

# EAA CHAPTER-690 NAV-COM

MEETINGS 2ND FRIDAY EACH MONTH AT STONE MOUNTAIN AIRPORT-8:00 P.M.

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## CHAPTER MEETING

Our next Chapter meeting is scheduled for Friday November 11, 1983, at the Stone Mountain Airport and will start at 8:00 p.m. This month's program will be presented by Dennis Balsam and will be a video tape program of Oshkosh '84 Convention.

## NEW MEMBERS

Increasing the Chapter Membership to 68 are the following 5 new members: John Owens, Charles Sego, Carl Sharpe, Guy Toro, and R. G. (Jesse) Dooman.

Welcome to EAA Chapter 690 gentlemen.

## ELECTION RESULTS

The following members were elected at the October meeting as our 1984 and 1985 Officers:

President - Tom Ferraro  
Vice- President - Boyce Miller  
Secretary - Henry Warner  
Treasurer - Richard (Deacon) Strand

Please give these Officers your support so that the Chapter will continue to be as successful as it has in the past.

## Editor's note.

Normally I don't get on the "soap box" and spout off about Veteran's Day or Thanksgiving Day, but the other day while working on my airplane and listening to the news on the radio I thought to myself that I was sure glad that I didn't live in places like Beirut and in Grenada and other places of a lot of tension. Then I got to thinking more of what it would be like to live in a country where I couldn't own an airplane or have the right to build one or even be able to belong to organizations like EAA. I had a hard time even imagining it.

We Americans are spoiled and we love it. We take a lot of our rights for granted and a lot of times don't remember that these are privileges that have been preserved by the ones being honored on Veteran's Day.

Then I started thinking about the things I should be thankful for. If you start listing them in your mind, it will surprise you how long the list can become. That's Thanksgiving Day.

What's this got to do with EAA? I went back to work on the airplane just glad and thankful that I can belong to EAA, that I can build and own an airplane, and as a very proud American.

Editor.



## CHAPTER CHRISTMAS PARTY

Remember the Chapter Christmas Party will be Saturday December 3, 1983, at the Perimeter Inn North, at I-285 and Buford Highway. The Cocktail reception will be from 6:30 p.m. to 7:30 p.m. and the buffet dinner will be from 7:30 p.m. to 8:30 p.m.. Russ Spooner of WSB Radio has confirmed our invitation to be our guest speaker for this year's Party. More details of the Party will be sent to you soon. If you already know that you will be attending the Party, please make your reservations now with Rex or Sandy Davis. During the week-day call 449-7242 or in the evenings and on the week-ends call 921-6897.

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\*joint venture project

### FLY-IN COMMITTEE

Chairperson for our Chapter Spring Fly-In is Harold Stalcup. Volunteers are always needed so you can call Harold at 921-9468 and he will be glad to "get you involved".

### OCTOBER GUEST

Guest at the October Chapter meeting was Jon Gedymin.

### CHAPTER MEMBER WIVES

Be prepared! After the first of the year a section of the newsletter will be for an article called "Meet the Chapter Wives." These articles will run monthly.

### WHO OWNS IT, FLYS IT, OR IS BUILDING IT

The following is a list compiled from the member information sheets received of members who have aircraft that they are either flying or building:

Gordon Washburn - '46 Aeronca 11AC Chief  
Georgae Brooks - J-3 Cub & Hatz Biplane  
Matthew Wagner - UP Comet II 185  
Doug Lawton - CGS Hawk, Eipper--Quicksilver  
High Craft Aero--Buchaneer  
Jim Jones - '48 Swift GC-1B  
Kenneth Brittingham, Jr. - Quicksilver MX  
Philip Jones - Lazair  
O. V. Scott, Jr. - C-150, Citabria, C-172  
Dan Barker, III - Ultralight  
Aurelio Joseph Donato - DHC-1 Chipmunk  
Harold Stalcup - Zenith CH-200  
Ed Booth - C-170

(continue next column)

Craig Gottschang - Vari-Eze, Glassair\*  
Gerald Collins - Long Ez, Glassair\*  
Larry Bishop - '46 Stinson 108, '38 Aeronca  
Rex Davis - Skybolt  
Harry Goetting - C-150  
Delburt Griffin - Tailwind  
Hank Peacock - '46 Swift, Long Ez  
Dennis Balsam - Zenair; Zenith CH-250  
Rev. John Blair - 1/18th C-172  
Frank Wilcox - Q-2  
Boyce Miller - PA-12, 15AC Aeronca Sedan  
Bob Chafer - Pitts S1C, Aeronca Champ 7AC,  
Scorpion II  
John Henderson - Navion  
Jack Calk - Turner T-40A  
Wayne Hood - KR-2  
Stephan De Blasio - Mirage Ultralight  
John Howe - Long Ez  
Fred Martin - Midget Mustang-1  
Jim Crunkleton - Skybolt  
Ken Sharp - C-182, Cjetkovic CA-61  
John Kytile, III - PA-12  
Reinhart Kuntz - Der Cricket  
John Popp - Navion, Skybolt  
James Cook - Barracuda  
Tom Ferraro - Skybolt, Pacer PA-22/20  
Jesse Dooman - C-320, C-340, CE-501  
Charles Sego - Ultralight  
Henry Warner - C-172

If anyone was missed on this list, contact the Editor so that your name and aircraft can be included in a future newsletter.



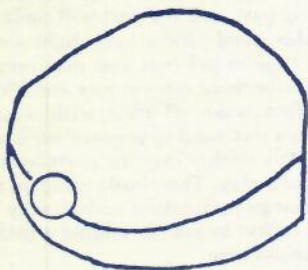
# TECHNICAL TOPICS

## YOU TOO CAN BE A "KOPY KAT"

From the Dalworth, Texas Chapter 34 Newsletter  
by Richard A. Szaraz, EAA 145  
1000 Aspen Lane  
Mansfield, Texas 76063

Have you seen old whatshisname's new fiberglass cowling? It cost him \$150, and four other builders besides you all need one just like it, but \$150 is a lot of money. Boy, if you had a mold, you could knock out a half dozen of 'em for \$15 a piece, and always be able to make a spare. But how do you make a mold? "Quick 'N Dirty", is the answer! We simply use the finished cowling as a mold for making a mold.

FIGURE 1 — Basic Cowl



First, clean the cowling with water and a soft cloth, then wipe it down with toluene or acetone. Now, tape it together exactly as it will be when it's mounted on the airplane.

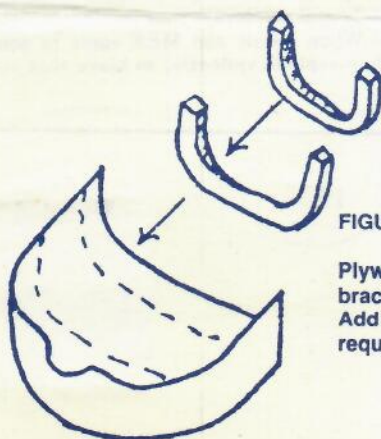
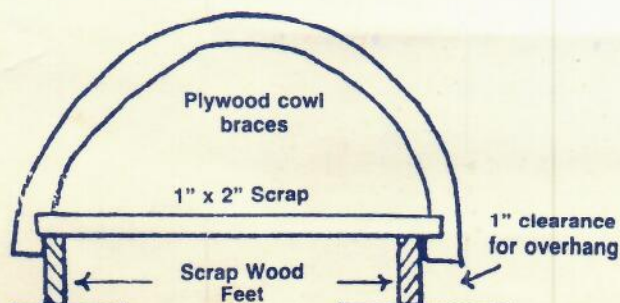


FIGURE 2

Plywood or particle board braces for inside of cowl. Add longitudinal braces as required for rigidity.

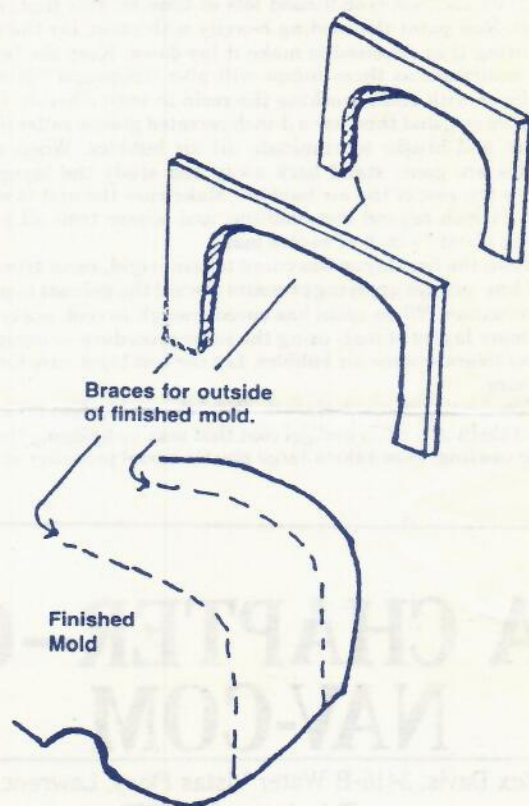
Set the cowling on the floor nose down, and make some braces that will fit inside the cowling. The cowling mold will be made in two parts so brace the cowling accordingly. Whatever you use to brace it, remember that each half must be rigid.

FIGURE 3 — End View Of Braces



Now insert the braces, fastening them in place with bondo blobs. When bondo hardens, remove tape and separate cowling halves. Bondo some 1 x 2 scraps to the braces so that the cowling halves will have some feet to stand on. This allows the fiberglass to extend beyond the edges, when doing the layup.

FIGURE 4 — Finished Mold



At this point, decide if you want a mold that is "good enough" or if you want to go first class. The difference is about an hour's time and about \$5. Of course, by doing "good enough" at this stage you'll probably lose all you saved and then some with each part you make later on. "First Class" means gel coat the mold.

Gel coat is a durable, decorative plastic that is essentially little more than a thickened, pigmented polyester resin, that is catalyzed in the same manner as resin: (with methyl ethyl ketone peroxide). Gel coat can be sprayed or brushed on, with spraying being the preferred method. I've had great results using the Wagner electric airless gun (\$110), and also with the Sears two-way gun (siphon or pressure — \$40). Just remember, work fast, rinse quickly with acetone, disassemble completely, and thoroughly clean all spray gun parts. If you let the gel coat "kick" in the spray gun, you can just write it off as a loss. You have about 8 minutes pot life.

Now let's wax the cowling. Give it five coats of mold release wax. Apply each coat in a different direction, using a straight back and forth motion. Don't miss even a pinpoint area! Let each coat dry a few minutes, and buff each coat with a soft, clean cloth. After buffing the last coat, give the entire cowling one very light



coat of PVA (poly-vinyl alcohol). PVA will guarantee a release. It is soluble with water only. Apply with a soft, lint-free cloth, that is slightly dampened with water. Put a small amount of PVA on the cloth, and apply lightly and evenly. Looking at the surface against the light it should only be slightly coated, as though you breathed on a piece of glass. Don't miss any spots.

Now, gel coat the cowlings. You can use plain old general purpose gel; tooling gel is mainly for high production and high temperature molds. Try to use a color different than the color of the parts you will be making. It will then be easier to evenly gel coat the parts you will be making later. Note that even though you may spray the gel coat, it will not be nice and smooth like paint. It will have an orange peel texture on the side facing you. The quality of the gel finish is determined by the quality of the surface it is sprayed on. If the cowling was shiny, the mold made from it will be shiny. Any streaks or fingerprints will also show up in the mold.

After gel coating, allow gel to "kick", until it's just barely tacky. Now, precut the first layer of mat, not cloth. Use a thin mat for the first layer. About  $\frac{3}{4}$  oz. or  $1\frac{1}{2}$  oz. per square yard. Never use cloth for the first layer, the weave will "telegraph" through into the gel coat. This will then show up in all the parts made from this mold.

Now measure out the polyester resin and catalyze it "cool" — about 1% catalyst (you'll need lots of time for this first, critical layer). Now paint the cowlings heavily with resin, lay the mat on it, cutting it as required to make it lay down. Keep the laps at a bare minimum as these lumps will also "telegraph". Now soak this layer with resin, working the resin in with a brush. Pull all wrinkles out, and then use a 3-inch serrated plastic roller (or your fingers and brush) to eliminate all air bubbles. When all the bubbles are gone, stand back away and study the layup. Now remove the rest of the air bubbles. Make sure the mat is wet out about  $\frac{1}{4}$  inch beyond the moldline, and scissor trim all around, leaving about  $\frac{3}{4}$  inch of excess mat.

When the first layup has cured to semi-rigid, razor trim to the mold line, always applying pressure toward the gel coat to prevent delamination. When resin has cured enough to cool, apply about four more layers of mat, using the same procedure — except that we can tolerate some air bubbles. Let the last layer cure for about 12 hours.

Now for the moment of truth. Sand the mold edges all around, just to clean any resin and gel coat that may be bridging the mold to the cowling. Now take a large plastic model propeller and look

for a loose spot in which to insert the tip between the gel coat and the cowling. Now work the tip all around the mold, going ever deeper; now force the mold from the cowling and there you have it! Now replace the mold on the cowling and apply some braces to the outside mold surface to retain its shape.

Now scrub out mold with clean water and soft rag. Let cure about a week before use. When you use the mold for the first ten pulls, always use five coats of wax, PVA, and the gel coat within one hour. Never wax and let sit overnight before gel coating until mold is "broken in". New molds "suck up" wax like a sponge. After ten pulls reduce wax to two or three coats, no PVA. If parts start to "pre-release" before curing in mold, skip wax for one pull.

#### FINAL NOTES FOR POLYESTER MOLDS

1. Try to make mold thickness about three times thickness of the parts made from them — this prevents distortion and allows heat to dissipate.
2. Always catalyze resin and gel coat, "cool" when building molds; it prevents heat distortion and pre-release.
3. Johnsons Paste wax is a good mold release wax.
4. Building raw glass parts in molds will result in pin holes in the surface of the part. If you don't want decorative gel coated parts, try using "Primer-Surfacer Gel Coat". Spray it into mold, lay up part, and the part will come out of the mold with no pin holes, ready for a very light sanding and painting. Whatever type of gel coat you use, remember that finished parts will have mold release wax and PVA on them. To paint over gel, first wash off PVA with water, wipe down with toluene, then wet sand to prepare surface.
5. You can easily modify existing parts by using bondo or plastic type modeling clay. Then build mold on modified part.
6. You can change laminating resin (tacky surface) to finishing resin (non tacky) by simply adding a little wax that has been dissolved in acetone.
7. If laying up in hot weather you can use 30% MEK catalyst, instead of the standard 60% MEK. Also, ask your resin supplier for "summer mix" resin or "winter mix" resin. The difference is the amount of cobalt naphthanate accelerator used in the manufacture of resin. High cobalt will mean a purple case to the resin and very rapid gel. If you decide to purchase cobalt naphthanate separately and accelerate your own resin, you are asking for trouble. When cobalt and MEK come in contact with each other, they explode violently, so leave that to the pros.

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