RETRACT SPRINGS
J. Dale Wilson

Do you have your Osprey all covered? You made the retract springs as per plans and then you saw the models at Oshkosh where the builders were smart enough to put pulleys on the retract cable so that the springs were in the center section? I did, but I don't! I tried just once to stretch the spring into place after the wings were covered. It is such a job that when I brought another Osprey from Long Island to Madison, Ed Richartz the builder had to cut the cables to release the springs.

HERE'S WHAT TO DO...

Get two pieces of 1/8" aluminum,make plates the shape of the pattern. Get 2 pieces of 1½" square aluminum tube 23" long from your glass store front company, now make a 1¼" hole in the plate and weld 4-1" angles around the hole to support the tube (do not weld the tube, cause this way you can remove the tube for transporting). The springs fit into the tube, but be careful they cannot hang up when the gear is down. A hole in the end of the tube will hold the ¼" bolt retainer for the spring, but you can make a nicer end plate if you wish. In mounting the plate, be sure to shim solidly between the plywood end rib and the gear truss as the plate needs support to keep it from tipping. Then too, it will reduce the load on the screws I used to fasten the plate to the end of the spar. Be sure there is sufficient room for the wing straps and the bolts for them.

That's the easy part, now to get the springs out of your covered wing. After struggling for over an hour with my fat little arm reaching through the access hole in the end rib,I was feeling like a proctologist at the camel barn in our local zoo. Hot and sweaty and short tempered. BUT I finally succeeded in clamping a small visegrip on the bolt head and using a ¼" drive socket for the nut. If you were smart enough to use a clevis pin you might be able to run a piece of safety wire through the cotter pin and pull it out with that.

G.E. LEXAN FOR OSPREY WINDOWS

Jeff Fraisure

As evidenced by an article in the September issue of Newsletter, some builders are having difficulty in fabricating the windows for their projects.

There is a plastic available marketed by G.E. under the name "Lexan". This is an unbreakable,polycarbonate plastic and is perfect for the Osprey. It can be cold bent in a radius of 100 times sheet thickness. For .125" sheet that is 12.5". This is perfect for the Osprey windshield.

I purchased a 4x6 sheet of Light Bronze tint .125 Lexan from a plastics wholesaler in Seattle for N276JF. Cost of $2.93/ft.

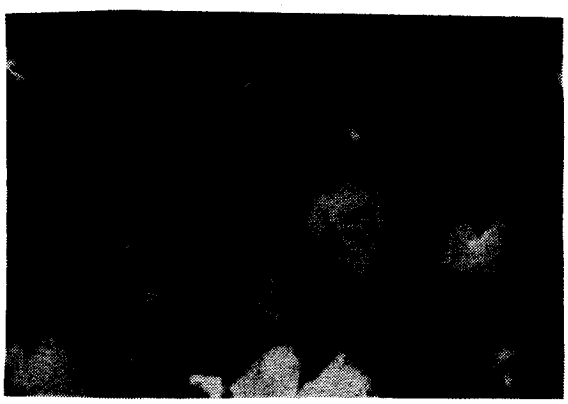
When the canopy was finished, I made a pattern for the front window from showcards transferred it to the paper covering on the Lexan, and cut it with a sabre saw. The flat sheet was then inserted into the canopy window frame. Once sprung into place, the window will stay in place due to the shape of the canopy, bow & funnel. Now all that is necessary is to drill the screw holes. I used a 2½" spacing rather than 3" because the windows are under stress. 45 screws are required per window. This is a simple 1 afternoon, 1 man job. No heat, no oven, no mold and perfect flat optics every time.

The rear windows must be molded just as the plans call for due to the spherical curvature. The only difference between Lexan and Acrylic is the heat cycle required.

Polycarbonate plastics absorb water. This is what gives them their unbreakable properties. Therefore, the sheet must be dried. This is accomplished in an oven at 265° +/-5°F for 4 hours. This step is critical.!

After the drying cycle, the oven is run up to 375°-400°. Shortly after this temperature is reached, the sheet is removed and pressed over the mold just as in the plans. If the sheet is not dried before the high temperature is attained, the water vapor will expand within the plastic and cause bubbles which will ruin the sheet. (I ruined by first one!)

I must stress that this stuff in unbreakable. I have samples in the hanger that I dare visitors to break. They have been bent, hammered, jumped on and bashed, with only scratches to show for the effort. It can be drilled with a regular drill as little as 1/32" from the edge and will not crack. (Try that with Acrylic!) I guarantee it will be the last windshield you will ever have to install in your Osprey.



Vol. 2, No. 1 November 1981
OSPREY 2 NEWSLETTER is published bi-monthly beginning in January of each year. DEADLINE date is the 20th of the month prior to publication. (Dec, Feb, Apr, June, Aug, Oct). SUBSCRIPTION RATES are $7.50/yr for U.S.; $10.0/yr for CANADIAN (US Funds Only); $12.50/yr for FOREIGN (US Funds Only). Please make checks and money orders payable to: OSPREY 2 NEWSLETTER.

Editors: Lynn and Ken Zillmer
Technical Advisor/Designer: George Pereira

OSPREY 2 NEWSLETTER is published at 35079 Road J, Oconomowoc, WI 53066. (414-966-0076)