(**Lacquer,** *from page 16)*

it. I take the 1000 grit ultra fine and very lightly rub down the wing. Not too much, all you want to do is smooth it down. My friend Jack Zika will rub the wing down with only his hand, using the roughness of his skin . Wipe off the wing with a towel to get the dust off. The skins should still have a very light sheen to them from the lacquer spray and be very smooth. You can also use this method on sheet tails and balsa fuses.

Water based varathane is a very popular method. A lot of people wipe it on and wipe it back off trying to leave as little as possible on the wings. You would be surprised at how much actually does soak into the wood. It's fast and easy but it does have it's downfalls.

Remember that it is water based and if you are doing a sheet balsa tail, you'd better do both sides really quick otherwise it is very prone to warpage. This will also hold true to wing panels. If you don't do both sides at the same time, you can run into trouble. The varathane will also cause the balsa to "fuzz". To get a smooth finish you will also have to sand it as well.

To this date I have finished 20 wings and tails along with 4 wood fuses with this method with outstanding results. I've tried about every way to get a really light weight finish. Give it a try, I'm sure you will be satisfied. If I can be of any help or answer any questions, e-mail me: JABurg@CompuServe.com or call me at (303) 696-8654.

Building a Lightweight Climmax HLG

Tom Clarkson

After building about four Climmax Hand Launch Gliders from CR Aircraft, I finally learned how to build one that is light enough to be quite competitive.

Nearly two years ago, I built my first glider, a CR Aircraft Climmax. As you can imagine, I made my share of mistakes. The first mistake that I made was to put too much paint on the wing. Nice white and orange on the top and dark blue on the bottom. I used Krylon (read heavy) and to make sure I got a really nice paint job I kept putting on coats to try to achieve a smooth surface. Big mistake! I probably added an ounce or more to the wing. Then, I decided to paint the fuse to match the color scheme. Wrong again. Another half ounce learning about pin holes. The end result was 14.5 oz. (Side note. Weigh everything when building and keep notes to learn what works best .)

I took my plane to the field and tried to teach myself how to launch and fly it. It took forever before I was able to get it into the air and back down ... in one piece. I thought that I had built the plane wrong until one day I asked Ron Scharck to fly it and give me his opinion. Well he threw it, thermalled it up, flew around the hill for a few minutes, brought the plane back, caught it, and then handed it to me and said the plane was working fine. I stayed on the field throwing and throwing having learned that piloting skills must have something to do with HLG business.

Climmax #2

The next Climmax Poly that I built, was a little better, but still made some mistakes. Still trying to have a nice looking plane, I again painted the fuse. I also covered the wing with Ultracoat Lite believing that this would be lighter than paint. Here is where I start learning light! I installed Hitec HS-60 servos for the first time and went to a 110mAH battery. It turned out a bit lighter than before, coming in at 12.75oz ready to fly. Still not quite good enough, but I was learning to catch a thermal now and then so did not notice as much.

At a club meeting, I heard Patrick Dionisio talk about how he had used a magic marker to color a wing. I decided that this was the answer, so I proceeded to take the covering off the Climmax Poly and used the magic marker, much to my children's delight. Well it took some more weight off, but boy was it ugly. I then used a rag to very lightly rub on some varathane as a sealer. I also sanded the paint off the fuse. This modification trimmed a full ounce off resulting in a ready to fly weight of 11.75 oz. It made a huge difference. I actually won a contest with it.

Climmax #3

My next Climmax was the PF version. I used similar building techniques with four HS-60s. It came out to 13.25oz and was still very ugly. Mike Ziaskas saw the plane and when commenting about it's beauty, suggested that I use Pactra dope on the wing instead of magic marker.

I had to fix the magic marker wing anyway due to a mid-air so this gave me the opportunity to try the Pactra route. Got a new poly wing from Charlie, got new balsa for the tail, and another receiver. This time, I think that I got it about right. I discovered that it is possible to get an FMA receiver and a 110mah battery in the nose if you push on them a little. Then I mounted the HS-60s side by side (not in-line) just behind the receiver. This resulted in the model balancing with a very small amount of additional nose weight. Next, I put some Pactra dope on a rag let it soak in so it was almost dry and rubbed it lightly onto the balsa wing. As I did this, I kept weighing the wing and was very surprised that it gained an immeasurable amount of weight (less than 1 gram). I did the same thing to the tail. This time I decided not to rub on any varathane as it looks like the dope will be adequate as a sealer, at least in San Diego. Since this is my contest plane, I try not to fly it at all when it is wet, just in case. I was very pleased with the results. It looks ok, still not beautiful, but lots better than the magic marker. But, best of all it weighs 11.25oz ready to fly. A quite competitive weight.

Interestingly, the next project is to add a way to add ballast to the model. When there are light thermals, this plane is hard to beat. However, in dead air, a little more weight helps with the launch height. It seems to me that 12oz would be about perfect in dead air and about 13oz in windy conditions.

Another trick that I learned, from George Joy, which might be useful to those flying poly HL models is to use flap to elevator compensation to add some down when you move the flap stick down. This results in good penetration in the wind in a much more consistent way than holding down elevator. It works great.

So, for those of you considering getting into HL, I highly recommend the Climmax. It flies great, is easy to learn, and a well built Climmax is competitive in any contest.