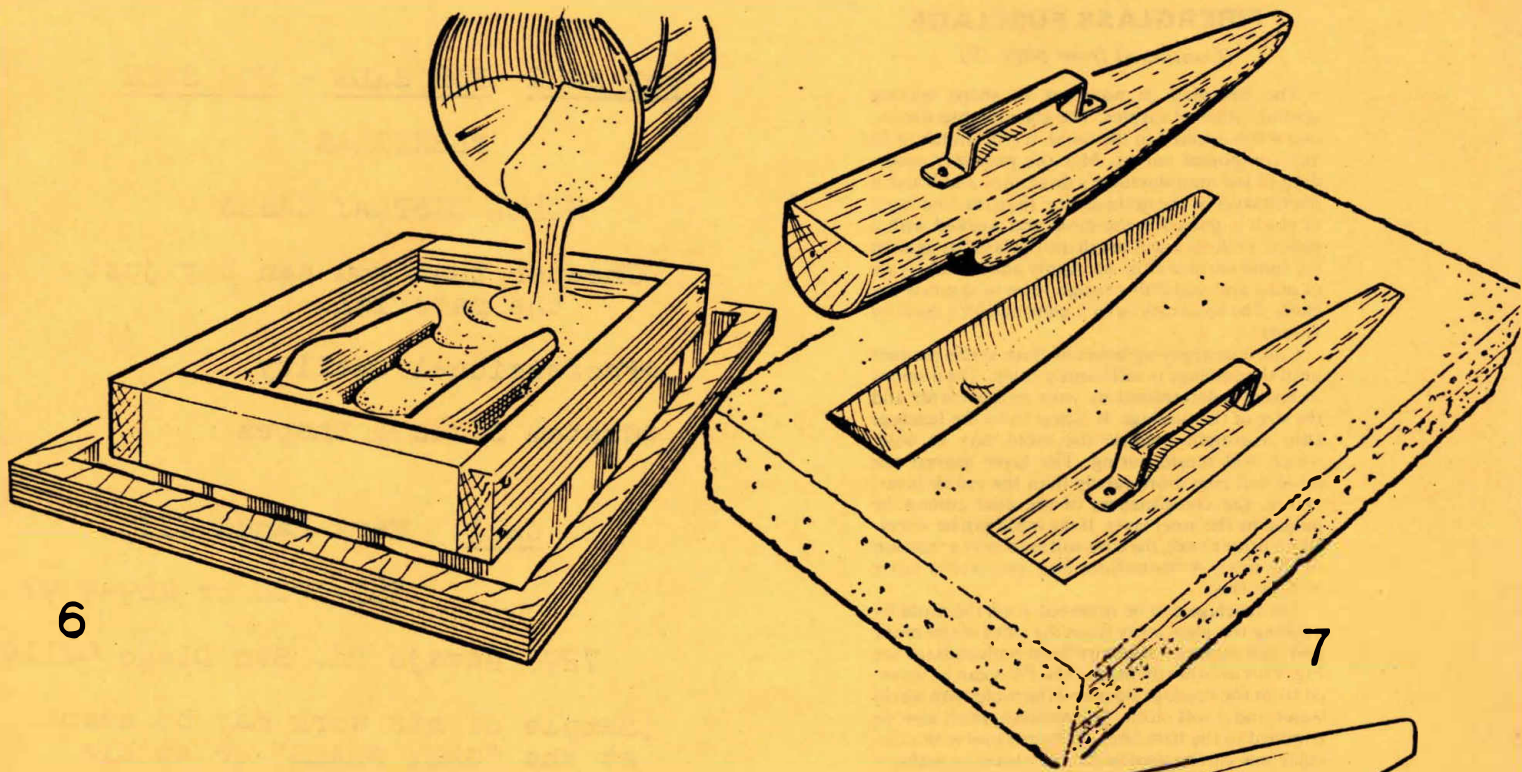
The Hydrocal is mixed with cold water. The formula should be two parts of plaster to one part of water by weight. Mixing requires



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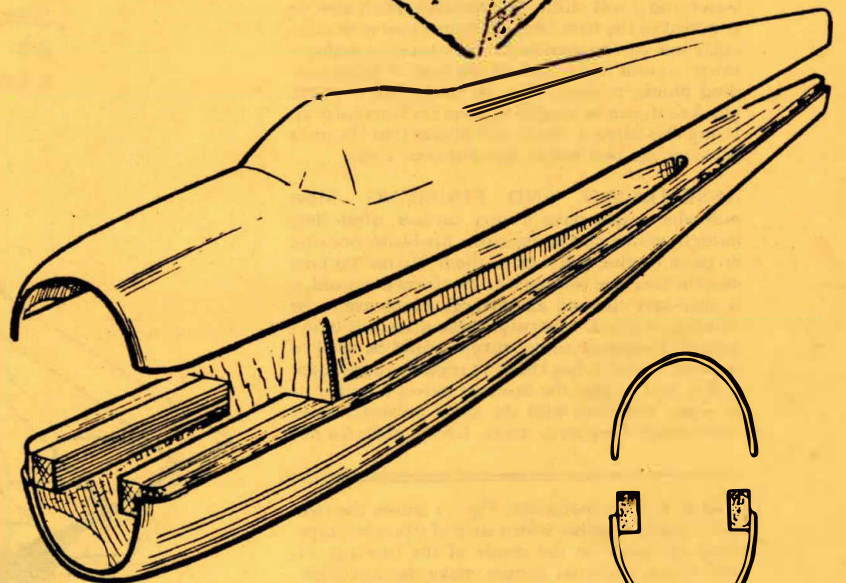
a large container, usually a cheap plastic bucket and a strong arm. A bathroom scale is used to determine the correct ratio. When the mixing is complete, spread a thin layer of the Hydrocal over the patterns to be sure they are thoroughly covered, then fill the form as shown in Fig. 6.

The plaster will set in about half an hour, and the patterns can be removed after about two hours. If the pattern is stubborn, screw a door pull to it and try to pull it out (Fig. 7). At this time any air holes can be patched by applying a small amount of plaster with a finger.

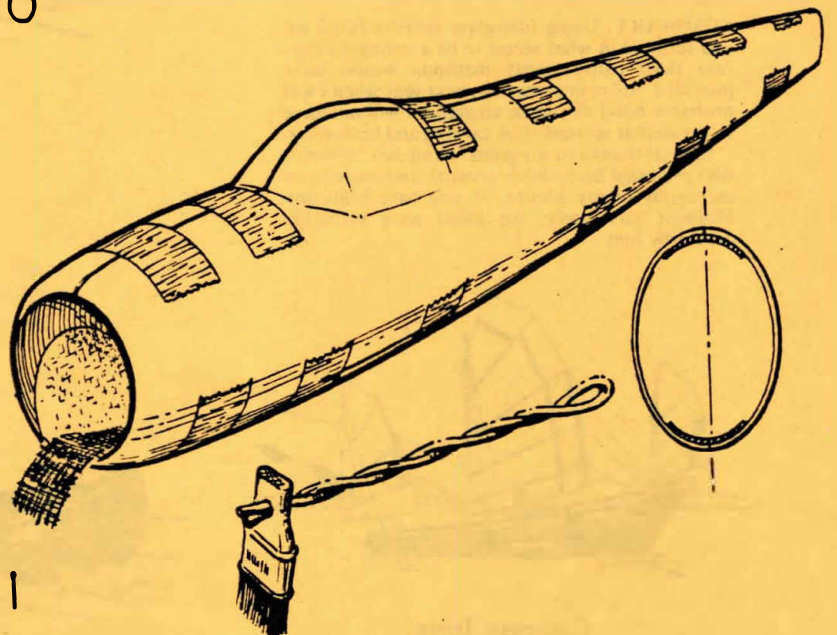
The mold appears ready to use, but it isn't. It takes a week to ten days at room temperature for a complete cure. The term "cure" refers to the process of driving moisture from the plaster. If the mold is placed near a furnace, it will dry a little sooner. In industrial situations large ovens are used for the final cure. If the parting agent, which keeps the resin from sticking to the mold, is used before a total cure, the parting agent will be dissolved by moisture released from the mold. The result will be a mess, so control your enthusiasm and wait the necessary time. The mold can be sealed with lacquer after total cure, but I haven't found that this is necessary.

**MAKING THE COPIES.** The mold should be coated with two layers of mold release wax and polished lightly. Then two coats of PVA parting agent are brushed on. Both coats should be allowed to dry thoroughly. Two layers of wax are then applied over the parting agent which completes the mold preparation. The parting agents, glass and resin are all available from boat builders' supply houses. The resin we used is HS4116. One source for the resin, parting agents and glass is the High Strength Plastic Corp., 1701 Damen, Chicago, IL 60647.

(Continued on page 89)



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11



## FIBERGLASS FUSELAGE

(Continued from page 19)

The fiberglass is now cut to shape leaving several inches of surplus. The glass is loose woven, and when applied to the mold, it will stretch to fit any compound curves. Mix the polyester according to the manufacturer's directions and brush a liberal layer in the mold cavity; then the first layer of cloth is placed in the mold and worked with a palette knife or a stiff brush until it lays flat against the mold surface (Fig. 8). Apply additional layers of glass and add only enough resin to saturate the cloth. The ideal ratio is 65% glass and 35% resin by volume.

Continue applying layers of cloth in this manner until the fuselage is sufficiently thick. The number of layers is determined by your requirements and the size of the fuselage. It is best to let the fuselage cure overnight because the mold may be cold, which will retard curing. The layer nearest the mold will cure more slowly than the visible layer. Hence, the completeness of the cure cannot be judged by the inner layer. If the mold can be warmed up prior to use, the cure will take only a fraction of the time. A MonoKote heat gun works fairly well for this.

The fuselage can be removed from the mold by pushing the glass away from the sides of the mold and then pulling straight up from both ends (or see Fig. 9 for another method). The PVA can be washed from the fuselage sides and the mold with warm water and a soft cloth. The molding must now be trimmed to the trim line. A Dremel tool with a circular saw can be used to cut the excess to within a thirty-second of an inch of the line. A large sanding block, perhaps 8" x 36" with coarse paper glued to it, can be used to remove the final surplus. Using this large a block will insure that the joint between the two halves has minimal voids.

**ASSEMBLING AND FINISHING.** Most polyester resins have a wax surface, after they harden, which can cause some problems because no paint or glue will stick to them. No matter how nice the fuselage is when it comes from the mold, it is necessary to sand all surfaces which are to be painted or glued; otherwise these materials won't adhere. I suppose some solvent could be used to remove this wax, but I haven't tried this approach.

It is best to glue the fuselage halves together or to some structure with the same polyester resin from which they were made. Epoxy glues do not

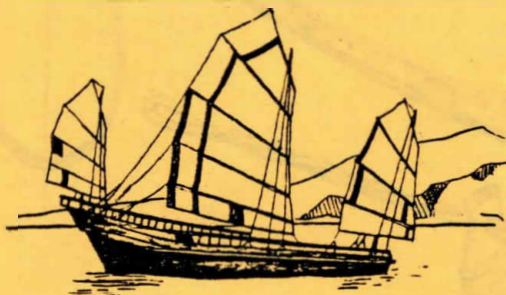
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bond well to the polyester. Fig. 11 shows the two halves glued together with a strip of fiberglass tape along the joint on the inside of the fuselage. A short brush and coat hanger make the job easier.

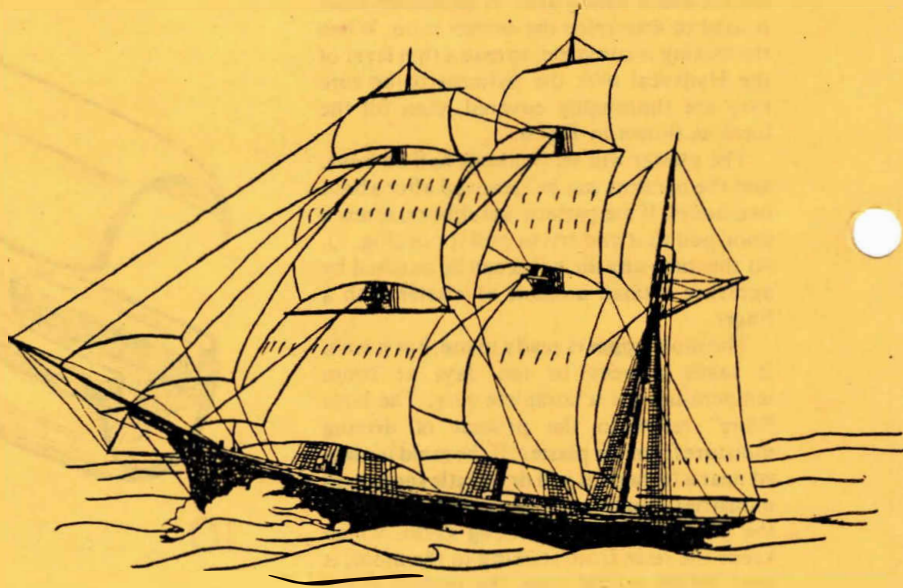
Hobby epoxy enamel seems to adhere well to the surface and all that is needed is a coat or two.

**SUMMARY.** Using fiberglass saved a full 2 oz. and resulted in what seems to be a stronger structure than conventional methods would have provided. More importantly, next year when I will probably build this same airplane, I will not have to do all that *sgnjglkyrvk* carving and hollowing.

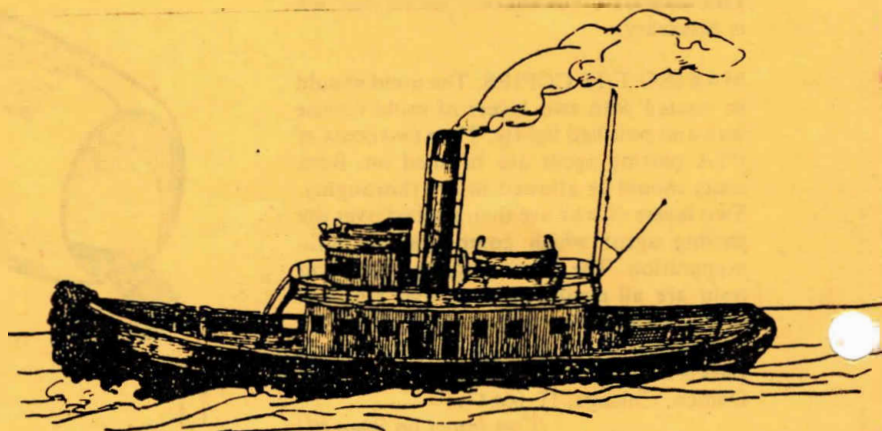
Special thanks to my good friend Jim Newman who provided his brilliant artwork and spared you the agony of my photos. If you have built any Midwest kits lately, the plans were probably drawn by him. ■



CHINESE JUNK.



BARK



HARBOR TUGBOAT.

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PLEXIGLAS

MODEL DISPLAY CASES

\*Cheaper than you can buy just the material.

\*Professional Quality

\*Custom Sizes & Shapes

Call: Mark Hanna III

/redacted/

(Sample of his work may be seen at the "GREY WHALE" or at his store address above.)

PROTOTYPE  
FEET

LENGTH OF MODEL IN INCHES

	1/32"	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
50	1 9/16	3 1/8	6 1/4	9 3/8	12 1/2	15 5/8	18 3/4	25	31 1/4	37 1/2
100	3 1/8	6 1/4	12 1/2	18 3/4	25	31 1/4	37 1/2	50	62 1/2	75
150	4 11/16	9 3/8	18 3/4	28 1/8	37 1/2	46 7/8	56 1/4	75	93 3/4	
200	6 1/4	12 1/2	25	37 1/2	50	62 1/2	75	100	125	
250	7 13/16	15 5/8	31 1/4	46 7/8	62 1/2	78 1/8	93 3/4	125		
300	9 3/8	18 3/4	37 1/2	56 1/4	75	93 3/4	112 1/2			
350	10 15/16	21 7/8	43 3/4	65 5/8	87 1/2	109 3/8				
400	12 1/2	25	50	75	100					
450	14 1/16	28 1/8	56 1/4	84 3/8	112 1/2					
500	15 5/8	31 1/4	62 1/2	93 3/4	125					
600	18 3/4	37 1/2	75	112 1/2						
700	21 7/8	43 3/4	87 1/2							
800	25	50	100							
900	28 1/8	56 1/4	112 1/2							
1000	31 1/4	62 1/2	125							

