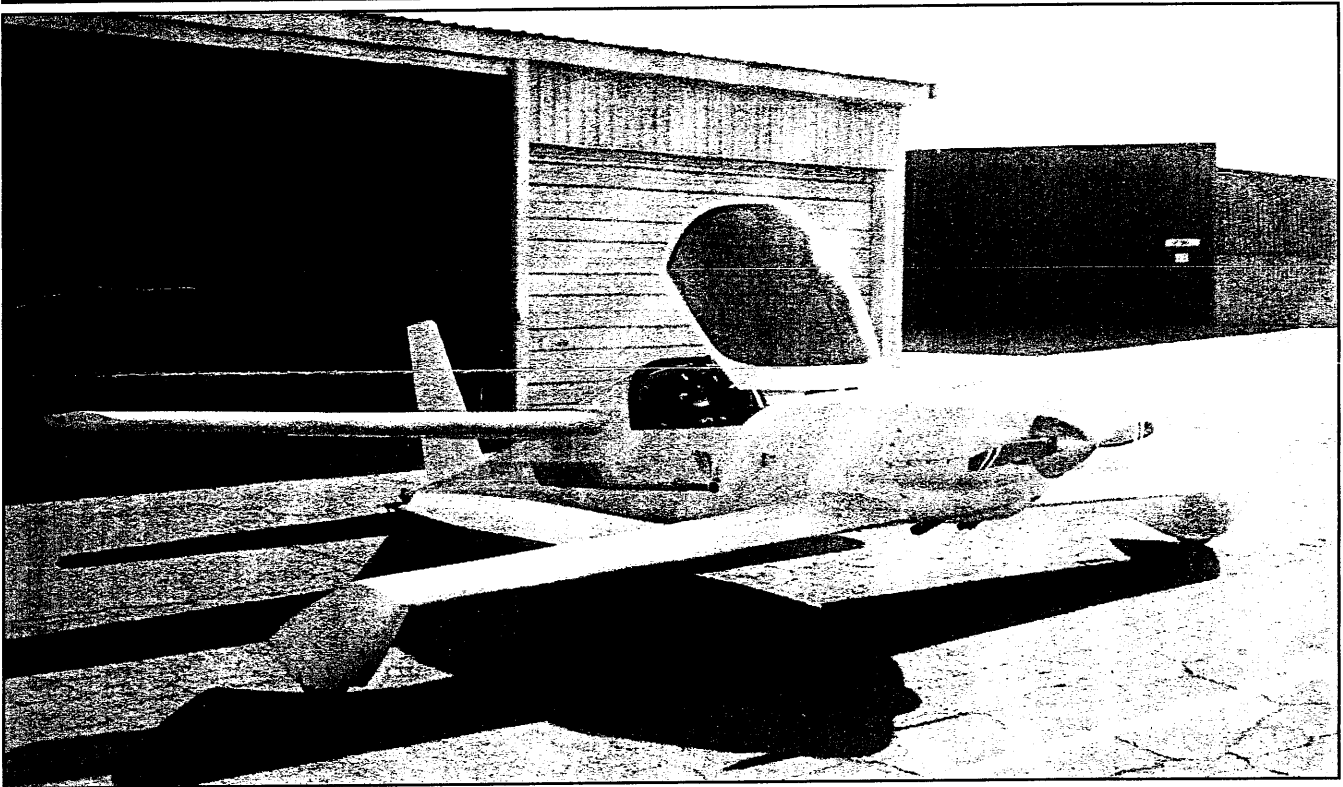


DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICIAL VOICE OF DRAGONFLY BUILDERS ALL OVER THE WORLD

Volume 86

July/August 2000



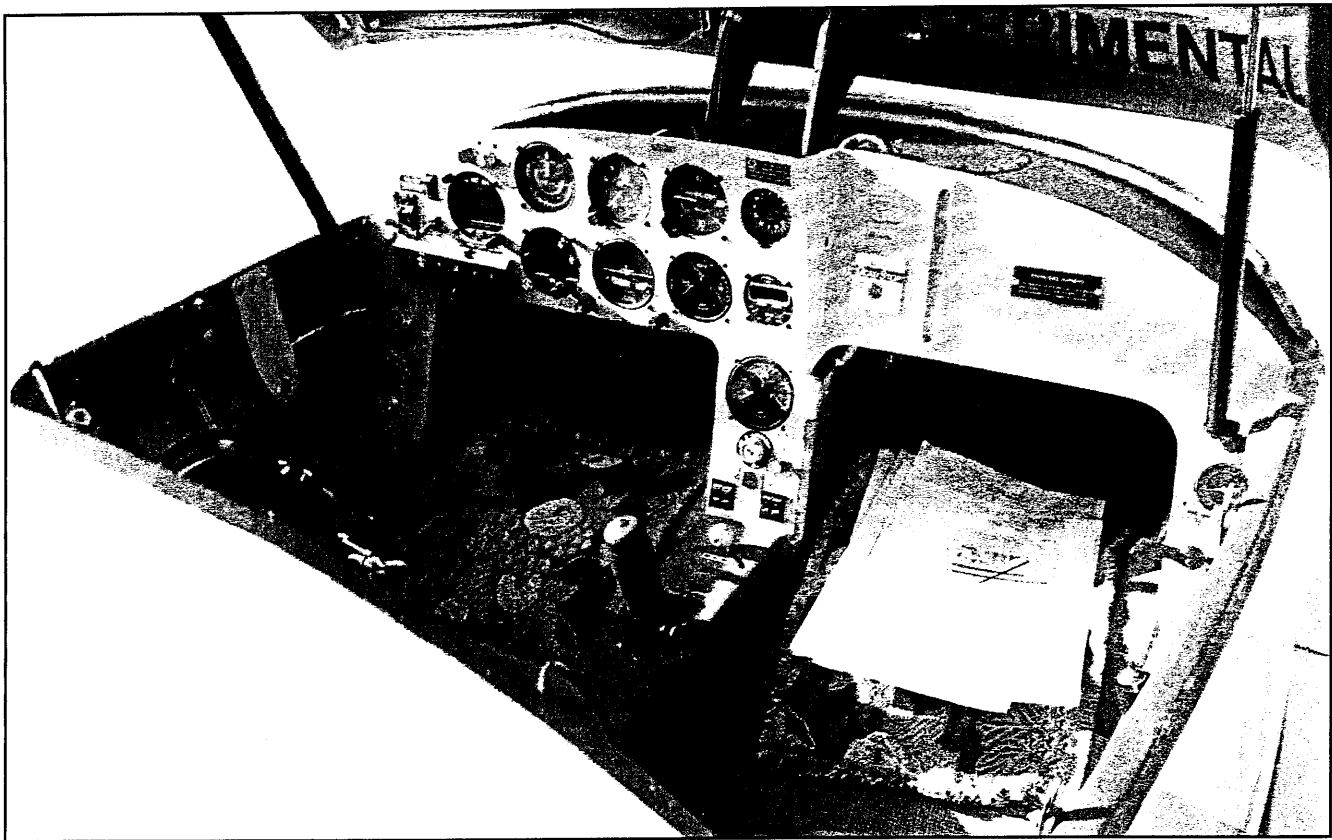
Richard Terry makes his first flight in his beautiful Mark I

Hello Spud & Fellow Dragonfliers!

Just a note to let you know that N85MT, a Mark I Dragonfly has finally made it's first flight. This plane was started in July 1982 in Annapolis MD. Completed & signed-off in 1998 in Las Vegas, NV . And, finally, signed off again (another story) and flown in Chino California. The flight went pretty well, with

only a slight trim pressure problem which hopefully re-angling the sparrow strainers will correct. The pilot was myself, half-scared to death, half-thrilled to death. I had a steep learning curve getting a handle on the ground handling. I had almost 20 hours of taxi testing before I felt confident about keeping it straight. When I got my tail wheel endorsement in a Citabria it was a

piece of cake, but was still very valuable because it taught me to control airspeed/altitude properly with pitch/power (checkout in something with NO FLAPS!) I also got 2 hours with Troy Burris in his Mark II. Slow flight, turns, stalls and most importantly, approaches & landings. Troy is great (and brave!) because he actually let me make the landings.



I admit that I was a little afraid of this plane (and I'm not alone. I think this is why so many Dragonfly's are just sitting in hangars unflown). It was unfounded thought, this plane is easy to fly, and rather than spend time & money to put the tail wheel where it doesn't belong, spend it learning to handle a tail wheel plane. Once it clicks, it's easy. It will bounce easily on landing, especially the Mark I; it also does fly instantly with full power just as advertised, so just go around.

Now to admitting my mistake.... Upon shutting down after the flight I was surprised (read that p—ed off!) to find the prop was now 51" instead of 52"! I did bounce a little on my first two landings, but added power and went around as everyone said to do (they are absolutely right!). the third landing was with very little bounce and the roll out (which is what I most feared) was a nonevent. What got my prop (I'm convinced) was the land back I did before my first takeoff. I made one run to 60, pulled power and aft

stick; it got light but no liftoff. On the 2nd one I went to 70 mph, pulled power & aft stick, still no liftoff, then just as I was relaxing it was suddenly 4 feet in the air. Like a dummy, I just sat there, with 2 big bounces as a result. I'm sure this is where the prop was nicked, although I neither saw nor heard nothing. I gave passing thought to shutting down to check the plane, but everything sounded & felt all right, so I went ahead and took off the next run. In retrospect, I should have shutoff & checked it. I now am ambivalent about land-backs. On the one hand, I'm sure this is where I damaged the prop (luckily nothing else); but on the other hand that period in the air convinced me that pitch & roll control was adequate. If you do a land-back, be careful and have the mind set to fly if you get too high. I should have gone to full power right then and flew.

My new prop should be delivered this week, so I should soon be back in the air. I love this airplane, and I feel so sorry & stupid for waiting so long to fly it. I am still very cautious with this plane as both it and I are

new, but I am no longer afraid of it. To those others out there that are in my shoes: take the time to learn what you have to learn, i.e.: proper airspeed/altitude control, ground handling; get someone to let you land a dragonfly (there is a difference between just riding in one & landing one) and get that feeling/picture required because you are so close to the runway before arresting your decent. Then go fly it. Respect it, but don't be afraid of it; this airplane loves to fly. My thanks to Troy, Allen and Brad at Chino, who gave me much needed support and information while I was getting ready to fly. And thanks to all those Dragonflyers, and you Spud, whose input to this newsletter and at fly-ins has helped me and many others.

Richard at Chino

Richard J. Terry
20711 Timberline Lane
Diamond Bar, CA. 91765

The troops are checking in...

Richard Werner update

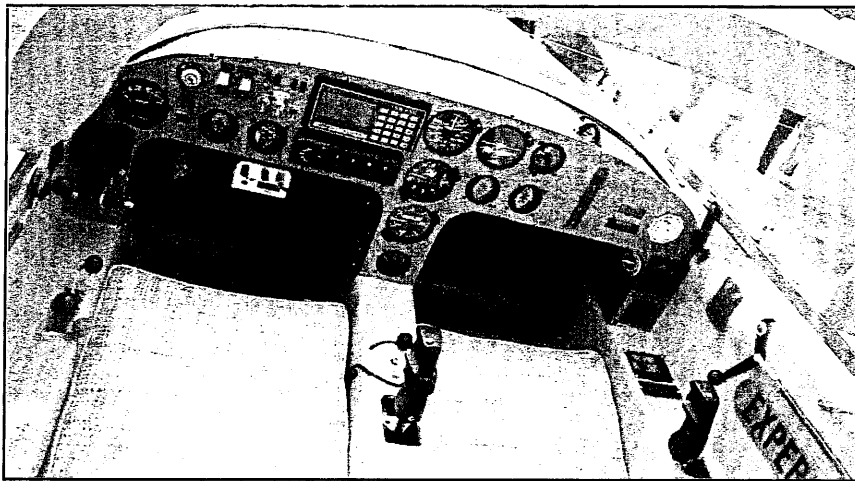
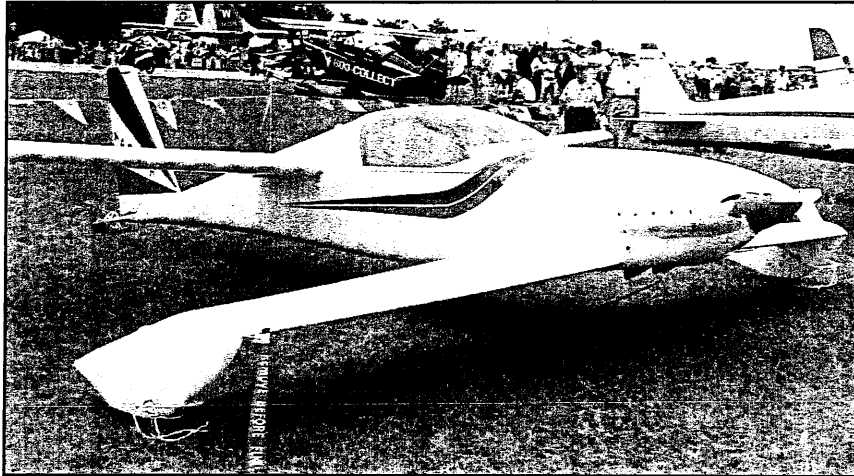
Sorry for being long overdue with some Dragonfly info. I like to talk about age of the plane and a few things that have become a problem for me. 4862H has been flying for over 16 years now with only a few pilot induced bad landings and one engine out due to a newly installed facet fuel pump that pumped fuel a little better than my original. I

replaced it not because the old one failed but because it was old. What I believed happened was in climb out with the nose high and the return line in the front of the header tank the new fuel pump pressurized my header tank and forced fuel past the float in my carburetor and choked the engine with fuel. I was near the airport "climb out" and turned around making four attempts to restart.

Tried carb heat, throttle closed, throttle half open, and throttle open but nothing. I maintained 80 mph on the way down and was lining up for coming down short of one of the short runways at my airport and on that fourth restart attempt I saw them. The telephone poles and wires I have driven past for the last 16 years to get to my hangar. The same ones the airport

manager has been trying to get UE to move under ground for years. I lines up between the poles and had two seconds to decide to go under or over. I decided on over and had to give it full aft stick just to clear the top wire. I came down hard in the grass in a three point configuration and bounced my way to the runway. I got out checked my shorts "they were ok" and moved my one wheel that was still in the grass back on the runway. Jumped back in and it started right up and taxied

back to the hangar. Only damage was to the runway lights I ran over and the scrapes they left on my wheel pant and canard. I later looked at the telephone pole on my way out and there was three wires on top that I saw but there was one by itself I didn't that was 4 feet below the others. If I would have chose under I would have gotten hurt. I fixed the problem temporarily



by putting a switch on the fuel pump and turning it off during climb-out. I plan to meter down the exit opening on the fuel pump to restrict the flow a little in the future. I took 5 months off from flying because of work Boeing had me traveling to make the engine inlet ducts in LA for the new Unmanned Combat Air Vehicle, a pilot-less stealthy bomber about the size of an F-16. I got to make all the composite skins and

doors for it. Some of the bond tools my crew used were 28' x 14' for the fuselage. I am now starting the X-37 a space shuttle want-to-be about 30' long designed to test new innovations to reduce space flight from current \$10000 dollars a pound to \$1000. Its made of all high temp composite material and is scheduled for space flight in the shuttle bay in 2002 and 2003 with a few self launches from under a B-52 wing sprinkled in that time period. I also had a startup problem with the Dragonfly during this time that after pulling the engine off to check the

HAPI alternator which was ok turned out to be the slick magneto. Receiving no lubrication from the engine and not knowing any better the firing mechanism dragged a little when I pulled the prop thru before start up. It changed the engine timing causing the no starts. I used LPS-1 and a little motor oil working it in by rotating the firing mechanism by hand. Its the smoothest the engine has ever run. Next don't forget to change "all" your fuel lines every once in a while. I change my big automotive steel fuel filters every two years and the fuel lines around them but until the header tank return line sheared in the pattern at the airport dumping fuel all over my fuse panel, I never thought about those lines that

are tucked out of sight. I also changed from clear ones in the plans to a good old black quality automotive fuel line. Back to the in-flight fuel problem, I don't smoke and that's a good thing, I immediately turned the master off and flew on the magneto, something you electronic ignition only boys might not be able to do. Once the fuel level got down below the return line I stopped adding fuel to the interior of my airplane. Landed in a hurry and opened my forward sliding canopy

on role out to get some fresh air and taxied back to the hangar. One last fuel related problem. I started noticing on landing my canard was bouncing more and even during taxi it felt loose going over bumps. I regularly "tap test" all my flying surfaces to check for delams and had a small one in one corner at the canard and fuselage fairing that I was going to repair some day. Well for standard repair I was going to drill a few small holes and inject epoxy in one end until it ran clear "free of air" in the other. Then tape the holes shut, put a plywood plate with a wax paper release between it and a little pressure from underneath from a floor jack and be done except to touch up a couple of drill holes with paint. What I found was with probing with a very long drill bit a void caused by fuel leaking around the header tank, shutoff valve and or fuel filter area about the size of your fist. I know about fuel and I am real careful changing fuel filters, shutoff valves, and header tank fuel screens and have always put towels down or buckets to catch any drips. The in-flight fuel line leak dumped the fuel in between the canard drag bulkhead and the main fuel tank. I do remember over the years a fuel seep that never formed a drip but discolored some of the Teflon tape in the header tank shutoff valve plumbing. I resealed my plumbing with new Teflon tape adding another turn or two but not out of the thread lines so as not to introduce pieces of Teflon tape into the fuel system. For the repair I purchased a can of spray foam from the hardware store and did a test to make sure it didn't chemically react to the wing foam. Drilled a bigger hole in the bottom 1/4" and almost emptied the can into it. Taped the hole shut covered it with a fairly large piece of plywood and jacked the bottom of the airplane up a few inches and let it cure. After cure I scuffed up the repair hole and area and put a 3 ply patch over the hole added some filler primer and

paint and it was like I pumped up a flat tire. Been flying it for at least a couple of years. Even with that off field landing I have never had a prop strike with this repair. One thing I would change in the plans is to topcoat paint the interior of the canard. All military aircraft we build get a nice gloss white epoxy paint coat in areas where fuel, hydraulics and oils are present to prevent intrusion into the laminate. Hey I need a custom cover that is waterproof, covers my engine inlets and all the way back behind the canopy and has Velcro straps to keep in place, I got an interior bath from the storm that blew thru Oshkosh last year on my 14th visit with the plane "must be a record". Know any vendors that might be able to do this?

My DF has a little over 350 hours, pretty weak but I plan on spending more time flying when I convince my wife to go with me. I did get her on my 170 mph ZX-11 Ninja shouldn't be too long now. I missed Oshkosh this year because of weather. Tried Friday, Saturday and was even going Sunday for the day but couldn't make it thru all the thunderstorms.

Take care,

Rich Werner
Wildwood, MO

richard.p.werner2@boeing.com

Thanks for the super update Rich. Reg Clarke offers a nice cover custom made for the DF. Check back in the classified section for all the details.

From the Justin Mace Dragonfly Shunkworks - Arizona Division

O' Spudley,

After 2.5 yrs of playing with my DF I finally have the O-200 installed and flying. Was it worth it you ask?? Well, that remains to be seen, but after giving lessons today with about 10 landing attempts and some air work and 130 kts at less than full power I would have to say yes.

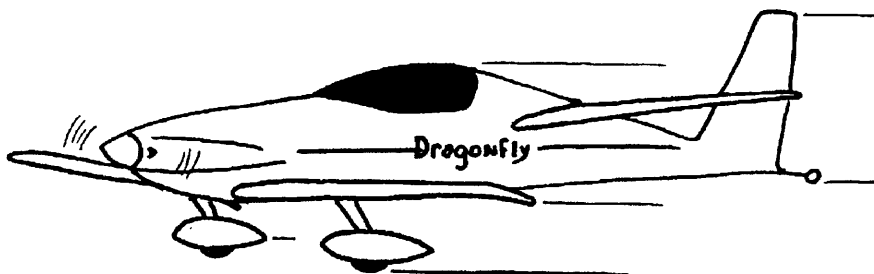
I have had a problem with cooling and I am now in process of closing the cowl inlets down to about 25 sq inches total. I can't seem to get the oil temp up above 165 F. The cylinder head temps on climb out are below 400 F. At cruise the oil temps goes to 148 F and the heads go to about 300 F that's with the OAT of 100 F. Kinda depressing after all of that work to have to pull the oil cooler off and rework the cowl. (We could only wish we had these kinds of problems!!!)

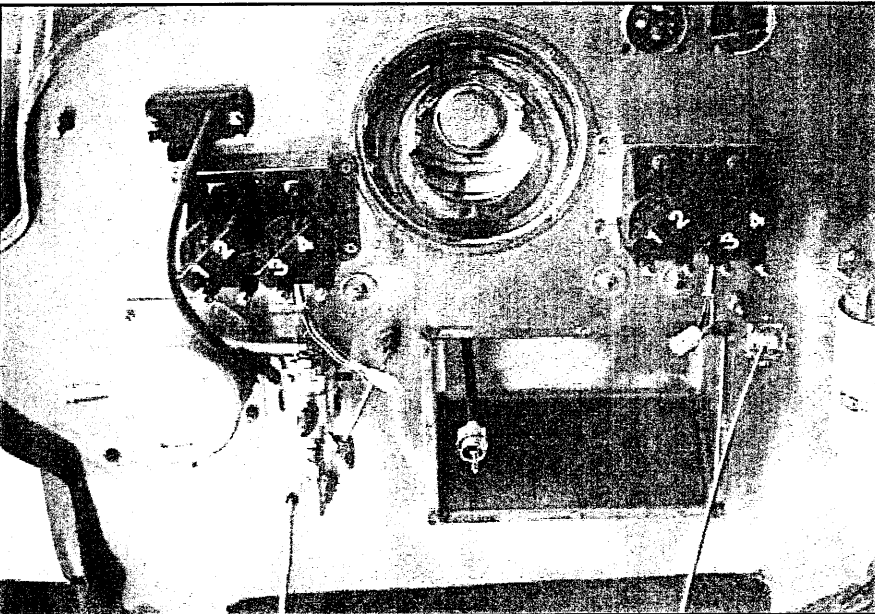
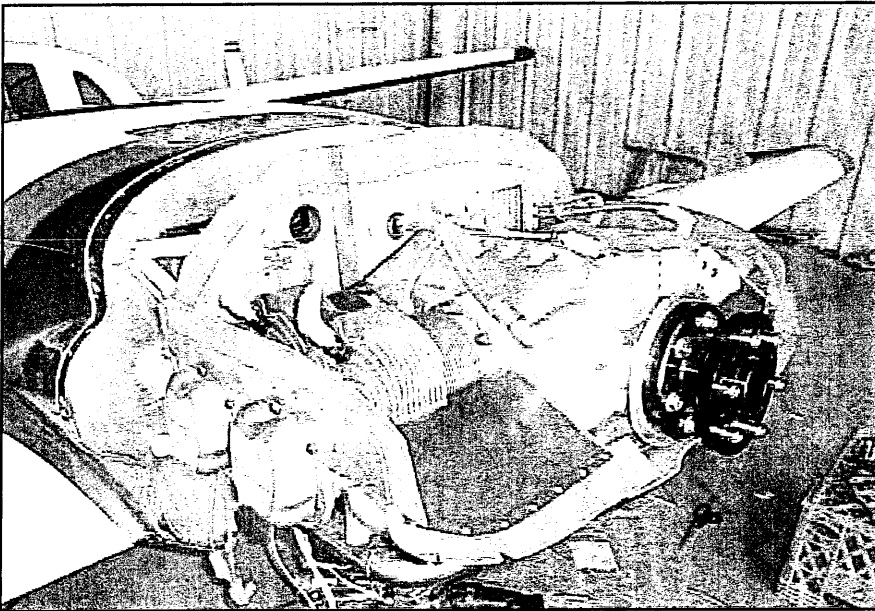
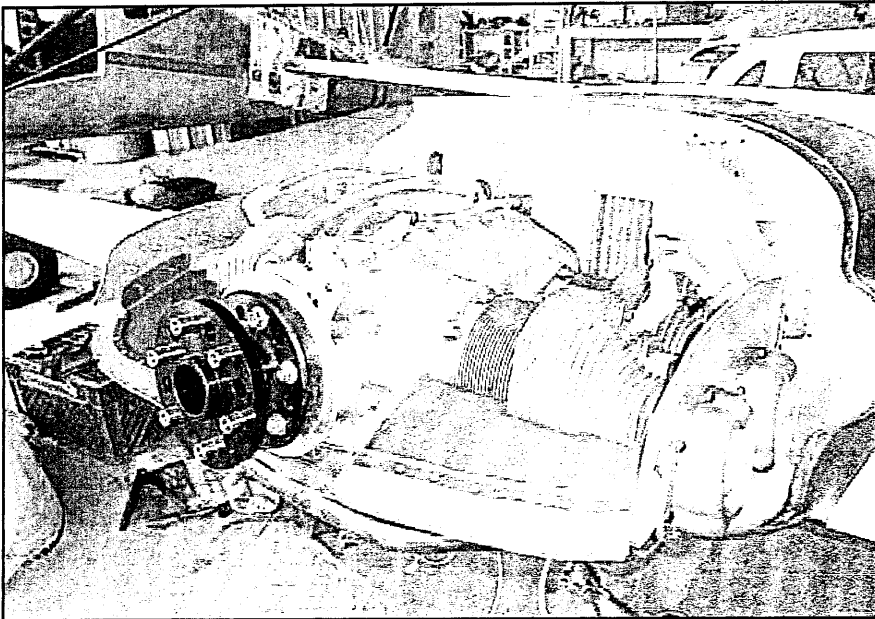
I should have the cowl rework done in a week or so and should have it painted in a month. I need to get my prop finished. I'll get to that after I make some full power runs at 11,500 and see where the rpms settle out at.

Second report: Follow-up after testing with the cowl mods....

Well I just got back from a 75% power run and a test of my new round air inlets. The engine is only a little warmer with the new smaller round inlets. I may cut the size down just a little more.

At 7500 ft into the rising sun 2900 rpm @ 23" mp A very disappointing 135 kts. (155 mph). A climb to 8500 ft a turn to put the sun at my back still 2900 rpm and 22" mp a much better 158 kts (182 mph). The two way average comes out at 146 kts (168 mph). Not the 150 (173 mph) I was hoping for, but just exactly what the VW powered DF's are suppose to do. I think 2900 rpm at altitude is just what I am looking for, not too high & not to low. I guess I'll just





have to settle for the cruise speed of 165 mph. After all these years I can now say the my DF will fly as advertised. That is with the exception of the power plant and the fuel burn.

After I get the cowl finished I'll worry about fuel burn but for now I'll just have to live with what ever it turns out to be. I suppose I can clean up the airframe some but that will be down the road if ever.

Third report: Justin goes Cross-country

Just flew to Carlsbad MN to see Mark Snow. 135 kts (155 mph) ground to ground at 2:37 min for 352 nm. I used 12.6 gal of gas. My calculator says that is 4.8/hr fuel burn or 31 mpg. I got the exact same set of numbers coming home. The same winds both ways, how odd. The rpms at 135 kts is 2700 at 21" mp not as fast as it will go but close. I can top out at about 145 kts (168 mph) but the 2700 to 2800 rpms & 22" mp is a good cruise. I could gain a few kts if I would remove the external antenna and strobes but the 100-mile air to air range is great. I never have a problem with ATC hearing me even at 50 mile. The prop I am running is a Performance Prop from here in AZ. It is a three bladed one, probably another reason I am not faster. It is a 52X70. That makes the takeoff and climb a little slow.

Mark isn't flying as much as he would like, he has been very busy at work lately. His bird is still way faster than mine. He just blows by me! I guess I'll just have to keep trying.

As of this writing my Dragonfly has 750 hours on the airframe and 20 hours on the O-200, 835 lbs.

Looking forward to seeing everyone again. With any luck at all I should be able to fly to Ottawa shortly.

Justin Mace
Tucson, Arizona

MIKE'S CORNER



Dear Readers:

Last month's issue introduced Bob Marso, our young Aeronautical Engineer, who had joined us as a summer intern. Bob will be departing for Ireland to further his education in just a few short weeks. During the short period that we have had the benefit of his expertise, we have made several modest design changes in our Genesis line of aircraft, and are presently working on increasing our gross weight capability to 1,600 lbs. This change has been requested by a number of our current builders as well as by other potential buyers as a direct result of the enormous popularity of our float planes and most recently due to the introduction of our inline twin engine SkyBlaster model.

Although Bob is headed for distant shores, he has agreed to update and rewrite the construction manual during the upcoming school year. It is our sincere hope that we will have an all new manual and AutoCAD drawings available by next summer. In the meantime, Bob has asked me to solicit comments and ideas from the subscribers to the DBFN. Armed with the entire collection of DBFN newsletters and the interminable errata sheets, Bob has more than enough to keep him busy, yet he

wants more. This is your chance to help bring the construction manual up to date, and to have someone evaluate your constructive suggestions for how you would like to see the manual written. We are looking for both general and specific comments. Perhaps you found the manual was not direct enough, and was lacking in photos and drawings. Or perhaps you thought the manual was written with the assumption that the builder needed prerequisite skills that not every builder possesses, and should have had an appendix in which certain terms and concepts were defined. Or maybe you have a disagreement with the materials and or methods of construction. Whatever the case, this is your chance to contribute to the next generation of builders.

Please email or snailmail your comments, suggestions, photos, etc., to SlipStream Industries, and we will see to it that they are forwarded to Bob for possible inclusion in the new manual. Our email address is flygenesis@aol.com and our physical address is W8407 Cottonville Drive, Wautoma, WI 54982. If you mail in your comments, be sure and include a phone number so that Bob can contact you to further discuss your comments, etc. Also, please understand that Bob cannot possibly answer each and every letter, but rest assured that he will read all of them.

It is said that the most important contribution any of us can make is to leave this world in a better state than when we entered it. Please pitch in and help make your Dragonfly manual the best that it can be for another generation of builders.

Enjoy the beauty of fall in flight!

Mike Puhl

Dragonfly fuselage - canopy covers

Dragonfly outdoor storage cover

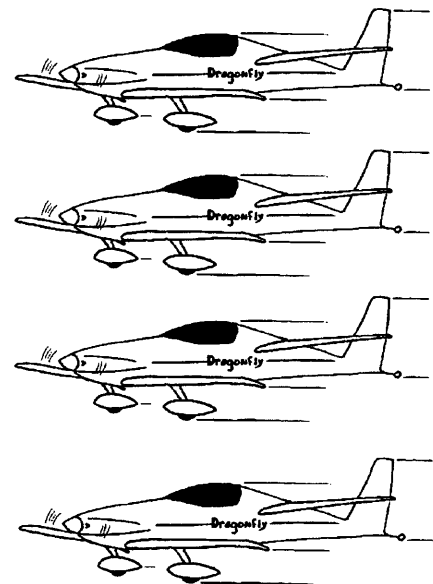
I don't know about your Dragonfly but mine leaks like a SIVE. The Dragonfly covers that I make start behind the back wing to around the cowling. It's made of TYVEK marine fabric made by DU PONT. Superb UV protection, dirt & dust protection easily handling & storage, soft inner lining. Straps are (4) behind and in front over wing & behind canard and around cowl. Its a very nice over very light and compact. If anyone is interested the are \$195.00 U.S. with shipping to the US is \$15.00 / Overseas is \$25.00. Personal checks drawn on a US bank are OK

AIRRYDER Aviation & Flight
Center
BOX 1990
HANNA,, Alberta
CANADA.
PH / FAX (403) 854-4541

E-mail: airryder@telusplanet.net

Regards,

Reg Clarke



The Classifieds

For Sale: The original Dragonfly prototype, presently configured as a Mark II with the original HAPI "Magnum" engine. 25 hours since Lower Overhaul and 400 -500 hours since Upper Overhaul. Airframe in good condition but needs some TLC to return to it's glory years. Looking for a good home. \$10,000. Contact SlipStream Industries at (920) 787-5886. Email: flygenesis@aol.com

For Sale: Dragonfly MKII. Excellent workmanship. Complete plane except canard, gauges. Everything to complete canard except gear. Canard on table awaiting final layups. Spar laid up, gear leg boxes in and all cloth/carbon to complete. No gear. Always hangered, Hapi 1835 w/dual elec ign and latest mods. New Props Inc. 52/42 Prop incl spinner. Beautiful Red cloth seats. Fuselage complete w/new hatch cutout but not finished. Wing in excellent condition. Paint in excellent condition. Would entertain splitting up engine and airframe. Priced for quick sale \$4,800. Bill Brutsman 913-888-8942. Lenexa, KS Fax: 913-599-1290 Email: wdbtrsmn@aol.com

For Sale: Dragonfly covers constructed of TYVEK marine fabric made by DU PONT. Superb UV protection, dirt & dust protection easily handling & storage, soft inner lining. Straps are (4) behind and in front over wing & behind canard and around cowl. Very light and compact. \$195.00 U.S. with shipping to the US is \$15.00 / Overseas is \$25.00. Personal checks drawn on a US bank OK.

AIRRYDER Aviation & Flight Center
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E-mail airryder@telusplanet.net

For Sale: Mark I Dragonfly. 120 TT. VFR (was flying), forward and rear hatch, nice interior. Needs canard, wheels and brakes of choice, cowling, engine and prop of choice. Minor fuselage repairs needed. No instruments or accessories, just fuselage and wing. Get a head start - Save lots of hours \$3,000.00. Can be seen when at Ottawa Fly-in (35 miles north) N# has been decommissioned and is being sold as "Pieces". For more details on this aircraft Contact Spud Spornitz after 7:00 PM CST or weekends. (913) 764-5118 or E-mail dbfn-spud@aol.com

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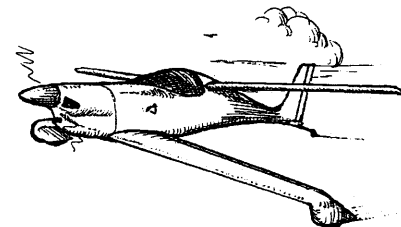
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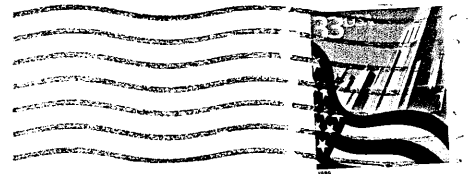
The Grin Department!

RULES OF THE AIR

1. Every takeoff is optional. Every landing is mandatory.
2. If you push the stick forward, the houses get bigger. If you pull the stick back, they get smaller. That is, unless you keep pulling the stick all the way back, then they get bigger again.
3. Flying isn't dangerous. Crashing is what's dangerous.
4. It's always better to be down here wishing you were up there than up there wishing you were down here.
5. The ONLY time you have too much fuel is when you're on fire.
6. The propeller is just a big fan in front of the plane used to keep the pilot cool. When it stops, you can actually watch the pilot start sweating.
7. When in doubt, hold on to your altitude. No one has ever collided with the sky.
8. A 'good' landing is one from which you can walk away. A 'great' landing is one after which they can use the plane again.
9. Learn from the mistakes of others. You won't live long enough to make all of them yourself.
10. You know you've landed with the wheels up if it takes full power to taxi to the ramp.
11. The probability of survival is inversely proportional to the angle of arrival. Large angle of arrival, small probability of survival and vice versa.
12. Never let an aircraft take you somewhere your brain didn't get to five minutes earlier.
13. Stay out of clouds. The silver lining everyone keeps talking about might be another airplane going in the opposite direction. Reliable sources also report that mountains have been known to hide out in clouds.



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