Make Canopies Fit!

Here's a better way to attach those finicky clear parts

By Pat Hawkey *Photos by the author*

Pat improved the windscreen fit of this 1/32 scale Hasegawa F6F-5N Hellcat.

I recently bumped into a guy at the local hobby shop who'd brought in a finished model airplane. The canopy hadn't turned out entirely to his liking and he asked me, "How do you do your clear parts?"

I smiled. There was no short answer to his question. "I really *hate* clear parts," I told him. I really do. Over the years and over literally hundreds of model planes, ill-fitting clear parts have caused me more grief than any other modeling problem.

An inspection of most real airplanes will show that the Plexiglas canopies, windscreens, leading-edge landing light covers, and other transparent parts blend smoothly with the surrounding aluminum skin. Rarely does it look like these items were just bolted on at the factory after the rest of the machine was built. In way too many cases, though, that's exactly the look achieved on a finished model. To get a blended-into-the-skin look in miniature isn't usually quick or easy, but it can make the difference between a "pretty good" model and a contest winner.

The problem, of course, is that unlike the rest of the model that you can hammer, rasp, shim, chop, or correct with a gob of epoxy putty, clear parts must be pampered and protected. They are styrene in its pure form – very brittle material that is prone to crack if stressed. Squeezing or pulling a canopy to fit a fuselage is asking for big trouble. Building a model to fit its clear parts is a safer practice.

A clear problem. I recently had to tackle a classic example of a poorly fitting clear piece, the windscreen of Hasegawa's 1/32 scale F6F-5N Hellcat. While the piece was relatively large and easy to get at, it required a lot of effort to make it blend into the fuselage. The techniques used here can be applied to the same situation in any scale.

When correctly set in place, the sides of the windscreen met the fuselage acceptably, **1**, but the curved front didn't meet the same curve of the fuselage, **2**. If I had mashed the thing down until it touched and somehow glued it so it stayed there, it probably would have cracked.

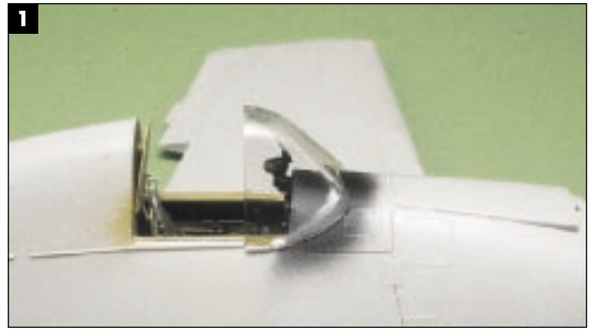
Instead, I painted the upper decking flat black, then held the windscreen in place with one hand and with a scribing tool in the other, traced around the clear piece, scratching the paint in the process, **3**. With the windscreen location thus marked, I went back and further scraped away enough paint to give me a plastic-to-plastic bonding surface, **4**.

With masking tape holding the corners firmly where they belonged, I began the slow process of tacking down the sides of the windscreen with gap-filling super glue where it touched the fuselage. *What!?* Super glue frosts canopies! In large amounts, you bet it will. Instead, I applied tiny drops at evenly spaced intervals making sure the glue seeped between the windscreen and the fuselage, **5**.

To do this, I used a very basic (one might say primitive) tool. I stretched a bit of sprue and bit it (that's right – with my teeth) to length. You could also pinch it with needle-nose pliers. This gave me a wand with a small flat spot on the end. This flat end can hold a tiny bead of super glue, which can be applied with great precision, **6**.

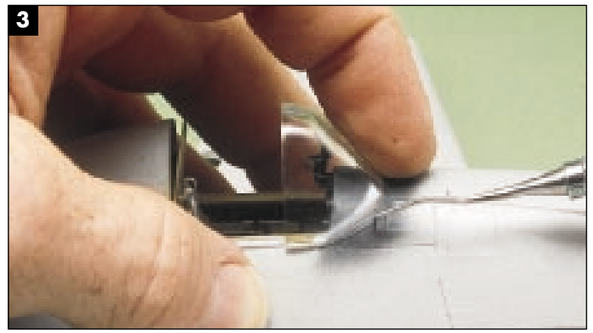
When these first droplets were dry (in a few minutes), I applied further tiny amounts in between the first droplets. And guess what! No frost! I did this as many times as it took to create a seal of super glue between the fuselage and the windscreen. This is very important, because a fair amount of sanding was ahead and I didn't want any wet-sanded grit seeping under the clear part and onto the cockpit decking. When the super glue was dry, I had a clear piece that was fixed firmly in place.

Filling larger gaps. The width of the gap in the front of the windscreen was too large to be easily filled with super glue, so I slid a piece of .010" styrene through the gap and marked the outside radius with a pencil, **7**. After removing the styrene, I trimmed close to the mark with a good pair of manicure scissors, **8**. When satisfied my custom piece would plug the hole, I cut the rounded end loose from the sheet stock. This crescent-shaped shim was jammed

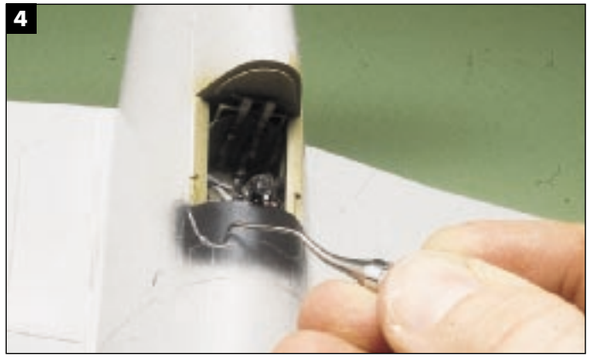


Hasegawa's 1/32 scale Hellcat canopy fits pretty good from the side . . .

. . . but has a considerable gap at the front. Pat will show you how to fix these tricky fit problems.



Pat traced the edge of the canopy on the black-painted coaming.



Scraping away paint improves the glue's adhesion.

The gap in front is too large for super glue, so it must be filled with sheet styrene.

Tiny drops of super glue won't frost the clear parts.

Pat cuts the traced outline of the windscreen edge from the sheet.

Biting the end of stretched styrene sprue produces a handy super glue applicator.

The thin sheet styrene crescent is wedged into the gap between the canopy and the fuselage.

into the gap, **9**, and glued in place with liquid cement applied very carefully with a 000 or finer paint brush. (They'll have to chisel this windscreen off.) When the liquid glue dried, I trimmed the excess stock away with a good No. 11 blade, **10**.

Now the blending begins. If you don't trust the steadiness of your hand holding a file around a big clear part, you might want to cover critical not-to-be-scratched areas with masking tape now. With the excess super glue dry and hardened, I file off the shim and any high edges of the windscreen, with a round riffler file, **11**. It leaves scratches, but that's OK. That's what putty is for.

I carefully covered all the exposed area with masking tape, because an accidental smear of body putty across the windshield would ruin my day. I pressed and smoothed the putty (the Stucco brand from Italy is my favorite) firmly into the scratched areas with a toothpick, **12**, and when dry, sanded it smooth with 600-grit wet sandpaper. After priming the sanded area to reveal hidden glitches, I removed the masking tape to see how things were looking, **13**.

At this point, I added the small bullet-shaped fairings missing from the bottom corners of the windscreen. With used 600-grit paper, I sanded the primed area smooth, up to and including the bottom edges of the windscreen, **14**. After polishing the entire area – including windscreen – with plastic polish, I wiped things down with rubbing alcohol to remove any polish residue that might keep masking tape from sticking. Now it's off to the paint shop.

Inside on the outside. I masked the clear panels for painting, leaving the framing exposed. In 1/32 scale, the interior color of the canopy frames is clearly visible, so I first shot the windscreen and adjoining fuselage panel Interior Green to eliminate any overspray pattern that may be detectable under the smooth gloss blue finish to follow, **15**. This can only be seen when viewing things from the cockpit.

With the paint job finished, the dramatic moment came when I pulled off the masking tape, **16** . . . wow! Does that windscreen look like part of the airplane, or what? I'm sure there'll be voices out there saying "Man, that's a lot of work. Why doesn't he just use Future floor polish and white glue like I do?" I'd have to reply that I'm kinda stuck in my ways. And if somebody out there can get these results with white glue, I'd love to see them. **FSM**

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Any excess styrene is trimmed away with a sharp blade.

After a primer coat, Pat removes the mask to check the joint.

The super glue and styrene fillers are carefully smoothed out with a fine riffler file.

The smooth joint between the canopy and fuselage is ready for final color coats.

With the clear windows masked, Pat fills any remaining gaps with filler putty.

After masking, Pat applies the interior framing color (Interior Green). The exterior color is sprayed next.

The finished canopy looks like it was built into the fuselage of the F6F-5N night fighter Hellcat.