The Red & White Kitfox

B&N Construction Log

7/27 – 8/9/05 – 30 hours. Glare shield: Build a female mold for the glare shield. Start with ¼" board trimmed to the shape of the cowl and panel minus 1/8" for the thickness of the mold surface. Bond them together with a centerline "shape" designed to cross the windshield bars where they cross. Fill with 2" foam blocks glued together with 3M-77. Use epoxy/balloons to glue the exterior edges all together. Shape the blocks. Cover with epoxy/Microlight. (Note: my first pot full exothermed and melted half the mold. I then spent another 20 hours fixing it with additional foam and Microlight. From then on I spread the epoxy on a cookie pan after mixing and had no problem with exo.)



8/10/05 – 7 hours. Glare shield: Add 2 layers of Microlight to the glare shield tool. It's almost complete!

8/11/05 – 8/20/05 – 5 hours. Piece work on the glare shield tool. Add Microlight and fair.

8/21/05 – 6 hours. Glare shield: Discover that the glare shield tool doesn't match the instrument panel tool. Prep and release the instrument panel tool and mount the glare shield tool to it to build the correct size interface. This "should" ensure that the glare shield matches at least the instrument panel.



8/23/05 – 6 hours. Glare shield: Add more Microlight to tool. Smooth. Drive to the paint store for some hi-build primer.

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Glare shield: High build prime the tool. Spray with black lacquer after cure. It looks pretty lumpy. Sand with 60 on the fiberglass batten and bring it right in, smooth as a baby's bottom.

8/30/05 – 8 hours. Glare shield: High build prime the tool again. Spray with black lacquer after cure. Sand smooth by hand, no batten and make it somewhat lumpy again. Bring the whole tool up to 600, then rub it out with white buffing compound, then wax 4 times. It looks OK.

Glare shield: Put five layers of wax on the center section in preparation for a test part.

9/25/05 – 3.5 hours. Glare shield: Cut material and lay up a test part in the center of the tool. Start with 12x12 of 282 PW E-glass. Then lay one 12x12 0/90 11oz 5HS carbon. Then lay one 12x6 of the same. Laminate with System-3 Silver-Tip resin with slow hardener. Use peel ply, perf, and two layers of bleed under 27" of vacuum. Late in the evening pull the part only to discover it's not really cured. (Kind of flimsy.) Lay it back on the tool to cure.

9/26/05 – 6 hours. Glare-shield: Inspect test part. The plain weave is extremely dry, indicating a pretty significant over-bleed. Try to find pin-prick perf to no avail. There's not much perf on the Internet. Measuring the thicknesses gives .01" for the plain weave, as expected, and .013" for the 5HS carbon. The thin laminate is way too flimsy, and the thick doesn't have enough torsional stiffness. I think I may have to go with two DB layers over one 0/90, for a total thickness of .039".

10/3/05 – 5 hours. Glare shield: Lay it up with one 0/90 11 oz. carbon 5HS and two DB similar. Bag for a few hours then bag the tool in a 55 gallon trash bag and pipe in heat from a blow dryer using 2" heater duct. Bring up the temperature to ~135F for two hours. (Measured by thermocouple.) Pull bag and cool. Unfortunately the part's back-drafted on the tool and can't be pulled without either destroying the tool or cutting and repairing the part. I will therefore make the attachments and rear flange before I pull the part in the hopes that I can correct any warpage with the flange and attachment.

10/4/05 – 5 hours. Glare shield: Make aft flange. First cover back 6" of part with flash tape. Then lay in duct tape over part for good bag adhesion. Adhere ¼" x 1 ¾" rubber strip along back edge for a step. Lay up three 282 PW E-glass and one 11oz carbon 5HS then bag with two bleeds. Cure overnight, then bag and heat as above. Pull the part, and then trim ¾" in front of the joggle and 1" behind it.

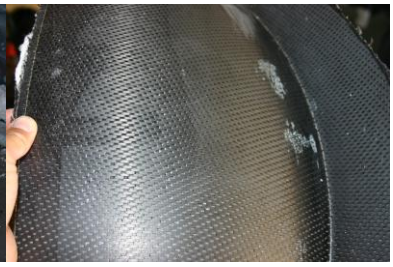
10/5/05 – 6 hours. Glare Shield: Build a tool to lay up two angles to attach the glare shield to the two fore and aft posts holding the instrument panel. I'll slot these angles and attach them to the posts with Adels. That will give me full adjustability in all directions. Build a three sided box out of melamine and pine and shape it to the curvature of the glare shield at the location of the two instrument panel posts. Flash tape the glare shield, surround with duct tape, and then hot glue the box in place to the glare shield.

Cut material for two 3 x 11oz 5HS carbon laminates.

10/6/05 – 8 hours. Glare shield: Lay up flanges, bag and cure at 140 F with the hair dryer. Strip the bag and pull the parts. Trim for a 1" flange along the glare shield and a 4 ½" drop next to the instrument panel.

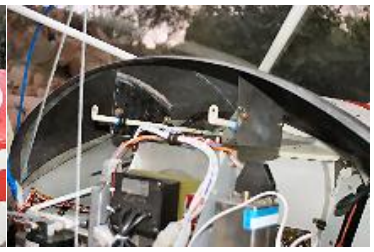

10/7/05 – 2 hours. Glare shield: Pull the glare shield by destroying the tool. It looks GREAT!





11/20/05 – 8 hours. Glare shield: Trim and fit glare shield. Start by cutting cardboard patterns to get a rough fit. Trim glare shield to get a rough fit. Then start sanding and fitting; installing the glare shield and instrument panel about a zillion times. Once fit, use acrylic adhesive to install the aft edge reinforcement and the two supports. Check fit again by installing onto panel support tubes with Adel clamps. It works well.






11/21/05 – 3 hours. Glare shield: Check fit and sand edges. Clear-coat with epoxy.

11/22/05 – 2 hours. Glare shield: Send and fair and re-coat with epoxy.

1/19/06 – 3/27/06 - ? hrs. Instrument panel, center console, and glare shield: Apply color transfer labels. Clear gloss 3 coats all. All of them end up with a bunch of runs and edge build-ups. Sand them out successfully on the center console and glare shield. Accidentally go through some of the instrument panel labels and even through the existing clear coat to wood. Re-order the instrument panel labels and re-apply them when they come in. Buy a new spray gun, A Sata MiniJet 4, and re-apply the clear coat. This time apply a fully flat finish to the glare shield and a satin finish to the instrument panel and center console. The glare shield comes out perfectly. The instrument panel and center console have a lot of blemishes and the center console has runs. Since I made two batches of satin finish the gloss is different.

Glare shield: Install two float nuts. Glue the forward edge rubber rub strip with white 5200.

3/19/06 – 4/10/06 - ? hours. Glare shield: Glue rubber trim edge to forward edge. Fit center piece and install nut plates. Install.