

DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICIAL VOICE OF DRAGONFLY BUILDERS ALL OVER THE WORLD

Volume 104

July/August 2003



Louis Beverly's Mark II

**Photos and text by
Louis Beverly**

This MK II project was originally started in 1982 and I purchased it from the builder's family in 1997.

Although it was tied down at Clow airport in Naperville, IL, and the engine and systems were operated for me, I wound up disassembling the aircraft after trucking it to Rockford, Illinois.

The engine is a Revmaster 2100D which was purchased by the original owner in 1979! It uses a Bendix D-2000 dual magneto and Ellison throttle body. It has an alternator intended for a Kubota tractor



Louis working in 26° temperatures, INSIDE!

Volt Harley Davidson motorcycle battery.

Instruments include the usual suspects, along with CHT, EGT, and induction temp.

Both the transponder and Cessna-type com antennae are mounted internally on metal mesh/foil ground planes.

Recently removed while reworking this project were the Collins Nav radio, marker beacon receiver, all the commercial switches, and wiring.

Both side stick controls are located outboard, with the throttle/mixture/carb heat quadrant located in the center console. I have also installed a cable-type aileron trim system in the center console. Due to space and geometry constraints, I am using an electric servo for elevator trim.

and a geared starter. The prop is 54 x 50 from Ed Sterba. After purchasing the aircraft, I drained and preserved the engine and it borscoped ok in July 2002.

The airframe consists of a fuselage assembled from a Task kit. It has an access hatch aft of the firewall for access to the rudder/elevator controls and features differential hydraulic brakes.

Avionics/instrumentation include Collins com, transponder with altitude encoder, ELT, and uses a 12-

Unfortunately, I have a 4-inch venturi mounted on the fuselage right side to provide vacuum for the attitude indicator and directional gyro.

I am seriously considering removing the entire vacuum system and plugging the mount hole.



This venturi is so hideous on this aircraft that I had to search to find photos of the installation so you can see!

Appropriate electrical circuits are protected with fuses except for the two electric fuel pumps, which use MIL-spec switches and circuit breakers. Some of the things I perma-

At this time, I only have rudder controls and brakes on the left side. I have not been able to locate another set of HAPI rudder pedals and leaving the controls out affords a little more room on the passenger side.

I would like to make a few excuses for why, after owning this thing for over 6 years, I am still working on it. Besides the normal life and job pressures I did two things that lengthened the process. After working on the aircraft for a year, I got the crazy idea that I could get into the air sooner if I bought another Dragonfly! So I purchased a MK I that I saw on the Internet that



It's never easy to move a Dragonfly, but it looks like Louis did it the right way

Louis Beverly's Mark II (Continued from page 2)



It sure has a great looking cockpit, full IFR !



Louis plans to rebuild his 2100 Revmaster.



Louis is not too thrilled with the venturi on the side of his plane.

had been flown but had some fuel damage to the canard. I trucked it back to Illinois but, guess what, there is not enough room in a three-car garage for the two projects. Duh! So I rented a hanger 35 miles from home for the two birds. Now, think about it this way: when I have two hours to work on the air-

craft, I kill an hour and twenty minutes traveling to and from the 'workshop'. Probably don't even make the trip. Not only did the distance cut into the work time, I spent a year playing around trying to effect a composite repair on the MK I. The one smart thing I did was to promise myself that if the

MK I did not fly in a year, I would get rid of it. The canard failed the stress test and I did get rid of it one year and two weeks later.

This is the project's current status; I changed jobs this year, moving from Rockford to Greensboro, North Carolina. It took a while to find a hanger down here. I finally located one in Siler City, which is 50 miles from where I live (I did not learn the Illinois distance lesson), and moved the aircraft from the Janesville, WI hanger on 9/15.

Everything has been put back together, the engine reinstalled, and I am planning to perform the first engine run on or about 12/17 (got to celebrate the Wright Brothers - I'm in the right state!). After I get the engine running and all the systems sorted out, I plan to remove the engine and overhaul it. Then I will prepare for the first flight.

Wish me luck!
Louis Beverly
Louisbeverly@cs.com

Third annual Livermore Tandem Wing Fly-in



Dragonflies and Q's in front of Bob Farnam's hangar, at the Third Annual Tandem Wing Fly-in, Livermore airport (LVK) in northern California (near San Francisco), which was held August 16-17, 2003

Third annual Livermore Tandem Wing Fly-in

By Pat Panzera

Year 3. Twice as good as year 2, which was twice as good as year 1.

It's going to be tough for the dynamic duo of Bob Farnam and Jim Patillo to top this year's event with next year's event. Actually, not all the credit should go to Jim and Bob. They had plenty of excellent help. A pile of thanks goes out to Alan Thayer, Mark Summers, Brad Olsen, Sam Kittle and Dick Gossen, just to name a few, as well as the forums presenters Barry Webber and Jim McCormick.

As tradition would have it, the fly-in was kicked off on Friday afternoon through late evening, with a no-host dinner at Beeb's Restaurant (located on the field) which actually got started at about 6:00 pm. In 2002 about 20 people made it to the Friday night dinner, and although I didn't get an official count this year, we definitely had substantially more people there than ever before.

The next morning several courageous pilots braved the early AM, and flew a short hop over to nearby Tracy (TCY) for the launch and first leg of the triangle. After the performance run, the participants flew back to Livermore and the fly-in,

and by 10am the fly-in was officially kicked off, and the "significant other's" headed out for their annual trip to San Francisco.

This past year, we lost 2 Q-2 pilots to first flight fatal accidents. Jim Patillo and Bob Farnam are very serious when it comes to flight safety, especially first flights, so they booked EAA Flight Advisor Barry Webber to conduct a highly informative talk on first flight safety. Barry is a former Q-2 builder and pilot, so his message was specific to tandem wing aircraft. It was very informative in all aspects of first flights, from both a technical aspect as well as safety.



With their backs to us, Dragonfly pilot Alan Tenerelli (left) is speaking with Don Stewart (right) in front of Alan's plane. In the foreground, Richard Terry's MKI is parked in front of several Q's.

Jim McCormick, the west coast distributor for Jabiru engines was the next speaker. He gave a brief introduction, then fielded questions for the rest of his allotted time.

Allen Thayer was up next, with his report on the performance run, followed by yours truly, with my Corvair presentation.

As with the Laughlin fly-in, I brought the engine test stand and ran the Corvair engine several times. When I brought the engine to Laughlin earlier in the year, the alternator wasn't wired up. With the help of Don Stewart, we finished the wiring, and the alternator began to charge the battery.

It seems that every year we pick up more new Dragonfly's at this event. Along with the usual suspects, Brad Hale, Allan Tenerelli and Tim Iverson, this year we were privileged to be joined by another Dragonfly, belonging to Richard Terry. Conspicuously absent for the first time



was Charlie Johnson, who was unable to make his annual trek from Ogden, Utah.

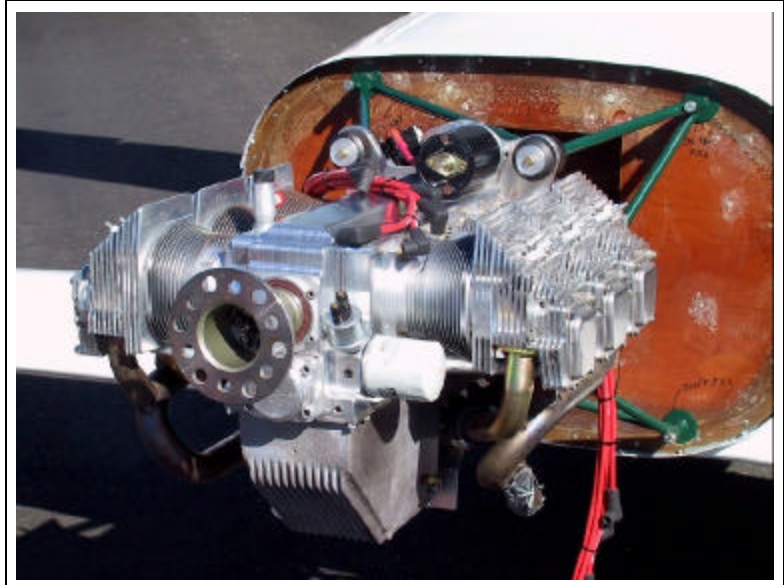
After the forums, things got real casual. Sam started cooking dinner, the hangars were converted from forum space to eating space, and most people meandered around the planes, asking questions and giving

opinions. As usual, our hosts Jim Patillo and Bob Farnam gave familiarization rides to those who needed them.

One particular project that caught most people's eye is Alan Thayer's Jabiru installation in his Q-2, pictured on the next page.

Jabiru Engine

Displacement	3314cc
Bore	97.5mm
Stroke	74mm
Compression Ratio	8.3:1
Ramp Weight	81kg (180lb)
Power Rating @ 2750rpm,	107hp
Power Rating @ 3300rpm	120hp
Fuel	AVGAS 100/130LL or premium Auto fuel at above 92 RON/Octane
TBO	1000 hrs
Cost	\$12,900



Livermore Tandem-Wing Fly-in Performance Evaluation By Alan Thayer

For the first time in the three-year history of the Livermore Tandem-wing Fly-in, a Performance Evaluation was held to give builders the opportunity to compare their planes against others of the same class, HP, etc. I was privileged to spear-head the event and was especially happy that out of the 12 planes that showed up for the Fly-in mid-August, four took part in the Performance run. We hope for a greater participation in the years to come, as with something like this, everyone becomes a winner!

As always, safety is stressed, first and foremost; during our pilot's briefing immediately before the start of the run, safe flying procedures were discussed, including passing, flying the course, altitude and proper entry into position for the run. Also, each pilot was assigned a specific number for use during air-to-ground and air-to-air communications, such as "Performance One," "Performance

Two," etc. We released each plane at one-minute intervals, with the estimated fastest departing first, on down to the estimated slowest so as to avoid in-air proximity conflicts.

Jim and Bob, the Fly-in organizers decided to hold the run in the Tracy vicinity, in the Central Valley of California, just a ten-minute flight out of the immediate Livermore area, in order to avoid local air traffic. It was a great choice; Tracy is a non-tower, uncontrolled field, perfect for this type of event. The triangular course took us from Tracy to Turlock to Oakdale and back to Tracy. An altitude of 2,000 feet was maintained over the approximately 90 mile course.

Three Q-200's and one Dragonfly took part in the run. The Q pilots consisted of Jim Patillo, who came in at 200.3 MPH, Bob Farnam with 181 MPH, and Brad Olson, in his beautiful newly-acquired plane, with 179 MPH. All three were running Q-200's. Dragonfly owner Tim Iverson came in with 130 MPH on his 65 HP HAPI-powered plane. Not too bad for a VW.

This type of event is exceedingly helpful in enabling us to compare planes against others that are similarly built, taking into account engine HP, weight, prop, canard design and modifications from plans.

Why do some airplanes fly faster and perform better than others? A performance evaluation can help us determine what factors may determine ultimate performance as we compare construction techniques, how the builder may have deviated from stock, and how our engines may have been modified.

To quote a phrase coined at Ottawa, the mother of all Tandem-wing fly-ins, "this is NOT a race!" Rather, a time for learning, safety and fun, leading to better performing airplanes. Please consider taking part in an event of this nature the next time you have the opportunity, as the more that do, the larger a data basis we are able to build, which ultimately gives us a larger comparison basis as we build and fly better performing planes. See you next time!

Alan Thayer
alant@familyradio.org

A Page from Andrew's Raptor plans: Anchoring Points

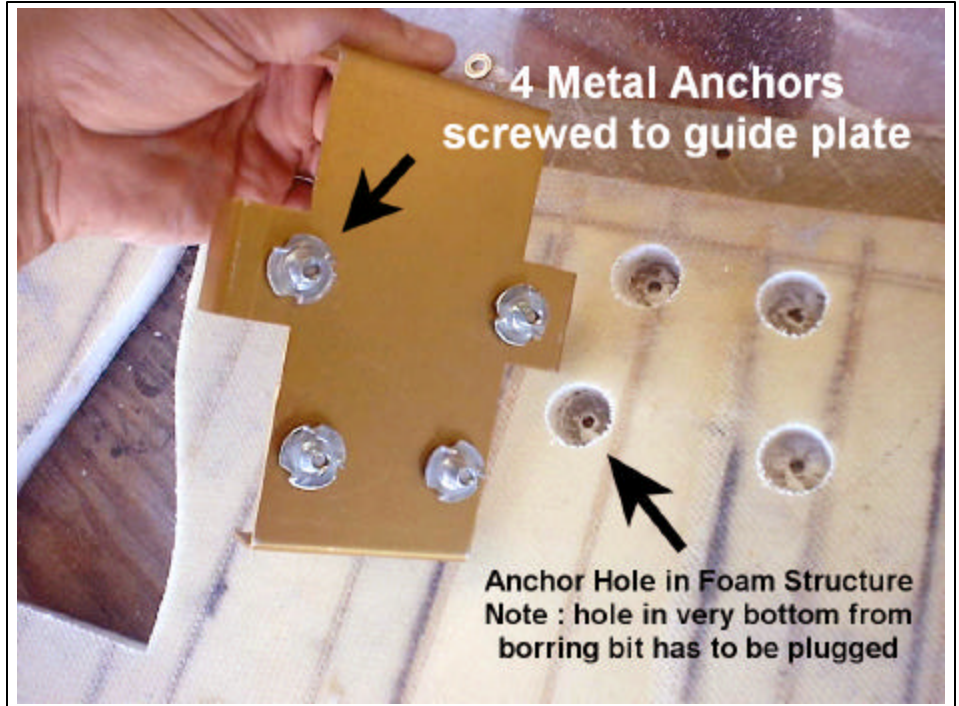
Editor's note: As pointed out in the previous newsletter (Issue #103), our friend Andrew Aurigema designed, built and flew his own tandem wing aircraft, known as the Eos Raptor. In doing so, Drew diligently produced a set of concise plans, so that others might be able to build a similar Raptor, or even borrow chapters of this plans, to copy certain innovative elements Drew incorporated into his project. The following article is an exact reproduction of Drew's chapter on anchoring points. The layout has changed to fit the format of this newsletter, but not a single word has changed.

Chapter #002: Creating Threaded Metal Anchoring Points in Fiberglass Foam Structures

The following is a method of creating permanent, threaded, metal anchor point in a foam & fiberglass structure. The basic instructions are for a 10-32 threaded fastener, but the concept works for 8-32 and 6-32 fasteners also. Larger bolts exceed the strength of the material and will pull out, so do not scale this idea up past 10-32 bolts. This is not intended as a method of transmitting flight loads to structural elements, but rather a way to install cable holders, instrument panels, inspection hatches, trim control assemblies, wire bundle wrap holders, etc. to nearly any surface that would normally crush under a fastener load. The idea presumes you have about 1/2" of depth to work with. That way the well and the fastener are hidden from the surface.

Get your parts aligned and drilled

If you are installing a plate or cover, then tape it down to the surface that you want to attach it to and drill the pilot holes thru all surfaces at once with a #10 drill bit (3/16"). Take



the cover (plate) away and keep it safe from harm. On the surface is now the pattern for the anchor wells you are about to make.

Make a little tiny wishing well

Go get a 3/4" spoon / flat bill wood boring bit (available from any hardware store or super home center like Lowe's or Home Depot). New ones are good because fiberglass dulls them real fast and you want it sharp. Start by boring a 3/4" hole through the first side (only) of glass and foam sandwich or down into the micro as required. You will need about 3/8" deep to hide the metal anchor in any case. Use the bit (spinning slowly) to auger out the foam and make a tiny wishing well. The little well will have a hole in it from the pointy end of the spoonbill (usually a 1/4" hole) and a very nice circular wall of foam. (If you punched the bit all the way through the other side, don't worry, it is simple to fix.) Into this little well, you will be bonding a metal " T " nut. This anchor is available from the local hardware store. Oh yeah, you need some 10-32 threaded " T "

nuts with the sharp spurs still attached. Just tell the hardware store people you are building wood furniture. Note : the brass "barrel" kind may work as well. The anchor point you are making will be *completely* buried inside the foam and glass structure. With this in mind, purchase the short ones (1/2" high or less). These creatures should set you back about 15 cents each. Don't be tempted to use stainless steel. It is weaker than the cheap carbon steel / plated ones and the threads may pull out quicker. Go cheap and you will be fine.

The process for the installing the anchors into the foam (hole) is simple and flexible. This is a place that you can experiment some. So if you find a better way to do something, write it down so you don't forget it next time. The bulk of the build up instructions are for glass/foam/glass sandwiches. If you are bonding into a strong well (like a huge hunk of micro or flox or wood, you can omit the patches of glass on the surface.

Continued on next page

Get it all ready ahead of time

If peel-ply was not used, and usually it wasn't in these cases, scratch sand (80 grit) the area surrounding the hole. Do both sides of the glass if a patch is be used on both sides. This prep is so a reinforcement patch of glass will stay stuck to the original glass. Have a few 2" and 3" diameter glass patches (6 oz BI glass cloth) made up and standing by. Get the insert ready by putting a 1" long 10-32 screw into it. The pointy spurs are away from the inserted screw. Use parting wax on the screw threads. You can use candle wax, crayon, spray wax, car wax any wax so long as you do not forget to use wax on the screw threads. Make sure some of the treads are sticking out of the insert. Do not wax the anchor, only the screw threads.

Install the threaded insert

Start by getting the patch glass prepared. Paint resin (with brush) on all surfaces of the hole and the surrounding couple of square inches of glass. Then, paint area of surface

patch with wet flox. Use wet flox, no skip that step. Next, make up and place a "blob" of kinda wet micro in hole. Use duct tape on the back side of the hole if necessary to keep the mess from leaking through.

Using the screw as a way to hold onto the anchor, put the anchor into hole with the pointed spurs down. Make sure you squish the micro down some and get the anchor below the surface. Any extra micro will come out the edges of the well. Work a dry, round patch of fiberglass cloth over the screw head and onto the wet micro. Use your paint brush and apply resin as required to wet out the glass completely. Use a second patch (different size, oversized) as required. Do whatever it takes to keep the screw straight while the whole mess dries.

Alternate ideas

Put the screws into the original plate and screw the anchors to the plate as an alignment tool. Use a washer under the head of the anchor so that it is set a little away from the align-

ment plate (later it will be a little below the final surface because of this little space. Fill the holes with wet micro and plot all the anchors down into the wet micro at once. Wait until everything is dry before taking the screw out **slowly**. Then remove the guide plate. You better have waxed that plate or it will not come off. Sand the surface as required. You may need to pry the little washers out of the micro before sanding. Then sand the surrounding area and patch the glass as above to get back some strength. Re-drill the hole in the glass when dry with a 1/8" drill and use a knife to open it up so as to not hurt the threaded anchors.

Mistakes Happen

If you went through the far side of the wall with the auger bit : put two patches on the back side and a temporary backing plate there until the anchor assembly dries. A block of wood or cardboard or anything that can be duct taped into place will work.

Nothing But Net

Wait until everything is dry before taking the screw out **slowly**. After the screw is out, take away the backings, peel-ply and such and sand the assembly flat. If you shear the head of the screw off (as is known to happen) you will see why we recommend you leave 1/2" of threads sticking out (vice grip time). That is why you wax all the threads of the screw.

In General

We have found that almost any surface can be made into an attachment area by using this method. Several anchors may be used close to each other by making the "well" large enough to accommodate them all. Try installing several anchor points at once by screwing them to a plate



first, then bonding them into the wells. This change will require a second glassing to fill in any voids, but all the screws will be aligned to the plate at one time. Any reinforcement fiberglass may be put on after the first lay-ups have dried. Don't forget to scratch sand.

Blob-Bond Method

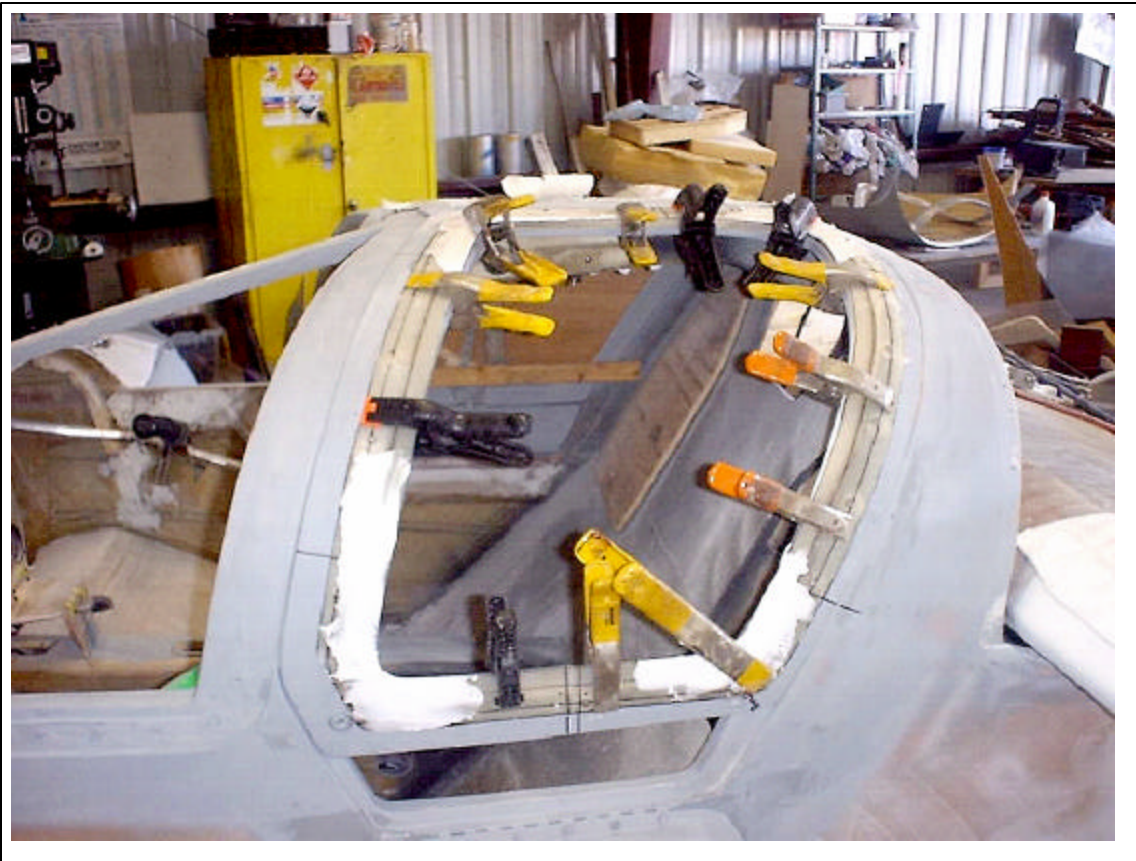
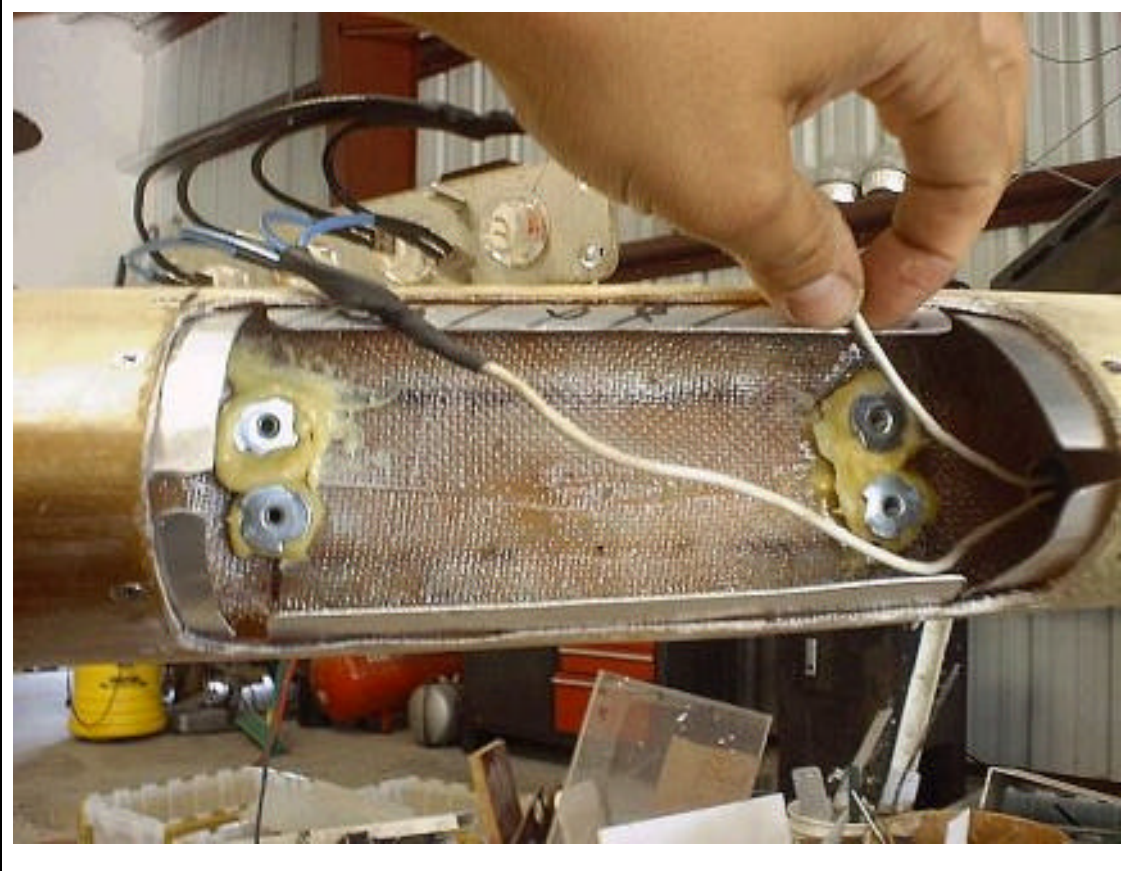
Scratch sand the surface, paint with resin, paint with wet floc, put a blob of kinda wet floc on the surface, blob bond the anchors down into the wet floc mess. This works for surfaces that afford you a lot of room and you do not want to cut into. See pic to right :

Structural Note

This method can be scaled up in strength by adding floc to the micro and increasing the size of the patches and / or their number of plies. Don't get carried away, this is not intended as major structural attachment method.

If You Are Feeling Froggy?

Try bonding in 56 of these bad boys at one time. This is how we got the window frames all aligned at one crack.



Mike Puhl checks in

The state of Slipstream By Pat Panzera

While I was at the Copperstate fly-in, I met a man who had some interesting information for me, concerning the ownership of the Dragonfly. He told me that Slipstream had sold out, and the new owner was selling kits and parts only, no plans. A quick call to Mike cleared things up.

The rights to the Dragonfly have not been sold as of yet, and they are still available for anyone who wants them. The asking price has been reduced to \$35,000, and Mike is not actively advertising the sale.

“We are real cautious about who we talk to about it,” Mike told me. “I am going to more aggressively look for someone to purchase the design after the first of January. We’ve dropped our asking price down on the business to \$35,000, which really does put it into the realm of what people consider. You can make a little bit of a living off of this to be honest with you but we are so busy with floats and high-wings right now that it really doesn’t get a lot of attention”

When I asked Mike about sales of plans, he told me,

“For every person that buys a kit, we sell 25 sets of plans.”

When I asked if the plans had ever been revised and redrawn as he had planned in the beginning, Mike answered,

“The plans are totally done right now, they are actually all on computer we just print them off.” Mike went on to tell me how he traded the prototype to an engineer for the work he did on the tricycle gear,

and to completely revise the plans. So the prototype is no longer in the hands of Slipstream, but everything else (molds and such) still is. The prototype was reconstructed with tricycle gear, fitted with a 2200 Jabiru, and sold off to someone in the south east. This was the plane spotted at OSH, and made the cover of DBFN issue #92.

Mike went on to say,

“If somebody really does have an interest, it can defiantly pay for itself in a very short time. We sell a lot of canopies. We sell them of course for KR2 and not just for the DF line. But that has been a nice little part of our business and parts have been a little bit slower. Not a lot of people want to buy parts but we make them, and I just sold a pilot control stick last week. We also sell the Mark II gear legs from time to time.”

I then asked Mike if he would be willing to sell current plans holders an updated set of plans, to which he replied,

“I did exactly that last week. A gentleman called and said that his plans were old and weather beaten and he said that he was even afraid he was missing some of the pages. I looked him up and could see he was a plans holder and I sent him a new set of plans. He didn’t need the tapes and he didn’t need the templates, and I think we charged him \$129. I ran the whole thing for him, and did in a nice 3 ring binder with dividers. The plans are complete with MKI, II and II versions.”

“If someone calls in and say they’ve got plans they bought, as long as I have the number, I can look it up in a heartbeat. If they have there number Pat, no problem.”

Mike and I talked for a good 30 minutes or longer. He assured me that all the errata items have been incorporated in to the new plans, but unfortunately they had to recycle the old photos. They had the original prints to work from, and maybe if the person putting the new plans together was savvy enough, the photos may have been digitally enhanced. I’ve not seen the new plans, but Mike promised to send me some sample pages.

The plans have been reformatted to fit 8.5x11 paper, which fits in a 3 ring binder. The plan is to keep the master in computer format, so that whenever a change or correction arises, all future prints will be updated.

When I asked Mike about the molds, specifically the cowl, he told me that he had 2 cowl molds. One for the old HAPI engine, and one for the 4 cylinder, 2200cc Jabiru. Mike went on to say,

“If you do get buyers that are interested in that Jabiru 2200, or somebody that is interested in doing it, id be happy to put them into contact with Al Stone. Al was the gentleman that really refurbished that Mark III down there at Oshkosh, and he installed that engine. He’s an engineer and not only that but he’s a first rate individual, just a great guy.”

I hope that helps clear up a few things for you. Feel free to call Mike with orders, questions, etc. The state of the Dragonfly is that it’s alive and well, and apparently thriving, although up for sale.

Pat~



Brian Hendrichs checks in

Brian Hendrichs

I thought I would share an update on N636AA. For those of you who don't know, I purchased this Dragonfly (second owner) in September 2002, and the plane was built (completed) in 1987 by its original owner.

The plane started life as a Mark I, but was converted to a Mark II by the original builder after tangling with a runway light. The engine is a Great Plains 1835cc VW with an electronic secondary ignition and a Zenith carb, turning a Tennessee prop.

Since acquiring this plane, I have been busy getting both myself and the plane ready for flight together. I equipped myself with a fresh BFR by means of a Wings phase completion plus a tail wheel endorsement with over 10 hours in both a J-3 cub and C-140, with over 55 landings (obviously including 3-point and wheel landings) on both paved and grass strips. As an aside, it was very interesting to read and compare Phil Boyer's (AOPA president) tail dragger endorsement experience articulated in AOPA magazine.

As far as the plane, a very extensive list of things were done relative to inspection and maintenance and to enhance the safety and compliance of the aircraft (e.g. replace plastic brake lines with stainless steel braided lines having better working pressure and resulting in firmer brakes). Other additions and maintenance included new battery relocated, a new propeller, an ACK encoder/Becker transponder combo, a Microair radio, new ELT battery, valve adjustment, oil change, repack wheel bearings, checked brake linings, bled the brakes, cleaned gascolator and replaced gasket, re-



placed fuel filter, put in new plugs, etc (you guys know the complete maintenance drill). While I will not include the complete list here, I also had the pressure altitude reporting system and transponder checked per FAR 91.411/413 and FAR 43 Appendix E/F and also had a compression check done on the cylinders. And probably most importantly, I had an official weight and balance done using digital aircraft scales to determine the true empty weight and C.G. location and verified the operating range of all control surfaces.

I decided that, in the process of all this, I would apply for a new airworthiness certificate with an updated set of operating limitations (which allow me to incorporate major changes and re-establish compliance by flying 5 test hours and logging the outcome). The old op limits did not allow for this.

To complete this story, I received my condition inspection sign-off and new airworthiness certificate with updated operating limitations,, and N636AA is now ready again.

While I must say that there has, and continues to be, a feeling of anxiousness to get airborne, I continue

to maintain a cautious approach to flight preparation that includes complete familiarization with all previous Dragonfly incidents/accidents, the preparation of a sequenced flight test plan (in accordance with AC90-89), and continued familiarization with Dragonfly operational and flight characteristics. One could argue that since the plane has already undergone flight testing during its original certification, some of this is not necessary. While that may be true, I believe there is benefit as a new owner to repeat some of this not only for confidence in the aircraft, but also for my benefit in understanding and familiarity with the airplane.

I appreciate all the past contributions by members of DBFN and all the Sport Aviation, Experimenter and other related sources of documentation and most of all, I appreciate the camaraderie and support of this group.

I hope to provide another post detailing high speed taxi tests and first flight over the next month or so. In the meantime, I may take some additional backseat time in a Long EZ as well.

Brian Hendrichs, Warrenville, IL

Classifieds

I recently asked Don Stewart if he wanted to list all the Ottawa video tapes he's produced over the past 8 years. Here's his response. ~Pat

From Don Stewart:

I will make available all Ottawa Field of Dreams Fly-In Videos between 1994-2001, inclusive (8 years). Each year's video is 6 hours or longer and include workshops, pilot interviews, aircraft features and the Awards Dinner. Each year's video is duplicated on one Extended Play VHS cassette. The cost for each year's video is \$20 plus \$5 shipping. ALL THE PROCEEDS OF THE VIDEO SALES GO TO THE CONTACT! CHARITY.

Ordering information is at: <http://www.siinc-sources.com/Dragonfly/dfvideo/> or call: (928) 778-6988) If you are not familiar with the Contact! Magazine charity, which is in place to assist the families of deceased aviators, please visit:

<http://www.contactmagazine.com/Issue72/NewCharity.html>

For Sale: Mark III Dragonfly project.

Task factory lightweight honeycomb fuselage; spraylat covered canopy is forward hinged with two air spring assists. Dual side stick controls are installed. The original and a new blank uncut instrument panel is included. The top cowl contains a custom fiberglass 4 gallon fuel tank. The wings are detailed (micro filled) and reinforced. Canard is reinforced white, the elevators are reinforced and are modified for removal from fuselage. ailerons, back and reflexor options are optional. A full set of engine instruments is included along with original Viking plans, and additional plans for the nose gear option. Fiberglass cloth, extra tires/wheels and many other parts too numerous to list are included with this project. Asking \$4300, a bargain price for quality workmanship.

Mick Myal, Tucson AZ.

520-881-2232 E-Mail

Myal@DCN2.net

For Sale: Dragonfly MK I N812RG, With HAPI 1835 engine, dual ignition, 40 hrs TT, A&E, Terra TXN923 Nav/Com w/ remote Tri-Nav indicator, new prop, always hangared, excellent condition, needs some engine and cowl work and touched up from sitting for too many years. Includes lots of extras, including all DF newsletters ever published. This has been a labor of love that I need to sell for several reasons. Located in central OH. Serious inquiries only. Asking \$11,000. Call or e-mail to discuss or for photos. Ronald L. Geese. (740) 964-9497 or rgeese1@columbus.rr.com

For Sale: Dragonfly MK II N189SM, with 80hp Continental A-80. 250-hrs SMHO by Skeezi Adkisson, and dual Savier electronic ignition. 3 blade Warp Drive prop w/ Gary Hunter blades. Curses 145-150 mph on 4.9 gph. 21+ gallon fuel capacity, dual throttles, hydraulic brakes, ELT, cabin heat, oil cooler and filter. Garmin 195, vortex generators, electric pitch trim. Asking \$22,000 or possibility trade for 2 place side-by-side, tri-gear with turbo or bigger engine. See photos in a recent KITPLANES @ magazine, featuring details on electronic ignition. Call 618-594-2681 and ask for Terry, or e-mail: troneill@charter.net

For Sale: Carbon Fiber NACA Inlets and Spinners. Spinners are \$250 each, including back plate, but w/o front bulkhead. Inlets are \$30 per pair, set in glass. Contact Charlie Johnson, 2228 East 7875 South, Ogden UT 84405 (801)-479-7446 or e-mail: OneSkyDog@aol.com

12th Annual Tandem Wing Fly-In Video now available So here is the deal. Send me \$25 USD and I will mail you a tape anywhere in the world. Personal checks (heck if I can't trust you guys who can I trust) or money orders are ok. Send you payment along with your address to: Jeffrey LeTemp 1107 Murry Lane Rolla, MO 65401 or e-mail: letempt@fidnet.com

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Back issues of DBFN #89 through present are available for \$4.00 each, from Pat Panzera at the above address.

For issues #88 and older, send \$3.00 for each issue to:

Bill Spornitz,
1112 Layton Drive,
Olathe, Kansas 66061
(913)-764-5118
bspornitz@sbcglobal.net

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