

DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICAL VOICE OF DRAGONFLYERS ALL OVER THE WORLD

VOLUME 64

MARCH - APRIL 1996



VON LEACH OF SHELBYVILLE, INDIANA MAKES HIS FIRST FLIGHT IN HIS BEAUTIFUL MARK I DRAGONFLY

Dear Spudley:

I apologize for taking so long to write. As you know my DF has been flying since January 1995. Finally, enclosed is a picture you had requested. To review, it is a Mark 1 with: 1835cc home-brew VW with single port heads, Slick magneto, Hapi electronic ignition, Hapi Ultra carb. 52 X 42 Props Inc. prop, header tank moved to behind the

bulkhead that forms the pilots seat to move the C.G. aft, two Facet fuel pumps (one to transfer fuel to the header tank, and one to insure adequate fuel pressure to the carb at all normal flight attitudes).

I have had some problems, but I think I have all of them solved. The last problem, which occurred last summer, was the float stuck in the Hapi carb flooding the engine. I was

fortunate enough to be letting down to the traffic pattern when it happened and landed without event, but I did get to log a dead stick landing. (My log book has no heading to put that under, well, hopefully I'll never need to make another entry anyway).

After finding a new float valve I had trouble getting the engine to run smoothly. I finally figured out that

the right bank was running rich while the left bank was running lean. This turned out to be caused by the alignment of the intake manifold tubes. While I had the carb off I changed to a new geared starter and "tidied up" the routing of the intake manifold tubes. It turned out that the length of the left bank tube was about 3/4" shorter than the right bank. I re-adjusted these and solved the problem. The engine now runs smoothly.

During all my problems I ended up needing a new carb needle. Thanks for the help on that Spud. I finally ended up getting a new one from "**Lectron Fuel Systems: in Texas at (817) 848-4044.**" They make replacement needles, but the one I got from them was too rich at idle on my engine. I measured it and made one by hand. After many trial and error adjustments to it, lots of filling, it works very well.

I installed "turbulator tape" on my canard last spring and tested it in various configurations during the summer and fall. At one time I had it installed full span on the canard at about 50% chord of the top. It seemed to provide a slightly lower stall speed which didn't vary as the leading edge became bugged up. It was unaffected in light rain, the stall speed did not go up. However, I think it slowed down the top speed and cruise speed slightly. I have since removed it, except for about 6" near the fuselage.

For those who are interested it is .5mm thick, 12mm wide with 60 degrees zig-zags on the front and trailing edge. It provides very small turbulence eddies behind it that are suppose to make the airflow stay attached longer. It works, but costs only a few mph in cruise speed. Source is:

Knauff & Grove Inc.
RR #1 Box 414
Julian, PA 16844
(814) 355-2483

I have elevator gap seals on my Dragonfly as per one of the newsletters. I think they work, but mine don't seem to seal fully. When I blow air in the lower gap it

leaks out the top. I am planning to experiment with externally applied gap seals like the sail planes use.

I appreciate the newsletter and all the ideas, information, and reports, (including accidents). If I had not found information about some of the things in the newsletter I might of have had more problems that I did in getting my airplane flying. One big area is the fuel system. I had originally installed a small see through automotive filter, but later learning better in the newsletter I changed to a large one with lots of filter area. I have had no problems with fuel filters.

Although I don't intend to install a belly brake on my aircraft I appreciate the effort of those who figured out how to make and install one and I appreciate you reporting it in the newsletter. I did use the newsletter plans to fabricate the heavier 3/4" elevator torque tubes. My airplane didn't have these originally. I also installed my gap seals as a result of the newsletter.

I think your approach is the right one, Spud. Put out any information you think we might be interested in and let each individual decide which, if any, is pertinent to him or her and their airplane. Let the individual decide if they want to experiment with a subject. That is what learning and experimenting is all about.

Flying the Dragonfly is Fun, but one must be cautious with anything mechanical that they are placing their life on. The information in the newsletter is very important in spreading information about mechanical improvements, cautions, and advice through the experience of others.

Von Leach
509 W. Dwain Village
Shelbyville, IN 46176

STEVE LARIBEE ON TOUR!

Dear Dragonflyers,

Greetings from the midwest. Last Saturday was a cloudless, see-to-the-horizon day. A great day to warm up the oil in the Dragonfly by flying over to Indiana and see if Gary Sheets had his Dragonfly project flying.

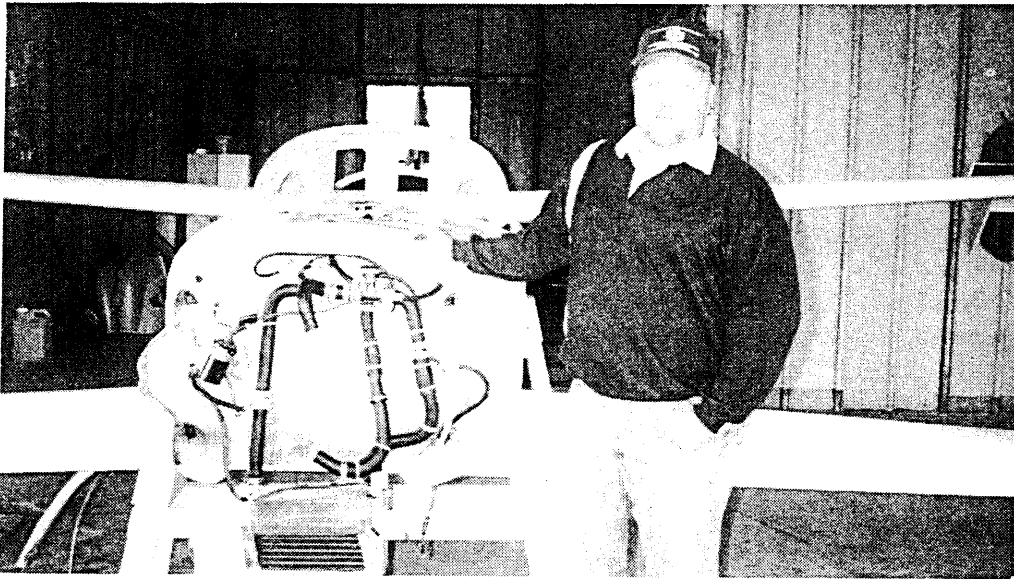
Crossing into Indiana I decided to land at all the airports that were close to my line of flight. I landed at ten airports and the Dragonfly always draws a crowd. Navigation was incredibly easy with my Garmin 95XL GPS. I highly recommend this unit as it is the smallest one on the market when you remove its battery pack. I made a bracket where my left canopy lift strut fastens to the fuselage to hold the yoke mount. This allows the GPS to be permanently installed with easy access to the keypad, good visibility of the moving map, without blocking out the instrument panel, or interfering with getting in and out of the cockpit. The only radio equipment a Dragonfly needs is a 760 com, transponder with mode C, ELT, and a GPS. Pay the extra dollars and get the moving map GPS. Folks, the transponder is for your safety as some air traffic radar will not pick you up. That kind of excitement you don't need if you fly around B and C airspace.

Mid afternoon I arrived at my destination, Shelbyville airport. On final I see a Dragonfly holding short and I think it's Gary about to leave. Upon opening my canopy at the FBO, Gary comes running up to greet me. He informed me that the Dragonfly belongs to Von Leach who is doing taxi test before making his second flight. While Von was running up and down the runway Gary took me over to his hangar to show me his Dragonfly.

Gary Sheets has had his share of



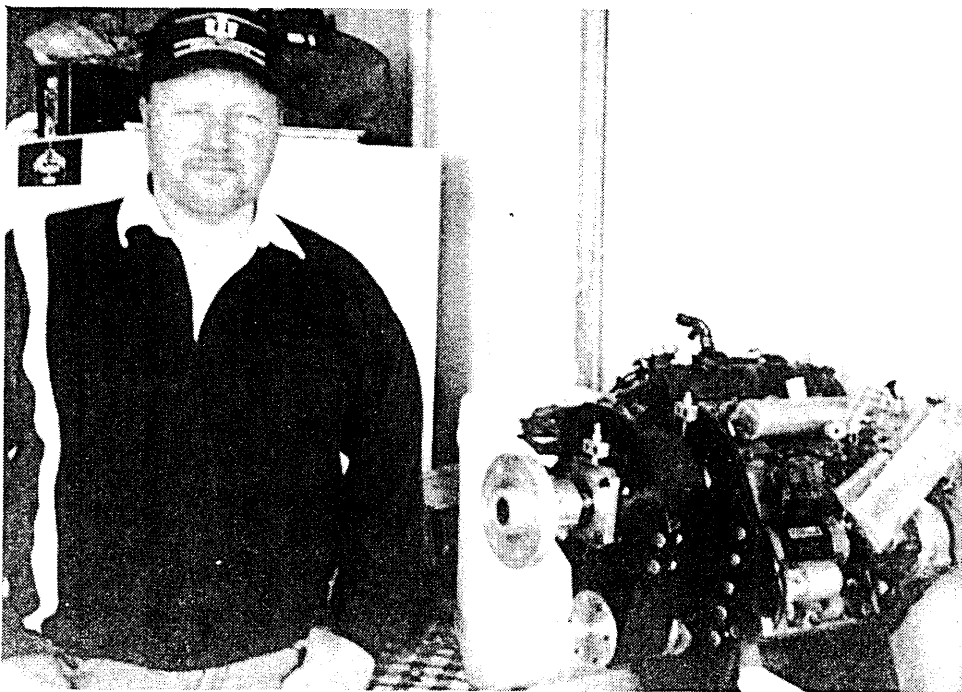
The Three Amigo's Larry Sheet's, Steve Larabee and Von Leach



excitement in his Dragonfly. Over a year ago, with about 90 hours on his Hapi engine, it quit two miles out and he was fortunately able to make the airport. He tells me the Dragonfly is a great glider, but it is an understatement to say he was not happy with what he found upon disassembling his engine. He had also experienced an earlier fiberglass gear failure. This caused him to reconsider what kind of engine and gear he would like to have in his Dragonfly.

When I was last here, his Dragonfly had a hoop style gear and a 3 cylinder Suzuki water cooled engine mounted on the firewall. I was expecting to see a finished project. What Gary showed me was a broken bird. I knew how he felt because I have been there myself. It's a kick in the stomach that we don't want anyone else to experience.

Two weeks earlier while making a high speed taxi test, it veered off the runway. It ended up on its back. He will have to replace the 3 blade Warp Drive propeller and canopy. Repairs are needed on the cowl, fuselage and tail. He has also cut six inches off his gear to try and improve its ground handling. I think he should install my steel gear legs so he will have one less item to worry about. He told me he would think about it.



About this time both Gary and I thought Von had done enough taxing and if Von and his airplane were ready, he should fly it. After some discussion between Von and Gary, Von powered up and flew off. He did the right thing by climbing for altitude over the airport. I looked at Gary and said what are we doing here and we climbed into my Dragonfly to take some aero pictures of Von. Gary handled the communications and camera chores while I made sure we kept out of Von's way in case he should have any problems.

Back down on the ground Van's smile was wider then the canard on his Dragonfly. He was one exhilarated Dragonflyer. His engine was in green and roll problem been corrected by adjusting his

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elevators.

After sharing in Von's accomplishment I noticed the sun was getting low in the west and it was time for me to be heading home. As the sun disappeared and the twilight crept over me, I thought of all the delightful people I have met and the great times I have experienced with my Dragonfly. Free of the earth and alone with my memoirs, I felt good. All in all it had been an incredibly enjoyable day.

Remember to keep the shiny side up and the dirty side down and happy Dragonflying.

Steve Laribee
703 Timothy Circle
Charleston, IL 61920
(217) 345-2633

MULTICOM

● Join The EAA

Wow! I can not believe the people that I have talked to over the last year that are not members of the **EAA** and are not receiving their excellent magazine "Sport Aviation". Sport Aviation goes into much more technical detail than any other publication. For those of you that are not members..."**YOU ARE MISSING THE BOAT BIG TIME!**" If you are going to build a airplane, you need to support the **EAA** and you definitely can use the technical info. Here's a special offer. I have obtained a quantity of **EAA** info and membership pamphlets. You call me, write me or E-mail and I'll mail this to you no charge. So come on gang Join the **EAA** today! - Spud

Phone (913) 764-5118
E-mail DBFNSPUD@AOL.COM
1112 E. Layton Drive
Olathe, Kansas 66061

● The Dragonfly On The Internet

Spud, here are three homepages I have found on the Internet. It looks like the net is growing and getting more DF builders on all the time. Here they are:

www.biddeford.com/~ddelaros/home.html

www.interstice.com/~kevin/dragonfly/html

www.geocities.com/hollywood/1769

See you later

Justin & Linda Mace
Flying "Dragonfly 764JM"

● Soon to Fly in Australia

Spud, keep up the great job, it's the only way of keeping in touch with you guys over in the states. The camaraderie in the Dragonfly group is mainly due to your efforts. My Dragonfly is about ready to fly (about a month, I hope), in fact we have 3 DF's about to fly here in Melbourne. I will send you a report (s) on all this as soon as it happens. Graeme & Sandy Davey - Australia

● The Troops Checking In

Spud, I for one really appreciate the technical articles. It really helps me to make improvements to an already great little aircraft. Keep up the good work!! **Brian Knox, Iowa.**
- Spud, I have enjoyed every issue of DBFN. You're doing a great job. I'm currently taking some more night classes so don't have any extra time. I'll be through this summer and can get started on my aviation projects. My Dream is to finish a Dragonfly some day using a Continental 65 that I have to put in it. **Ken Hayward, Washington.** - I hope to be a Dragonfly owner or builder in the near future. In the meantime DBFN keeps me informed and my intent high. For

Christmas my wife gave me the "1995 **Ottawa Dragonfly/Quickie Fly-in video**". Technically it may be of "Home Movie" quality, but the first hour alone is worth the cost of the whole tape. Parts of discussions were not of particular interest, but it has been a joy to watch. You might tell your readers, again. owning it is \$26.00 well spent!
Reyman Branting - Pennsylvania.

● Don's Dragonfly Toys On The Net

You net surfers now can order all of your Dragonfly videos, accessories and goodies via net. Don & Debbie Stewart new E-mail address is siinc@computerlink.com

● Hoop Style Gear Plans Available.....Again

Back in issue #43 Gene Divincenzo presented a new style hoop landing gear (Long-EZ style) that he designed and built for his Dragonfly. In that issue he offered everyone full size plans to make the actual gear leg mold which incorporated all the correct angle and curvatures. Gene was making copies of these at the company he worked for at the time for \$10.00. Several people have tried to obtain the full size gear leg from Gene Divincenzo over the last few months. Gene is no longer working for this company and is not in a position to supply the gear plans any longer. I have obtained the original masters from Gene of the plans. We have several sets made up. The full size gear sheet is 24" X 30" and the other sheet is 11" X 17" and this one is in color. Those people wanting the "full size hoop style gear plans" may do so now by sending your check for \$15.00 including postage. **Bill Spornitz, 1112 East Layton Drive, Olathe, Kansas 66061 Any questions (913) 764-5118**

● DF Builders Forum On The Internet

Continued on next page

Kevin Hester of Redwood City, California who is a computer / Internet "**Wiz Kid**" setup a forum area on the internet where all the Dragonfly builders could talk and ask each other questions. The way this thing works is that when one of the people asks or answers a question it is broadcasted to all 60+ people that are on the list simultaneously! It's too cool....if you talk to one, you talk to everyone! If you want to be on the list you have to subscribe (Yes, its free!). This is what you need to do if you want on the "Dragonlist". From any PC connected to the Internet, send an E-mail to: **dragonlist-request@interstice.com**. In your message simply type the word "subscribe". If you have difficulty you can contact Kevin via his direct E-mail address "**kevinh@3do.com**" - Spud

● Weedeater that Dragonfly

Spud, I flew a couple of hours today in my trusty Mark I. It was beautiful clear cold air here in the frozen north. I love my Dragonfly, I have over 225 hours now on the airplane. Here's a quick tip - It's probably obvious to anyone but me. A bunch of bugs got jammed in my pitot system last summer. They ended somewhere between the pitot tube and the cockpit and I lost my airspeed. I couldn't get them out with air or wire, so finally I tried "Weedeater" line. It is just stiff enough to jam through the system and ram the bugs out, but still flexible enough to do the job. Now I carry ten feet in my flight bag for emergencies away from home. Keep up the good work! **Peter Judd - Vancouver, Canada**

● Oshkosh 1996

Here it comes again! Everything is set-up and ready to go for all Dragonfly/Quickie activities. **Thursday evening 8:00 to 9:30 PM (Evening) Dragonfly-Quickie builders forum**. This evening forum is becoming more popular with all the builders, less noise! **The Drag-**

onfly - Quickie Builders and Flyers Dinner. Sign-up at **Great Plains A/C booth**, Cash bar at **7:30 PM**, Dinner at **8:00 PM** at the **Hilton**. Same room, same menu (*This was good chow.....It's Spud approved!!!*) We had a great time at the Hilton last year so we going to do it on a on going basis. We lost our special camping area this last year as Mrs. Gumz is moving. We will have the eight man "Spudley Hilton" setup at another location and ready for any and all Dragonfly or Quickie pilots that fly their birds to the event. The Spudley Hilton will be set-up for use by our pilots Wednesday, Thursday, Friday and Saturday. (No Sunday night). Only thing we ask the pilots to do is share daily camping fees with your fellow camping partners. - Spud

● Our Annual Ottawa DF - Quickie Fly-in

Our Sixth Annual Dragonfly - Quickie Fly-in is on schedule again this year on Labor day weekend. Those dates are August 30, 31 & September 1st at Ottawa, Kansas. All plans are in the works, but we want some input. The Taylors of Viking Aircraft want to know exactly what topic areas you want to discuss or explore. Steve Bennett of Great Plains also would like to know what you want to learn and see. And of course Jimmy and Spud want to know what you want us to do to make it a better overall event, at the fly-in and at the awards banquet. Come on know you have to tell us, get out that pen and paper or pickup the phone and call. And yes ladies the "**Kansas City Shopping/Tour bus**" is already setup and ready to go. Tell us where you want to go and what ya want to do. Where and what will be decided by the ladies. Please forward all call and comments to **Spud Spornitz (913) 764-5118** or **1112 E. Layton Drive, Olathe, KS 66061**

INSURANCE?

Hello Spud,

I began my Dragonfly project some time ago, and have completed the fuselage and have hot wired all the wing and canard components. The wing was glassed and sitting on the wing table when my wife had a car accident. The vehicle ran through the garage door, into the garage, picked up the wing and carried it to the far wall, broke through carrying the wing on the windshield and hood, and then exited through the wall, the roof fell down, and the car hit an embankment after flipping another vehicle onto it's side. All this was caused by "Cruise Control" or so we believe. No one was seriously injured, and after a while we finally got the building and vehicles repaired. The wing was destroyed (Broken about 4" from the tip).

An interesting note about all this: Your automobile, or homeowners insurance policy do not cover the Dragonfly project under construction. I assumed it did, thinking it was not officially an airplane until registered. What an expensive lesson! I suggest everyone who is interested, check their Insurance policy carefully.

At this time, I am ordering new construction supplies to construct a new wing and I have a request. When we moved to this house, I lost the templates for hot wiring the wing (I do not need the aileron templates, those parts are still fine). I would gladly put a deposit on them until returned in good shape, and pay for all the shipping costs. I am trying to get moving on this again soon. too much time has been lost already.

Sincerely, Jim Norris, 13149 Bodega Highway, Freestone, California. (707) 874-2727

OK you California guys, lets pitch in and help Jim with some templates and everyone check your insurance!

CANARD LIGHTING

● Canard Leading Edge Light Installation - C-GEM

Hello Spud and all our fellow Dragonflyers.

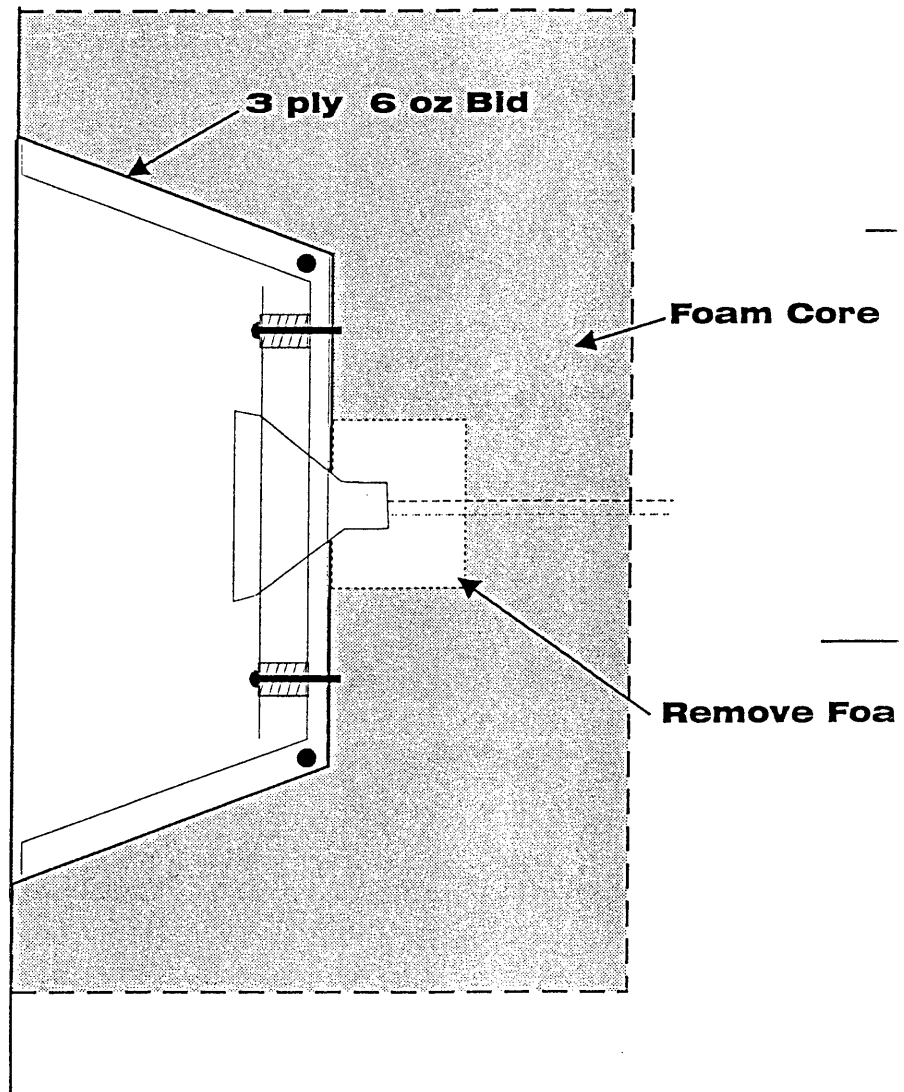
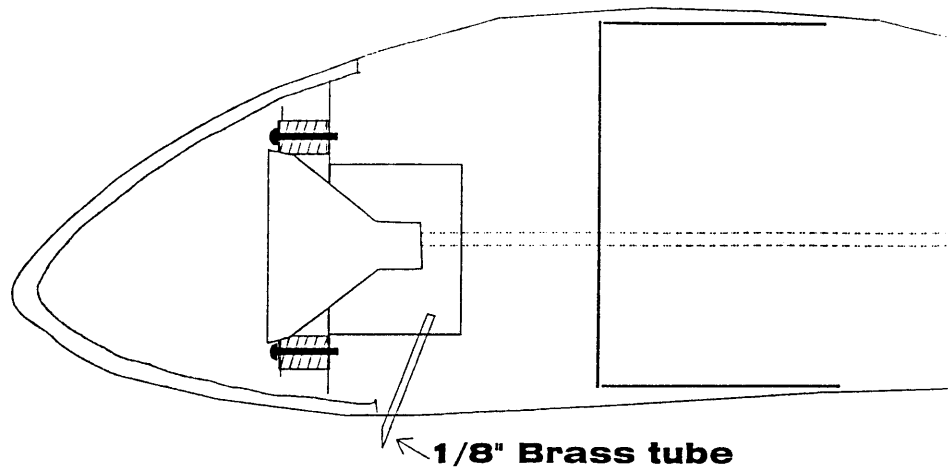
As always it is a typical winter up here in Canada. Very cold and lots of snow. I'm starting on withdrawal symptoms. I haven't flown since December!

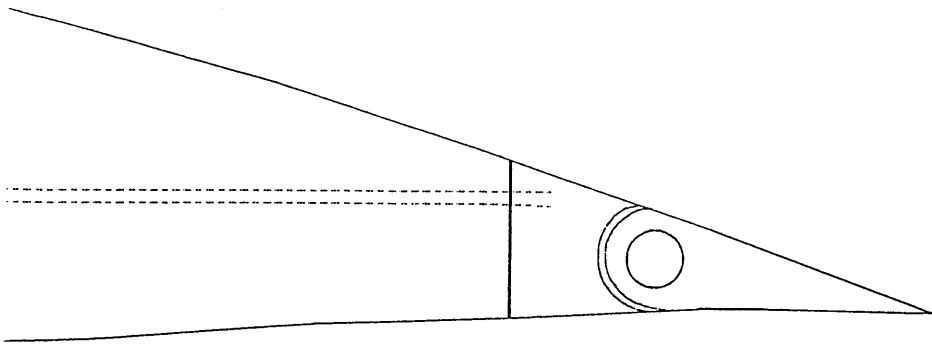
I have had several calls and letters reminding me that everyone would like to see more details on my Dragonfly canard lighting system. So here are the details.

The light bulbs I used are standard household 12 volt, 50 watt Halogen spots. The bulbs come in two versions, spot and flood. The spot produces a 14 degree beam and works great. The bulbs are made by GE (General Electric) and the part number for the 14 degree spot is "EXT/CG NSP 14 degree".

I made the mounting brackets from aluminum shaped using a wooden mold. With the light bulb in place pop rivet the 2 pieces together. The light and bracket are held in place with 3 8x32 screws with compression springs behind the bracket. This allows adjustment of the light. I adjusted them to aim a few hundred feet ahead with the tail down. I'm using them for ident lights. I have not tried using them for landing yet; I need to light my instrument panel first.

After removing the foam I glassed the surface with 3 plies of 6 oz. bid. At the locations of the mounting screws drill holes large enough for 8x32 nuts and flow the nuts in place.





Recess the sides to fit the light cover. Remove more foam than necessary and fill with micro so foam is not exposed. I used 1/8" Plexiglas to make the light cover. In order to shape the cover make a wooden mold and heat the Plexiglas to approx. 200 F degrees (until soft) and bend over the mold and hold until Plexiglas cools. Once trimmed, the cover can be held in place with four 6x32 screws (one in each corner).

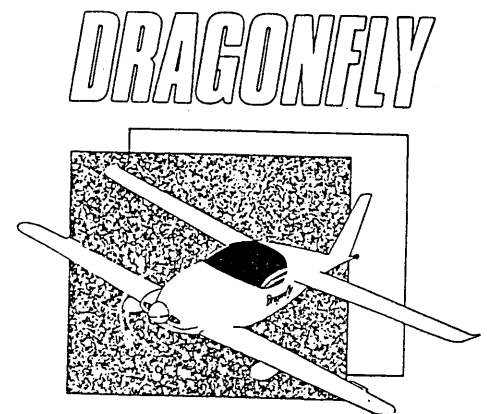
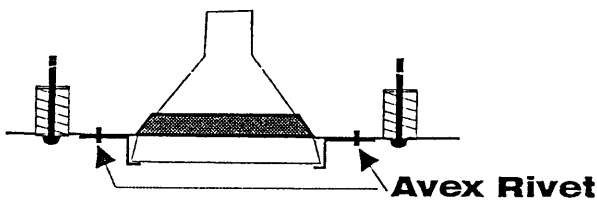
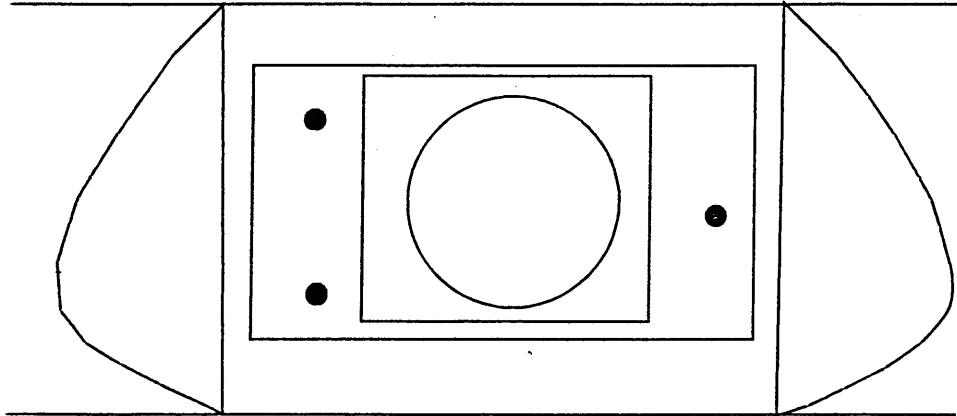
The wiring is run back to the control fairing and then to the center of the canard. I have both lights on a single toggle switch. Use one or two, your choice.

Since the lights do get hot I installed a 1/8" brass tube as shown to catch some ram air. The air enters behind the light bulb and exits through 3 holes (drilled at an angle) on the upper surface of the light cover.

The lights work great and I'm told they significantly improve the visibility of the Dragonfly in the circuit. We must all remember what a small profile the Dragonfly has when it is coming straight at you. It is very hard to see.

I hope to see everyone at this years Oshkosh and maybe the fly-in.

Ted Givins
628 Princess Louise Drive
Orleans, Ontario, Canada
(613) 837-6582



TOUCHY ELEVATORS & STIFF AILERONS

The following is meant to be "**food for thought**" and might be what a builder might experiment with to address a area of concern with the Dragonfly.

Let's take a look at the elevator & aileron control system and the leverage arms used through out the Dragonfly.

Over the last 5 or 6 years we have read in the newsletters (DBFN, The Dragonflyer and Dragonfiles) and some magazine articles pilot/builder reports is that the Dragonfly control system isn't balanced as nice as some other airplanes, being light on the elevator and heavy ailerons. All people reporting say that it has **to much** elevator or that they are **overly sensitive**, with very little movement of the control stick to create a positive change of fly attitude.

The opposite seems to be true of the ailerons. When the aircraft is flown over 145 to 150 mph the ailerons start to become progressively stiffer proportionately with the increase of airspeed. In a cross country mode fighting a crosswind at this higher speed it is more than the original Dragonfly trim system can overcome by itself. As the pilots try to assist the trim system via the muscle in their arm they soon suffer from fatigue if it is a lengthy flight.

One of the fixes so far for the stiff ailerons system has been the installation of a **servo tab system** (not to be confused with the elevator trim tabs) that has proved to be successful, this is like "power steering" for the ailerons. Those wanting to look back into this system may reference back to the original article in DBFN issue # 40 and a follow-up article in DBFN # 51. The servo tab

system seems to be a nice answer for the aileron problem.

The Elevators: Comments from Dragonfly pilots who have closely observed the people they have taken for rides, these flights range from a local joy ride, a pilot familiarization flights of DF builders at our annual fly-in, to the final training of a DF builder about to fly their plane for the first flight. Those pilot comment are; The unexperienced or non-pilot that have been properly prefaced prior to the flight on how to handle the plane seem to adapt very quickly. The Cessna/Piper pilot has the tendency to over control the Dragonfly, at least in pitch (these folks are the same ones that what to flare the DF like a Cessna also). They tell them to move the control stick initially, lightly with their finger tips and they will never have a problem. Another suggestion; Keep your arm on the side console and just use wrist action only.

Some talk has been given to the possibility of reducing the actual span of the elevator, that seems a little too drastic and would be a hard thing to reverse if one didn't like the results.

Basically what needs to be done is reduce the effectiveness/sensitivity of the elevator. A simple way to do this is to make some MINOR changes to our leverage arms between the control stick and the elevator control horn/bellcrank. What we need to do is REDUCE the actual movement of the elevator proportionately to the movement of control stick.

The current elevator control system spec's are; Control stick main pivot point (center) to elevator pushrod attach point 2 9/16". The main pivot point (center) of elevator torque tube to elevator pushrod point is 3".

To reduce elevator deflection distance (degrees) we need to do one of two things (or combination of)

1. Move the attach point on the control stick CLOSER to the pivot point

OR

2. Move the attach point on the elevator control bellcrank/horn farther AWAY from the pivot point. The later (#2) should be the preferred way in that it moves the elevator pushrod away from the fuel tank where there is occasionally a clearance problem on some Dragonflies.

What one would do is make a new elevator bellcrank/control horn that has approx 2" to 2 1/2" longer arm than the original. Then place 3 additional holes in the bell crank farther away from the original 3" point. These would be at 3 1/2", 4" and 4 1/2" intervals.

On the ailerons we need to do primarily the opposite of what we did on the elevators. We want MORE of a mechanical leverage. We want more of a multiplication of the torque applied by our hand and/or trim system.

This information is for educational value only! This is only a shared observation on how I (Spud Spornitz) plan to go about the experiment. If anyone should decide to experiment in this area, on their airplane one needs to proceed very cautiously through this process. With aggressive changes one could end up with a flip-flop of the problem, heavy elevators and light ailerons! Here are some strong suggestions for the builder that would like to experiment with this area.

BUILDER TIPS

DO IT PROPERLY! You are about to be a test pilot!

1. If you haven't made your first flight or are still in your first forty hours, STOP! Have all attachment points in the original plans located. DO NOT make any experimental flights with these changes until you are intimately familiar with your plane.
2. Do one adjustment (increment) position at a time.
3. Do one control system change at a time. Elevator or aileron, not both! And yes, one system change will effect the other system(s).
4. Do a high speed taxi test for feel (bad tendencies) of system prior to first lift off.
5. Do a full range of testing after each incremental change, especially at the lower speed to assure sufficient control surface movement at stall point and landing configuration.
6. Safety wire all bolt/nut combinations after EVERY change/adjustment.
7. DO NOT EXCEED any degree/travel restriction listed in the Dragonfly plans. Especially the elevator, adhere to those restricted measurements per the Dragonfly plans - period.

Very Best Regards

Spudley



Here are a few of the thousand and one things I've learned while building and flying my Dragonfly.

● Cutting pipe:

Cutting pipe whether it is 4130 steel or aluminum seems to pose a problem for me. I never seem to get the ends square when using a hacksaw. I tried a pipe cutter, a cheap plumbers cutter. Take your time and it cuts 4130 perfectly square with no problem. I've also cut aluminum spacers for my Quickie that are one inch in diameter with 1/8" walls...No problem!

● Micro and polyester fabric

In DBFN #61 David Morris asked if its OK to spread micro-balloons on the cloth before epoxy setup. It works well. After squeezing out all the excess epoxy spread dry micro balloons over the entire surface. After its all cured sweep off any excess and you can re-use it. Makes finishing a bit easier. The BEST way I found was to buy 10 yards of fabric "Polyester" for covering a ragwing. Get light stuff 2 oz. to 5 oz. from Wicks Aircraft or Aircraft Spruce. After squeezing out excess epoxy, lay on the fabric to peel ply the entire wing. Squeegee like a bugger and get it all wetted out. I think the little bit off the weight gain will be offset by the final finish. When the peel ply is pulled off its almost ready to prime.

● Fillers

When I use fillers, I use the West System epoxy. Mix it in a cup, then add (about a third of the epoxy volume) Methyl Hydrate (gasoline antifreeze). Mix it up well, then add

the micro. It doesn't have to be real thick when applied and once its dried well it is very easy to sand.

I changed my landing gear last Spring. I went from fiberglass to spring steel gear from an earlier issue of the newsletter, it was Steve Larabee's design. The glass gear had not failed, but I was never really comfortable with it. I was also checking out my wife in the Dragonfly since I had sold the Cessna. Although she lands better than me our runway is kinda rough, so its been tested a few times.

I did a couple of things different. When I made the gear I did it like in the newsletter. When I was finished it seemed to high for me. Also my wheel pants for the fiberglass gear legs wouldn't fit and I could for see gear fairing problems.

I took it all apart and cut 1 1/2" off the spring bottom. I also took the springs apart and put them in the press and straightened them. If you buy the spring, ask the spring company if you can purchase it un-arched. I modified my goose neck a bit and now everything fits and works like I want. I didn't cut my leg to use as spacer inside the socket. Instead I used the top of the leg and made 2 female sockets out of wood. I then took one side off of the socket, laid in the top of the spring gear along with a piece of 1/4" aviation plywood with several 1/2" holes drilled through it. The whole setup was filled with flox and then the other side of the female mold was clamped on and squeegee out the excess resin.

Take it all apart after setup and drill 2 small holes through the plywood or through the steel gear leg and attach more firmly with countersunk screws or small rivets. A little bit of

filing and it will slide perfectly into the canard.

For the gear fairings I hot-wired a couple of fairings out of blue Styro-foam. Fit front and back fairings on the spring while its on the aircraft. Then tape them together in place with duct tape. Then go to the store and get dinner table plastic place mats like the ones you eat off of. Get 4 because you'll screw up a couple. Cut them to shape so the seam is on the inside. Put contact cement on the duct tape and the inside of the place mat. Carefully place the fairing and smooth out. Silicon any gaps. If you aren't careful it will look like your grandmothers panty hose.

If you are, it will look good. You can also make a few spares prior to gluing. During annual , just cut it off, inspect everything and replace.

I don't know if I mentioned this in a earlier newsletter, but during construction of my Quickie I had a bad rash on my hands. What I found it is that I'm allergic to the rubber gloves, not the epoxy! I now use ply 9 gel and everything is fine.

I love to fly my Dragonfly, but my Quickie is almost ready and I'll be trying it out the spring/summer. It weighs in at 345 lbs. with a 52 hp . She should really jump. While I'm waiting for warm weather, I started to build a Hummelbird. Working with aluminum is nice, but I still prefer composite construction.

● One last point.

If you ever happen to pull your VW heads off. Take this opportunity to put in "Heli Coils" into the holes for the small secondary spark plug holes. The metal in the head won't support a lot of torque. The Heli coil are steel and take more strain. How I found this out happened last summer. After returning from a flight playing with my carb, I turned the

prop over and could hear a leaking hissing noise inside 1 head. Jumping the gun I assumed I had burnt an exhaust valve after running some high EGT's. I pulled the head off, prepared to replace the exhaust valves, but found nothing wrong. After lapping the valves and putting the heads back together, Started looking close. What the problem was a spark plug. One of the small plugs had leaked inside and compression was leaking through the center. I put the head back on with the intake and exhaust. When installing the plugs, I stripped one hole by over tightening. I took both head off and replaced all spark plug holes.

Thanks,

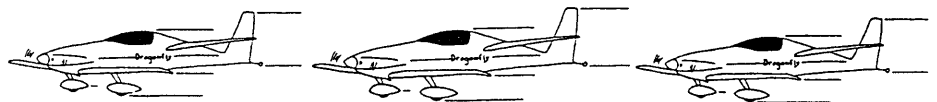
Chris Walterson
Box 1047
Geraldton, Ontario
Canada P0T 1M0
(807) 854-0524

CALENDAR

June 21, 22, 23 1996 Sixth National Gathering for Canard Type Aircraft. Annual event for Vari-EZ, Long-EZ & Cozy type airplanes. Contact (405) 946-5003 Contact Pete Peterson.

August 1 - 7, 1996, The Big O! Oshkosh, Wisconsin EAA Annual Convention

August 30, 31 and Sept 1st, 1996 - Labor Day Weekend. **Sixth Annual Dragonfly, Quickie, Q-2 and Q-200 Fly-in.** Ottawa, Kansas Contact Spud Spornitz (913)764-5118



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For Sale: Dragonfly. Tri-gear model, aluminum gas tank, engine is overhauled Continental A-65, three blade prop, new tires. Also included is a homemade trailer \$5000.00 Al Mullan (303) 936-1683

For Sale: 1985 Dragonfly, TT 500 hours, Hapi engine w/ Ellison throttle body, VFR radio & instruments, good paint & interior, Chrome spinner, needs new canard, landing accident with Mark I canard, minor damage, Engine OK, Pictures available for serious inquiries. Priced to sell. Call Rod Crain Work (901) 366-6757 or Home (901) 795-8389

Wanted: I am looking for "original" copies in good condition of the "DRAGONFLYER" newsletter issues #1, #3, #7 and #19. Will pay fair price. Spud Spornitz (913) 764-5118 or mail to 1112 Layton Drive, Olathe, KS 66061

For Sale: All new, never used. Diehl Super Case, flywheel, starter, Mag drive, slick mag & harness, No alt. components. Q-2 style motor mount. VW taper prop hub. All of the above items \$800.00 or best offer. Ask for Floyd after 6:00 pm (816) 836-0354

For Sale: Dragonfly Mark II project 85% complete. Fuselage, wing & canard constructed. All control surface complete, Canopy and cowling included, new style eng. mount. Eng instrument clusters, All VFR flight instruments, Type IV 1.9L Eng. w/ "0" hrs. New heads & valves setup for dual plugs, forged crank, prop hub, Great Plains Alternator, 1 Slick mag w/ harness & plugs, Mark Snow's electronic ignition, Accessory case, starter and prop. Many extra's. Impending bankruptcy forces sale -- Must sell. Call Matt days (616) 373-9885 leave message or send self addressed stamped envelope to Matt George 825 Oakland Dr., Kalamazoo, MI 49008-1201

Wanted: Your extra materials, looking for canopies, 5" carbon fiber (for spar caps), bi or uni cloth, blue foam, Instruments, etc. Spud (913) 764-5118

For Sale: Cleveland wheel and brakse assemblies with axles and Lamb tires & tubes. Rotors need to be replaced. 50% of new \$225.00, New carb heat muff - \$20.00, New carb air box -\$45.00, Thorton Tech seat belts (2) \$75.00 Chuck (508) 668-5285

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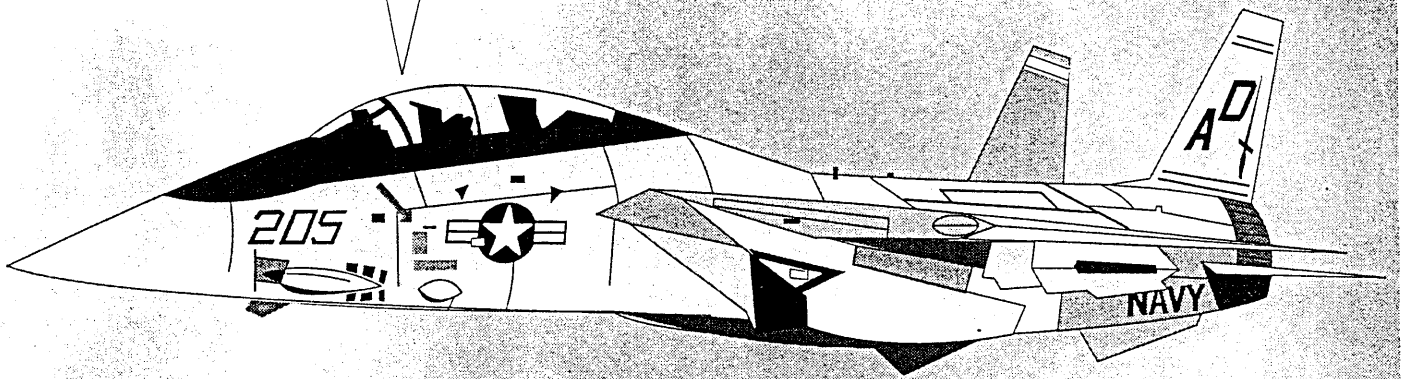
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1-913-764-5118

**I Would Have
Bought A Dragonfly
But The Wing Would Have
Fallen Off Like
Brutsmans**



*I would never tease or harrass a good freind and fellow DF builder.....Just Never!
(Spudley!)*

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