



# PROP WASH

## EAA Chapter 135

Book 3, Chapter 2      FEBRUARY 2001

Jack Arthur shares some thoughts and goals.....

Hello, and hope everyone has started the New Year off with a bang! Es and I have been looking at different kits that we might want to start on since the Air-coupe is off and flying. We want a plane that will have cross country capability, and that will be a good IFR platform. It will also have to cruise close to 200 mph. You know trying to find this is not easy. We looked at several and it came down to a RV6A. The only problem is that where in the world is Es going to pack all her baggage for a 2 week trip? Then we happened across a BD4 design.

(cont'd pg. 5)

### President's Column, Book 3, Chapter 2, February 2001

January has been a great month for building! Right at Christmas we turned the RV over and since then it's been like things have been going crazy on the top of the fuselage. Starting with the pieces that stabilize the back of the fuselage and then working on the creature inhabited space of the airplane. (baggage compartment and seats) Soundproofing, the lack of it,

That airplane, N21566, otherwise known as "The 182" or "Big Bird", has been one of the biggest love-hate relationships of my life.

the wanting of something better than the oil-canning noises and the vibrations of our spam-can Cessna and Pipers we typically drive has been bugging me ever since installing the new plastic interior pieces in the 182 in the summer of 1999.

(con'd page 2)

#### Board Meeting Minutes

To view the newsletter, you must have Adobe Acrobat Reader installed on your computer. To download the latest free version, please log onto: [www.adobe.com/products/acrobat/readstep.html](http://www.adobe.com/products/acrobat/readstep.html).



January 29, 2001

The board meeting was cancelled due to inclement weather. Bill did e-mail us all with things to accomplish before the next meeting.

- 1) Current copy of the by-laws need to be checked, proofread, and made sure they were the most current. Then we need to keep them on file for the official record.
- 2) Roger needs to call Skip, the attorney and get an official copy of our Articles of Incorporation, for the next board meeting.
- 3) Donna needs to have a current membership list for the board members at the next board meeting.
- 4) Alan Core needs contact the gentleman in Perry with the boy scout troop.



**NEXT MEETING:**  
Executive I Aviation  
Ankeny airport  
February 9, 2001 @ 6:30



## PROPWASH

That airplane, N21566, otherwise known as “the 182” or “Big Bird”, has been one of the biggest love-hate relationships of my life. The freedom she gives me; the love of planning to go somewhere; the joy of the trip; and the solidness and predictability that the 182 offers are fantastic! The noise; the fuel hungry motor to get any speed; the cost of keeping the beast fixed; the temperamental avionics suite, that unlike consumer electronics, keep breaking and DON'T get cheaper; and the frustrations of multiple couple ownership of the plane diminish the pleasure somewhat. The RV is being built to alleviate some of the frustrations, so now I'm attacking the NOISE problem.

The Cessna has plastic bag encased pieces of fiberglass insulation stuck between the skin and inside trim panels. The firewall has what can be generously called a piece of sound deadening blanket installed so the blanket SOME-TIMES comes in contact with the metal firewall. Best available in 1976? Possibly, but physics and chemistry sure have certainly improved what we can do since then. First, the availability of both passive and active sound deadening headsets has made this interior space a bunch better than 1994 when I first started flying that bird. Secondly, we now understand better how to deaden sound by changing the resonance pattern of the vibrating materials, i.e. the aluminum drum heads that get beat upon the wind's drumsticks.



Also I'll have the propeller dynamically balanced like we did on the 182 which helped a lot also.

So what's all this babbling about? 15 pounds of a special foam insulation materials meeting the FAA's spec for fire and smoke will be installed inside the creature area of the RV-6A. I'm hoping for about 20db sound deadening. Since I'm a fat man anyway, how can I justify the 15 pounds. 6 pounds from the cowling (Van's new epoxy type), 7 pounds from the starter (new permanent magnet type), 4 pounds less on antennas (burying copper foil inside the wing tips), and 6 pounds less of radios (planning on a Garmin 430 and transponder with my handhelds as redundant spares). Come see it at the open house in April, and love to hear any response!

Miss you for the next meeting February 9<sup>th</sup> because Carolyn and I will be on our yearly winter vacation. This year we are going to Florida, with a planned trip to the Navy's Pensacola Museum on the way back.

—Bill



### CALENDAR OF EVENTS

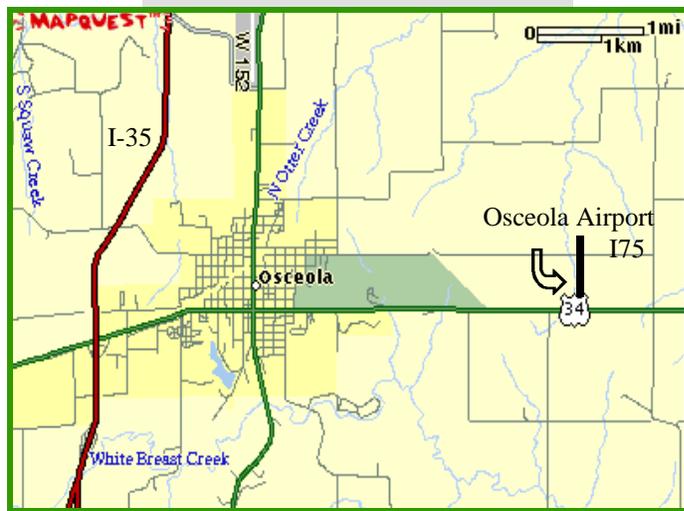
Friday, Feb. 9, 1830 hrs. Monthly club meeting at Exec 1 Aviation, Ankeny airport. The program will be a discussion of molding fiberglass parts, going over items and issues in the “From the Shop Column”.

Saturday, Feb. 10, 1300- 1600 hrs. Open house at Osceola Airport—Roger Bocox's RV-6A project almost completed. See Map for details.

Monday, Feb. 22, 1900 hrs. Board Meeting at Signature Aviation. Everyone welcome.

April 8-14. Fun and Sun, Lakeland, Fla.

**NEXT OPEN HOUSE**  
**February 10th at:**  
**Osceola Airport from 1:00-**  
**4:00 p.m.**  
**See Roger Bocox's RV-6A**



## FROM THE SHOP

contributed by Roger Bocox

### LAMINATING RESINS:

The other type of "glue" is actually a laminating resin. This is a glue that is used to make fiberglass, ceramic, carbon fiber, or Kevlar cloth turn hard and make it into a solid part instead of a cloth-like material. There are three basic types of laminating resins:

#### 1 Polyester Resin

This resin is the normal resin used to build boats and cars out of. It is very easy to work with, but it has its problems with aircraft use. It is a resin and a clear, water-like catalyst, (methyl-ethyl ketone perchlorate, MEKP). This is a dangerous chemical and should be kept far away from eyes. It will cause blindness if gotten into the eye. The MEKP is mixed into the resin with a dropper. Usually, 12-20 drops per ounce of resin. This causes the resin to get hot and "catalyze." This causes the resin to get hard. Polyester resin stinks bad and will give you a headache without adequate ventilation. Be careful with this stuff. It has some other not so great properties. First, it stinks. Second, it draws moisture and makes the surface feel tacky, like it will not cure. Third, it tends to soften with higher temperature exposures. Generally, don't use this for aircraft use.

#### 2. Vinylester Resin.

This is about the same as polyester resin, except that it has much better temperature properties. This is used by many aircraft manufacturers for cowling, wheel pants, etc.

#### 3. Epoxy Resin

This is a two part resin system similar to what was discussed last month. This is basically a glue just like regular epoxy glue, except that the properties of the epoxy have been modified to work best for making the cloth hard. It is usually thinner in consistency, and it doesn't smell too much. As with any system, make sure that the quantities of each part are mixed in exactly the proper proportions and that they are mixed thoroughly. Some resins must be used at 70 degrees and above, while other brands, can be used at lower temperatures.



To form a part in fiberglass with any of the above resins, you must have a mold. The mold should be perfectly smooth and be waxed with a mold release wax and then polished. The use of a mold release agent such as PVA is also recommended.

Note: making the mold a dark color will assist in the

viewing of the cloth and the molding process and will allow you to see air bubbles much better.

Cut the cloth oversize for the part being made. Usually, aircraft parts are made up of 3 or 4 layers of 9 ounce cloth. The thickness of the part will vary with the weight of the cloth and the number of layers of cloth. Generally, a part made with more layers of a lighter cloth will be stronger than a part made with just a few layers of a heavier cloth. Mix up the resin per the instructions with the resin and guess at how much to mix up. Again, you will just about always throw some away. There are two ways to apply resin to the cloth. They are:

1. Get a sheet of window glass bigger than the part being made, or use heavy weight plastic and pull it taught over the workbench. Wear latex or rubber gloves and wear a respirator. Lay out the dry cloth on the sheet and pour on the resin. Work the resin into the cloth with a brush, roller, or a squeegee. Allow the resin to set on the cloth a minute or so to make sure it soaks in completely. When the cloth turns from white to transparent, no more resin can be soaked up by the cloth. Remove all of the excess resin from the cloth with the squeegee. Place the excess back into the mixing container. Keep removing the resin until the cloth is not shiny anymore. The cloth should be dull and almost seem dry. Now, place the cloth over the mold and work it in with your hands and a brush/roller, etc. Take the tip of the brush and tap the cloth into place and to remove any air bubbles noticed. This is called 'stippling'. Add additional layers of cloth in the same manner until the desired thickness of the part is reached. Or.....

2. Lay the dry cloth over the mold and fit it into the mold by hand. Take a brush soaked with resin and brush the cloth until the cloth becomes soaked. When it is transparent, remove the excess with a brush, squeegee, playing card, or even toilet paper. Again, make the cloth dull on the surface to remove all excess resin. Again, too, keep adding layers in this manner until the required buildup is reached.

Make sure that the edges of the cloth beyond the edge of the mold are covered with resin. This will allow you to be able to cut the part to shape with a band saw, abrasive cut off wheel, etc. after the part is cured. Allow the part to set for, at least, 24 hours before touching the part. Most resins do not completely cure for 7-10 days, but can be handled and worked with in 24-48 hours.

They make a neat product called Peel-Ply which you can put on the uncured resin to keep the resin clean and ready for the parts to be joined together or to add more layers of cloth. This product is a Dacron tape which will not stick to the resin, but will protect the resin underneath. Generally, this product is used where two parts will be joined together at a later date, such as the seam down the middle of wheel pants. You just pull off the Peel-Ply, and then glass in your seaming tape along the joint. The stuff really works slick and insures a good bond between the parts and the seaming tape. That airplane,

## Chapter Meeting Minutes January 12, 2001

The January meeting was opened at 6:33 by our president Bill Gast, with the introduction of all members and the several guests present. Floyd Neff gave us a short Tec Advisors report. John Kennelly reported that EAA has a patch for the Young Eagles that have helped on ground support. If interested he will attempt to get some of the patches.

Next open house is Roger Bocox's at the Osceola airport. on February 10th 1-4 p.m.

Roger noted that the newsletter could be easily downloaded to each member with e-mail to save the chapter money along with being able to increase the size.

### OLD BUSINESS:

- ◆ Still have Shirts & Hats available for \$10/set- \$12/set XXL.
- ◆ eaa calendars for sale \$9/eA.

### NEW BUSINESS:

- ◆ Board meeting was changed to January 29th at 7:00 p.m.
- ◆ Bill has a book for raffeling off next month: "Tracon"
- ◆ new newsletter for pilots available from edmund anderson. e-mail : ed-splace@bigplanet.com or call 888-874-7167.

air suppliers co. are now dropping their catalog and now on the internet. web site: [www.airsuppliers.com](http://www.airsuppliers.com) or e-mail at: [asc@airsuppliers.com](mailto:asc@airsuppliers.com)



Most of the members have been slowed up on the progress of their projects because of the bitter cold weather and snow.

- Joe heggen didn't do much but move snow since the last meeting.
- New member Brant Hollensbe bought a KR2 project built in 1948 to provide a summer project. He is stretching the tail. Looks like some project!

- Ted Mart hasn't made much progress as it is too cold in the garage.
- John Nelson reports his heat bill too high to be in the garage working, but that the wife's car is still outside, so he needs to work to get it inside. He also reported talking to Ace Cannon.
- Tom Merfeld still looking for something to fit his long legs. Scott Smith was good enough to bring all the flying magazines for members to take, and informed us he is starting a monthly column in one next month.
- Barry Clement and Chris Greenwood have been inside with not much progress as well.
- Bob Foster found a left gear leg to purchase for his T-Craft.
- Mike Lossner said he has not had the Cub out of the hangar since the first weekend in November when he hauled pumpkins.
- Paul Steingrabe has been working on the cowling. He had the Glastar running and looking to have an open house in the near future.
- Jim Piros needs to borrow the scales that Roger has in his garage.
- Ruthwright-Piros is doing some charter flying for a small company. doing something she loves and getting paid for it as well!
- Floyd Neff and Maury Hunter waiting for a little warmer weather.
- Mike Abrahams is waiting for warmer weather, so he and Jack decided to refinance their homes, and their loan officer turns out to be John Nelson's son! Small world. Mike did say they have inherited a sewing machine for sewing upholstery the chapter members can use.
- Jerry Clyde and John Kennelly not doing much in the line of projects.
- Roger Bocox has not been down to Osceola in 2 months!
- Bill Gast got his RV6A turned over. He passed around a sample of sound proof foam that is closed cell. It comes in 4 foot wide rolls and is \$8/linear foot.
- Wes Olson says 3-M does have an approved sound proof foam as well.

Our speaker, Greg Harrison showed us his video on flight in the "Spirit of Des Moines" to Paris. the interesting video showed the actual flight with various stops. Trip took 53 hours and cost \$26,000! But what a chance of a lifetime to see!!! Thanks to Greg for sharing his experiences with us!

**Winter Flying**

**Be prepared for the cold weather by dressing warm for your pre-flight.**

**REMINDERS:**

**1) DON'T scrape the windshield to clear ice or frost. It is plastic and will permanently scratch! You can pour windshield washer fluid over the plastic and wings to clear the frost and ice.**

**2) If there is snow on the wings, please brush it off so the sun can melt any ice.**

**3) Do not do any Touch & Go's when the temperature is less than +10° F.**

**4) Do not fly the airplane when the temperature is below zero, unless it was completely warmed in a heated hangar.**

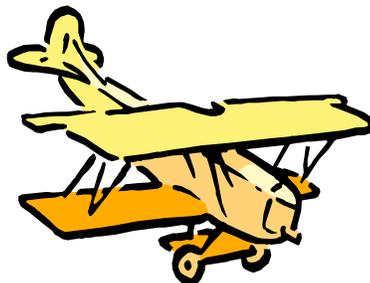
**FROM THE SHOP**

(Cont'd from pg. 3)

While laying up glass parts for aircraft, keep the following in mind:

1. Wear rubber gloves and a mask when working with resins. Provide proper ventilation.
2. Make molds in dark colors. Use a good mold release wax and even PVA. (Nothing is worse than making this great part and then you can't get it out of the mold. Ask me. I know about this from real experience.)
3. Mix resins to the proper percentages and mix thoroughly. Watch the temperature!
4. Make the parts out of, at least, 3 or 4 layers of cloth. Vary the cloth weight for the desired thickness, not the number of layers.
5. Soak all cloth until it become transparent.
6. Remove all excess resin. (Make the part look dry, not shiny.) Excess resin affords no strength, just excess weight. (That's why it's called EXCESS!)
7. Stipple out all air bubbles.
8. Use Peel-Ply on parts to be joined or reworked later.

As with any construction process, it is not difficult to laminate glass parts. It is just different. There are tricks to doing it, and once you learn them, you can make just about anything! Give it a try. The only way you learn is by doing. Sure, you will make a few mistakes, but that is how we learn too!



**(Jack Arthur shares, cont'd)**

I have to admit I haven't paid a lot of attention to Jim Bede's designs before, but I looked at the BD4 and it is a four place plane with the things in it I am looking for. I started doing some research on the web and got some phone numbers and talked to people from the midwest to the west coast and anywhere else Es thinks. Just wait till she gets the phone bill!!! Boy, will I have to do some "honey does". Anyway, I think at sometime in the future I would like to build a BD4. It is different, like the Aircoupe, with only a few around. It looks like the box the Cessna came in and if built light will meet the requirements I am looking for. It might just have enough room for Es to pack her baggage in! I will just have to find room for mine!

I want to thank everyone from the chapter for the award. All the attaboys we have



received for the work on the Aircoupe have been much appreciated. I want you to know we could not have done it without the chapters help and support. THANK YOU!

In our travels, Es and I have acquired a Singer Sewing Machine. Thanks to Larry and Susan Miller for donating this terrific industrial model machine, in great shape. Mark is looking for a belt for it. Where would we be without Mark! It should be able to sew any kind of material, including leather.

Like everyone else, I am hoping for a break in the weather, so we can get out and all enjoy our hobby!

Thanks to all! —Jack and Es

# PROP WASH

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## PROP WASH

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