FIBERGLASSING

I think it's safe to say that the first time you try fiberglassing, it will be one of the most awkward procedures you'll ever attempt in modeling! It certainly was for me, and for many others with whom I've spoken. But the good news is, it gets easier and easier, as well as better and better, every time we do it! Not only that, but after you've done it a few times, you'll find that it goes surprisingly quickly. Believe it or not, I can now glass a plane and have it ready to paint in about half the time it would take me to do a comparable job with an iron-on plastic film. And I'm serious!

There are two basic types of resins, epoxy and polyester, both of which have their good and bad points. I like epoxy because it doesn't smell so bad, and it is very consistent. I use Pacer Z-Poxy finishing resin. But when it comes to the glass cloth itself, there are many choices. First we must decide what weight (thickness) cloth to use. Then we choose the source. Generally speaking, the smaller the model, the less weight we want to add, so we choose a lighter (thinner) cloth. The lightest available is around a half ounce (that's weight "per square yard"), and the heaviest we'd want for a model airplane is around 2 oz. Keep in mind that not only is thicker cloth heavier, but it will hold more resin as well. I would not recommend 2 oz. cloth on anything less than a real giant! In fact, I use Dan Parsons's 6/10 oz. cloth on projects up to an 85" span warbird, and 1.5 oz. on anything larger.

I cannot over-stress the importance of having the model and work area ready. We should have any and all dings and dents filled and sanded to a smooth finish with 320 grit paper. We should also have a clean table that's smooth and free of anything that will create new dents and dings. Our work area should be free of obstructions, and anything in the way should be moved *out* of the way. Once we tack rag the model's surface to remove all dust and dirt particles, we don't want any dirt or debris on the work table that will stick to the model and ruin our finish. And for goodness sake, don't be fooled into thinking that by fiberglassing a model, we can cover up building mistakes. It simply isn't going to happen! Any surface blemishes will stand out just as proudly, if not even more so, after we cover it.

Once the tack rag work is done, we want to cut enough pieces of cloth to cover half the model. Typically, this will be the bottom surfaces of both wing panels, flaps, ailerons, the stab and elevator(s), the fuselage itself, and one side of the fin and rudder.

Rather than mixing enough resin to cover the entire model, I mix small amounts at a time. It's a really bad idea to try and squeeze too much working time from the pot life of whatever resin we're using. Remember what we talked about earlier? Don't rush the job! Make time work for you! Once the resin gets even slightly thick, toss it out and mix some more. This is one example of where experience counts... the more often you do it, the better you get. You'll learn to mix just enough to work with. I typically mix about 3-4 oz. at a time. Where I live it's warm year round, and epoxy sets faster in warmer temps. I plan on a working time of about 12 to 15 minutes. Don't try to stretch it out, or you'll end up with a big mess. I'd also like to point out that we don't recommend thinning Pacer Z-Poxy. If it's cold where you're working, you can warm the individual tubes of resin with a hair dryer, heat gun, or whatever.

Start by placing an oversize piece of cloth over the part you're glassing. If this is your first time, pick an elevator or something small and flat. You might even want to practice on some scrap wood before you start on the model itself. Pour a small dab of resin onto the surface right near the middle of the cloth. You'll notice that the cloth begins to turn 'clear', and you can see the surface underneath once the resin saturates the cloth. Now using your spreader, begin to work small amounts of resin toward the edges of the surface, but don't pull so much that you have a glob running over the edge. The idea here is to squeeze out just enough in each direction so as to saturate the cloth right up to, but not over the edges of the piece you're working. We'll get to the edges later. When doing a wing or fuselage, the same holds true with the edges of any openings. Work the resin right up to the edge, and then if there's a puddle of resin present, either pull it off in another direction, or wipe it off with a paper towel. Just don't let it run down into openings or around edges. We're not trying to achieve a glass-smooth effect here. We want only enough resin to saturate the cloth and stick it to the surface underneath.

Once the resin is smoothly spread out everywhere except for the edges, we take an acid brush or a small paint brush and dab resin onto the surface anywhere it isn't saturated. Then using a clean paper towel like a spreader, pull the resin around the edges, or right up to any openings. Again, we don't want globs of resin running around corners or into openings. We want just have enough to soak into the cloth and stick it to the surface.

Now we're in the home stretch. All that's left is some areas where we'll need to cut or relieve the cloth to lay down flat. We'll need to do this at the corners of an opening, for example, to allow the cloth to fold down onto the edges. Basically we're using the same technique here as we do when we cover a model with an iron-on material. Keep an eye on your time, though, because it's very easy to become so involved with what you're doing, the next thing you know the resin is hardening, the cloth begins stretching, and you're sticking to everything you touch. It's the beginning of a really big

mess. Don't be afraid to stop what you're doing, throw away the thickening resin, clean your spreader and scissors, and slip on a new pair of gloves (you are wearing gloves, right?). Get a new brush, mix a new cup of resin, and then go at it again. This is the single most important aspect of glassing a model. Keep the resin on the model and not the modeler!

The first time I glassed a model, I ruined three shirts, and the finish on the model was terrible! But I began to notice that the neater I was, the better the finish became. And the better the finish, the less sanding required to achieve a nice smooth finish.

Continue along like this until half the model is done. Then wait a day or so before doing the other side. If you're really careful, there won't be much sanding to do. I take a sanding block with 220 grit and work around the edges where the overhanging cloth just meets the surface. You'll notice by holding the block at just the right angle, and giving it a light sanding, the excess cloth drops off the model clean and easily. Do this around all the surfaces you just covered, but don't attempt to sand the main area smooth yet. Just get the edges knocked down so you can glass the other side. Once both sides are done, I use a sanding block with well-worn 220 grit or even 320 grit to *lightly* sand or scuff the entire glassed surface. I do this to give the surface some bite or grip for the following coat of resin. But before I go any further, I want to point out that if you'll notice every time I use the word sandpaper or grit, I also include the word 'block'. The reason is simple but profound. You cannot obtain a professional looking finish by sanding without a sanding block. From the moment you begin a model to the very end, *always* use a block to support the sandpaper! The difference between an average run of the mill model and one that is a work of art can almost always be summed up in two words; *sanding correctly!* Get used to it!

All right, we have the glass on the model, and we've lightly block sanded the entire surface to knock away any bumps or protrusions. Now comes what I call the 'flow coat'. This is just another coat of resin applied in the same manner as the first, except for laying the cloth. This one goes on somewhat like a coat of paint. The only difference is, I again apply mine with the spreader. Once again, though, there's no attempt to make a glass-smooth finish. I just want to fill the weave of the fiberglass cloth. Anything more will result in extra sanding.

After the flow coat cures, we need to sand the entire surface again, but it doesn't take much. If we go too far we'll cut into the cloth and defeat the whole purpose. With a little patience and practice, you'll get the hang of sanding 'just enough'. It's easy, you'll see. It just takes a little time, patience, and practice.