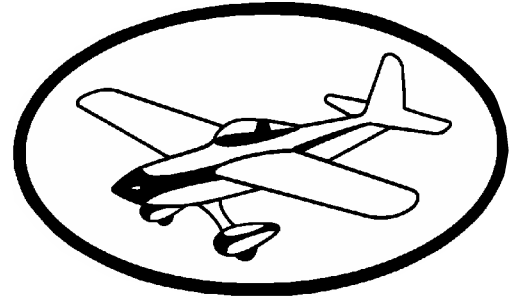


## C alendar of Events

- ◆ January 21 - Guelph, Pattern Fellowship Symposium
- ◆ January 27 - CNYMAA 20th annual Symposium, N.Y.S. Fairgrounds, Horticulture Bldg.
- ◆ January 27 - CNYMAA After Symposium "Ed Izzo Induction Banquet". Ramada Inn 6:30 PM. Tickets available from Walt's Hobby



Aero Radio Club of Syracuse

Official Publication of the Aero  
Radio Club of  
Syracuse  
January 96' edition

*ARCS Club Meeting.....  
At Walt's Hobby,  
January 12th 7:00 PM*

## New Year's Day...

Well, another New Year has come and gone and, as has become somewhat of a tradition, the ARCS held their annual New Years' Day Fly at the field. Actually, we did all our flying this year from a plowed area just in front of the main hangar since there was so much snow we couldn't get down to our own field. This actually worked out for the best since it kept us much closer to the heated building and coffee. The event is really turning into a multi club function since at least a third of the 35 or so people that were there were from other local clubs.

We had everything flying from sail planes to semi pattern planes, and everything in between. There were a number of electric's this year. It appears guys are getting the idea that when it's cold out it's a whole lot easier to push a switch and toss a model than trying to start a combustion engine.

The really big news this year was that Tom Brennan DIDN'T crash a model. Although, as usual, he tried his best - it just wasn't meant to be. Phil Artese terrified.....er,..... entertained everybody with that odd looking NASA platform of his, and Doc Schwarz tried his best to plow an open area with his electric model but gave up after he found out that wet snow does odd things to radios and electric motors. Rich Settembre's model was looking good in the air until he took it away from his kids so he could plow it into a snow bank on landing. There were a number of other members who brought models and flew, as well as a number of guys from other clubs so it made for a rather busy morning.

Doc Schwarz, the official New Years' Day ARCS chef, once again threatened us with some of his hot-dogs and our own president Mark D., spared no expense and effort as he drove all the way to the local BJ's and bought a bunch of chocolate chip cookies that he tried to convince everyone he made. Yea, right.....

So that's about all the news that's fit to print about New Years. Oh yea, what about the rest of us? We're no fools. We stayed inside where it was warm and watched out the window. After all, somebody has to do it!

# So, You Want To Make A Mold Fuh ?

What is involved in molding a fiberglass part? Specifically, I am thinking about a cowling for a 1/4 scale scratch built.??

There are two different answers to this, and in my opinion, neither of them involve plaster.

The following is a primer on molding parts which I've prepared. I plan to upload this to the forum library, but first, I'll submit it to all for comment. TO ALL FORUM MEMBERS: If you have any suggestions or criticisms, please voice them, and I'll edit it before I upload it this week.

## GLASS MOLDS

by Jim Ryan 73002,156

I. INTRODUCTION: Molded fiberglass parts offer many advantages over built-up structures. They're light, tough, fuel proof, and highly resistant to surface dings. Once the mold is produced, copies can be made quickly and easily, at almost no cost. For the scratch-builder though, it's first necessary to make a mold.

There are two generic kinds of molds: Male and female.

II. MALE MOLDS: Male molds take much less time to produce. The disadvantage of a male mold is that the rough surface is on the outside, so they require more sanding and finishing. This is only worthwhile for "one off" parts.

I make my male molds disposable, carving them from blue foam (the extruded stuff, which has really fine grain). These foam plugs are easy and fast to make and give acceptable results. This is often called the "lost foam" molding process, as the mold is destroyed. Some modelers prefer to cover the mold with low-temp film so that it can be re-used, but if I was going to go to that much effort, I'd go ahead and make a female mold.

A. Making a Male Mold: In this example, we'll make a cowl, which is one of the most popular applications for fiberglass.

Preparing extruded blue foam: Extruded blue (pink and gray also work) foam comes in layers up to 2" thick. It usually comes with a thin layer of polyethylene film laminated onto it, and this must be removed. Just work a corner loose, and you can carefully peel the film off both sides. Now you can cut the blocks to the size you need.

1. Laminate blocks of blue foam together to get a block thick enough to make your finished part. I just tack glue it with UFO or another "foam friendly" CA adhesive. You only need a little, as strength isn't needed, and if you use too much, you'll have hard ridges of glue at the lamination lines.

2. I tack glue templates onto the cowl block and use a hot wire to rough the cowl out to shape. This saves a little time but isn't necessary.

3. Use a sanding block to carve the block to exact shape. Permagrait sanding tools are also very handy here.

4. Finish sand the block to get it smooth, but remember this is the INSIDE of the finished part, so it doesn't have to be perfect.

5. Now it's time to glass the mold. You \*must\* use finishing epoxy, as polyester resin will dissolve the foam! Cover the block with two plies of boat cloth (6 or 7 1/2 ounce glass cloth) and one layer of 2 ounce cloth. The layer of lighter cloth will give you a better surface finish on the outside.

6. After the resin cures, trim the edges to shape and then sand the part until you have an acceptable surface for priming and painting. It's best to do this with the foam still in place.

7. Finally, remove the foam by pouring a little gasoline into the part. This will quickly dissolve the foam. Do this outside and rinse out the gasoline.

8. Prime and paint the cowl, and you're done!

(Continued on page 3)

*Molds (Continued from page 2)*

III. FEMALE MOLDS: Female molds use the original plug as a pattern for the mold which will make the actual part. This makes it possible for the female mold to offer a level of surface finish (as well as details like panel lines and rivets) not possible with a male mold. It also makes it possible to replicate additional copies quickly and easily. Of course, making the original mold takes more time and effort.

### A. Making the Mold:

1. For female molds, I carve the plug (the male pattern) from balsa. In theory, you can use foam, but that makes for a fragile plug. The male plug should be glassed, sanded, primed and wet-sanded to get the best finish possible. Any flaw in the plug will be replicated in the mold and in every single part you make. You can also add the panel lines and rivets with trim tape, glue dots, etc. If you're really into this, you can even add louvers, vents, Dzus fasteners, whatever your heart desires.

2. Once you're satisfied with the plug, rub on at least two coats of carnauba furniture wax and buff to a high shine. This will protect the plug from the resin.

3. Tack the plug to a pane of glass with spots of hot melt or with two-sided tape. You only need to tack it in place, as you have to remove it later.

4. Use plastic modeling clay to make a small fillet around the base of the plug. The fillet should be as small and smooth as you can make it, but it must prevent resin creeping under the plug.

5. Spray or brush on an even coat of Polyvinyl Alcohol (PVA) mold release. I \*don't\* mean Elmer's glue! This is a water-based release agent available from fiberglass suppliers. Allow it to dry. If you don't get a glassy smooth surface the first time, just let it dry, peel it off, and try again.

6. Brush on a heavy coat of epoxy laminating resin. If you really want a nice mold, you can first apply a coat of mold surfacing resin, which is thicker and makes it easier to build up a heavy layer without reinforcement.

7. Once the surfacing layer starts to gel, start applying layers of cloth and laminating resin, starting with 2 ounce, then boat cloth. Build up at least half a dozen layers of heavy cloth, more are better. You want the mold to be rigid. You can also use glass mat, which has chopped coarse fibers, for reinforcement once you have a few layers of cloth in place. If you do this, top it off with another layer of cloth so the mold won't be too rough, and let the resin fully cure.

8. Now, peel the glass-covered plug off the pane of glass and trim the sharp edges. Then pop the plug out of the mold. It might be a tight squeeze, and an air pipe can help.

9. You now have a mold with a flat flange around the edge. Wash the PVA out of the mold and dry it. I let the mold cure for a couple of days before I go on.

### B. Molding a Part:

1. Apply two coats of carnauba furniture wax to the mold and buff to a high gloss. Again, this is to protect the mold.

2. Apply a coat of PVA release to the mold and let dry. A soft brush will work, but an airbrush does a great job. Since you're working \*inside\* the mold, be careful to avoid runs and sags.

3. Lay in a layer of 2 ounce cloth and resin and then two layers of 6 or 7 1/2 ounce cloth. This lay-up is my personal preference, but depending on the size of the model, you can vary the number and makeup of the layers. For a larger model, you might want to use an extra layer; for a small electric model, this lay-up is too heavy, and you'd want to use lighter cloth. You can also reinforce high stress areas with microballoons, Kevlar, carbon fiber, you name it. Blot away the excess resin, as it only adds weight.

4. Once the resin cures, work an edge loose and peel the part out of the mold. Trim, rinse off the PVA, and proceed with finishing.

5. To make additional parts, you need only rinse the mold and apply a fresh coat of PVA. Supposedly, once a mold is broken in (say six parts), you can skip the PVA. I've never tried it, and I probably never will. I'd rather not risk ruining a

*(Continued on page 6)*

## CENTRAL NEW YORK MODEL AIRCRAFT ASSOC.

Dear Modeling Enthusiast.

The Upstate New York modeling community proudly invites you to attend a dinner and induction ceremony honoring our departed friend and master modeler, Ed Izzo. Please join Louise Izzo and friends on January 27, 1996, at the Ramada Inn, 1305 Buckley road, Liverpool, NY, when Ed will be inducted into the A.M.A. Aviation Hall of Fame.

This very special event will follow the 1996 Model Expo at the New York State Fairgrounds (Empire Expo Center). There will be a cocktail hour starting at 6:30 PM, with a prime rib buffet dinner at 7:30. Tickets for the dinner are \$20.00 per person and must be purchased by January 22, 1996. For those wishing to stay at the Ramada, room information is enclosed.

If you have any appropriate pictures or slides of Ed or Louise, please bring them to share. Make your reservations now to attend this unique ceremony for a very special man. For tickets to the Model Expo or dinner, or for further information, contact Walt Throne, Walt's hobby, 2 Dwight Park Drive, Syracuse, NY 13209, phone (315) 453-2291, fax (315) 451-8708.

Very truly yours,

Walt Throne  
Induction Ceremony Chairman

P.S. It's important that you purchase your dinner tickets as early as possible, and no later than January 22nd.



# Presidents Column

HELLO,

It is almost time again for the winter symposium. For those of you who are unfamiliar with the symposium, it is held out at the State Fair Grounds every Jan. In attendance you will find many local R/C clubs, and dealers both local and national. Exhibitions ranging from indoor helicopter flight to mag lev and CO2 car races, and Delta Dart construction and Fly off are held. We will have 14 or so clubs coming this year. Some from as far away as Ithaca and Rochester. As I have said before in addition to the things we usually look forward to we will also have at this years edition a number of presentations given by accomplished individuals on topics of interest to the aeromodeling community. I hope everyone has a chance to attend. I also know that the banquet following the symposium will be another fine affair, so make those baby-sitting plans and get out to Walt's to pick up your tickets.

The club plane, the Fazer is proving to be popular, quite a few people have picked up a kit. The best that I can tell the number of people in the club that have started the kit stands somewhere in the vicinity of 12 to 15, don't be left out, pick up a kit this winter and build it. I think that the club FAZER events this year will prove to be both popular and a big success.

Well that is all I have for this edition, I'll see you at this months meeting where Mike Gosson will give a Pattern Primer presentation. Take care, stay healthy.

Mark D.

*Okay Okay.... What's this hoopla about a Fazer you ask...*

Well let me tell you about it. First off it's not an RC Car a Rocket or a Boat. It's a SIG fun fly plane. The kit incorporates conventional building techniques i.e. wood ribs, stab, rubber and elevator. The wing is a full symmetrical airfoil and uses a profile type fuselage. You have several options when powering your Fazer, powerplants range from a .30 - .40 two stroke or a .40 - .50 four stroke engine. Any combination should prove more than suitable for the task.

The criteria behind choosing the SIG Fazer was simple. Find a plane that incorporates conventional building methods without a foam wing or stab. A plane that's affordable, posses excellent flying characteristics with the ability to perform a multitude of maneuvers. Hence the decision to choose the SIG Fazer.

The concept behind adopting a club plane was to offer the members a plane that we could ALL fly throughout the upcoming 96' season (at least for some of us). Your officers (Okay,, Mark D.) has agreed to sponsor a few fun fly events throughout the course of 96'. He also agreed to monthly Fazer meetings at the field, where we can exchange ideas and flying tips.

From what I can gather so far, it looks as though 8 members have participated in the Fazer challenge.

So what are you waiting for,, Spring... Get off your behind, quit complaining and buy a Fazer...

# Dues Are Due...

**Aero Radio Club  
of Syracuse**

**Application for  
Membership**

Name - \_\_\_\_\_

Address - \_\_\_\_\_

City, St., Zip - \_\_\_\_\_

Telephone No. - \_\_\_\_\_ AMA No. - \_\_\_\_\_

Amount Paid - \$ \_\_\_\_\_ Date Pd. - \_\_\_\_\_

Radio Frequency - \_\_\_\_\_

\*- Annual dues are \$35.00 per year for Regular members, \$10.00 per year for Junior members , and \$15.00 per year for senior members (using AMA guidelines). In addition a \$5.00 initiation fee is charged for your first year. Applications and dues can be sent to : ARCS, c/o Byron Monday 223 Heman St. East Syracuse, NY 13057

***The Clock's Ticking !***

Don't delay..... Renew early... . You see, it's not really my fault. I'm put under a great deal of pressure to hammer on the folks that might have forgotten about rejoining our "Elite" club of world class pilots. The best part of the equation is, we have not experienced a price increase in FY-95. Allen Greenspan would be proud of our officers. So, what you say folks, how bout coughing up the \$35.00 for the upcoming season. We have a lot to offer this year. A Pattern Primer, Fun-Fly, Picnic, Pylon Racing and whole host of other festive features. Besides, where on earth can you get material of this caliber for such a CHEAP price!

**ARCS CLUB OFFICERS**

***President***

Mark DeFilippo - 469-5639

***Vice President***

Gerd Wirickx- 673-1167

***Secretary***

Bill Volcko- 685-3034

***Treasurer***

Byron Monday- 437-3829

***Newsletter Editors***

Mike Gosson / Dave Mathewson

*Molds (Continued from page 3)*  
mold.

IV. CONCLUSION: There you have it. A short course in mold making. I've deliberately skipped two-part molds and other complexities. These are best left to your second project.

I highly recommend a copy of "Master Modeling" by Harry Higley, available at hobby shops or through RCM magazine. It has an excellent overview of the various ways of making glass molds.

*Sources for fiberglass supplies*

Composite Structures Technology  
PO Box 642, Dept. CL  
Tehachapi, CA 93581  
(800) 338-1278

Fiber Glast Developments Corp.  
1944 Neva Drive  
Dayton, OH 45414  
(800) 821-3283

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MB Gosson  
4920 Buxton Drive  
Syracuse, NY