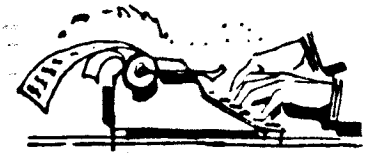

Finally getting around to dash off a few lines. Excess weight is the greatest bugaboo in light aircraft. It would be nice to have some of the mechanical assists such as hydraulic or electric gear, electric trim, etc, however, they all add unneeded weight. I am using Kevlar in place of fiberglass in all areas except the sheathing on the plywood skin. There I am using 3/4 oz fiberglass. Since seaplane operators find a paddle a necessity, you might find the enclosed sketch of a very light weight paddle interesting. The blade is made by laying up two layers of Kevlar on wax paper on a flat surface using epoxy rather than polyester resin. Do not squeegee too much resin out of the Kevlar. The shaft can be made from pine or 1 1/2" closet pole stock is available at the local lumber yard. Shape from round to oval as shown, (1 1/2" x 7/8"). Saw a slot in the end of the shaft to accept the 2 layer blade. Epoxy in place. Add two additional layers of Kevlar over each side of the blade, staggering the edges as shown in the exploded view. Epoxy a piece of the closet pole at the top for a grip. The dimensions shown work pretty well for a canoe but are too long unless you have a fishing rod tube into the rear section of fuselage. Both the blade width and shaft length can be tailored to fit your bird. When you varnish the shaft do not varnish the upper grip. It makes blisters in a hurry. I suggest the blade and shaft be made as large as possible. When you need a paddle, you usually need to move the bird in a hurry, so the bigger the better. It will be the lighest paddle obtainable, for the size.

The problem with fiberglass fuel tanks made with polyester resin has interested me, particularly since I recently lost the plastic tip from the float needle on my car due to use of fuel with Methanol. The float needle tip just disintegrated. I had planned to build wing tanks from Kevlar similar to Darry Capps. I am using West Epoxy, which works very well with either Kevlar or fiberglass. I wrote to the Gougeon Brothers and asked for words of wisdom about using the West Epoxy and Kevlar for tanks. I will quote from the Feb 19, 1986 letter from Jan Gougeon. "In general, gasoline by itself shouldn't be a problem. It doesn't look as though Toluene would be a problem either. A 100% Toluene test showed a reduction is strength in WEST SYSTEM epoxy, but the small amounts in gasoline shouldn't be a problem.

The bad news is, when Methanol is added to gasoline. Although it doesn't appear that anything is emitted from WEST SYSTEM epoxy into gasoline containing Methanol, the epoxy loses a significant amount of strength. I don't know if FAA will allow this to happen to aviation fuel, but our chemist thinks Methanol will be used more as time goes on.

We have used our products for fuel tanks in our boats for many years with good success."

From the above, it still looks like the additives, particularly Methanol, could be a problem..Since the Gougeon brothers (WEST), have extensive experience in the boat business and with epoxy, I have the utmost faith in their products and their engineering skills. They have always been most helpful in helping with problems and answering questions.

A little shortcut in doping process used to be used by a few of us many years ago but I haven't heard much about it in recent years. When the fabric (any type) is doped, (any type), the build up eventually reaches the stage where sanding and wet sanding is required. We used to use a procedure called "thinner rub". Sanding removed the high spots, hence you are taking off part of what you put in. By making a small palm size pad of fabric like old bed sheet material and dipping it in a can of the appropriate thinner, you can rub the surface in a circular motion and melt down the surface. Keep the pad wet with thinner to keep it from getting sticky. The rubbing melts the high spots into the low spots, smoothing them out at the same time. It removed very little of the dope. An added advantage is the loss of the possibility of sanding through the fabric on the edge of the hard objects under the skin such as the edge of ribs, etc. The procedure fills the edge of pinked tape with fewer coats than wet sanding alone. I have made 8 and 10 coat straight dope finish jobs appear as good as the 15-20 coats super jobs which are only wet sanded.

Keep up the good work in the Newsletters They are great.

Sincerely,

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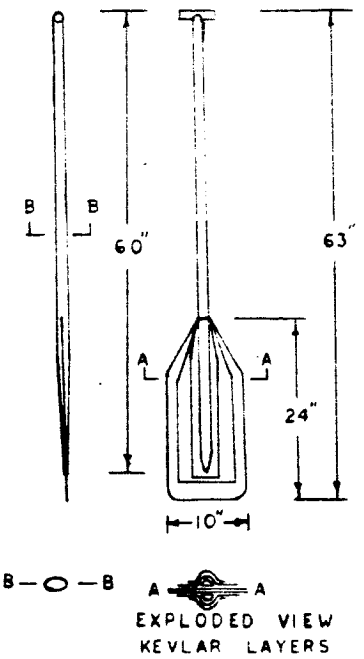

FEATHERWEIGHT

PADDLE