

Another Dragonfly Flies

Another Dragonfly has joined the list of flying Dragonfly's!!! Allen Peterson's Continental O-200 powered MK-II is out of restrictions and flying great. Allen is part of the Tucson, AZ Dragonfly gang and has learned a lot from long time Dragonfly builder and pilot Justin Mace. When you have someone with Justin's experience in your neighborhood it would be silly to not abuse them, I mean ask them for their advice.

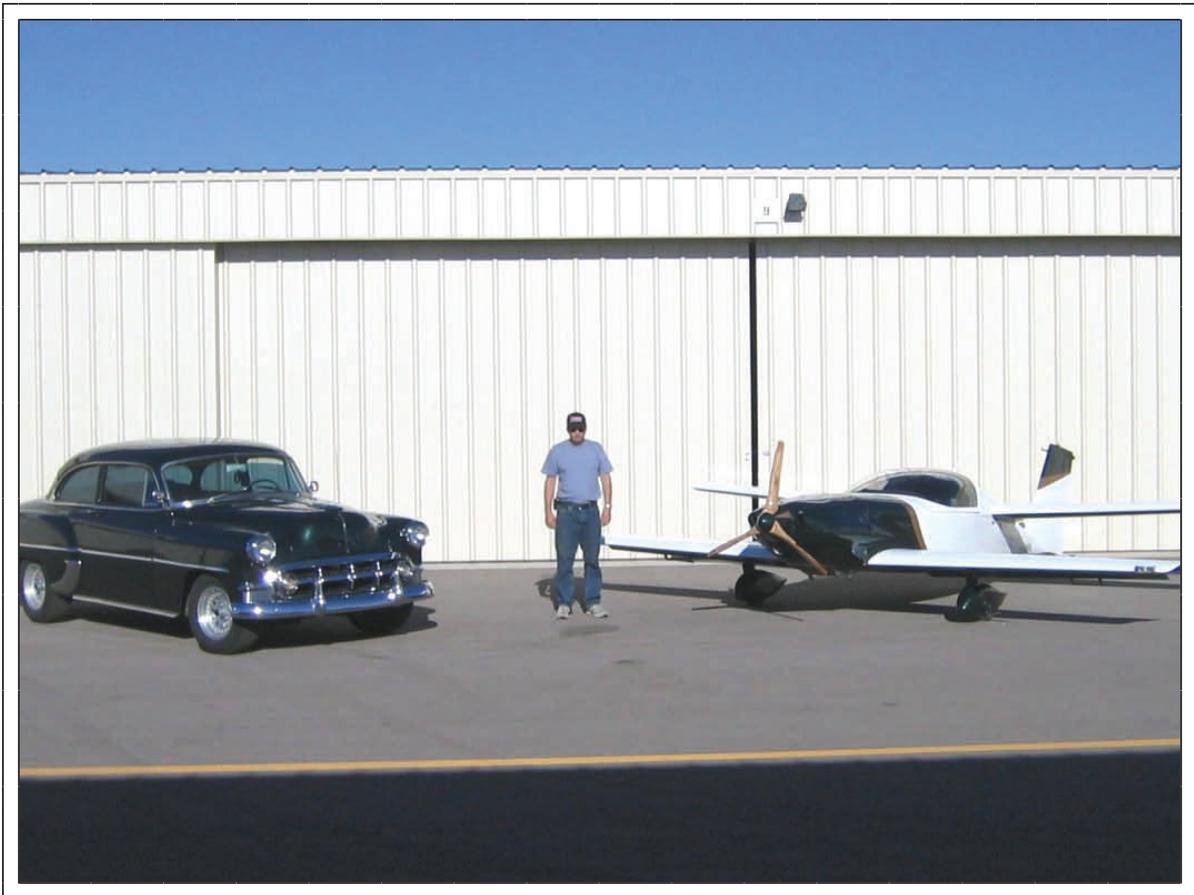
During a recent visit with Justin, he told me that Allen's airplane is flying great and that he is looking forward to a few long cross country flights this year. Justin sent me a few pictures and promises more details for an upcoming newsletter.



Inside this issue:

| | |
|----------------------------------|----|
| Allen Peterson's Dragonfly MK-II | 1 |
| Dart Industries Update | 4 |
| Fuel System Redundancy | 7 |
| Engine Vibration Isolation | 8 |
| Canard and Wingtip Design Ideas | 9 |
| Editor Ramblings | 10 |
| Classifieds | 11 |





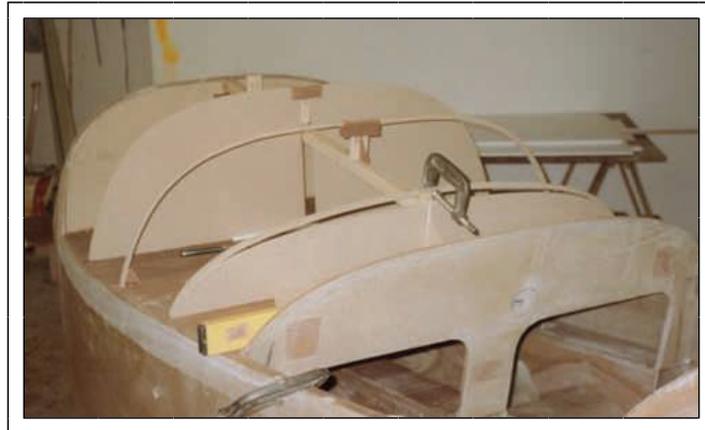
Dart Industries Update

by Mike Wright

My Dragonfly is coming along a lot faster, now that Dart Industries has set up shop in my neck of the woods. I needed to get cracking again some time or another, and the call from Dave Dormer for some assistance has me all fired up again. This article is about how I built my canopy.

Ten years ago when I began my build, I accepted that I would have to build the entire aircraft from raw materials. This came about as South Africa was one of the developing economies whose currency really struggled against the US \$. I began building at R5.50/\$1 and as I plodded along the exchange rate rocketed skywards, and in 2001 when I went to Sun n' Fun and also met Drew in Oak Hill we were at R8.20/\$1. This finally peaked at R13.95/\$1 and has slowly moved down to where we are now R5.90/\$1. This over the last ten years has had me hand make every single part of my Dragonfly the way it should be, and as a result I had to figure out how I was going to obtain the beautiful lines of a Dragonfly canopy, and then also the cowls etc.

I was the only builder in SA at the time, although according to VIKING records there were 3 builders who brought in a few raw material kits in the mid 1980's. I managed to track down Charles Bucklow, the builder of the first and only flying Dragonfly in SA, but alas he could not assist with the whereabouts of these kits, so I proceeded on with plan "B", - make a canopy, from scratch as purchasing one would be too expensive - the shipping worked out at 4 times the cost of the part.



(Continued on page 5)

(Continued from page 4)

I had read an article in SPORT AVIATION about that time about a fellow in the US who “BLEW” his canopy for his Long Eze, so I figured if he could do it so could I,....little did I know at that time. Our canopy shape is “PULLED’ not BLOWN. So I had to use another process. I then found a company in Cape Town who manufactures FAA approved aircraft windshields.....BINGO!

I used a boat builder’s technique to come up with the shape of my plug for my mold. I read the section in the plans on fitting the canopy and obtained the side profile by building up the support structure advocated to support a canopy in the fitting process. I then scaled the profile of the upper seat bulkhead, to obtain the correct height and width at the various stations for the “Canopy Bulkheads”. I allowed for a three millimeter thickness of the Plexiglas, and then began the planking of the plug. This was done by using 5mm white polystyrene, from the local art supply store, gluing it all together with the appropriate styrene GOO. Heck that stuff is messy!

The plug began to take shape, but along the butt joints there were raised sections. To smooth these lines out I glassed the entire exterior surface in cheap BID cloth. Once this cured I used Spackle and smeared it into all the low spots. The finishing process here really got me down at this point, but I now accept this as the best training for what is still to come. At this point I took a year or so on other parts of the Dragonfly, especially the LS1 elevators- another story on its own, built a new workshop and generally lost interest in the plane. I also went quite on the builders list. Then a call from a friend of mine got me fired up – DRAGONFLY had been purchased by DART Industries.

I simply had to learn more about this – I would now meet a really good fellow who has since become a good friend of mine and a building buddy, coach etc. Dave has supported me in many ways since we met. He has used me as a sound-board for a lot of things Dart Industries needed, to sort out as I had experience and I know this project inside out.



(Continued on page 6)

(Continued from page 5)

Soon DART sold their first kit, and the canopy would be needed. The Cape Town windshield manufactures proudly stated they could supply and they did – a Q2 canopy!! WARNING IT DOES NOT FIT AND LOOKS @%\$!. To them a Dragonfly and a Q2 were one and the same and since there was a Q in Cape Town they pulled a canopy, and sent it to DART. Well in my opinion it just does not look good, so I began work on completing my plug. A little cosmetic work and stiffening was required so I applied the last 5 mm polystyrene layer and glassed it to complete the sandwich. This final layer was relatively smooth and required almost no filling. Once this was done I sent it to Cape Town, they made a mold, and now supply beautiful lightly tinted Dragonfly canopies. The blue tint is the same as that found on some GA aircraft, such as the Bell Jet Ranger. Dart Industries can now supply their canopies from this work of mine and have supplied four to builders in South Africa so far. The shape is good and the canopy is supplied with very little trimming to be done. I only needed to sand 3mm off around the seat back bulkhead, in the outer bend, and then will begin the fitting process.

Dart Industries can now also supply metal parts and kit parts such as radiator fairings, for Xpresso looks, Xpresso Cowl-ing, as well as all the original TASK kit parts previously available. They now are in the process of bringing in a composites expert to run the production of the kit parts, and soon the supply stream will stabilize. They have also put in a bid for Gary Wolf's (ex Rodger Enns) Dragonfly, and have nearly completed the refurbishing of the Montana (Budd's) Dragonfly, which was declared obese and had to shed weight. These two planes are the new factory demonstrators, and will work the air show sales circuit.

So my friends, things are happening, albeit at a slow pace, and I have set a target for myself – to complete my plane before the end of 2007. Please hold me to that.

Happy building and flying.

Mike Wright
South Africa



Fuel System Redundancy

by Chris Gentry

Fuel System Redundancy? It couldn't hurt! There is a high potential for fuel starvation in all experimental aircraft which includes the Dragonfly. With this in mind I designed a redundant fuel system with several different fuel paths. The system includes (from right to left) 2 parallel input filters going to 2 high pressure fuel injector fuel pumps which then goes through 2 output high pressure fuel filters. Note that there are also 2 cross over paths which means there could be multiple fuel failures and you would still have fuel pressure to the injectors. Some would say this is a little overkill. In the early days I had an engine out because of fuel starvation while test flying someone's Dragonfly with a Posa carburetor. I made it back to the runway safely, but that Posa sits in my hanger today where no one can ever use it on an airplane.

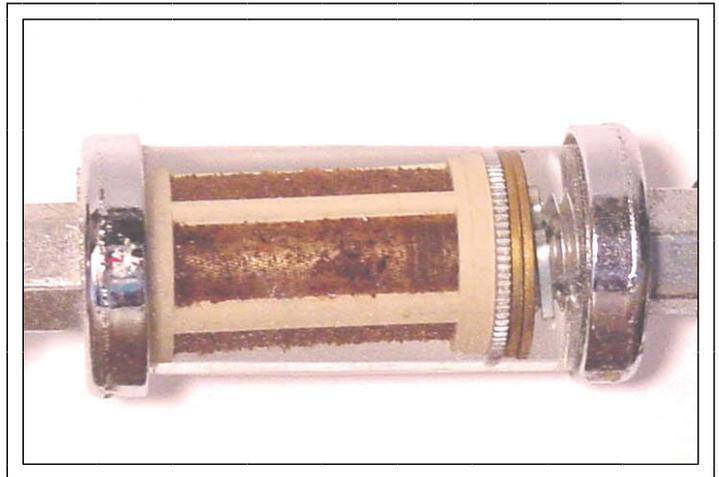
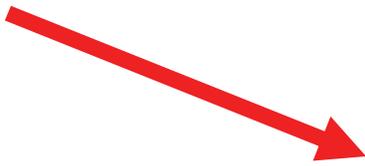
Chris said this may be overkill, but if you take a look through the NTSB accident database you will see that there are several accidents related to fuel system contamination. As we build our airplanes that fiberglass and foam dust gets everywhere. It is ABSOLUTELY CRITICAL that you use a good quality paper fuel filter with lots of surface area. They cost only a couple bucks from your local auto parts store. Replace it after your initial taxi tests and probably every 25 hours or so for the first 100 hours. Inspect it often and replace it (or them) as part of your annual conditional inspection.

I wrote an article about fuel filters for DBFN 109. On the next page is

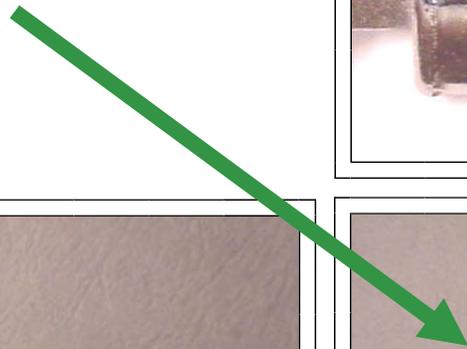
a picture of the one of the glass filter that I removed from N41GK when I received it. The other pictures are of the Fram G3 and G15 filters that are now in my airplane. If your airplane has one of these glass filters, PLEASE replace it with a better filter like the Fram G3. - Jeff



BAD!!!!!!



GOOD!!!!!!



Fram G3



Fram G15

Engine Vibration Isolation

by Chris Gentry

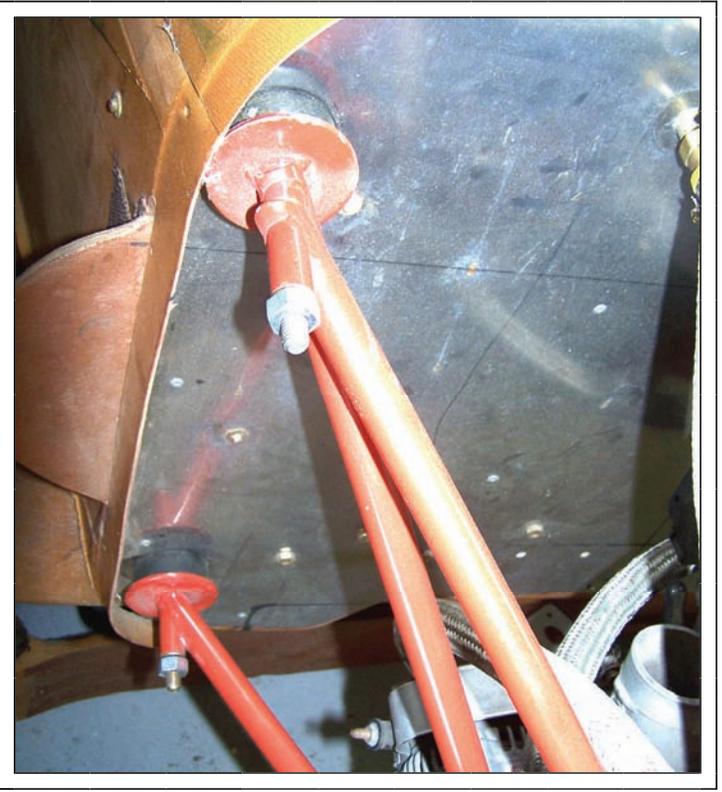
Vibration reduction and simplification? Some of the engines we like to use on airplanes need a good vibration reduction system but that is sometimes difficult because of the odd, and sometimes, uneven attachment points that have to be used at the engine. With this in mind and since most airplanes have a uniform flat firewall we designed a motor mount system that would have large Barry rubber mounts going through the firewall. We originally tried this design on our Glasair with a Turbocharged Mazda RX-7 engine with great success. We choose to use this same design



(Continued on page 9)

(Continued from page 8)

on the Dragonfly with the Subaru engine. The key thing to remember is that large steel washers must be used on the back of the rubber mount which is on the back side of the firewall.



Canard and Wingtip Design Ideas

by *Chris Gentry*

Canard and wing tip designs. We have made many kinds of canard and wing tips. For the canard we are swayed to using a derivative of the Finch tip as shown in the 1st picture.

Then, for the wing, (now don't laugh) after seeing the Bat-Mobile we are considering the one that is in the 2nd & 3rd picture. There are advantages to this, in that, it would be very easy to have many types of nav/strobe lights embedded in these large tips and, in theory, should have low vortex drag.





Editor Ramblings

It seems like it has become the norm that the newsletter is late. I appreciate your patience with me being late and all the very supportive comments that I receive about the newsletter. The lack of article contributions has been the major reason for my tardiness. I do not need a long detailed technical report with professional CAD drawings, a paragraph or two and a few pictures about your Dragonfly or a component on your Dragonfly would be greatly appreciated. A perfect example of this is any of the three articles that Chris Gentry provided for this newsletter.

If you have read any of the early Dragonfly newsletters you probably recognized a familiar name—Chris Gentry. Chris was an integral part of the Dragonfly in the formative years. Chris was the first newsletter editor and up until recently had a Dragonfly project that he was working on. Chris built the first canard with the in-board MK-II landing for Viking. I could go on and on about all Chris has done for the Dragonfly community, but I do not want to embarrass him too much. Chris has decided that he would rather relax a little and enjoy flying rather than building so he has sold off almost all of his Dragonfly stuff. He still has some foam and a fuselage for sale (see his classified advertisements on page 12). Thank you for all your contributions to the Dragonfly over the years Chris!!!

Remember there are a few tandem wing fly-ins this summer.....

The Tandem Wing Spring Fling is scheduled for June 2-3 at Casey Municipal Airport (1H8) located at Casey, IL. Your host for the event will be Keith Welsh. The event web site is:

http://quickiebuilders.org/QBA05/SpringFling/2006_spring_fling.htm

Keith and Steve Larabee hosted the Mattoon, IL Platoon Tandem Wing Fly-In for several years. The last few years, Sam Hoskins has hosted this fly-in at Murphysboro, IL. It is worth the trip to Casey, IL just to see Keith's beautiful Quickie. If the weather is PERFECT and my Dragonfly is performing FLAWLESSLY, I plan on attending the fly-in in my Dragonfly. I put these stipulations on my attendance because my parent's 50th wedding anniversary party is scheduled for 6 pm on June 3rd.....I think even though I am the oldest of three children (and the best), my pecking order

(Continued on page 11)

(Continued from page 10)

in the family would take a nose dive if I missed their party because I got weathered in or I had maintenance problems. I might see you there!?

The Livermore Tandem Wing Fly-In will be in August at Livermore Airport (LVK) at Livermore, CA. Your hosts for the event will be Bob Farnam and Jim Patillo. The event web site is:

<http://www.farnamengineering.com/LivermoreTandemWingFlyin.html>

This will be the 6th year for this event and they always have a great turn out of tandem wing airplanes. Bob and Jim really put on a great fly-in!!!

The Tandem Wing Field of Dreams Fly-In is scheduled for September 22-24, 2006 at Emporia Municipal Airport (EMP) located at Emporia, KS. Your host for the even is Spud Spornitz and Spud is currently working on the event web site. Spud is back at the helm this year!!! For a variety of reasons the fly-n will not be in one of the usual KS airports, but WOW does EMP look like a fantastic facility. A 5000' x 100' asphalt runway with a full length parallel taxiway and a 3875' x 300' turf runway!!! Expect me to try that turf runway if it is dry.

Spud has some TOP SECRET plans for the fly-in that will encourage lots of flying at the event. Of course to take full advantage of his great ideas, you have to be a current subscriber to either the Dragonfly Builders and Flyers Newsletter or Q-Talk.....more on this later.

Jeff

Classifieds

For Sale: Dragonfly Mk. II with hoop style landing gear. Engine : Modified HAPI/VW with pulley driven alternator, Airflow performance fuel injection, etc. Engine and airframe 170 hrs. The aircraft is located in Norway, all ways hangared and in good condition. For more info ,pictures etc. contact Torvid Lensebakken, E-mail: lensebakken@telefonica.net

For Sale: NACA Flush Inlets designed for 1/2" sandwich structures. These make a good looking functional inlet to replace the hand carved per plans ones. Inlets are \$40 per pair, plus \$4.00 shipping. Note: Spinners no longer available. Contact Charlie Johnson, 2228 East 7875 South, Ogden UT 84405 (801)-479-7446 or email: OneSkyDog@aol.com



(Continued on page 12)

(Continued from page 11)

For Sale: Polystyrene Blue Foam For Sale – Make offers – Some of the foams have already been professionally hot wired - canard, wing, rudder, elevator etc. Some are blank/uncut. Also have ½ “ Clark foam Located at the South Lakeland Airport (X49) in Florida. Pictures and more detail available via email request. (863) 646-2612 or email cgentry12@msn.com

For Sale: Dragonfly Fuselage For Sale -- \$600 Firm -- This includes fiber glassed sides, bottom, front and rear turtle decks, fuel tank/seat, engine cowl, motor mount and bulkheads. This would be a good start for someone. Just start putting it together. Located at the South Lakeland Airport (X49) in Florida. Pictures available via email request. (863) 646-2612 or email cgentry12@msn.com

For Sale: Dragonfly Type 1 converted to hoop gear. Porsche 1800 engine (big VW) converted to 2400 with parts from Great Plains. Airframe complete & wings & control surface mounts are finished. Cleveland wheels & brakes. Ed Sterba prop. Very nearly complete. Asking \$10,000. Call 815-397-1533 or email stiegrinding@aol.com



Obviously this picture is not a new one and most of you have probably seen it before, but I it always brings a smile to my face.

Subscriber's Information

Dragonfly Builders & Flyers Newsletter (DBFN) is currently published Bi-monthly at a rate of \$3.50 per issue / \$21.00 per year in the US, \$3.75 per issue / \$22.50 per year in Canada, Alaska and Mexico, and \$4.60 per issue / \$27.50 per year (US funds) per year for foreign subscribers. Send remittance to and make payment payable to:

Jeffrey A. LeTempt
1107 Murry Lane
Rolla, MO 65401
(573) 364-2545
letempt@fidnet.com

For hard copy back issues send \$4.00 for each issue to Jeffrey A. LeTempt at the above address.

Issues #89 through #106 are available electronically from Pat Panzera for \$4.00 each.

Patrick Panzera
PO Box 1382
Hanford CA 93232-1382
(559) 584-3306
panzera@experimental-aviation.com

Ideas and opinions expressed in DBFN are solely those of the individual author. The information is for entertainment only! Application of these ideas and/or suggestions contained in DBFN are the sole responsibility of the experimental aircraft builder, and should be applied at one's own risk. Application of any of the instructions or ideas contained in DBFN could result in injury, death, or worse.

Letters, pictures and computer supplied data submitted to DBFN are subject to final screening by DBFN / Jeff LeTempt, and may be restricted, deleted, revised or otherwise edited as deemed necessary for content or space requirements. Materials will be re-turned by request only, and with the proper postage paid.