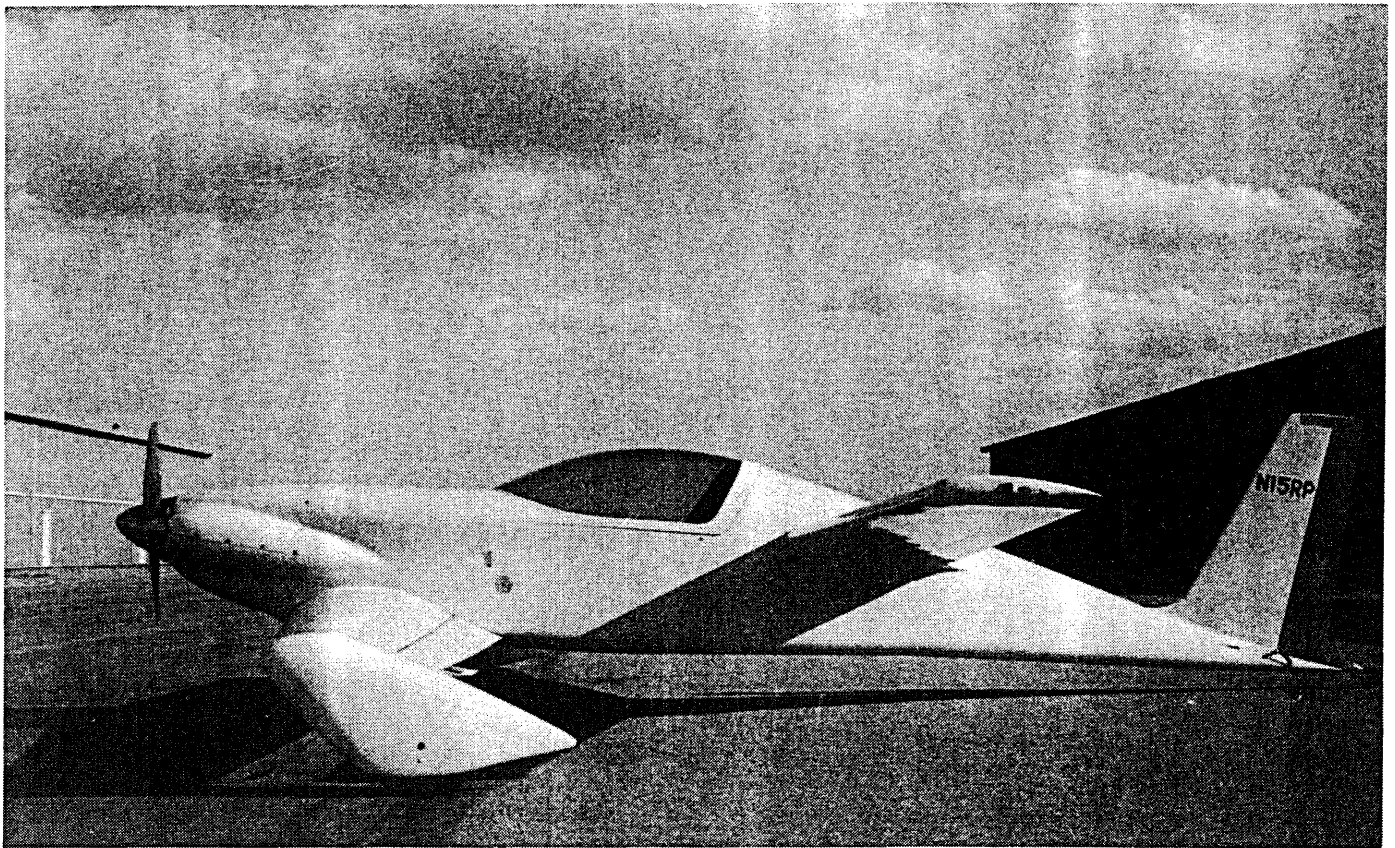


DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICAL VOICE OF DRAGONFLYERS ALL OVER THE WORLD

VOLUME 61

SEPTEMBER - OCTOBER 1995



RON PRICE'S MARK I DRAGONFLY MAKES IT'S FIRST FLIGHT!

Dear Spud,

I was beginning to think I would never be able to write this letter. Although my plane has been signed off for a time, I have never felt confident enough to put the first flight on it.

I have never had an "EGO" thing about being the first, as I always felt that an experienced "D-FLY" pilot would

be able to spot any dangerous characteristics by just getting it a foot off the runway.

Well thanks to a very considerate Fred Wiebe, my dream has finally been realized!!! (*Thanks Fred!!!*). Fred came up on Saturday, August 26th at 6:00 AM from Morris, Ill. airport to Kenosha, Wisconsin where I'm based. I was so excited when he said "Meet me tomorrow morning at your hangar", that I couldn't sleep.

So.....off to the airport I went at 1:00 AM, Going over the weight and balance etc., etc., etc.

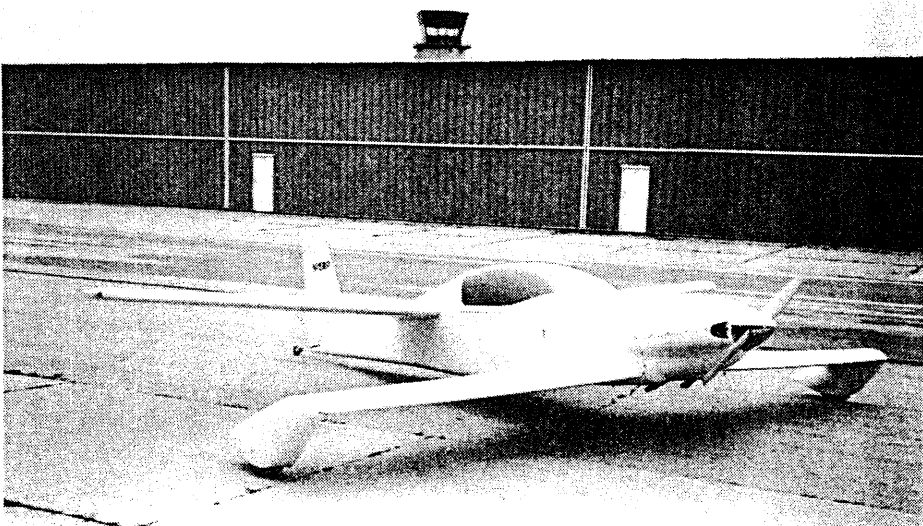
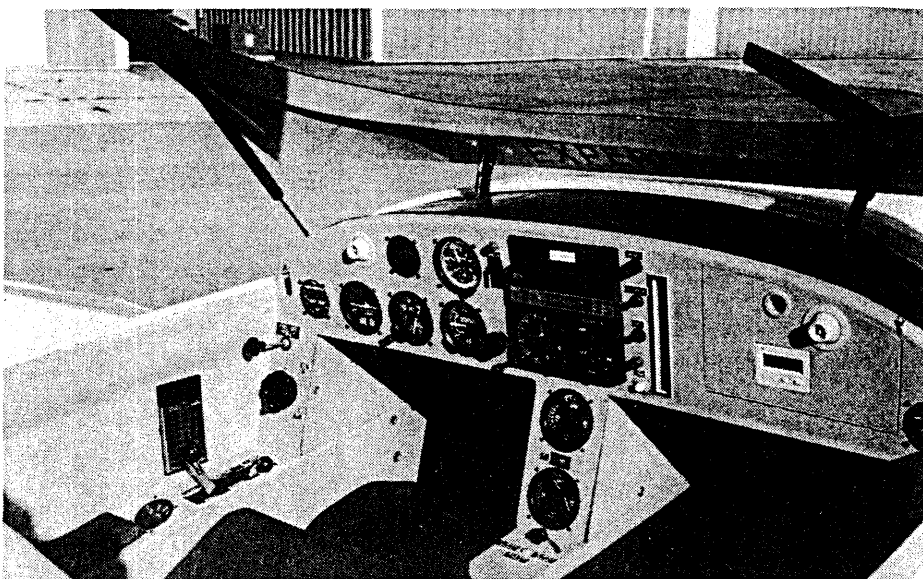
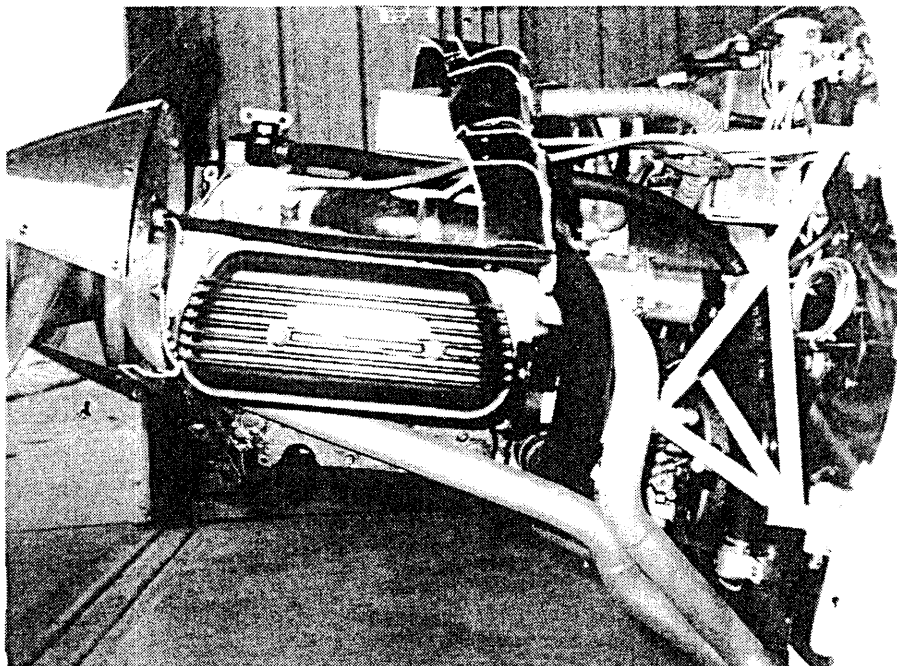
Naturally in all the excitement I forgot to bring cameras, binoculars (darn!!). Well at 6:00 AM Fred promptly shows up, does a preflight and announces "I'll run it down the runway and see how it feels".

Five minutes later, I'm standing on a small hill near the center of this 5000 ft. runway, and as I hear Fred kick that little Limbach in the rear, my heart starts to pound. It seemed like just a few seconds and the tail was up and then the canard.....I then expected Fred to cut the power, land and try it again. But, OH MY GOSH!!! He pulled back on the stick and is headed for the sky!!! I was ready for the paramedics!!! That little sweetheart just kept on climbing effortlessly.

Fred climbed to 3500 ft. and stayed up for 35 minutes, he had never landed, or flown , a "Mark 1". but his landing didn't even "Squeak" the tires. He says that it "flies great"!

Now a little more on my Dragonfly.....

My Dragonfly is a "plans built", started in the early 1980's, I chose the 68 hp Limbach, (as it was all I could afford at the time), which runs great, doesn't leak a drop of oil and has a very reliable track record. The engine mount was fabricated for me by Mac McKinzie of Starfire Aviation, Tempe, AZ. It has lord mounts, and hinges on one side for easy rear engine access. The motorcycle battery mounted on the firewall is quite adequate to crank this engine, giving me reliable starting even in cold weather. The prop is a 52X46 "Sterba" which at sometime I may try a different pitch. I think that Fred Wiebe said he was indicating 135 mph most of the time he was circling the airport.



The header tank is 4 gallons, mounted forward of the instrument panel, filled by the old standby electric "facet" fuel pump. (Incidentally from there the engine driven mechanical fuel pump takes over), And I did take the advice from the newsletter and installed larger fuel filters, (From Napa auto parts), but ones I still can see through. The space normally occupied by the plans specified header tank was made into a glove box and provides easy access to the power buss bars.

The control stick is from a Commodore 64 computer, The top button works nicely for the "Mike" switch. The interior was sprayed with the "Zolatone" splatter paint from Aircraft Spruce using a vacuum cleaner glass jar paint sprayer and an old Electrolux vacuum cleaner. Worked great, looks good! The seats are Nelson Aviation products (the standard blue folding ones that they sell to place on top of your "Spam-can" seats). They fit exactly between the consoles. I also sent them a pattern of the arch of the rear canopy bulkhead and they made a matching 2" inch thick, blue full headrest and thinner armrest cushions for the consoles. All are held in place with "Velcro strips". I mounted a small Radio Shack speaker in the rear corner of the seatback bulkhead which comes through the headrest very nicely. (Good insurance, if your headset ever goes out). Mine are "Audio Com", which have the built-in intercom.

I was concerned about placing any baggage on the floor behind the seats, as if it were to shift and come in contact with the "aileron motion changer's", it could ruin a perfectly good day. The fix was to construct a 4-sided 1/4" foam box, glassed inside and out, which sets over the torque tube/bellcrank assembly up to the wing lift bulkhead, with notches cut out in front for the seatback bulkhead and rudder cables. It lifts right off for inspection. The cover over the wing is completely removable for easy access to the aileron stuff and antennas. The ground plane for antennas were made from aluminum screening, hot glued to the floor behind the wing drag bulkhead.

The exterior paint is Dupont "Centari" acrylic enamel, (Wembeldon white). I used a \$19.95 "Binks look-a-like" spray gun with a 2 HP compressor in my garage. I just wet the floor a bit and started shooting. This was my first attempt at spray painting anything and it looks fine! Incidentally, this is a very forgiving paint. I was buffing around the canopy and got carried away, right through the paint! I just feathered the large bad spot and shot it again.....You cannot tell it was re-done. Try that with Imron.

Since my bird is a Mark I, I originally had the single pull brake lever which activated both wheels at once. I took Rob Kerman's suggestion and changed to individual tow brakes. I am using Airheart brakes and 5:00 X 5, 6 ply

tires.

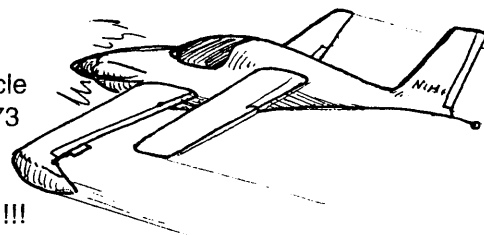
That's about it for me this time. The thing that I have to do now is get comfortable with barreling down the runway at increasing speed (up to 60 MPH), keeping it reasonably near the centerline (without wetting my pants!). Then get "Fearless Fred Wiebe" to give me a couple hours of intensive "Dual" on landings, and I'm going for it myself!!

I regret that I was unable to make the "Fly-in in Ottawa, Kansas" this year, but you can bet that there will be one more "D-Fly" there next year.

P.S. There has been a lot more to report on since I originally typed this out several weeks ago. I will be giving everyone an update for the next newsletter including a few safety tips on how not to "prime the engine from the front!"

Best Regards

Ron Price (N15RP)
2686 College Hill Circle
Schaumburg, IL 60173
(708) 925-9251



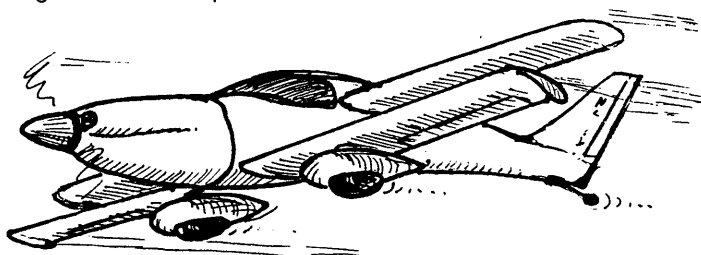
Congratulations Ron!!!!

P.S. Thanks for the new nickname for Fred Wiebe..... "**Fearless Fred**". I like it, I like it alot!

I have talked to quite a few Dragonfly builders that have reservation about making the first flight in their DF. They somehow feel that everyone will think less of them if they don't make that first flight in their Dragonfly. That's a bunch of Bullsh.....t! It takes a much better person to know what he can do and not do.....It's just pretty smart business when you make the right decision for YOU! I recomend if you don't have a ton of time in a Dragonfly that you DO let someone else do the first flight. At least give it a hop to see if it has any quirks.

Another good thing to do is have an A&P or another building buddy take the plane for a time. Tell them to just check it out. Make them a bet that they can't find anything wrong with it. We live with these projects for years. It is very easy skip over things that we have looked at for a long time and just didn't register. It never hurts to get a second opinion!

Spud



BOW GEAR ANALYSIS

Subj: Gear Leg Loads and Exotherming
Date: 95-09-26 22:33:14 EDT
From: DaveMTex
To: DBFNSPUD

Howdy Spud!

I answered my own last question about Exotherming. Since this new "hoop" style gear leg is one of the only truly "experimental" parts left of Dragonfly design where really structural parts are concerned, I decided I should educate myself about gear design. So I bought a really excellent book by Pazmany called "Landing Gear Design for Light Aircraft" from Wicks. I found out some fascinating information there and thought it would be a good idea to share what I had learned:

1. The first company to produce a composite cantilever spring gear leg (similar to ours) had a problem with exotherming due to the large volumes of epoxy involved in the layup. They had to go to a lamination process, making the gear in multiple layers. I would suspect anybody from our group who builds this gear will have to deal with exotherming and should consider doing it in stages as well.

2. Pazmany includes some excellent formulas for computing the loads on the gear due to landing forces, drag forces from tire friction, twisting forces on the gear leg, side forces, etc.

I decided to write a quick Basic program to compute some of these for myself, using the dimensions given in DiVincenzo's plans in DBFN #43. Here is what I found out:

If you attach the gear leg with bolts, let's say you use a couple right at the edge of the fuselage, and one in the middle of the fuselage bottom, and assuming a 1,100 lb gross weight, a 3.5g maximum impact, a dry runway, 11.5" diameter tires, and 65 mph landing speed, you get these figures:

Max vertical load on the gear: 3,116 lbs

Total Max drag load including wheel spin-up: 1,060 lbs

Max horizontal load (shear) on the outer fuselage attach point: 1,160 lbs

Max horizontal load (shear) on the center fuselage attach point: 1,260 lbs

Max downward load on the center fuselage attach point: 223 lbs

Max twisting load at the leading and trailing edges of the gear leg: 4,006 lbs

I have attached the Basic program to this message and you can publish it if you like. It will run under QBasic (standard equipment with MS-DOS 6.0 and later). **The program would take a lot of newsletter space. Anyone wanting a copy of Dave's program may obtain a copy by mailing \$3.00 to either Dave or Spud (to cover the HD disk and return postage).**

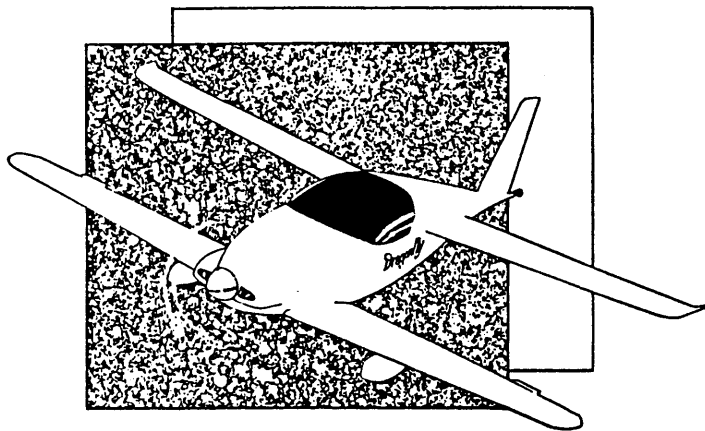
If I have made any mathematical errors, I do apologize. It might be nice for someone with an engineering background to check my figures. The twisting load is some cause for concern, I believe, and could account for the "I-ripped-the-bottom-of-my-fuselage-off-when-I-hit-the-obstacle-on-the-runway" problem.

Since the twisting load is downward at the leading edge of the gear leg, it would seem appropriate to put most of the strength up front to keep the gear from tearing away from the fuselage at the leading edge, while the trailing edge will be trying to punch upward toward the fuselage.

Dave Morris
2038 Oak Creek CT.
Garland, Texas 75040
(214) 414-1858

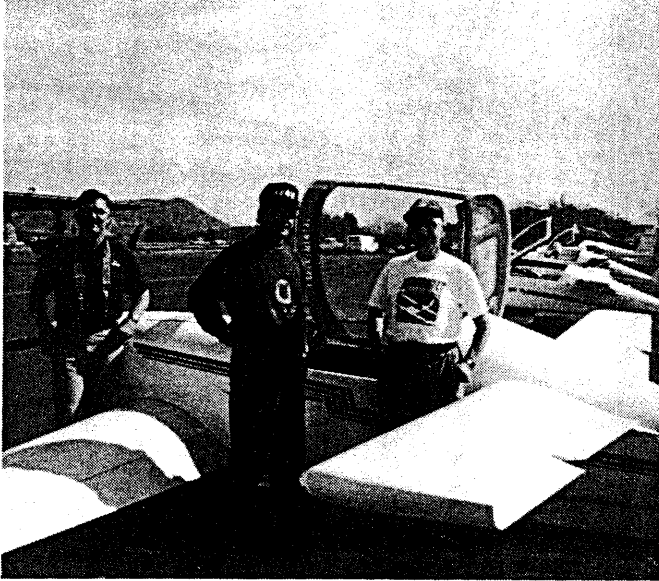
Nice job Dave!!! Excellent report! -- Spud

DRAGONFLY



A DRAGONFLY FATALITY

It is with deep regret that I must inform everyone that we have lost a fellow Dragonflyer, Len Griffin of Silver City, New Mexico.



LEN GRIFFIN (far right)

Len was out doing some local flying around his home airport. When he returned to the airport he decided to do some touch and goes. He had completed two touch and goes and was setting up for his third.

On the third round is when things started going wrong. There were several people on the field at the time of the accident. To follow is a what the FBO told me, the FAA and what I saw on the field after the accident.

Len came in contact with the ground approx. 60 feet before the end of the runway in between the second and third set of RAILS (runway approach ind. light sys.). The ground showed the contact of the two main wheels, but showed no contact of the prop at this point. The plane bounced back in the air and then flew at 20 to 30 above and 1200 to 1500 feet down the runway. The FBO was positive it was still under power during this part of the landing. It then came in contact with the runway and then slid off the runway to the left. It slid into a ditch area where it came to a stop right side up (it stayed upright all the way through the landing).

The airport has an emergency team and ambulance on the field because it was a main base for the U.S. Forestry Service. They were on the sight immediately.

Len was still alive but very blue in color. The EMT's removed Len from the plane and treated him for what they believed to be a stroke or heart attack. He was pronounced dead at the hospital. Initial reports say that Len had suffered a broken back in the lower lumbar area.

The A&P/FBO that maintained the aircraft, went over this airplane with great detail. He was very familiar with all the quirks of the DF. Fuel flow OK, Electrical system OK. Battery system OK.. Ignition OK, They even inspected for a bugged up canard and it was bone dry at the time of the accident. I purchased the aircraft from Len's son and have looked for more evidence of a mechanical problem, just can't find a thing.

The damage to the plane is as follows: Busted canard on the left side just outside of fuselage. Several outer skin punctures through outer skin only of fuselage just above canard. Lower cowling destroyed, exhaust pipes, lower intake manifold & carb, motor mount fractured, prop and spinner. Canard drag bulkhead in place but delaminated on left lower/right corner. Rear tail spring cracked at fuselage. That's it! Everything is totally intact. The cockpit is spotless. The FAA said this was a very survivable accident and no one should have even been hurt.

What Len really died from is still up in the air. The initial FAA report says that there was no mechanical problems and they are putting it down as a medically induced accident. Len's son is still waiting on a formal autopsy report. He feels that his dad just lost control of the airplane, but is baffled over the broken back. He says (so does my wife, she's a nurse) people don't die from a lower broken back. The EMT's say they think he was having a heart attack or stroke. The FBO, Len's granddaughter and some of Len's friends that knew him from the area think it was Len's other medical problem. Len had a herniated esophagus. This would flair-up, causing Len to choke, have an extreme coughing spell and a very hard time breathing. He had one of these spells at the 1994 fly-in and couldn't eat anything. Len's granddaughter said she would ride with Len in the car and he would have one of these coughing spells and would have to pull off the road. The FBO, the granddaughter and friends feel this is what happened during his last landing attempt. That's why he was blue when the EMT's got to him.

If I get any more of a formal report mechanical or medical, I'll post it here in the newsletter.

I've extended our condolences to Len's family from the entire Dragonfly group. -- Spud

OSHKOSH!

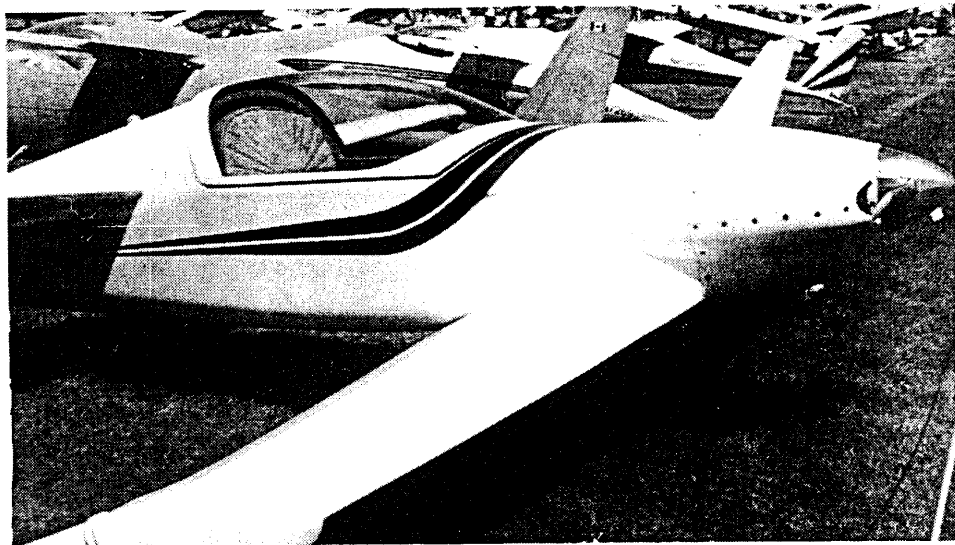
1995

This was my 12th year at Oshkosh and they just keep getting better and better.

Oshkosh started off this year with a combined banquet with our tandem wing buddies the Q-guys. We tried this two years ago at Butch's Anchor Inn, was somewhat of a disaster because it was so noisy. Well..... I wanted to try it one more time. Like my good buddy Jim Masal said "Spudley ya finally got it right!". (*Confucius say "Even a blind squirrel will find a nut once and a while).*

I had scheduled the Banquet at the Hilton. They set us up with our own deluxe banquet hall (*I mean nice!*), podium and PA system. The meal was superb. I had concerns in that the only night I could get the facilities was Thursday evening. Boy, the first evening of the event. I was very surprised in that we had 82 people show up !!!!!!! Jimmy Masal handled the MC chores and went around the room and got every introduce with his usual harassing southern charm. Everyone had nothing but positive comments so we'll do it again next year (*I already got it reserved*). Also a big thanks to Steve Bennett of Great Plains Aircraft who collected the banquet fees and handed out the tickets at his booth. Steve is always eager to help us.

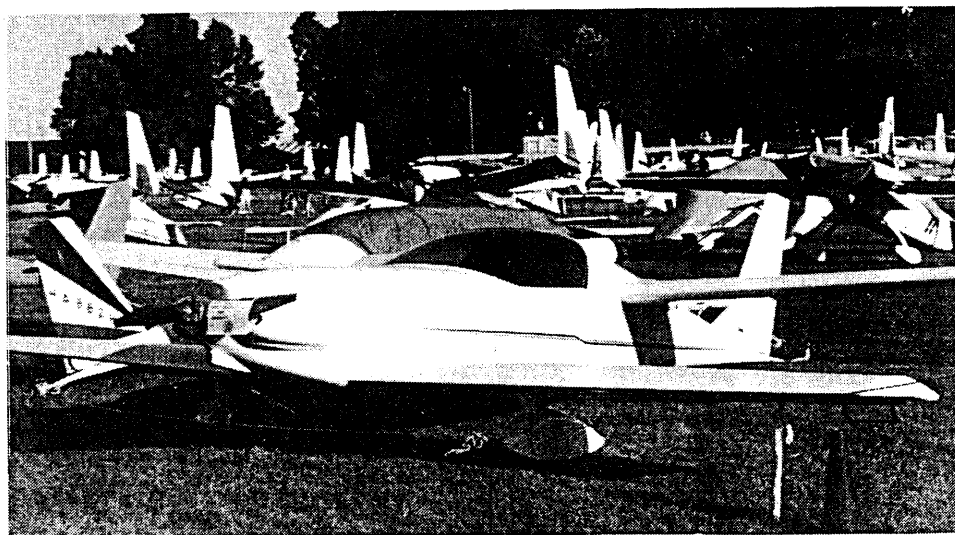
This years forum was held again on Friday night at 8:00 PM and this year we combined it along with the Q-guys. It turned out to be an excellent exchange of information. Both groups had something to offer the other. We had 120 builders and pilots attend. This 8:00 PM is kinda neat in the fact that there is no one trying to "out shout" the departing airplane nor is there another forum scheduled after ours. We talked for



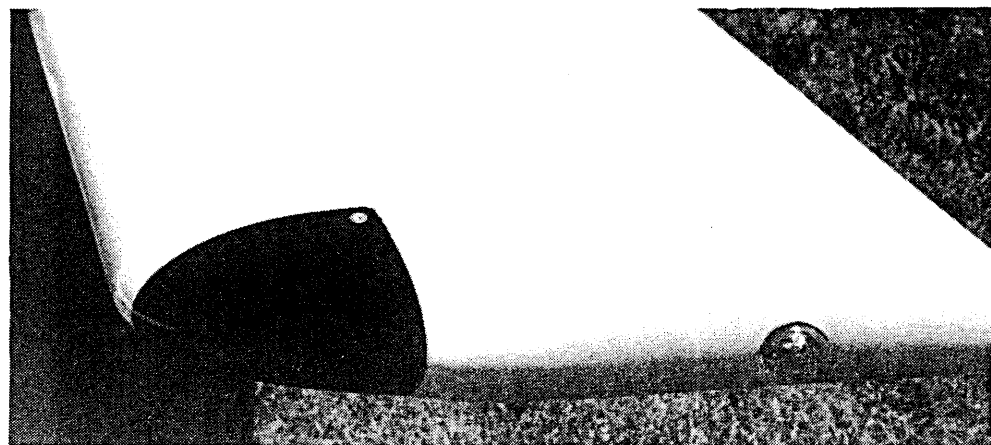
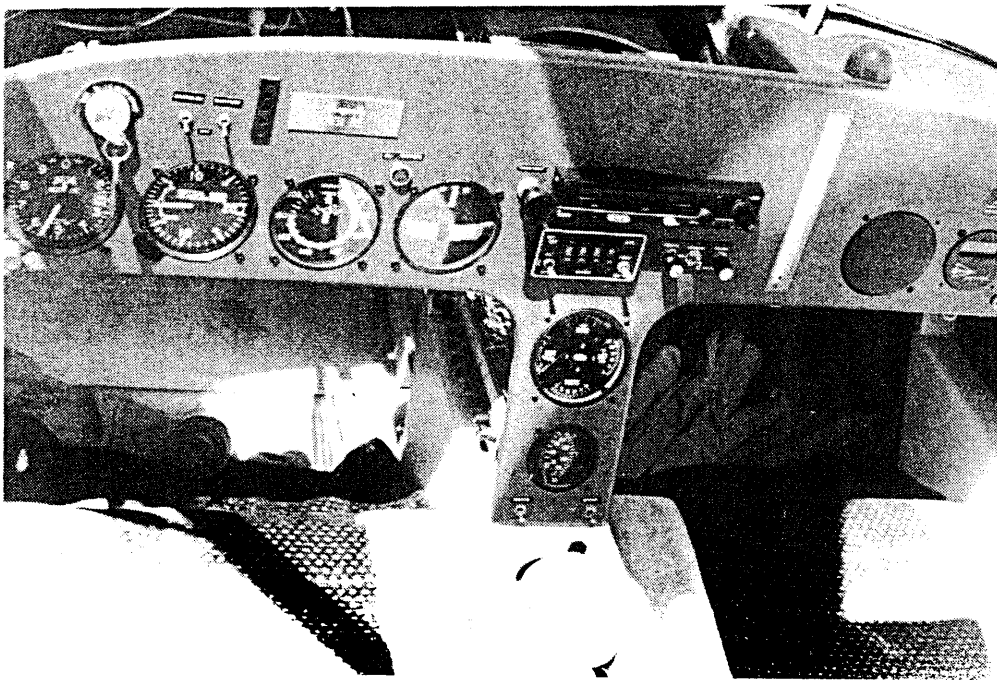
Richard Werner's Mark I



Reg Clarke's Mark II Subaru



Brad Hale's Mark II



Details of Brad Hale's Mark II

over two and half hours before the officials came to pull the microphone and speakers.

Saturday mornings meeting was held on the back porch of the Homebuilders Corner Building. This is a rather informal meeting. We talk about whatever comes up. We had about 20+ or so people at this meeting. We again introduced everyone and what they were doing. We are able to get a little bit better progress report from everyone at this meeting. Then it just turned into a question and answer period.

They added two new huge exhibitors buildings this year. I used to think that I could do and see everything in three days.....Just can't do it anymore. Anyone planning on attending Oshkosh in the future and seeing everything better plan on 4 days. And do your homework!

● The Planes

Richard Werner was up from St. Louis in his Mark I. I think that this was Richard's 7th or 8th trip to Oshkosh. Richard's DF is a faithful plane that hasn't let him down. He has all the materials and plans to build a Mark II canard. He also is going to build a hoop style gear but intends to use some of his hi-tech knowledge he uses at McDonnell Douglas to make a lighter, stronger version. He'll keep us posted on his progress.

Reg Clarke was there in his direct drive Subaru which he had over 310 hours on by the time he got home. Reg had more traffic around his airplane than I think he bargained for. The people had bunches of questions on his engine conversion. Lots of dead grass around this airplane.

Brad Hale was there out of California with his wife (*pssst.....Brad, I forgot your wife's name. I'm in trouble*). This was the first time I had seen Brad's DF in person. It is truly a superlative Dragonfly. The Oshkosh judges thought so too. They awarded Brad the Out-

standing Workmanship Award - Plans Built. What a honor! Brad's overall craftsmanship and his attention to detail is what won him this award. Not with all the whistle and bells. Hopefully the pictures will come out good enough to show some of the detail.

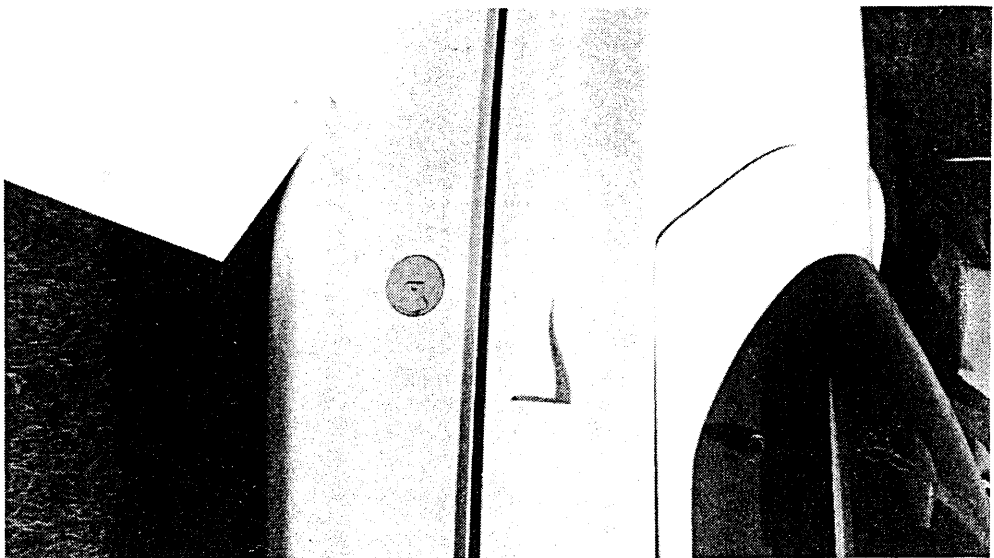
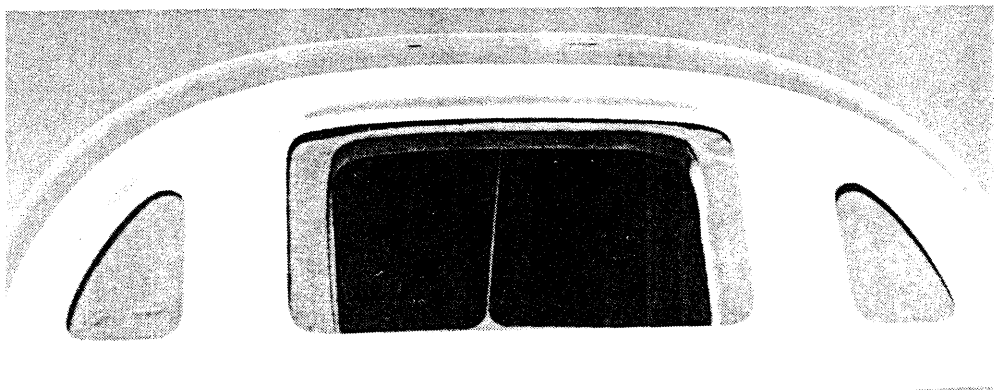
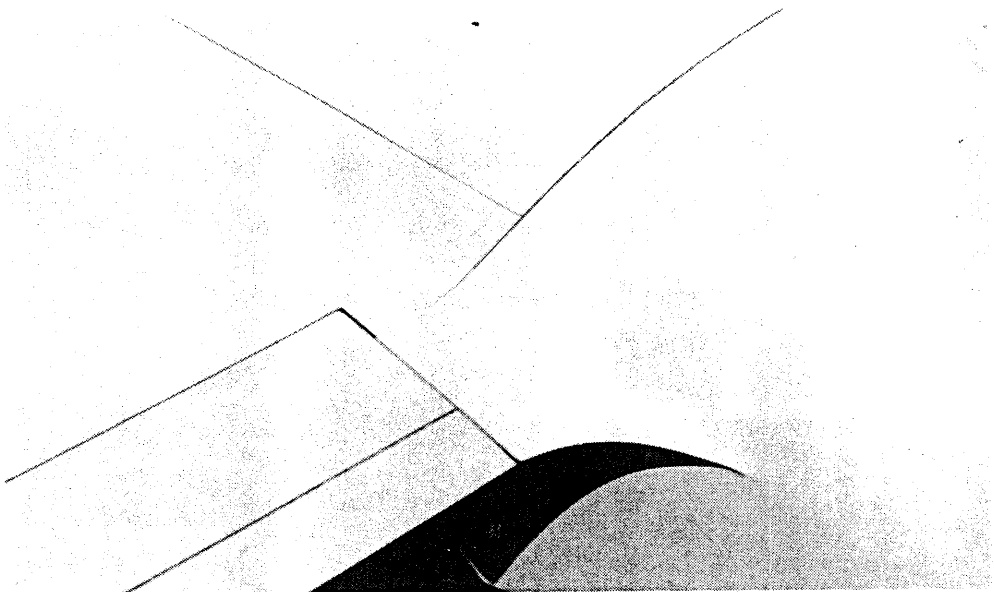
● **Other Highlight's**

I would be remiss if I didn't mention Terry Crouch's Quickie 1. You see, Terry won Reserve Grand Champion - Plans Built. Words can't explain this airplane. Absolutely gorgeous! I couldn't imagine the hours he has in this airplane. Congrats - Terry.

As I was driving home from this years Big O, I had a special feeling about this years event, this one was different somehow, there was some kind of message, something was different. I started to ponder it.....Terry Crouch wins Reserve Grand Champion - Plans Built with his Quickie. Brad Hale wins Outstanding Workmanship Award - Plans built. Reg Clarke was on the special automotive engine conversion flight line that they had set up this year. Also on another note that has nothing to do with the tandem wing gang, but Darry Capps in his GP-4 won the Denver to Oshkosh race in the Corinthian class (360 c.i. and below). Stop and think about it.....Do you know how many airplanes that were contenders for the Reserve Grand Champion and Outstanding Workmanship Award slots. Think about how many planes that were there that had superb workmanship. Think about all the Lancair, Glasair, etc. people that spent a good chunk of money preparing for that race. Then it hit ME!

THERE IS HOPE FOR THE LITTLE GUY!

It has been thought in past years by the little guys to not even try and compete with the big guys. We just can not compete against all the "CUBIC MONEY", it just seemed we didn't have a chance. The people and judges of Oshkosh have recognized the hard



Brad Hale's award winner!

work, quality and craftsmanship that these two gentlemen have put into their tandem wing aircraft. These judges saw through all the cubic money and gave credit where credit was due! There was Reg Clarke with an engine combination with over 280 hours on it that most people said "You can't do that!", but he did. Darry Capps all by himself in an all wooden aircraft beat all the high dollar boys. QUAD-TRIPLE DOUBLE WOW!! This was incredibly cool! It was like a shot of adrenaline. All of a sudden it was apparent that "US"..... "little guys" could compete and we were not lost in the shuffle. Everyone of us can be just a little bit more prouder of being a Tandem Wing Builder or Owner. This is just one reminder that it isn't how much money you have to throw at a project, but it is the work, quality and dedication of the final product.

Terry Crouch, Brad Hale, Reg Clarke and Darry Capps Super Congratulation and our hats are off to you! -- Spud

WHO'S ON - LINE?

To follow is a list of who I have address's on;

Justin Mace, Arizona.

"jmace@rtd.com"

Jody Adams, Maine

"jodydfly@biddeford.com"

Mike Digangi, Nevada

"gangster@hdc.com"

Jon Finley, Montana

"jon@amc.MT.net"

Spud Spornitz, Kansas

"DBFNSPUD@aol.com"

Carl Ericsson, Georgia

"cericso@lasc.lockheed.com"

Ron Triano, Nevada

"rondefly@sierra.net"

Phil Williams, New York

"uptown@aol.com"

George Gaston, Louisiana

"Ggaston@aol.com"

Dean Richards, California

"drddr@aol.com"

Bob Johnson, Utah

bjohnson@rad.med.utah.edu

James Bender, California

"n107mb@msn.com"

● Pitch and Roll Forces

Spud,

I'm very interested in the discussion on balancing pitch & roll control forces. A couple of weeks ago I was fortunate enough to meet up with the Evans' at a fly-in. Guy was kind enough to give me a ride in his beautiful Dragonfly. The only nonintuitive thing was the incredibly sensitive pitch control. I've heard other DF pilots say that you'll get used to it, but it was substantially more responsive than the Cessna 120 and Piper Colt I'm used to. The sensitivity isn't bad, but it would be nice if it was balanced wrt. roll.

I've been working on a low cost datalogger/digital panel. If it ever comes to something worth sharing, I'll certainly write an article.

Kevin Hester -- Calif.

We have an article addressing this subject almost complete and hopefully it will be completed for the next issue (#62) -- Spud

● Microballoon Short Cut?

Hey Spud!

Is it OK to sprinkle microballoons onto a completed layup before it cures in order to shortcut the arduous task of trying to spread dry micro onto a cured skin? I read this in the newsletter a while back and had thought of doing it on the fuselage, wings, and other large areas as a way of cutting down on the amount of time and frustration in getting ready to finish the surfaces. Or do I run the risk of the microballoons soaking up too much of the epoxy and drawing it away from lower layers, resulting in a too-dry layup? Any builder experiences you know of?

Thanks! Dave Morris -- Texas

I have heard of several people using this method. Lets get some hands-on report from you guys that have tried this method, please. -- Spud

● A Different Filler!

Thanks Spud for the reply. Progress is still going great, I have the bottom of the fuselage ready for paint, I tried Aero Poxly light instead of the micro ballons for filler, it

worked great. I have the hoop gear in place and am fitting the wing and canard for the final fitting. Take care and keep up the great work on the newsletter.
Ron Triano - Nevada

● A new Dragonflyer builder.

Curtis and Arlene Chapin of Texas are usually regular Ottawa Fly-in attendees but decided to skip it this year. They are the proud new parents of Collin Richard Chapin, 8 lbs. 3 oz. - 20 inches born August 23, 1995. Congrats!

● Sorry For the delay.....!

I'm sorry for the delay of this issue of DBFN. My youngest son Ryan was shot in the back over a high school football of all things. He progressing nicely and we feel very fortunate that he's alive, but as you can expect it thru Mom and Dad for a loop! Things are just getting back to normal. -- Spud

● Subscription Reminder!

Everyone's DBFN subscription will be due after receipt of the next issue #62. Stay on your toes, you won't want to miss a single issue!

PHOTO CAPTION CONTEST!

All right! Who was the outlaw, scoundrel and trickster that sent that picture to my wife of Spud in one of his weaker moments at Oshkosh 1995 (*no I'm not drooling!*) I'm looking for a confession and she's not talkin, but I'll find the culprit(s) someday and it will be revenge!

Of course Kris shows this to everybody she can. And all of them are still yucking it up!

Then she came up with the idea that we should use it for a caption contest. I told her maybe in another life time. Then about two weeks later we made a bet on a football game. If I lost I had to put the picture in the newsletter and do the caption contest. Damm.....I lost the @^%\$&^\$\$+!# bet!. So here we go!

Some rules:

1. No more than 3 entries per subscribers.
2. No fowl language
3. Must be in by Nov 20th, 1995

The winner will receive their 1996 DBFN subscription free of charge!

A FELLOW DRAGONFLY BUILDER "DEMOTED!!"

Dear Spud,

Just thought I would drop you a line to let you know that I am no longer a "Dragonfly Builder". Nope, I have been demoted to "Assistant Dragonfly Builder". Here's what happened.

When I got to the big lay-ups on the bottom and top of the canard I needed some help. I didn't have too much luck finding a helper among friends. So, in desperation I asked (begged) my wife, Sandy, to help me. She reluctantly agreed, but said that I would owe her "BIG TIME!". This was OK, cause I really needed her help. I explained to her what needed to be done and started to work. From there the conversation went about like this. Sandy Said, "You aren't getting that micro junk very even, here give me that yellow scrappee thing (squeegee)"...."That sure doesn't look like 45 degrees to me, here let me do that"...."Don't pull the cloth like that, YOU messed up the part I just straightened!"...."Where is MY next piece of cloth!"...."Look at that big wrinkle you made on my side!"...."Look, I'll be in charge now! You just go over there, stay out of my way, and mix that Goop Junk (Epoxy) and I'll let you know if I need any help!"

So, that is basically how I went from "Builder" to "Assistant Builder". Sandy has a talent for looking at something and seeing whether it is right or wrong. And if it is wrong she can see what to do to make it right, even if it is something she has never done before. I have been married to Sandy for over 25 years and she still surprises me with new talents I didn't realize she had. The canard came out great.

In closing, I would like to advise my fellow builders to try and get your wives involved in your project. They might just surprise you with a hidden talent the way mine did.

Sure wish I was still in charge of the project though!

Michael J. Digangi
1520 Appaloosa Ct.
Carson City, NV 89701



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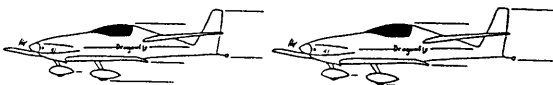
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Spudley Van Winkle at Oshkosh 1995 (see page 10)

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