**New Window FramesFor STARDUST**
**Casting aluminum- filled epoxy frames**
By Joe Parker

To prep our 30-year-old Allied Seabreeze 35 for a paint job, we had to remove the window frames. These frames were cast aluminum and original equipment. The outer frames were thicker and had not been broken. However, once we began to remove the inner frames, it was obvious that they had been removed for previous paint jobs. The aluminum castings had been broken and repaired by simply gluing them back together with an unidentifiable filled adhesive. As we removed them, the inner frames fell apart at the repairs. Two came off in four or more pieces. Close inspection of the surface of the breaks showed that the cracks had been there for a long time. The difference between a recent break, which was clean and bright aluminum, and a preexisting break, which was discolored and dark, was pretty obvious. We debated whether further repairs were really the right thing to do, and decided that we should replace the frames. However, the cost of having them cast in aluminum or bronze was pretty high. Instead, we decided to cast aluminum-filled epoxy frames reinforced with fiberglass.

## Making the plug

The first task was to make a plug out of one of the old frames. We glued ¼" plywood onto a sheet of waxed plate glass with WEST SYSTEM® 105/205 to create a base. The best frame was chosen (only one break), and the break was repaired. This frame was glued onto the plywood, again with 105/205. The plywood base allowed space for a 2" flat flange around the perimeter of the old frame, with a ¼" step down to the glass to stiffen the mold. We created a small fillet where the frame met the plywood, using 105/205 and 406 Colloidal Silica, and coated the frame and the plywood with three coats of 105/205. Next, we wet sanded this surface, starting with 180 grit and working up to 600 grit. Then we applied three coats of mold release, buffing each one before applying the next.

## Making the mold

The mold was then laminated on this completed plug. First, we applied a surface coat (105/206 mixed with 404 High-Density Filler added at 15% by weight) to the plug. When this coat reached a tacky stage, we applied a coat of 105/206 with 10% 404. Then we placed a layer of Episize™ 740, 4 oz. fiberglass fabric into the wet thickened mixture. This layer cured for about 2 hours, and then we applied 2 more layers of the 4 oz. fiberglass. We allowed this to cure hard, about 4 or 5 hours, and applied a layer of Episize 737 Biaxial Fabric. These layers of fiberglass fabric went from the plate glass surface up and over the plywood and cast frame, then back down to the plate glass surface. We let this laminate cure for two days at room temperature. We used a wedge to remove the mold laminate from the plug. Then we cleaned and polished the mold surface and applied three coats of mold wax, buffing each one before applying the next. Now