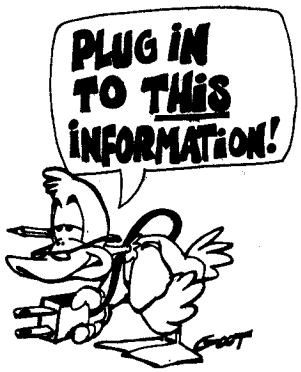

At the risk of repeating some things about fiberglassing that experienced builders already know, I thought it might be helpful to write about some of the things I have learned. When I built my Osprey I had never done anything with fiberglass with the result that I didn't do a very good job and had alot of trouble. Since then I have built a Quickie which is nothing but fiberglass and foam and I have learned alot about the process. The difference is the resin.

Polyester resin is the kind you get from the auto parts store and is mixed with a very small amount of hardener, like four drops per ounce. It will dissolve styrofoam, but will not dissolve polyurathane foam. Epoxy resin is the kind used building the Quickie and comes from Rutan or Wicks Aircraft Supply. It has to be mixed quite precisely with 78 parts resin to 22 parts hardener. It will not dissolve either styrofoam or polyurathane foam. The big difference is in the time you get to work it before it hardens. Polyester resin goes pretty fast, in about 15 minutes. Epoxy resin such as is used building the Quickie takes a matter of a couple of hours, making it alot easier to handle. Getting the proper proportion of resin and hardener is most important and you can buy a dispenser for $150.00 or build a simple balance. I built mine from some scrap lumber and it works just fine.

Regardless of which resin is used, the first layer of fiberglass over the foam is put on with a slurry made up of equal parts of resin and microballoons which look like flour but which are actually many, many tiny hollow inorganic spheres. This mixture not only fills up the voids in the foam but saves a lot of weight compared to using the straight resin. When more than one lamination of glass is used, all the following layers are put on with straight resin and the resin is "aqueegeed" thoroughly to remove the excess, again saving alot of weight. I didn't know any better when I glassed the bottom of my Osprey and I am sure that has something to do with my finished bird weighing 1,011 pounds empty. I had to use a lot of resin with the first layer of cloth to get it to stay on after filling the voids in the finished surface of polyurathane foam. Use of microballoons does an excellent job of filling the voids and making the first layer stay down.

After the layup is complete and the resin is hard, the surface is not smooth since the weave of the fiberglass is on the surface. There are several ways to finish the surface. One is with bondo, with microballoons which is what I used. It is barely satisfactory. I found the best way to finish is with a fairly dry mixture of resin and microballoons which can be spread and troweled easily on the surface and allowed to harden before sanding. The same mixture can be used to fill low places, dings, etc.

I found it much better to use the slow epoxy resin, rather than the polyester resin, and make my own filler with the epoxy resin rather than using bondo, which is a polyester material. If I had it all to do over again, I'd make the bottom of the Osprey and all of the other foam parts out of blocks of styrofoam glued in place and shaped first with a hot wire and then with a coarse file and sandpaper. All the glassing would be done with slow setting epoxy resin.

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