

installation. It still uses the ball screw mechanism, but he had to machine a lot of special parts to make it more compact and lighter, so it will be more expensive than Steve's. He has been flying it for about a year now with no problems and would like to have one or two others evaluate it for him as well. If interested, you can reach him on (843) 884-5061.

VANCE'S COLUMN

Builders,

For you folks getting ready to put on your wheel pants here is some advice. Mine are 12 years old and are the original Herb Sanders type (teardrop and very efficient) and are tightly fitted around the wheel. That is the crux of the problem. I have about one finger width all around the tire, and when the COZY is eating grass or, parked on its nose, you can slide a piece of cardboard between the pant and the dirt. Pretty close. This was the arrangement years ago when every knot counted. Now I'm not so sure it's worth it. In 12 years, I have trashed one or the other with runway debris 3 times. The last was on the way to Sun 'n Fun while landing at Destin FL. Fortunately, I was able to duct tape it together (it usually trashes only the bottom two inches or so) to see me through the weeks flying that lay ahead.

What happens is that the tire is spun up, and if a small rock or branch of a tree or shrub gets run over, it's likely to get spun up into the small clearances around the tire. OR, if you let the air pressure get low, the side walls will bulge (at impact) and do damage, or if you do an astronaut shuttle landing, the tire really goes flat for a second, the sidewalls will bulge even more causing bigger damage. I haven't done any trials on how much airspeed is lost by raising the pant and giving more clearance. But I suspect not much more than a knot or two. So if you're a low rider like me, be prepared to do a little repair during your cruising.

Some of the builders have asked me why my wheel pants are split into front and back instead of the newer installation with the support all coming from a semi circle on the inside like most are doing now. Both my hangar partners (Cozy 3 and a Cozy 4) have this later mod and is much easier to take on and off. The total work to mount these is about the same, so the savings are in the field when you have to repair a tire or tube. Incidentally, after buying the shells it takes about 40 hours of work to build, align, install, finish, and paint these beauties. But worth every knot.

On a slightly different subject, I've noticed several of my sight gauges in various projects and some of the builders put a wee bit too much flox on the surfaces of the plastic and when putting the two together, some brown ugly flox squashed into the clear bubble sight area. To this end you can pop the bubble off and put a new one on with minimum work. I'll send you a new bubble for 8 bucks including postage. You are going to be looking at that sight gauge for a long time so it might as well look good.

To that end I've had a builder use 5-minute epoxy when bonding the two pieces of plastic together. And I've had another builder use Gougeon Brother epoxy or West System's some call it, with successful results. I have some samples glued up from several years ago with safe-t-poxy and RAE. When I first started making these jewels and I have just now

glued up two more with 5 min and West systems. Looks good so far, and it eliminates the brown stain from oozing into the clear tube. More later.

Last quarter I reported on a homebuilt fuel flow system designed by a Defiant builder. It is a kit you build for \$335 which includes a floscan transducer. This is a small lightweight unit, which digitally reads out in total gallons used, and current fuel flow. Sadly, this unit did not work out for me as the ambient light is too much for the unit, making it impossible to read in direct sunlight and even when using a shaded hand over the display, barely readable. The unit was not very accurate in a steady state fuel flow situation, as it would vary the read out by 3 and 4 tenths of a gallon. I have written the designer but have not heard back from him yet. The kit is by TalonWorks Inc. in Fayetteville AR. Have fun flying.....Vance Atkinson Cozy N43CZ 1200TT.

FIREWALL MATERIALS

Steve Wright, of electric nose lift fame, with the help of a friend, conducted an evaluation of firewall materials. He used 1/4 inch birch plywood covered on both sides with 2 plies of BID. His reference sample had fiberfrax (he didn't say how thick) and aluminum. A second had fiberfrax and stainless steel, and a third had 5.7 oz. carbon BID cloth wet out with 3 coats of 477 epoxy. The 477 is an intumescent material (expands up to 1-1/2 to 2 inches in thickness when heated) which was evaluated and recommended by RAF several years ago (call 1-800-877-3473 for technical information). Each sample was heated with a propane torch. He reported the following results:

With the first sample, the aluminum burned through in 30 seconds, and the back side of the plywood began to smoke after 60 seconds.

With the second sample the stainless did not melt, but after 5 minutes, the back side of the plywood became hot to the touch.

The third sample (carbon and 477) seemed to be as good as or better than the second sample (stainless). The carbon BID prevented burn through, and the back side was not as hot after 5 minutes.

Steve reported that the third sample was considerably lighter than the stainless one. His only concern about using this construction on his airplane was that the intumescent material (477), after expanding, might not be strong enough to withstand exposure to high-velocity, turbulent air. He plans to test this concern.

OIL COOLER LOCATION

The preferred location for the oil cooler is at the top of the firewall so there is airflow past the accessory case in flight and also after parking. When we installed the B & C 90 deg. spin on oil filter assembly, we didn't think there was enough room remaining for the oil cooler, so we moved ours to the right side lower cowling at the butt end of the wing. David Domeier writes: "For those interested in an upper cowling oil cooler exit position, the 13 vane oil cooler from Wicks fits above the B & C 90 deg spin on oil filter. Don't use the plans flange, but mount the cooler flat up to the cowling top with a 2" angle attach to the firewall and a small

FIREWALL MATERIALS

Steve Wright, of electric nose lift fame, with the help of a friend, conducted an evaluation of firewall materials. He used ¼ inch birch plywood covered on both sides with 2 plies of BID. His reference sample had fiberfrax (he didn't say how thick) and aluminum. A second had fiberfrax and stainless steel, and a third had 5.7 oz. carbon BID cloth wet out with 3 coats of 477 epoxy. The 477 is an intumescent material (expands up to 1-1/2 to 2 inches in thickness when heated) which was evaluated and recommended by RAF several years ago (call 1-800-877-3473 for technical information). Each sample was heated with a propane torch. He reported the following results:

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