

WATERCOLOR PAPER FILLETS

A Primer

by Dave Mitchell

*As published in the May/June 2009 MaxFax, Stew Meyers,
Editor*

Disclaimer: Nothing in this treatise is to be considered definitive, absolute, authoritative, beyond question or even advisable. If in doubt, consult your attorney.

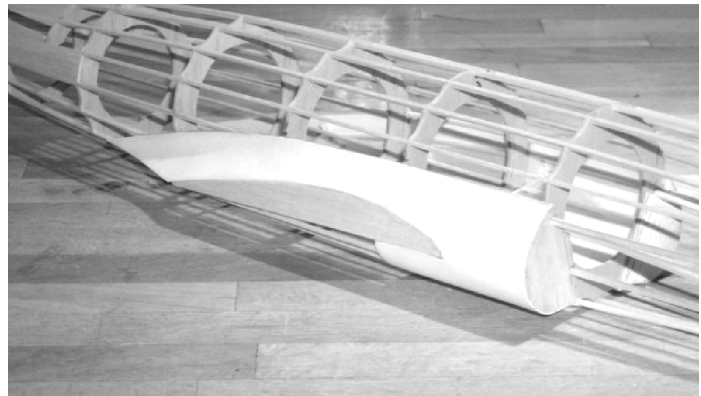
So, you abandoned all caution and decided to build that plane. You know, the shiny red one with the gigantic, sexy, compound-curve fillets. The one that looks like Gina Lollabrigida in Notre Dame de Paris. And now, having framed up the boxy fuselage core and tacked on the wings, you are faced with the dread question: how to reproduce those seductive curves? The airplane is nothing without them. In the past, you've tried tissue (finicky; indefinite edges), balsa (liable to crack), foam (ugh), bond paper (too stiff), Bondo (too hard to sand, and that smell) and the dear knows what else, all with imperfect results. And now, too far down the road to turn back, you despair. What were you thinking? How humiliating it will be, to suffer the patronizing remarks of your fellow modelers as they inspect your plane and offer well-meaning suggestions on other planes you might want to consider modeling. "Have you thought of a Volksplane?" "What about a Fike?" "Laceys are nice ". Alas, your Waterloo is at hand. You have overstepped your abilities. You are ruined but hark! What is that sound? A trumpet? Here, in this desolate landscape of regret? No ... how could ... YES! Fear not, intrepid modeler, your rescue is at hand

Before you get too excited, know that this method will not spare you the degrading and wretched process of cutting and fitting fillet template pieces. For God's sake stiffen your spine, man, and get it over with. Chose a light bond paper for this task, something that cuts easily and that will hold a curve so that you can bend it to shape. Trim and fit it as best you can to the desired shape. When you arrive at an area that develops a compound curve, cut a second template piece if necessary, and so on until you have pieced up a complete fillet, made up out of as many subsections as you need to get a true pattern. Glue stick is handy for tacking together the various pieces. It will be ugly, but you must forge ahead. Trim and fit, trim and fit...when you are satisfied, flatten the template out, clean the edges to fair curves, and set aside. Do the same for the other side, unless you are so confident in your construction that you feel this is unnecessary. Mark them in some way so that you remember which end is fore and which is aft and which is left and which is right, reminding yourself that pride comes before a fall.

Now hie thee to your local art supply store and purchase some watercolor paper. I will not be so didactic as to specify which brand or weight, but will offer that my experience is based on "Arches" brand paper of approximately 140# weight, that came from a watercolor-paper "block"; such a block comes packaged 20 or so sheets to a bundle, all of which is glued around the perimeter into a single package, from which single sheets can be peeled one at a time. The alternative is to buy

individual sheets, which are also available, and will also work. Make your pick, and embrace it. This paper is your salvation.

Regard the paper. Depending on whether it is "Cold Press" or "Hot Press" it may or may not have a pronounced texture. I am not aware at this time of a "Lukewarm Press" paper, but it may exist. If there is texture, use a sanding block and some 220 grit sandpaper on a block to sand the surface smooth; you will want to follow up with some 400 grit, and finish with some 600. Even after this, the paper will be slightly fuzzy. I found the sanding very easy to do on the watercolor paper block, as the paper is fixed around the edges and remains flat. The objective is to get the paper smooth, no more. You want to leave some thickness to it, which you will find to be useful in shaping.



Once the paper is smooth on one side, use the template to mark and cut a single-piece fillet out of the watercolor paper. Soak this fillet blank in warm water for about 5-10 minutes. Remove from the water, and blot with a paper towel. The paper will be limp and pliable, and will hold any curve (within reason) you put into it. It's a bit like working with wet tissue, except that the thickness of the paper gives it far more structural integrity. Use your finger, an Xacto handle, the back of a spoon, your nose, etc. to shape the paper as needed to fit the model. If, as you are working it into place, you find the fit is off (the ARE limits to how much compounding the paper will take without kinking) make a note of what needs to be adjusted, mark out a new template, and repeat the process. Avoid at all costs kinking the paper; once the integrity of the paper fibers have been thus compromised, all is for naught. It will be pretty clear if you are on the right track. True masochists will insist on carving a mold upon which to form the fillets. While this would undoubtedly allow even more amazing compound forms to be made (and probably from thinner paper to start) the author advises AGAINST such a method, as it requires a degree of dedication to the pursuit of perfection that you really ought to be applying instead to your day job, or perhaps your comb-over.

Keep a dozen or so Scotch tape tabs on hand, to ever-so-gently tack the fillet into place on the structure while working it into position. Use only as much tape as you need, and minimize the amount that is actually on the fillet — it tends to tear the surface when you remove it. Draftsman's adhesive tabs might also work well. The idea is that you want to get it all into position while the paper is still damp, then let it dry.

Drying will take maybe an hour at most, at which time you can carefully peel away the tape tabs. You will find the fillet will hold its shape in a most gratifying fashion. If desired, you may now carefully sand the back side to remove unwanted weight--the paper sands very well, and the edges can be nicely feathered. I was able to reduce the weight of the fillets on my P80 by a little more than 1/3 overall before the paper started to get too weak to handle.

The ducts for the P80 are rather complex, so I ran stringers to support the edges of the fillet where it contacts the fuselage. To attach, I brushed two thinned coats of Duco cement on these stringers, and likewise two coats on to the edges of the fillet itself. I then dry-fitted it into place, and brushed acetone onto the edges. This reactivates the Duco, which flashes dry again in a half-minute or so. Worked like a charm, and the fillets were then ready for any final trimming and touchup sanding.

I have yet to progress to final finishing; I expect the paper will be quite absorbent, so the task will be to attach tissue without overloading the fillet with adhesive. Glue stick may work well here, though I think it would be prudent to seal the paper surface with a coat of thinned out dope first. I would avoid applying water or water-based finishes until it is thus sealed.

Armed with this technique, you need never fear sexy fillets again (sexy women may be a different story). Stride boldly and purposefully into the uncharted wilderness; go forth, pilgrim, and conquer.

