Cutting Acrylic Windshields

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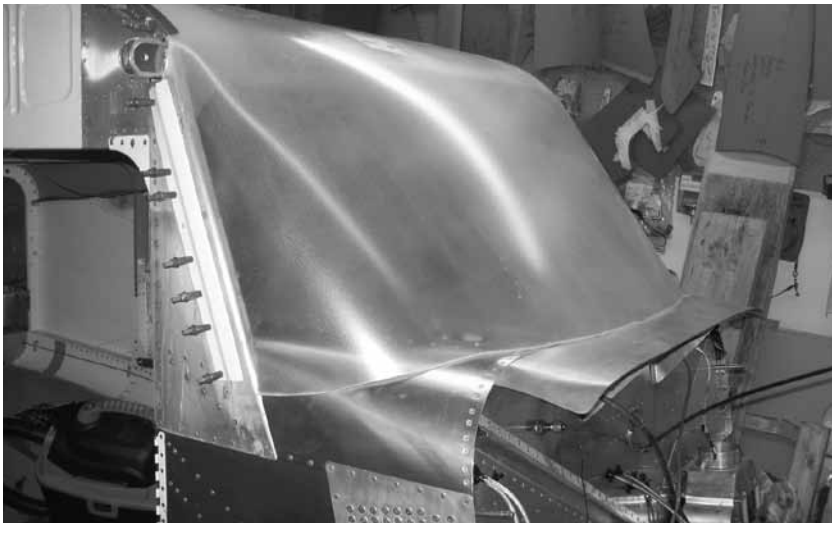

I've done a lot of windshields over the past seventeen years while building, or rebuilding, on average 1.5 airplanes per year and at the same time maintaining a fair sized fleet of Murphy and Zenair products for customers. All but the very first one of those windshield installs has been done with ease, and with absolutely no fear of breaking the acrylic.

Windshield manufactures like LP Aero still state on their installation paperwork to cut the acrylic with a band saw. I think they suggest this because they are in the market of selling windshields! I did my first windshield that way…. terrified the entire time that the saw was going to bind, jump or catch and of course it did on the last cut. Since that (at the time $300, now $720) mistake, I have been using a small cut off wheel in a Dremel tool.

Always leave the protective coating on the windshield until it's time for the last placement. Mark the windshield where you want to cut it with a sharpy marker. I have the luxury of many old broken windshields to use as templates to check the fit on the airplane I'm working on, and paper patterns of same to clamp in place on the new windshield for a one time marking and cutting in less than an hour. You may have to place the windshield on the fuselage many times and mark for small trims at a time to get a nice fit, but regardless of how many times you have to cut you can keep the task at hand easy (with a pleasant outcome) if you use the cut off wheel, versus the band saw. I have never had an acrylic windshield crack or break on me

using this cutting method.

Before you dig right in to the trim lines try cutting on the outside edge in the scrap area first, to get a feel for how much hand control you need. Determine if you are better going to the right or the left before you get into the real trimming. One direction will have the wheel pulling down to the surface, the other trying to pop out. Both can work, just depends on the operator and hand/arm strength and dexterity.

I run the Dremel at full speed and it moves along very nicely, negating hot spots from staying in one place for too long. It cuts very easily and the added benefit of the cut wheel is the trailing edge polishes the cut as you go along. As you get about a foot into the cut take a spring clamp and position it to hold the piece that is being cut off to the main windshield. This will keep it from "loading" the cut area that may cause the blade to bind or put the weight of the flapping cut off piece on the area to be cut. Once you have your windshield fitting nicely, take some fine sandpaper and go around all the edges to smooth out the odd spot you may have gouged a little with the cut wheel.

At this point your windshield is covered in acrylic dust! You can wipe it all you want and the static just brings it right back. I fought this for years, heck 17 of them! Last week I finally woke up when the "light bulb" glowed for a bit. I ran into the house and grabbed my old stereo LP Static Eliminator gun. A few shots with that and the windshield wiped clean! Now don't anyone tell me that they don't know what an LP is….