

DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICIAL VOICE OF DRAGONFLYERS ALL OVER THE WORLD

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Just a few of the birds tucked away for the night at this years Dragonfly - Quickie fly-in

OTTAWA 1997

It was big times in a small town... at least after an opening disappointment which I'll mention in a moment! Some 22 Q's and DFlys appeared on the Ottawa blacktop during Labor Day weekend along with a typical crowd of just over a hundred. Most folks experienced good flying/driving weather and were already in position Friday evening.

To limber everybody up, We traditionally gather on Friday after sundown at the Sirloin Stockade across the street from all the motels. We chow down in a back meeting room and get a weekend preview briefing. This year Jon Finley did a brief on the performance evaluation flight that he organized. There was a collective groan as he specified the launch time: 7 am, Saturday (What wuz this, a mission to Bremen?). We tried to break up early to get some

ZZZZZ's but everybody was excited and the hangar talk just wouldn't be stilled.

I bunked with Spud some 30 minutes away in Olathe, so it was early to rise for me... except that even before the clock dinged, I was awakened by a loud boom and a flash of lightning. Never mind that the weatherman didn't see that coming the night before. When I got to the airport about 8, there were some soggy and

disappointed pilots shuffling around. But not for long. The moody weather gave everyone time for a nice cup of coffee and some modest breakfast fare from a couple that bring their mobile "canteen" to our site. Their food is staple (doughnuts, burgers, doggies, drinks, cookies, chips etc.) priced nicely and VERY convenient... available at the first sign of a pang.

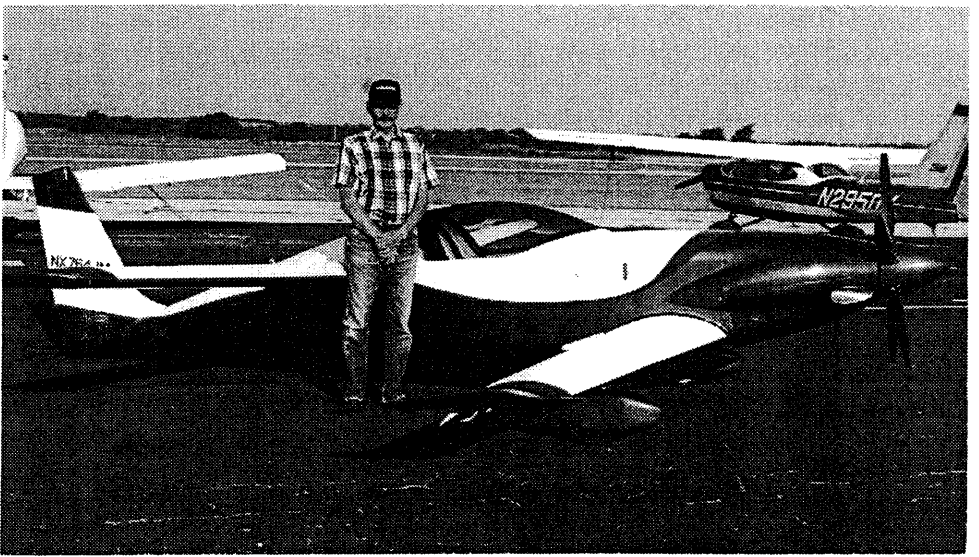
By 9:30 the Q forum was underway with the occasional fly-by going on in the distance. This was followed by the Dragonfly forum and then a special guest, Bob Nuckolls, who did an outstanding presentation on common sense planning and wiring of a small aircraft electrical system. If I don't get the Ottawa 97 videotape for anything else, I'll get it for this. (I have been advised via E-mail that Nuckolls has a \$42.00 book for sale that is well worth the money and deals specifically with sport plane electric's).

The forums lasted till 1:30 after which a Performance Evaluation Flight briefing was held. All of a sudden there was an eruption of commotion to get aircraft to the starting grid in a guesstimated order of fastest to lastest (we knew Terry Crouch in his Q-1 would be lastest). couple pilots were lollygagging so the second half of the grid got a bit out of sequence. But SAFETY was the watchword and all aircraft were safely launched. Flight BOSS Jon Finley should report the finish results, but from the ground it was fun to watch the launch and then 20 minutes later listen for a distant growl from to east as the first and following aircraft came roaring back towards the finish-line. Bob Malechek's hopped-up Q-200 was back fastest with a speed from the standing start of 188 mph. Many returning pilots are very enthused about the flight and rarin' to go again for next year. Several pilots rode with passengers giving a more real life performance result.

Lotsa rides are given this year as the weather was perfect for it. Spud organized a sign up sheet to prioritize rides (ie. fist rides go to guys who expect to finish an airplane before next Ottawa). That seemed a fair way to do it but it took far too much effort and too many did it their own way. Next year we'll return to



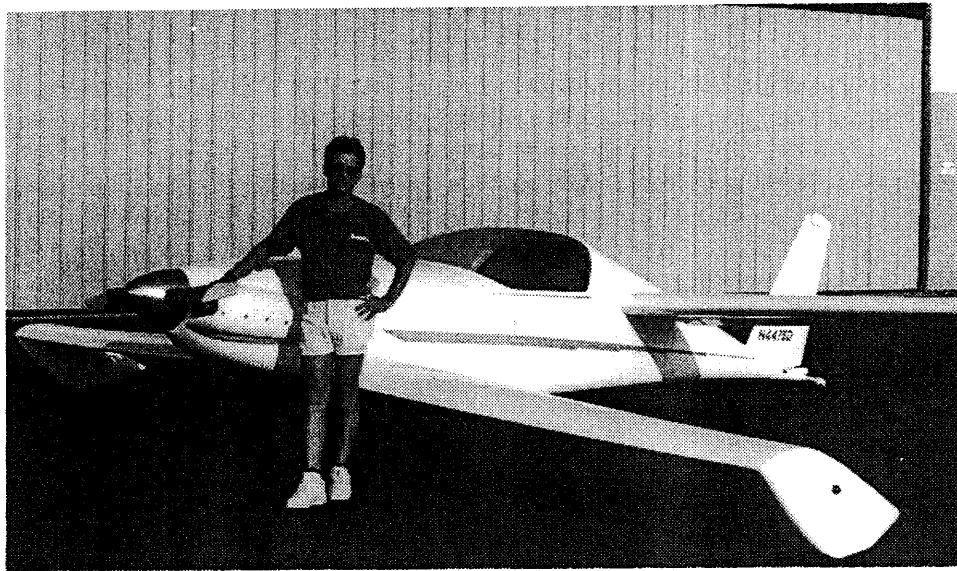
"The Southern Gentleman Himself" - Gene Arthur - Texas



Justin "The Magician" Mace - Arizona



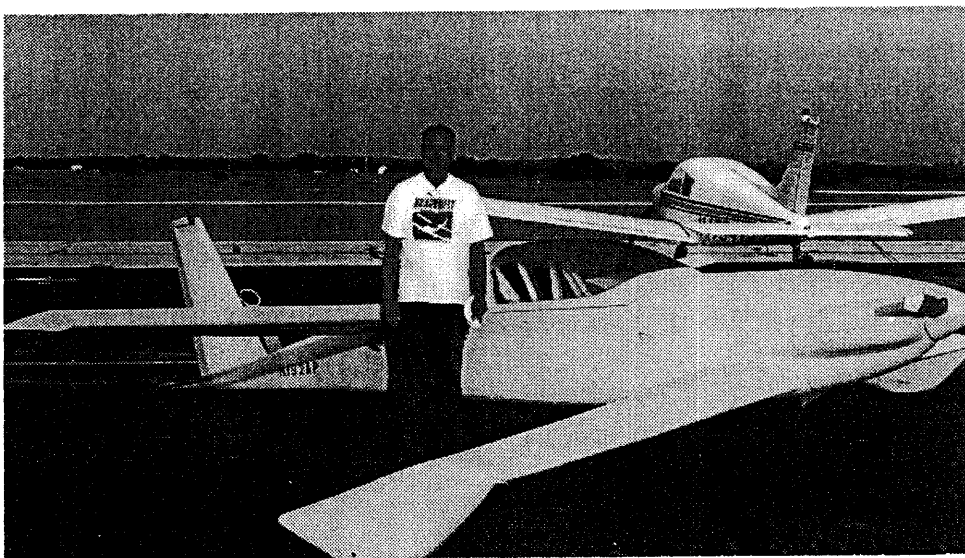
"Best Overall Dragonfly" - Wayne Ulvestad - South Dakota



"MR. LEGS " Bruce Dixon - Kansas



"Mr. Long Distance" John Mason - California



"Mr. Charisma" - Allen Perkins - Michigan

the usual free-for-all. After all, these aren't our airplanes and a pilot can choose to ride whoever he will. If you are a shrinking violet and are in deathly fear of asking for a ride, then you just won't get one. It takes plenty of energy to organize this fly-in just for starters and Spud doesn't need to spend energy screwing around with this part of it. If anyone to a better solution, please step up to the volunteer desk.

Now it is no revelation that the focus of this weekend is airplanes, flying and pilots. But this year, just off center stage Debbie Stewart was implementing a very effectively planned series Of activities. This reporter didn't sit in on the activities, but I could tell from the smiles on the ladies faces that they were really enjoying themselves... and then they would disappear again. We're delighted Debbie took on this piece of to Ottawa action will ask her for a report.

Along about sundown everyone shuffled off to the motels for a cleanup or straight to the University where the banquet would take place. Wonder of wonders, the county voted to allow liquor this year so a couple of us brewskied up to prepare for the long and rigorous alcohol-free banquet and festivities. About 90+ faces showed up for the banquet and as usual, the University fed us well. But we weren't there just for the food.

Spud works for an automotive performance parts distributor and this year he strong-armed several vendors to donate a boat-load of door prizes. I wean it. We eventually had a prize for everyone at the banquet with a few left over! And for the bigger awards in the Dragonfly category, we had the following:

Best Overall - Wayne Ulvestad - N69DF

Runner up - John Mason - N14JE

Best Interior - Wayne Ulvestad - N69DF

Runner up - John Mason - N14JE

Long Distance - John Mason (1330 miles)

High Timer - Mark Snow (721 hours)

Don Stewart taped the banquet again along with his helper Matt Gunsch. Well, it should be said that he rolled gobs of tape on the entire event as well. But Don and Debbie can't resist bestowing some "Joke" awards' of their own each year This is an occasion for great hilarity, catcalls and unsolicited

editorial comments from the assembled minions. You can imagine

Don & Debbie Stewart's "B" list Awards

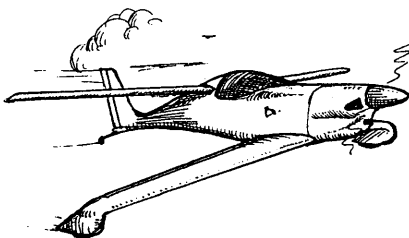
Pilot with Best Legs - **Bruce Dixon**, KS
Illegal Alien - **Kimbull McAndrew**, Canada
Charisma/Funky Chicken - **Allen Perkins**, MI
Lead Sinker-**Justin Mace**, AZ (942lb. E.W)
H.H. Hardy Hard Luck- **David Borque**, LA

And then we had the Grand Finale Prize. In order to entice pilots to bring their Q-birds or Dfly aircraft we "raffled" off a state of the art Garmin GPS. This would go just to pilots who brung their aircraft. Tickets to win were handed out based on the distance flown to get to Ottawa. The longer the distance, the more raffle tickets went into the hat. And there was an extra surprise. It only takes one ticket to win, right? This time the guy who flew the longest distance and had the best chance of winning actually DID win Kimbull McAndrew flying modified Q-2 with a Lyc O-235 from Canada. Now the surprise: We couldn't get co-operation from Garmin on the actual purchase of the GPS for the event. So Kimbull unwrapped 4 crisp \$100.00 bills, that's right \$400 big ones! Bet he had a nice ride home.

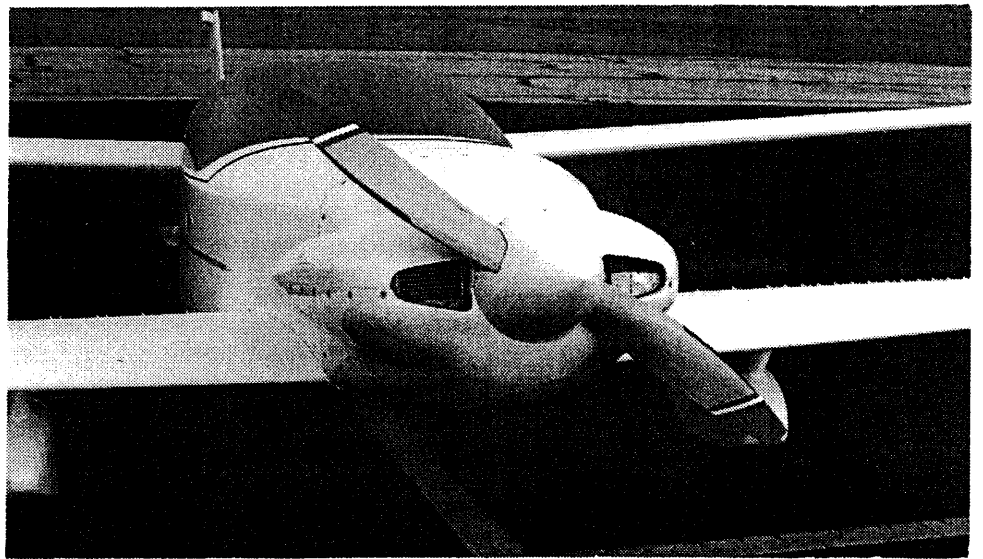
Sunday was pretty unstructured except that more rides were given and Don Stewart launched a photo plane so some of the guys could give him some in flight passes for the video. He tells me he got some good stuff. And then everyone lazily drifted off for home.

Once again we had a safe and very enjoyable event. This year we had a couple of new twists to add to the fun, but really the most fun is being with each other laughing, talking and learning. It's an annual reunion that can't be beat! And I'm convinced it gets airplanes in the air!
And that's what its all about!

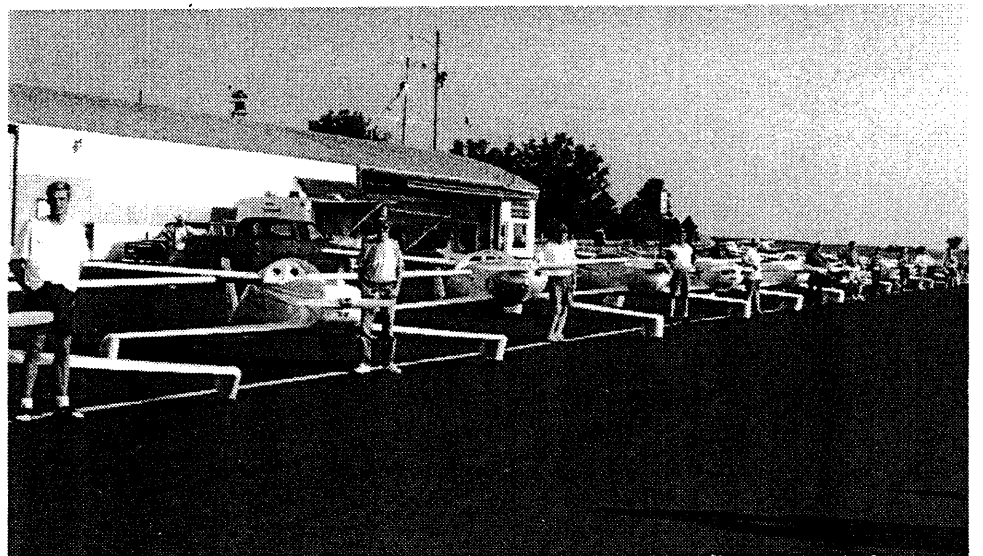
Jimmy Masal



Fred "IFR" Weibe - Illinois



Mark Snow's trusty Continental Powered Dragonfly



The Quickie, Q-2, Q-200 Gang - What a great bunch of Folks!!!

NSI COCKPIT ADJUSTABLE PROPELLER SYSTEM

● Overview

Subaru engines, rotaries, Porsche derived powerplants - what's a VW-powered Dragonflieger to do to improve the performance of these sweet little aircraft? Lacking the time or the financial resources for a "firewall-forward" refit, I'd been mulling over this very question last year when I came across an advertisement from NSI Propulsion Systems in one of my periodicals for an electrically-controlled Cockpit Adjustable Propeller (the CAP).

The problem is a familiar one for pilots of low-powered aircraft with high performance potential: when selecting a prop (or as in the case of N107MB, ground-adjusting the Warp Drive unit) for good climb performance, cruise speeds are dramatically reduced; conversely, pitching the prop for cruise destroys climb performance. Mid-range pitch settings seem to result in an across-the-board mediocrity. Aargh!

● NSI

I had always been impressed with the apparent quality of the NSI products I had seen at Oshkosh. The engineering, fit and finish of these products certainly seemed consistent with what I had come to expect from a NASA-qualified, high technology aerospace contractor (however small). Further, this unit employed NSI-modified Warp Drive carbon fiber blades, which I had found to be high quality, reliable and relatively inexpensive.

● DF#88

N107MB is powered by a Revmaster 2100D 75hp naturally-aspirated engine. In 350+ hours it has proven to be a terrific little motor. It is equipped however, with a modified Continental style prop hub (the six-bolt 0-200 hub employs 1/2" prop bolts, where the Revmaster uses 3/8"). When I placed my

order With NSI for the CAP, I was unaware of the bolt size difference. Consequently, when the CAP arrived, I was faced with the prospect of resuming the prop hub adapter to NSI, or press-fitting bushings into the prop hub adapter I had. I chose to fit bushings into the existing adapter to save time, and it has worked well.

Deliver Regarding time: apparently, I was the first customer to order an NSI CAP for a VWbased engine. And as the folks at NSI had as yet not fabricated a prop hub adapter for this particular application, time to delivery was a bit over ten months. In our conversations, Lance Wheeler was sympathetic but insistent that the finished adapter be of a quality consistent with the rest of the CAP components. He explained that their first two adapter prototypes failed to meet his "fit-and-finish" standards. I can only say that the product that they did eventually ship is superb, with fit and workmanship as good as any that I've seen anywhere in the aerospace industry.

● Assembly

The CAP is delivered from NSI in two boxes—one containing the modified Warp Drive blades, the other the partially-assembled prop hub. The manual that accompanied my unit was a preliminary version, and although intended for the Rotax installation, I found it be clearly written, very complete and illustrated with lots of color photographs (digital cameras are so cool...

The assembly consists of fitting the blades into the prop hub drive carriage, reassembling the hub halves, fitting the slipping to the hub assembly, bolting the prop to the hub adapter (and the adapter to the engine prop flange), and finally, fitting the brush assembly mounting bracket. The two VW-specific issues

are: 1) blade orientation when fitting them into the hub assembly and, 2) the NSI-supplied brush assembly mounting bracket is designed for Rotax engines.

Issue #1: Our blades are different because our engines turn counterclockwise, as viewed from the cockpit. The folks at NSI were extremely clever in designing the CAP hub assembly to work equally well in either direction (this same hub can be employed in tractor or pusher, CW or CCW configurations). When orienting the blades in the hub, in relation to the axial carriage drive, it is imperative that you have a dear visualization of the hub had you're working with (you'll be looking down at the back side of the front half of the assembly), and the rotation of your engine. Although the manual does a reasonable job, written descriptions of the process (and the variables) are necessarily awkward. It is, in fact, much easier to picture, in situ, than to describe. Really ...

Issue #2: The brush assembly mounting bracket is a two piece affair (a semi-circular bolt-this-to-the-Rotax reduction-gear part, and the brush assembly mount), and the later part can be adapted for our uses. The Revmaster has a prop hub extender that works beautifully for securing the brush mounting bracket (as well as 7MB's Rocky Mountain field effect tachometer sensor). For you metal-smiths out there, fabricating the bracket should be relatively straight forward, but as I was intent on a job properly done, I enlisted the expertise of a pro (Gary Lair, 619.280.7542). Gary fabricated an incredibly solid, lightweight bracket in T6064 aluminum, to 0.003" tolerance. Feel free to contact him for bracket assemblies or pans.

● Control & Electrical

Having assembled and mounted the prop / slip ring I brush assemblies, the wiring could no longer be avoided.

Actually, NSI's control scheme is pretty conventional—a "control modules, supplied with breaker 12V, employs micro-relays to polarize DC applied to the hub: a classic 2-wire bi-directional DC motor. NSI supplies a center-loaded SPDT toggle switch for cockpit controlled "increase pitch / decrease pitch", in addition to a thermal type ON/OFF breaker switch, wiring harness, Power On & Over Current indicator lights, and of course, the control module itself.

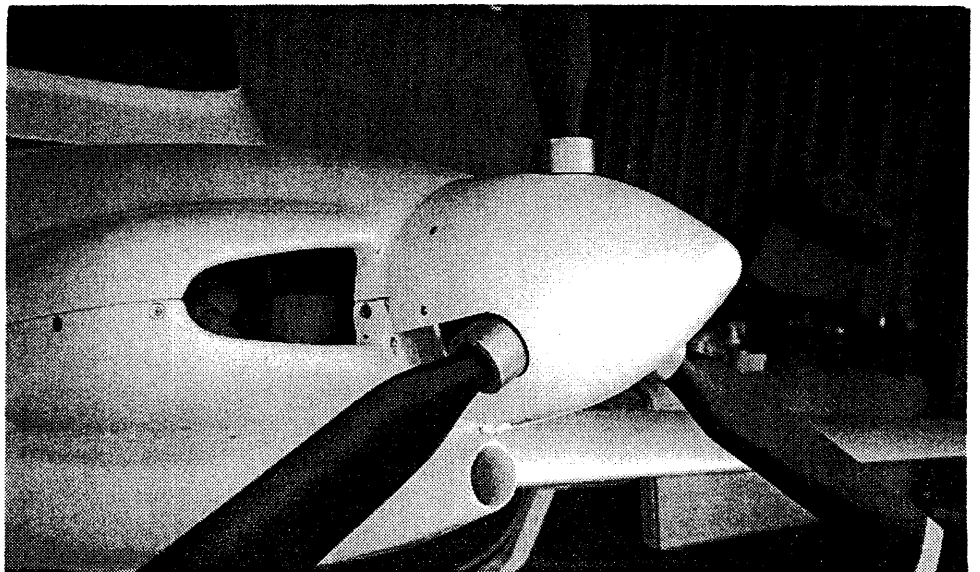
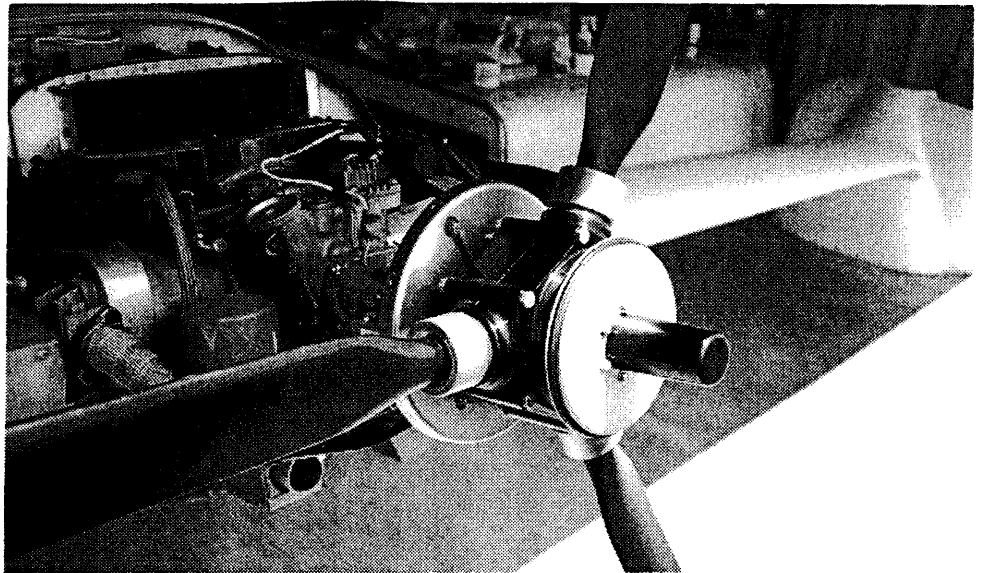
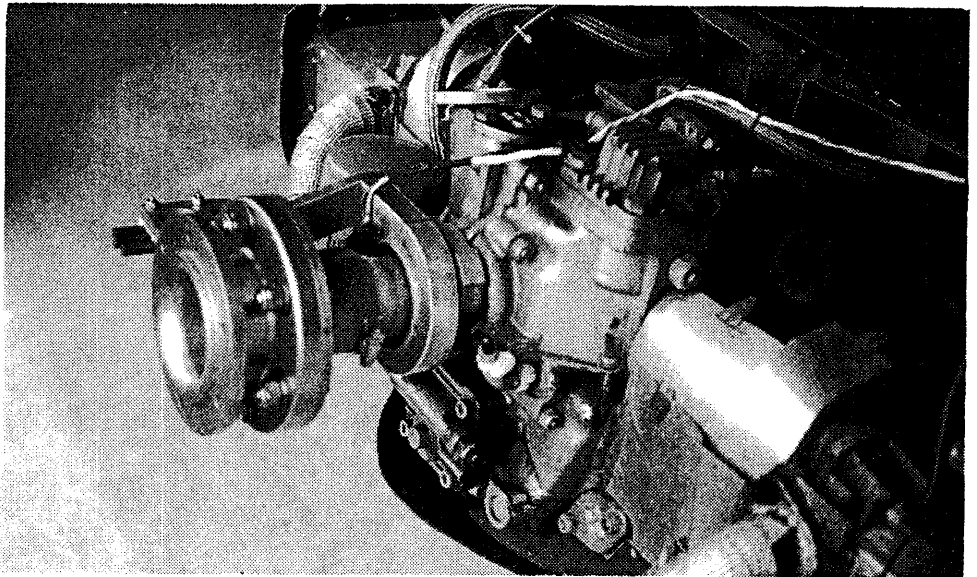
The control module (which incidentally also provides an audio alarm output, in addition to the Over Current indicator light output) has two speed control outputs: normal speed applies plus or minus 6.3V to the prop motor; high speed applies plus or minus 12V to double the blade pitch rate-of-change. Having tried both, mated to an engine of very modest power, I doubt that I'll be using the high speed mode much (if ever).

For N107MB, I took the opportunity to install a Menzimer control stick grip to apply the appropriate signals for controlling both the NSI CAP, as well as a Menzimer servo for elevator trim control. Wiring the stick grip switches required a little "interpolations of the schematic though, because, while the servo requires switched 12V, the prop control module inputs are pulled to ground.

● Summary

The NSI Cockpit Adjustable Propeller is a well engineered, easily installed unit, that looks good and appears to have a good reputation for reliability. The "hands-free" operation of stick grip-mounted control switches is *wonderful*. Flat pitch approaches (with no speed brakes) greatly improve the descent profile, and of course, climb rates, cruise speeds and fuel burn have all been improved as well. NSI produces a terrific product, but for those considering a purchase, I do have one, fairly significant caveat: NSI-quoted delivery dates are routinely "optimistic" by months (in my case, delivery was promised in three

continued on page 10



HAPI ALTERNATOR - MAGNET RING FAILURE

As a standard procedure during my walk around I pull the engine through 4 blades to prime the cylinders (Posa super carb). During one walk around I noticed a very faint rubbing sound. It occurred at one specific position in the rotation and was finally isolated to be coming from the rear of the engine in the accessory case area.

Removal of the engine from the accessory case identified the cause. One of the magnet covers in the alternator magnet ring was showing signs of rubbing (Photo 1). Following a detailed inspection it was found that at least two of the magnet covers were loose. Since this condition was not repairable the magnet ring was removed from flywheel.

Once removed it was discovered that approximately half of the magnets were very badly cracked.

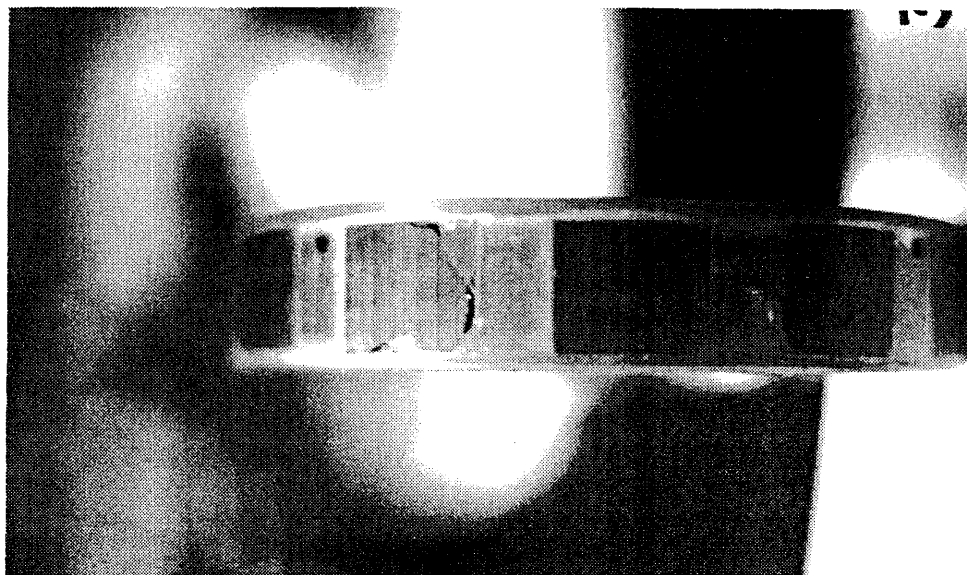
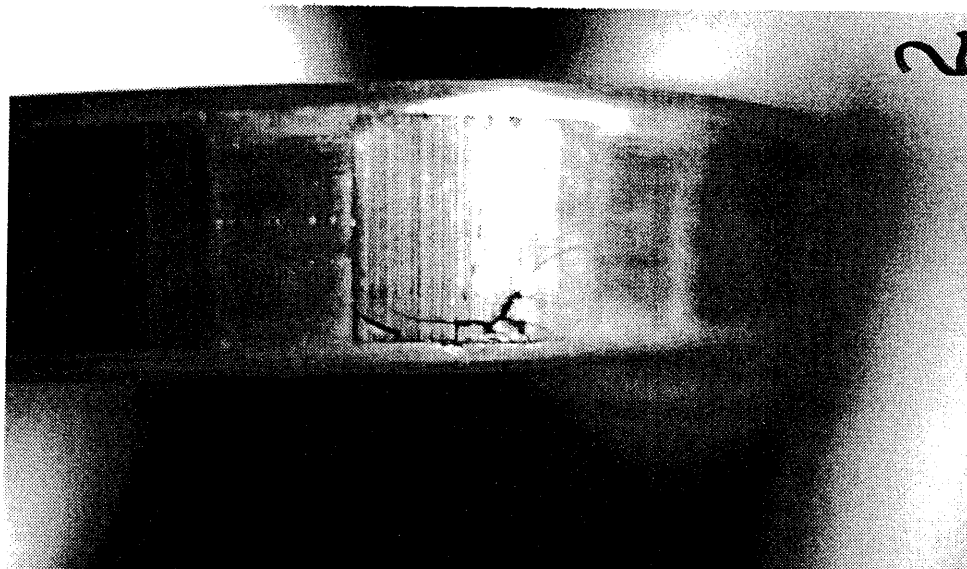
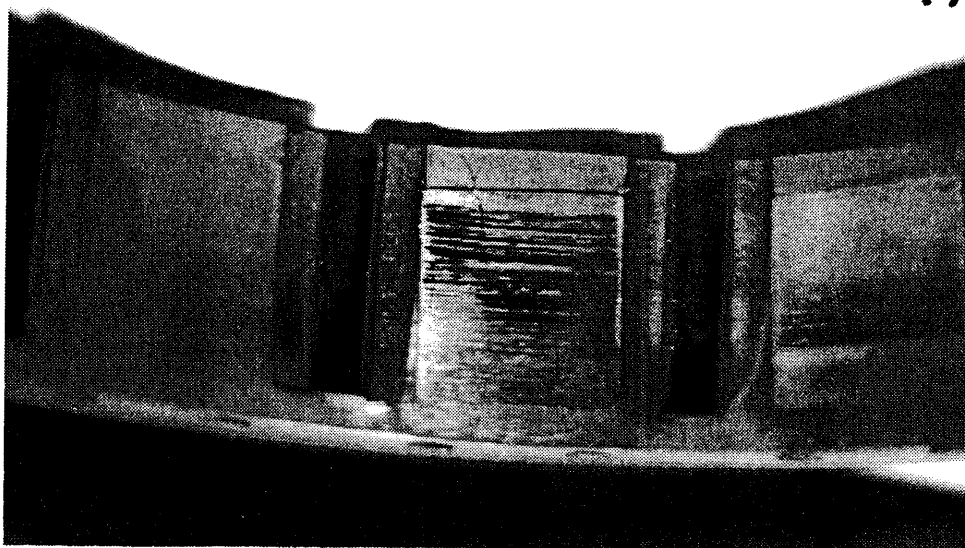
Photos 2 + 3 show some of the more severe cracking. The engine/alternator had approx 330 hours. It may be that the colder climate in Canada contributed to the failure.

The good news was I found the problem before a magnet cap become free which could have destroyed the accessory case or jammed the engine. The bad news - there are no sources for replacements. The built-in alternator sold by Great Plains is not compatible with the Hapi flywheel and case.

The only solution was to design a new alternator installation. Basically, a Suzuki alternator (55 amp and 6.5 lb) was installed to be direct driven off the crank. Full details are provided in a separate article.

I would strongly recommend that everyone get into the habit of pulling the blades through during walk around. This will confirm your engine compression and if you listen carefully you may detect a minor problem before it becomes a force landing.

We'll have the the full article on my alternator installation in the next issue of DBFN. - **Ted Givins, PEngC-GGEM**



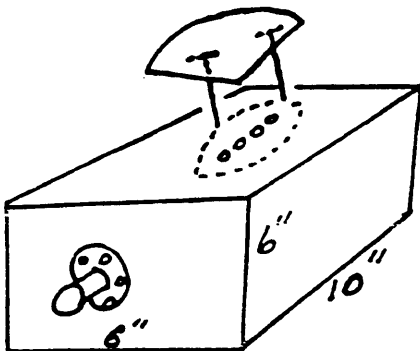
How To Make Plexiglas Wing Tip Lenses

As promised, here are the DIRECTIONS FOR VACUUM FORMING THE WING TIP PLEXIGLASS LENSES..

This is the method I used to form wing tip lenses. To use the vacuum method of forming Plexiglas lenses, I wish to stress the following items:

1. Make an AIRTIGHT vacuum box.
2. Leave a slight space between the male mold and the top surface of the vacuum box.
3. Wooden molds need an epoxy finish placed on them.
4. Use a NEW vacuum bag in mama's vacuum cleaner.
5. Get the Plexiglas to the correct temperature without creating air bubbles in the glass.
6. Place the vacuum chamber close to the oven.
7. Have some one else turn on the vacuum cleaner motor when ready.

● BASIC CONSTRUCTION OF VACUUM CHAMBER:



It can be made from 1/2" plywood, or 1" x 6", 1" x 8", or 1" x 10" stock. Size of box depends on how large the lens will be. **Make the box volume as small as possible.** Don't forget, your

vacuum will have to take all the air OUT. Figure about two inches on all sides of the lens. Size about 6" high x 6" wide x 10" long should be about right. 7/64" holes will be drilled in a specific pattern into the top of the box after the outline of the male mold is made. Obtain a threaded PVC pipe to a 1-1/2" hose clamp end, and metal pipe flange. Trace the outline of the flange's inside diameter as low as possible (on the chamber's end) and cut out this hole

Use caulking compound as a gasket and mount the flange to the chamber. Remember, the frames (holding the Plexiglas) will have to seal off the top of the vacuum chamber and not hit the flange. Caulk all joints on the **outside**.

● MAKING THE FEMALE MOLD:

There are two configurations which will make it difficult to make a female mold:

- (a) Wing tip glassed and painted or - unpainted;
- (b) Wing tip cutout and ready for some type of electronic device.

Approximate the size of the Plexiglas lens and extend each dimension by one inch. Use a mold release or similar product on the surface. Make up 4 cups of Plaster Of Paris, of fairly firm consistency. Lay the plaster on the top and bottom of the wing tip. If the wing is standing on the trailing edge you can see it will be easier to lay the plaster. Might want to make a cardboard dam, 1/2. high, which can be duct taped to the wing surface. Allow the plaster to cure. I like to leave them over-

night so all the moisture gets out of the plaster. When cured, the plaster will be white and brittle. Do both wing tips in the same manner. When you take off this female mold, be careful not to break it. If it does break cleanly, it can be FiveMinute epoxied, but with a little more difficulty. If you used the cardboard dams, the edges should be fairly straight. If not, don't worry about it. Check the inside of the mold for air bubble holes. If there are some, fill them with petroleum jelly by smearing it all over the inside of the mold.

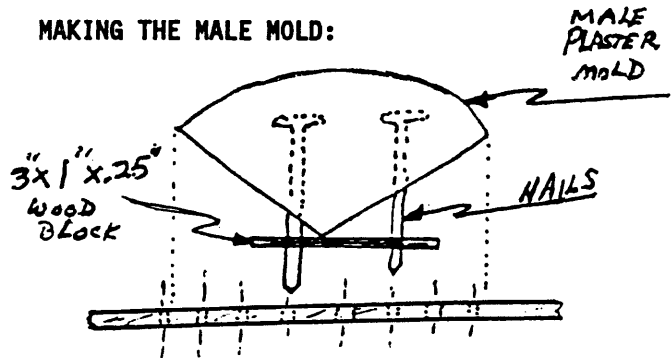
● IF YOUR WING TIP IS ALREADY CUT OUT FOR AN ELECTRONIC DEVICE:

(1) You still have the foam chunk you cut out, make a female mold as described above, but first use Five-Minute epoxy to glue on some scrap foam to the exposed foam sides and shape. Use plaster to fill in the raw foam and sand for a smooth finish. Use petroleum jelly and proceed as described above.

● IF YOU DON'T HAVE THE CUTOUT CHUNK:

Use Five-Minute epoxy or nails to secure a block of foam to the cutout area and sand to shape. Add a 2" wide scrap foam piece to the mating surfaces and sand for a smooth finish. Use petroleum jelly and proceed as described.

MAKING THE MALE MOLD:



Materials needed: Two 16 penny common nails, one 3" x 1" x 0.25" wood strip, enough plaster to fill one female mold, two cardboard dams for the ends of the mold, and duct tape.

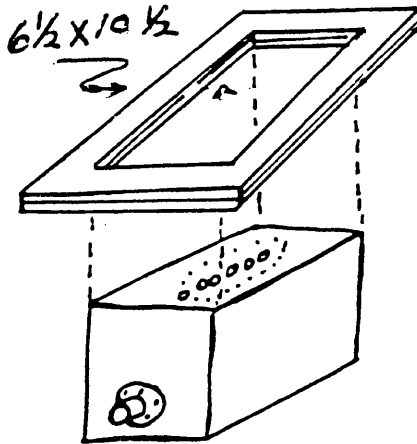
Square off the ends of the mold, and carefully attach the cardboard dams with duct tape, but be sure to leave a flap opening where the two pieces of cardboard meet to pour the plaster into the mold.

Next position the 3" x 1" x 0.25. wood strip lengthwise on the top of the vacuum chamber, centered as well as possible. Drill two holes (for the nails), one hole 1/2" from each end of the wood strip. Drill right through the strip and the top of the vacuum chamber. Now drill holes for the air to be sucked through the wood strip into the vacuum chamber. I drilled through the strip's center, plus three holes (3/16") on either side of center.

Push the two nails through the wood strip to that the HEADS are about 1.5" above the strip. The HEADS will be pushed into the wet plaster of the male mold. (see picture). Make holes in the cardboard dams for the nails. Lightly grease the inside of the female mold with petroleum jelly. Now make up a thick, lumpless but pourable mix of plaster. Lift the cardboard dam flap and fill the female mold right up to the top. Don't worry about how pretty it looks. Position the wooden strip with the nail heads centered fore and aft. Inbed the nail heads into the wet plaster and let cure over a few days to allow ALL the moisture to evaporate, then break the female mold. The two nails should line up with the holes in the vacuum box. Fill any air bubble holes with plaster, sand to smooth surface. Note: the smoother the surface the better the lens will look.

● **VACUUM CHAMBER AIR HOLES:**

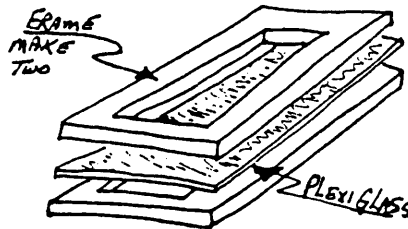
Place the cured male mold nails into the two holes in the chamber top. Trace the outline of the mold onto the



chamber top and drill several 1/8" holes within the outline.

● **MAKING THE PLEXIGLAS FRAMES:**

PLEXIGLAS FRAMES:



Make two frames from .5" plywood as shown. Keep in mind that the frame/Plexiglas will be pushed down over the mold and pressed on the top of the box to shut off the air and help seal the vacuum. The inside cutout should be fairly close to the outside dimension of the vacuum chamber PLUS the thickness of the Plexiglas. Because drilling holes in the glass might crack the whole piece, I used four "C" clamps to hold

the Plexiglas and the two frames together. This also makes four "legs" for the frame to stand on when in the oven heating up. When the frame is pulled over the mold, the Plexiglas seems to hold better and not tear like it would if holes were drilled through the Plexiglas. (NOTE: Plexiglas cannot stand the heat generated by using a high speed twist drill. there are special Plexiglas bits available, or you can use a Dremmel tool successfully...)

● **MAMA'S OVEN:**

Important items to keep in mind while heating the Plexiglas: (1) how fast the glass "liquefies". (2) Overheating will increase the chance for air bubbles to develop within the glass. (3) When to extract the glass from the oven. Set the oven to bake and preheat at 250.F. Place a large cookie tray on the middle rack with enough room to place the "C" clamped frame on the tray. DON'T EXPOSE THE PLEXIGLAS TO DIRECT HEAT! Always use indirect heat. Place the Glass/frame in the oven for about 1.5 minutes and WATCH IT. When it sags about .5" in the middle and NO AIR BUBBLES appear, it is ready to pull over the mold. Use gloves to take out the frame, THE "C" CLAMPS ARE HOT! Be careful not to touch the Plexiglas to anything when moving it to the mold.

● **THE BIG PULL:**

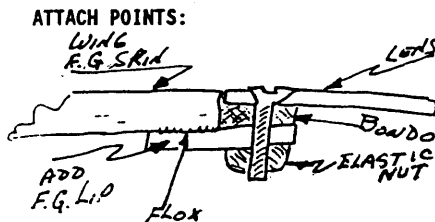
Have a second person ready with the vacuum switch. Place the frame over the mold and push down over it till the Plexiglas closes down over the top chamber surface to form a second chamber. At this point, the vacuum should be turned on and left on. If you have an air tight chamber and correct temperature, the glass should be drawn down on the top and be drawn around the male plug. Don't be in a hurry. Wait till the Plexiglas cools to the touch. You should be able to lift the lens off of

the mold, still in the frame, without having to cut it off. Be careful here in cutting the lens to proper dimensions. Now you know why the extra inch was added to the mold! Plexiglas will crack if not handled properly. Use very fine cutting tools, like a Jeweler's saw or a fine abrasive wheel.

● CUT TO SIZE

Determine how large an opening you want in the wing tip. This obviously will be determined by the electronics placed in the wing or canard. Once the size of the opening is determined, place the new lens over the hole and use the measurements by 1/2" all the way around. Cut the lens to size with a cutting wheel.

● ATTACH POINTS:



There are several ways to attach the lens to the fiberglass surface, i.e. undercut the fiberglass and by using the piece of the surface just removed. Cut about a 1/2" strip and flex it to the underside of the fiberglass skin. Cut the Plexiglas lens for close fit, drill attach holes in the top and bottom corners. Use rivets (AN426A 3-3) to attach the corner elastic insert anchor nut (22NA5-82) to the underside of the fiberglass skin. Make sure the rivet heads are flush with the fiberglass skin. Don't worry about a flush alignment or the gap (should there be any) between

the two surfaces of the skin and lens. To get around this mismatch, carefully place masking tape on the inside edges of the lens so the Bondo will not touch it. Next, place loose fitting and lubricated, round match sticks into the plastic nuts in order not to clog the elastic nut threads. They should be easy to push through the plastic nut when pressed down by the lens. Mix up some Bondo and generously coat the lip where the lens will lay. Place in place till it sets up. Remove the lens, remove the match sticks and sand to the proper contoured Trim the excess from the inside lip. The fit should be almost perfect with hardly any gap and a very smooth transition from fiberglass skin to lens surface.

Rene DeLathauer
Phoenix, Arizona

Article originally submitted to "Dragonfiles".

● OPTION "B"

About five years ago I purchased wing tip lenses from Aircraft Windshield out of California. I asked for some for a Dragonfly. If you'll look at all the Lancair's, Galsair's etc. They are all pretty much the same. Spudley

Aircraft Windshield Company
10871 Kyle Street
Los Alamitos, California 90720
Phone (560) 430-8108
Fax (560) 598-0716

NSI Adjustable continued

months, and arrived in 10+). I've talked to a number of other owners who have experienced similar, and sometimes worse delays. For me, the result was worth the wait. My advise: be prepared for the wait, and DO NOT pay the whole bill up front.

Safe flying !!

Jim Bender
San Diego, California

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For Sale: Prefab Dragonfly Kit - \$5,500.00. Fuselage assembled with tail fin, rudder, fire wall, motor mount angles, upper-lower seat back, intercostal-tail bulkheads, fuel tank & consoles installed. Pre-cut canard and wing cores, fiberglass cloth, some carbon fiber, engine cowling, Mark I wheel pants, some hardware. Wayne Ulvestad, Volga, SD work (605) 627-9291 home (605) 627-5365

FOR SALE: Mark II Dragonfly, HAPI 82hp, Ellison Carb, Dual electronic, Steel legs, Cleveland's, Full Panel, Vacuum system, Engine driven fuel pump + Standby, Aux. fuel tank, King GPS + Radio + Transponder, Narco Nav/Com, CHT/ELT, Reflexors, and much more. A real <10>, Hangared East Coast, Foto cover newsletter 69, \$ 16,500, Phil Williams 2090 Joy Creek Lane, Henderson, Nevada 89012 (702) 269-5725 (73-74)

For Sale: Dragonfly Mark II, 128 TTSN, 20 STOH, 1835 HAPI engine, dual ignition, new carburetor, new tires, new brake and fuel lines, new automotive battery, micrometer throttle control, basic instruments plus portable nav/Com, no damage history, always Hangared.

Continued on next page

"THE CLASSIFIEDS" Continued

Rated a 9 in and out, \$12,500, (864) 458-1887 or (864) 942-0025 after 5:30 p.m. EST. (73 & 74)

For Sale: Dragonfly Mark I, 68 HP Limbach engine with mechanical fuel pump, Sterba Prop, 4 gallon header tank, forward hinged canopy, Hurst/Airheart disk brakes, 5:00 X 6" tires, Whelan strobes, Escort Nav/Com, Loran, Elec. turn coordinator & R.O.C., True airspeed and chronometer. Will only sell to experienced DF pilot. Make reasonable off and/or will consider for Ultralight, boat or travel trailer. Ron Price, Schaumburg, IL (847) 925-9251 (73+74)

N4422K is still for sale! This well constructed bird has been flown about 69 hours, and needs only fairly minor work to get back in the air. Asking \$8,900 but must sell soon, so all serious offers will be considered. For more information, you can call John at (415) 604 - 5384 or send e-mail to jbnell@mail.arc.nasa.gov (73)

For Sale: Dragonfly MK II, 90% complete. Everything to finish airframe included. Hoop gear mod completed with Cleveland's and VFR instruments. \$6500.00 Must sell 616-343-6990 (73)

For Sale: 1991 Dragonfly Mark II, N64TM, VW 2165, 471 HRS TTAF, 014 HRS STOH, 3 blade Warp drive prop, Terra Com, Mode C, '94 Best Overall Dragonfly. Bill Masons' original DF \$16,500 OBO (or best offer) (512)-749-4230 (73)

For Sale: VW Type IV engine parts: engine case and bolts, connecting rods (2.0 liter) and crankshaft (71 mm), rebuilt heads and hardware, flywheel, pushrods, oil pump, oil cooler, oil filter bracket, plus other parts. Call Steve at (308) 485-4764

For Sale: New fully assembled Dragonfly -MK I with Com & Loran. 2 hrs. flying time, Recently A & P inspected. Engine 7 hours, new brakes, carbon fiber spar. (770) 886-7707 \$13,500.00 (73)

Inboard Mark II "Hoop Style" Gear Plans - Full size hoop gear template drawings for making the mold and instructions on how to mount to the fuselage. \$14.00 (\$18.00 outside of U.S.) Mail your checks to: Bill Spornitz, 1112 East Layton Drive, Olathe, Kansas 66061-2936

Wanted: I'm looking for a pair of "un-used" Mark I wheel fairing halves from a Task Pre-fab kit. Also looking for a canard bottom fairing piece. Must be reasonably priced. Ask for Mark Carroll at (502) 759-3135 work or (502) 759-4740 home

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: Dragonfly Mark 1 kit w/HAPI 1835cc dual electronic ignition. many extras. Very close to completion. At least 85% More details available on-line at the Dragonfly web page. Call after 5:00 PM EST 207-324-6072 \$9,500.00

"New Release" 1997 "Field of Dreams" OTTAWA FLY-IN VIDEO: Over 51/2 hours of workshops, interviews, Fly-bys and the Awards Banquet. VHS. \$26.00 (FREE SHIPPING). DBFN INDEX: 84 pages, 8-1/2x11", spiral bound. Index of ALL DBFN newsletters to date, sorted by Subject, Author, Type and Issue #. Over 5000 entries. \$15.00 (FREE SHIPPING). Purchase both for \$40.00 and receive a Free DFLY Cap Checks: Stewart Instruments.; P.O. Box 11929; Prescott, AZ 86304 MC or VISA: (520) 778-6988 <73-78>

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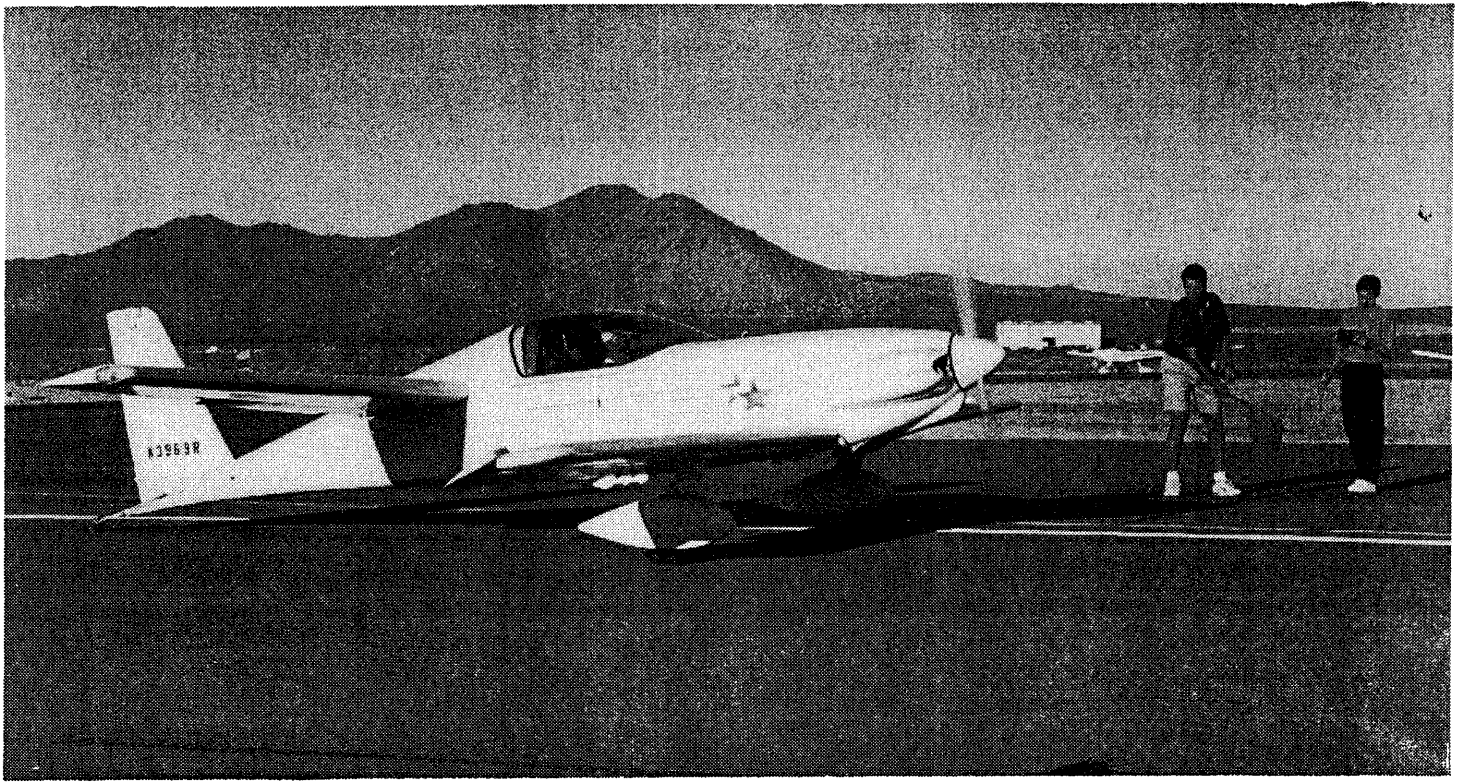
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24 hour Phone & Fax

1-913-397-0518

E-mail DBFNSPUD@AOL.COM



***That Nate "Racing" Rambo getting the green
flag at this years Copperstate Dash!***

(More on this event in the next issue of DBFN)

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The Official Voice of Dragonflyer All Over The World

Bill "Spud" Spornitz - Editor/Publisher

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