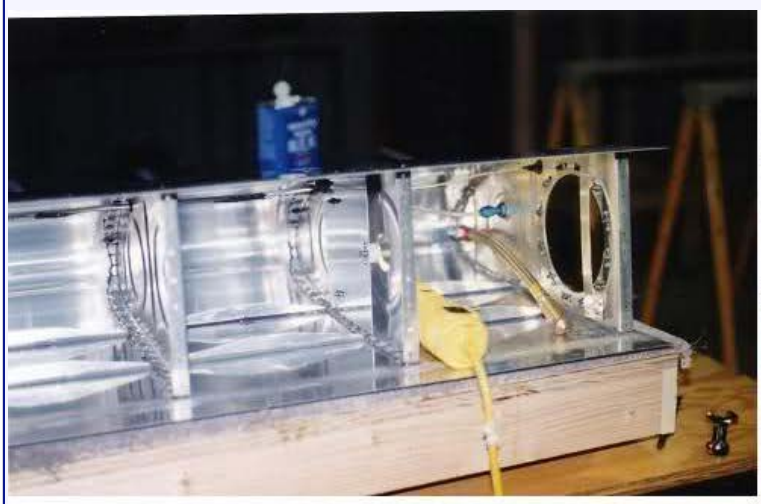
Working with proseal is no big deal.....really. It continues to rate right up there with canopy cutting as a chore many builders seem to dread with a vague sense of impending doom.....shadows of ill-defined personal perception overwhelming the clarity of knowledge and reality. *Who* starts these wild overblown horror stories? Overrated piffle. The stuff of wasted worry.

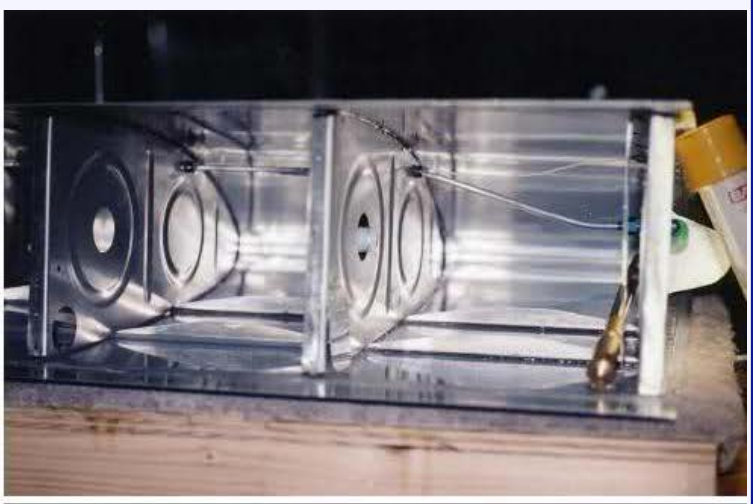
For years I worked with proseal, often daily and for weeks at a time. Even after many years of working with a material used in far more applications than just fuel tanks, I still had to attend 3 days of sealer school to satisfy customer requirements for training when I did a stint on the C-17 program. The cockpit and nose section of the giant cargo plane is produced in St. Louis. It is proseal that makes pressurization possible. It made some sense to retrain when assigned to the C-17 program because the enormous size of the pressure vessel demanded proseal be applied precisely and application requirements were somewhat different than the routine techniques we commonly employed on the F/A-18 Hornet. Interestingly, those persons skilled in icing a cake performed better with a filleting spoon than their polysulfide-challenged co-workers when requirements specified spreading proseal evenly over a surface without any interruptions or other defects. In the self-interest of limiting the mess to an absolute minimum and keeping my clothes unstained (rarely successful since I refused to wear an apron), I did manage to absorb a few helpful tricks over the years. Admittedly, most of the time I used a pneumatic Semco to apply the stuff, but the use of a Semco sealant gun does present a logistical nightmare for the average homebuilder because it can accept a dizzying array of accessories including various sized tubes, nozzles, spreaders, extentions and such. Last but not least, the stock of limited shelf life sealer was mixed daily and manually stuffed into appropriately sized tubes by the friendly folk working the neighborhood sealer crib, stamped with an expiration date, then distributed plantwide into dozens of stategically located 40 degree below zero freezers for shop use. That was the way things were done for decades until a new age of economic fashion swept the nation. Not too many years ago, the powers-that-be decided proseal mixing should be subcontracted out to distant strangers, layoff notices soon followed, and the proseal mix is now shipped in from afar and stored in new 80 degree below zero uberfreezers!

Fortunately for the RV builder, the job of **sealing** a bit easier with the introduction of this handy device, essentially a caulking gun. http://tinyurl.com/28gf9o I recommmend using one, if possible. Such a device sure beats using a common alternative a homebuilder has traditionally been reduced to using...a paper cup and a popsicle stick or tongue depressor. Still, the device is nice but not really an essential tool.

As for proseal itself, if you get the stuff on your clothes...forget it. Nothing out there will remove proseal without also discoloring your shirt or pants. I take that back. Methylene chloride will "sometimes" work (depending upon the fabric) but its dubious use is best served for a much more noble cause...to decaffinate coffee. Otherwise its just too toxic a chemical and not worth the risk to health from needless exposure. Prior to using proseal, rub some barrier cream or lotion into your skin to more easily remove the stuff from your hands after a **sealing** session. Wear a pair or two of latex gloves anyway. You can peel the first pair off as required.

When I assembled my leak free fuel tanks, I proceeded exactly as I would at work. ***There is no compelling reason to wallow around in wet sealer needlessly!*** I would commonly apply the proseal to the mating surfaces of the parts (called fay-sealing), 100% cleco the assembly together, then allow it set up somewhere between tack dry and full cure. That's it. *Walk away.* Upon returning to work the next day or even better....after the weekend, I would then remove every second or third cleco from the assembly, wet install and shoot the rivet, then repeat the process over and over again until all the rivets were set.





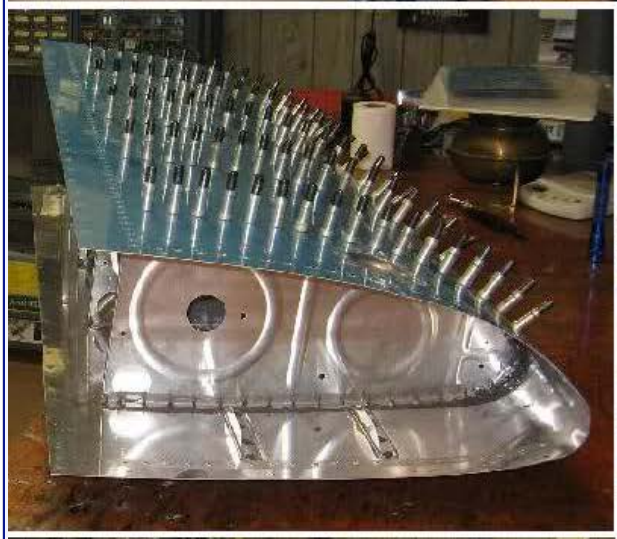
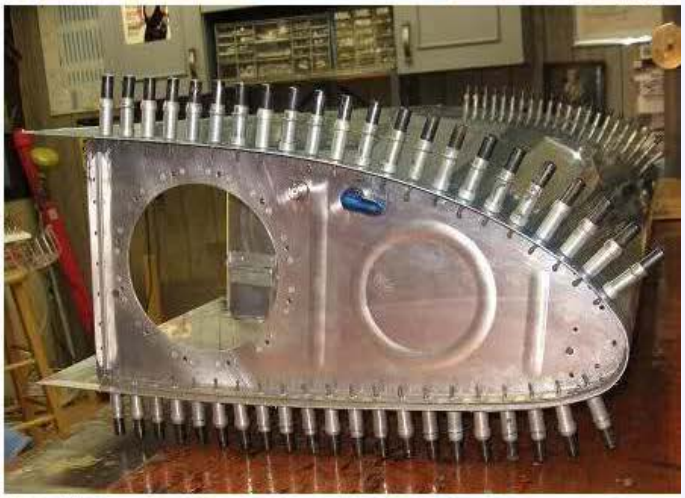
The above pre-digital pictures make a poor attempt to illustrate the procedure I used on my 6A fuel tanks. First, after roughing the local fay **sealing** surfaces with maroon scotchbrite and thorough cleaning with MEK, the ribs were fay sealed and secured to the skin by 100% clecoing into place. I insured adequate squeeze-out (smoothed into an uninterrupted fillet seal) existed around the ribs and skin (and previously installed stiffeners) without any voids whatsoever. Session complete. I felt no need to have extra sealer arbitrarily slopped all over the place as a sort of voodoo talisman employed to ward off leak demons. In my mind, excessive and weighty sealer needlessly laying about in perpetuity simply

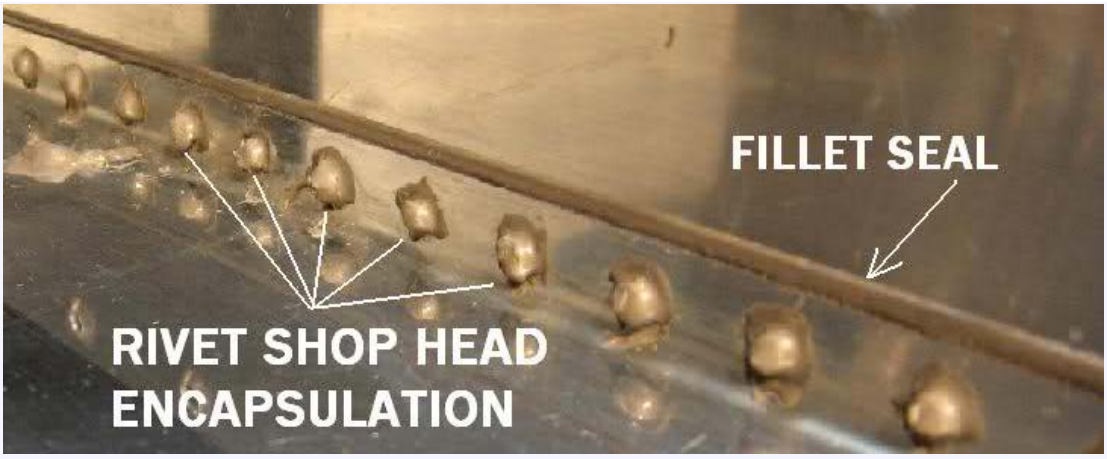
displaced that much more fuel the tanks would otherwise hold. A day or so later, the rivets were wet installed by first removing the clecoes from alternate holes. When all rivets were finally set and while I still had interior access, AND to further insure against leaks, using a Q-tip or a toothpick, I swirled a dollop of sealer around the shop head of each rivet to encapsulate it to its dimple. Next came attaching the rear baffle to the **tank** skin. As shown, I routinely 100% clecoed and clamped assemblies together. I then allowed the freshly (fay) sealed assembly to set up overnight before moving on to and completing the final riveting. This procedure greatly reduced mess and bother when I worked with wet proseal during this interesting phase of construction. Correctly applied, proseal is truly a tough and awesome material.

The photos below were were added on 01/07/09 to more clearly illustrate the procedures I outlined in the original posting. These are detail photographs of the RV-8 fuel tanks I assembled in January '07 following the exact same procedures. Filled with fuel for some months now and like my -6A flying since '05, no leaks have been detected.







As in all aspects of our personal construction experience, we should strive for perfection knowing we will never really achieve it. Prosealing need not be the nightmare scenario some would have you believe. Far from it. There are more pleasant sheet metal tasks to do...sure...but...whoever said building an airplane was not going to be a challenging experience from time to time?

Rick Galati RV-6A "Darla" 124 hours