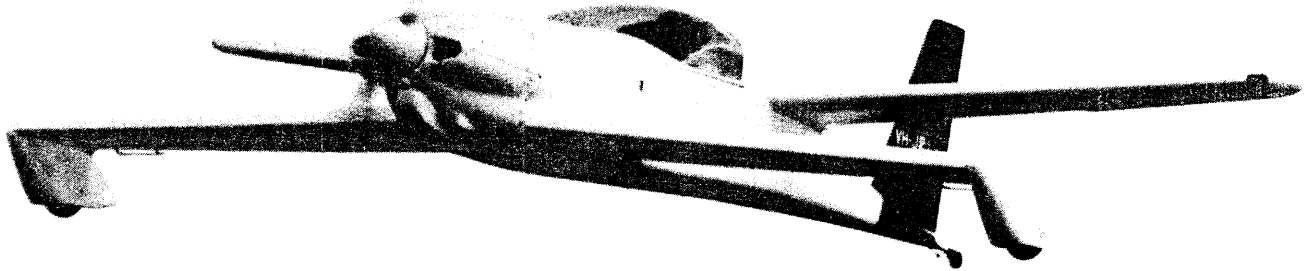


DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICAL VOICE OF DRAGONFLYERS ALL OVER THE WORLD

VOLUME 45

JANUARY - FEBRUARY 1993



DR. ROBIN JELLIFEE OF N.S.W., AUSTRALIA

Hello Spud

Please find enclosed a photo of my Dragonfly when it was a Mark I. I have some comments I'd like to share with our readers.

Looking at the wingtip wheel pants of my Mark I, which are now on the workshop. I note that the terrible porposing which destroyed the prop on three occasions, may have been an or yet indescribable effects on the aerodynamics at that critical time. The front of the wheel housing has been scraped away. My opinion of the canards reaction, is that it not only flexes, but also twists forward, giving decreased lift, and then springs back to give a momentary increased angle of attack and hence more lift. or it gets into the air again. This twisting makes the porpising more pronounced. What

do the rest of the Dragonfly buffs think about this theory? I'd like to hear everyone's opinion. Anyhow I must not recommend not to build the Mark I version. I am currently changing over to a Mark II now and I hope this cures it's bad landing habits.

We have very stringent C.A.A. rules here in Australia and cooling be within the approved limits. At Max. angle of climb, i.e. we are told to maintain a climb at 72 mph with full load (gross) at a air temp of 100 F degrees. The original cowling and baffling did not allow sufficient cooling at this aggressive rate of climb. After trying all sorts of exhaust devices such as undercowling flaps and even Beech Debonair slits <<. I took a hacksaw and raised the top of the air intake by 2 inches - no more problem!

Another C.A.A. requirement was to be able to climb at 3% with full load - with the 1835cc motor it would only make 7%. I purchased an Australian 2100cc VW conversion and now can easily achieve 9%. Right after I finished up this engine change the C.A.A. reduced the requirement to only 6%!!!!!! Sounds like my luck - Spud

After I complete my conversion I'll write again.

Keep up the good work

Yours sincerely

Dr. Robin Jellifee

Coffs Harbour, N.S.W.

DELAM / DISBOND FOLLOW-UP

Back in DBFN # 41 (page 5) we had reprinted an article on structural degradation of foam cores that was published in "The Canard Pusher" newsletter put out by the Rutan bunch out of Mojave. To follow is a follow-up article going into more detail on the subject. I consider these gentlemen to be the "Pro's from Jersey" on the subject - Spud

From: Mike Melvill.

So far, we have received only one letter from a builder with a problem in this area. This aircraft is a Q-2 and, normally, we would not presume to comment on some else's design but this particular problem could so easily have resulted in an in-flight structural failure that we felt morally obligated to say something about it.

During a landing that the pilot said was not any harder than other landings he had made, the canard (also the landing gear since the main wheels are mounted on the tips of the canard) failed. The top skin just inboard of the fuselage side, buckled and the canard folded up.. Subsequent sectioning of this area showed a large percentage of foam had "melted". This builder/pilot suspected that this melting damage was caused by excessive heat from the sun while tied down outside in Florida. He included three photographs of the section of the damaged canard.

We at RAF (Rutan Aircraft Factory) have not seen this canard, only the photo's, but we have a different opinion. We believe this damage may have been caused by fuel leaking out of the fuel tank (above the canard) and seeping through tiny pinholes in the top skin and melting the foam. Styrofoam, be it blue or orange, fabrication billets or flotation billets, will melt when it comes in contact with any fuel, solvent, etc. Put

a scrap of foam in a container of fuel and, in a short period of time, the foam will totally disappear. Pour a little fuel, avgas or mogas onto a block of foam and you will be amazed at the damage. The three photos supplied to us by this Q-2 builder/pilot, in our opinion, show classic fuel or solvent damage. One of Scaled Composites employees who has built a Quickie and a Q-2 informed us that the fuel tank is, in fact, mounted directly over the canard and that he had heard of this type of foam damage before.

All of the RAF designs have a fuel-proof barrier between fuel and styrofoam. This barrier can be a sandwich panel of glass/PVC foam/glass or glass/urethane foam (Clark)/glass, but RAF feels it is absolutely essential to completely protect any Styrofoam core structure from exposure to fuel or any kind of solvent. In some cases, even the fumes of fuel or a solvent such as MEK or acetone can degrade a foam core to the point of causing a possible structural failure.

We have written a letter to this particular Q-2 owner and will be passing this information on to Jack Cox, editor of Sport Aviation. We are not criticizing anyone, it's just that this kind of damage is many times invisible and may not easily be spotted in a normal preflight. Any foam core, glass structure, while perfectly safe with an undamaged core, can become prone to catastrophic failure if the foam core is damaged. This kind of hidden damage could cause a serious accident. This is our only reason to bring this to everyone's attention.

To protect yourself from this kind of failure, it is critically important to prevent fuel from coming into contact with glass structure that has a Styrofoam core (blue or orange). The same goes for any solvent, be it MEK, acetone, Prep-Sol, Acryklean, or whatever.

To check your structure for possible delamination or dis-bonds, move the airplane into the sun or, at least, to where it is warm. This will cause any disbonded areas to bubble up (bulge) due to the air or gas in the void heating up and expanding. Carefully tap the entire area using a quarter (25-cent piece). Listen carefully for the telltale "hollow" sound when you tap an area that is disbonded or delaminated as opposed to the solid "click" sound of a normal structure. By carefully tapping and using a felt tip pen to mark the perimeter of the damaged area, you can outline any area that need repair, then you can repair these areas, in most cases, simply by injecting a mixture of epoxy and micro-ballons, using a syringe. You will have to drill a number of small holes (to closely fit the needle) and inject the epoxy mix into the hole until it comes out of the adjacent holes. Keep moving the syringe around until forcing it into any hole will make it come out of the holes closest to that one. Now, move the airplane out of the sun into a cooler area. Place some plastic (Visqueen) over the area, cover that with a piece of flexible material (.032 aluminum) and place a lead shot bag on top of that. As soon as the epoxy in the cup has kicked off, remove the

lead shot bag, the aluminum and the plastic. Carefully scrape the excess epoxy off the paint using a "plastic" putty knife. After a full cure, you can carefully polish this area and repaint. Sometimes the visual damage is so little it does not require repainting. Recheck the area by tapping with a quarter to assure that you completely filled all void areas. - Thanks, **Mike Melvill - The Rutan Group.**

I reprinted this article for several reasons; First off I know we do not have a fuel tank over the canard and our fuselage/tank foam is Clark urethane foam, but I have seen several different styles of header tanks in the area behind the firewall which is over the canard. Any kind of leakage could be a definite problem. 2nd, There are some people that are "mopping down" there canard/wings prior to painting with Mek, Acetone or paint thinner. 3rd, RAF has a excellent inspection and repair procedure that we all can use. I'd like to thank Mike Melvill of RAF for giving us permission to reprint this article and any other "Canard Pusher" newsletter information that might be of merit to the Dragonfly community. - Spud

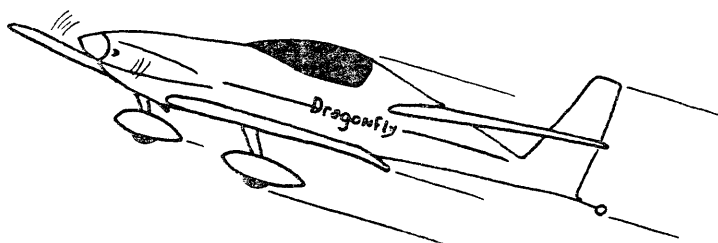
1993 CALENDAR

● April 18-24, 1993 EAA Sun N' Fun - Lakeland, Florida

● June 11,12,13, 1993 National Gathering for Canard Type Airplanes Johnson County Industrial Airport, Olathe, Kansas Contact: Terry Yake. 8904 West 116th Terrace, Overland Park, KS 66210-1963 (913) 451-8904

● July 29-August 4, 1993 EAA Annual Convention and Fly-in, Oshkosh, Wisc

● September 3,4,5, 1993 3rd Annual Dragonfly/Quickie/Q-2/Q-200 Fly-in, Ottawa, Kansas.

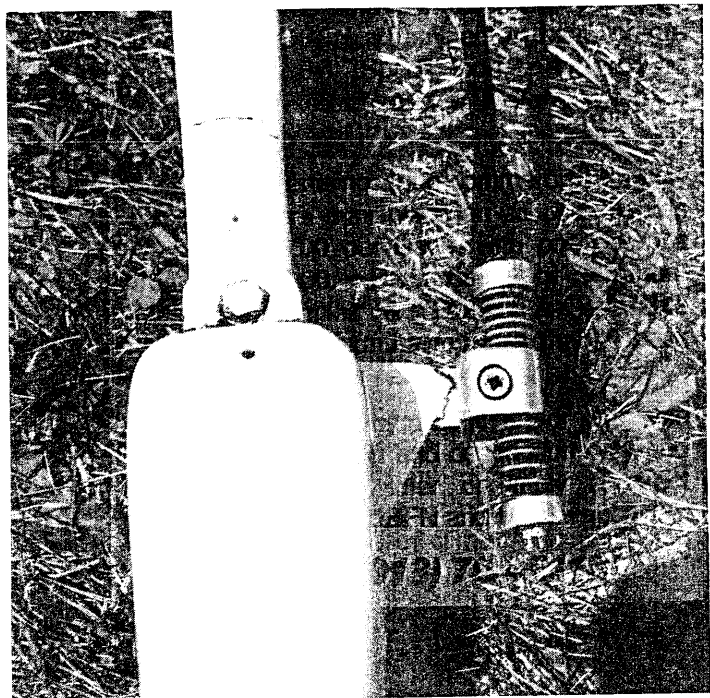
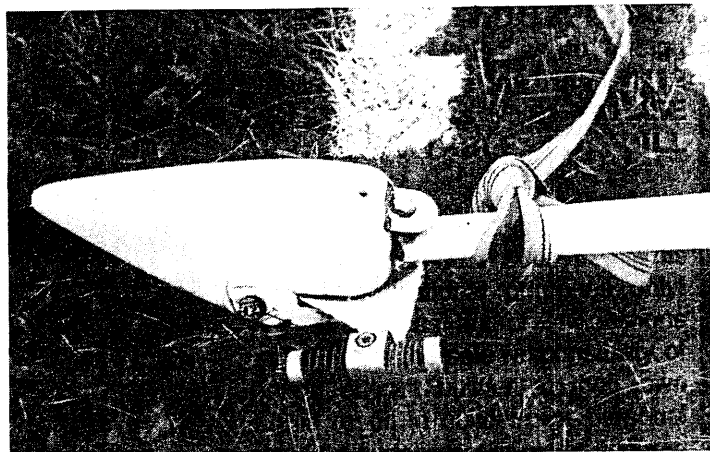


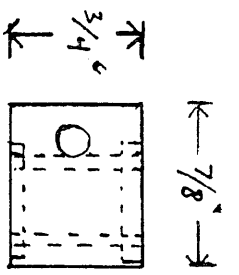
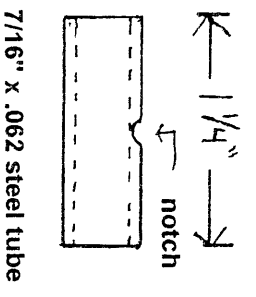
MELESKI TAIL WHEEL ASSEMBLY

Hi Spudley

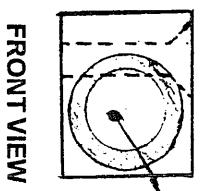
Here are a couple of photos and the drawing for my Dragonfly Tiller Arm Damper Spring Assembly. If you plan on using a tiller arm this is one of the best you can do for ground control. It removes (dampens) the darting effects that the tail wheel picks up from imperfections in the runway/taxiways and it also looks good. The pictures and the drawings are self-explanatory. Stan Meleski

DRAWING ON NEXT PAGE



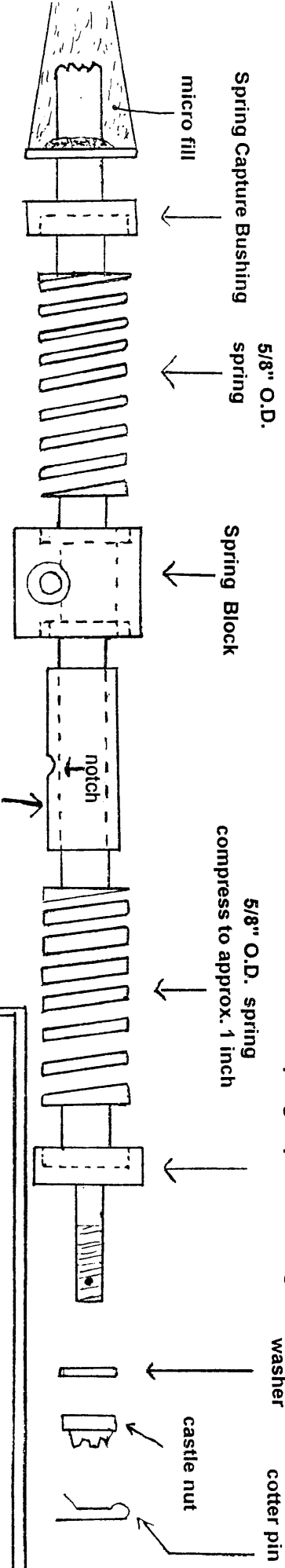
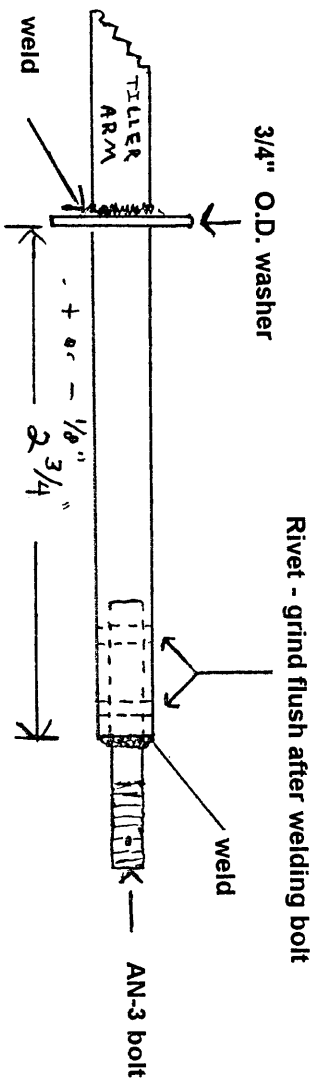
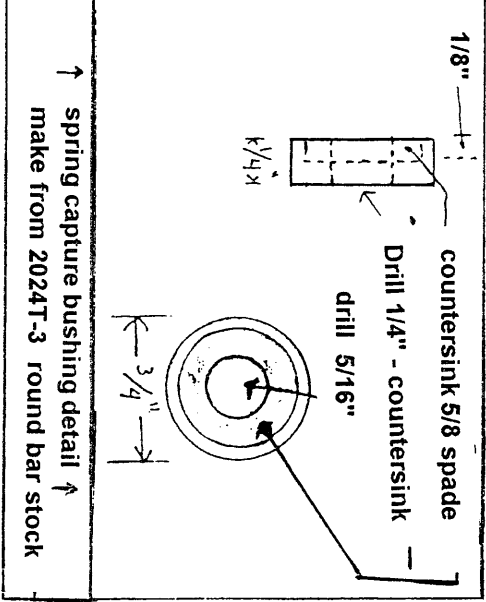


make from 1" x 3/4" 2024T-3



Drill 3/16" - counter sink for flush head bolt

Drill 1/4" and countersink with 5/8" spade bit 1/8" into material. Then drill 7/16" to accept sleeve. Countersink tail wheel bolt hole to accept flush head bolt. Be sure to drill hole so as to capture notch in sleeve.



Drawing shown is for educational purposes only and is what is used on experimental Dragonfly N189SM. It is offered only as an exchange of information with other builders. Use on any other aircraft is solely at the discretion of the user. S.M.

Dragonfly Tiller Arm Spring Assembly
Design by: J.R. Dragon Driver
Drawing by: Stan Meleski

DRAGONFLY HEATER

Here it is January 17, 1993 and its 7 degrees here in Kansas. Well this being the January/February issue I thought this article sent in by Len Griffin was rather "Timely". To follow is the late Del Bradley's cockpit heating system that Len Griffin of Silver City, New Mexico now owns. Most people feel more comfortable pulling the heat from the oil cooler/exchanger vs the exhaust manifold/muff because of the reduced chance of pulling any carbon monoxide from a leaking exhaust system. - Spud

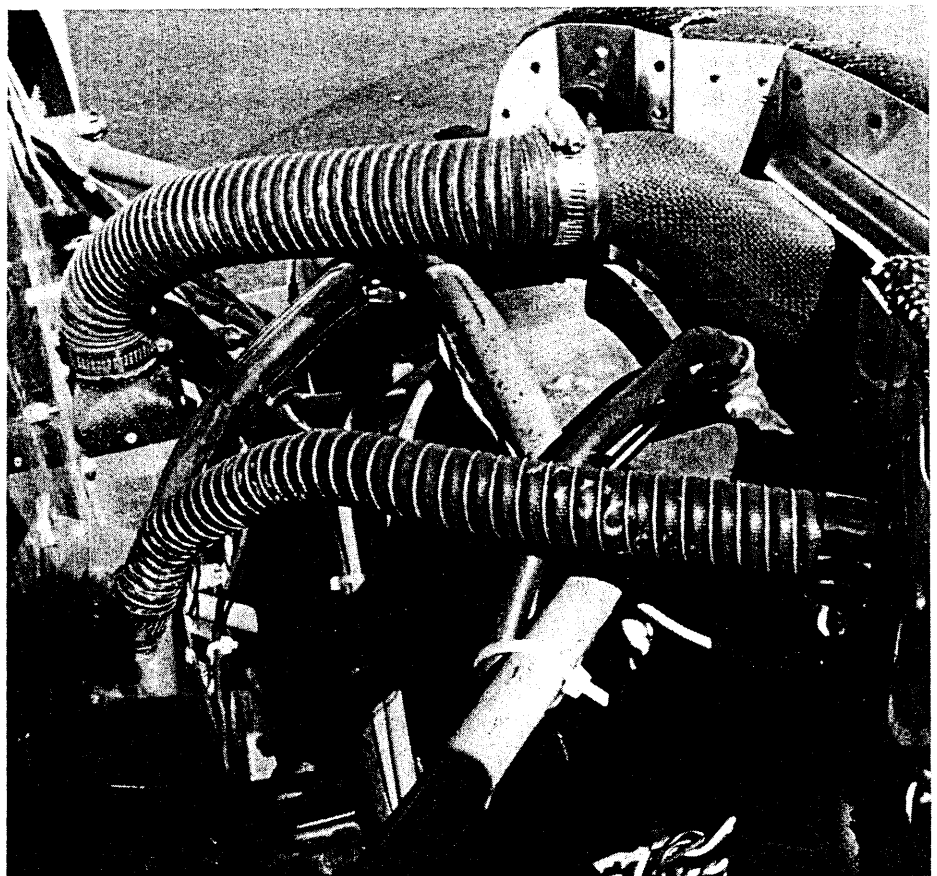
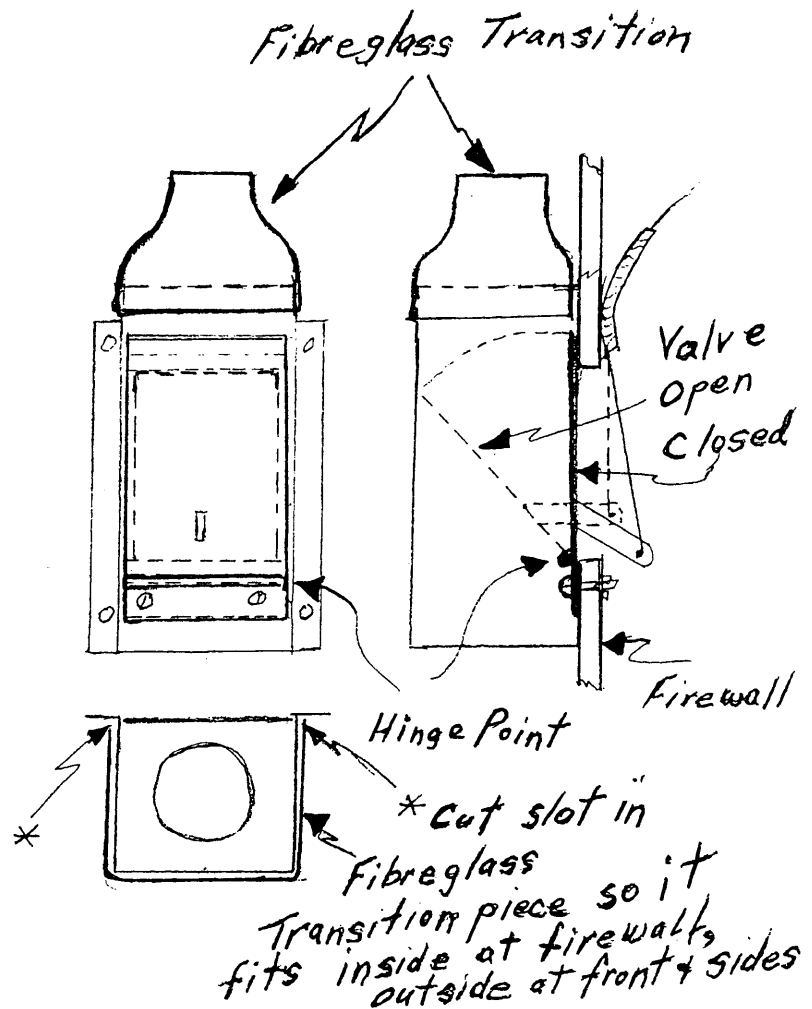
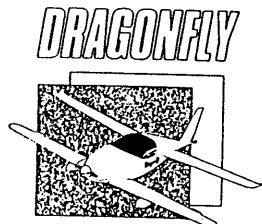
Hi Spud

Enclosed are photo's of Del's oil cooler cabin heat source. The fiberglass transition piece at the oil cooler end covers about half of the cooler outlet area. The cabin end is a simple three sided aluminum box with a closely fitted rectangular hinged valve which blocks off the opening through the firewall and allows free flow out the cowl bottom when closed and diverts to the cabin when open. Make your fiberglass transitions from the oil cooler and the transition to the cabin heat inlet valve out of blue foam. Shape it just the way you want it. Wrap with 2 plys of 6 or 10 oz. bi. After the epoxy has completely set, remove the blue foam by dissolving it with gasoline.

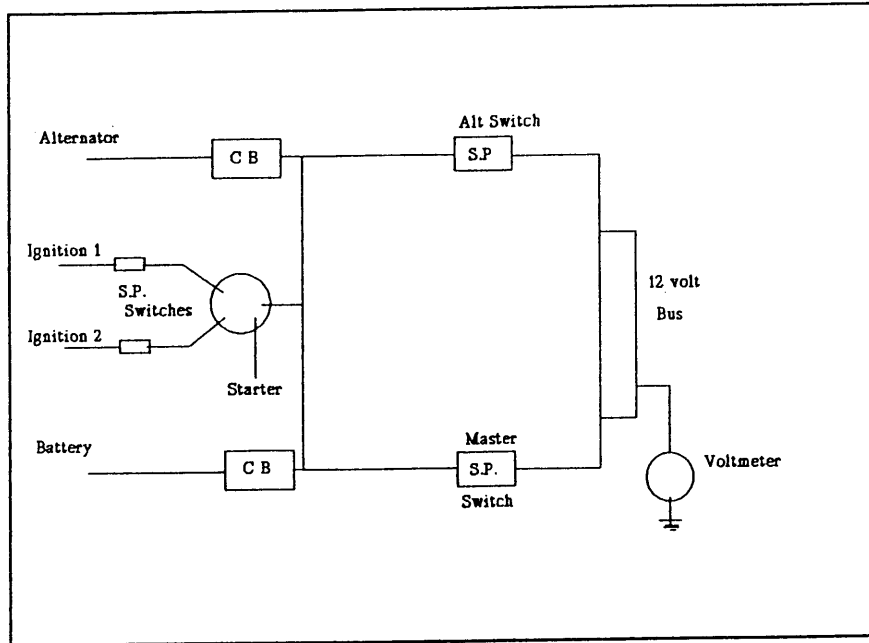
Best Regards

Len Griffin

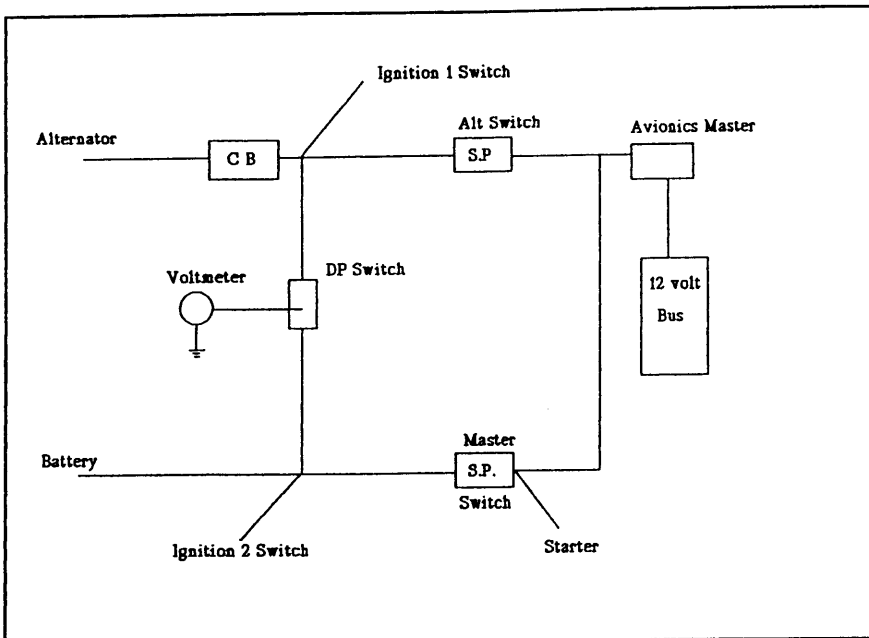
Silver City, New Mexico



TWO IGNITION SYSTEM WIRING OPTIONS



New wiring for C-GGEM with Sure Fire II Ignition.



Wiring as proposed by:

Griffin
2316 Johnson Rd
Silver City, NM 88061

Hello Everyone,

This schematic shows the changes I made after I had the ignition failure in 1991. I am much more comfortable with this system. My DF is now rebuilt except for the painting which we'll finish up this spring.

Notes: 1. With master and alternator switches off, the 12 volt bus is isolated and the battery & alternator voltage is provided to the ignition. Also the loss of either battery or alternator will not result in the loss of either ignition.

2. The ignition switch is a universal automotive switch rated for 30 amps.

3. Voltmeter reads voltage at 12 volt Bus:

- with both master and alternator switch on read total voltage:
- with master off read alternator voltage; and
- with alternator off read battery voltage.

Hope to see everyone at this upcoming years events. - Ted Givens - Orleans, Ontario, Canada

Hi Spud

I always thought Hapi's suggested 2P2T switches for master and alternator with their dual electronic was too complicated but I never got around to doing anything about it until I read Ted Given's story about his switch failure. Here is a wiring revision I came up with - result of my forced cogitation.

As you can see, 1P1T switches will do the job with greater redundancy. But because I am frugal (read that as CHEAP) I intend to use only one throw of the existing switches with legs in parallel. This will increase the amp capacity and reduce any local heating at the switch, as well as requiring only a minor wiring change (no new parts or relocation). I think this is about as redundant as we can get without adding a second alternator (still working on that !)

Len Griffin - Silver City, New Mexico



ADJUSTABLE CANOPY STRUTS

Hi Spud!

We have had quite a few people ask us about our canopy struts and how we installed the air valves. We had noticed over the years that these struts on cars loose there pressure sooner or later. Gene and I wanted to be able to vary this pressure and be able to keep it at the proper level without having to replace the entire strut.

The two struts that we use on our aircraft are the rear hatch struts from any 81 thru about 88 Ford Escort car or wagon. You may use the existing rod ends that they come stock with or you may turn the existing end off them with a lathe and thread the ends to accept a more compact aluminum rod end. One end is mounted in the longeron next to the instrument panel by flexing in a 1/2" dia. piece of aluminum round stock as a hard point while the other end is attached to an aluminum bracket bolted to the wood stiffener of the canopy frame.

These struts in stock form have way to much internal pressure and must be altered by adding an air valve. This process can be used on any metal bodied struts that you have in your aircraft now.

To install the air valve you must drill a hole in the body of the strut as close as possible to the end opposite of the shaft. Because of the extreme pressure inside you must put something over the strut so when the pressure is released by the drill bit the oil and/or air blast doesn't get you! Please remember to always wear safety glasses when doing any kind of machine work. Cover the strut where you want to install the air valve with a scrap piece of sheet metal (or thin plywood). Drill a 1/8"

inch hole thru the sheet metal and then into the strut where you want the air valve installed.

Go to your local automotive store and purchase two chrome mag wheel valve stems. These stems replace the conventional rubber valve stem and they are made of brass. We machined down the outside diameter of these to reduce their size and mass and put a small radius on the end to match the O.D. of the strut before

we placed them over their respective holes and sweat soldered them on (use acid core solder).

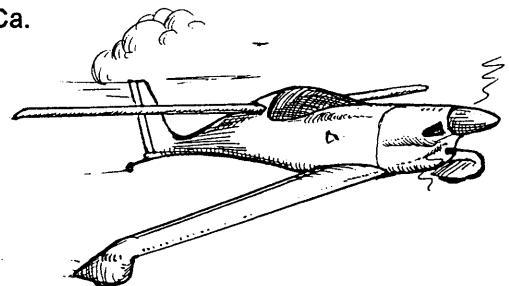
There is lubricating oil in the struts so the end being soldered should be kept higher to avoid contamination.

We use about 400 psi in each of our struts. You will have to find on of the FBO maintenance shop which has a strut pump for aircraft landing gear to, get this kind of pressure. If you need to bleed off some pressure after the struts are installed be very careful. Cover the valve core with an old rag

when you bleed of the pressure. Wear safety glasses because the high pressure and oil inside will coat both you and your instrument panel almost instantly if your not careful--believe me I know!

Guy Evans

Visalia, Ca.



LETTERS, LETTERS

Dear Spud.

It sure is great to have the newsletter in print again. I thought I would write you with some of my flying experiences with my Dragonfly.

As a low time Dragon-driver I need all the help I can get and enjoy reading about other Dragonfly builders and pilots experiences. Hopefully by sharing some of my experience might help some of the the others in the group.

Now a little about N114LP she had about 45 hours on her and hadn't flown in quite a while. She was built from plans S/N 085 by Leo Sheridan. I haven't been able to get in touch with him, but I have spoken by phone with her second owner. He scared me to death with tales of sudden engine stoppage during go rounds and finally a hose to a remote oil filter breaking in flight causing all the oil being pumped out. He made her back to the airport but the engine obviously needed to be overhauled. He sold her as is to owner #3. Owner #3 had the engine overhauled (finding surprisingly little damage) and flew it for 20 minutes total while holding the canopy closed with one hand. He also had problems with engine stoppage. He blamed it on the carburetor and devised an ingenious fix! He cut slots in the top of the cowling cheeks to fit a automotive VW intake manifold. Then he cut a hole in the top of the cowling for the carburetor flange and mounted a Solex VW carb on top. On top of that was a nice big automotive air cleaner which was for ground use only and was removed for flight. This was the way it was on his first and final flight he made (*I'd love to see a picture of that - Spud*). Since the header tank was now lower than the carb, he bypassed the header tank and ran a fuel line directly from the main tank to the carb with a electric fuel pump. Want to guess what failed when I started to flying it.....? Your right! the electric fuel pump, but by that time I had already rebuilt the cowling, repaired the canopy that the airport brats had broken and re-installed the original carburetor and manifold.

The engine was purring like a kitten. So against all of Rex Taylors advice I decided I couldn't afford to fly to Arizona to fly the Dragonfly he suggested and anyway it was a Mark II and mine is a Mark I. So after lots of taxi practice I decided to go a flying (poor folks, got poor ways).

The wind was blowing about 15 knots (not unusual for New Braunfels, TX) and right down RWY 4. To get to the threshold I had to taxi down RWY 17 crosswind. I went faster and faster down 17 tracking the centerline beautifully! "Hey Mom look at me!" . As the intersection was approaching fast (I was at 45 mph) I chopped the throttle and pulled the brake lever.....and got a whole new look at where I had just came from. I ground looped off the runway

and ended up looking out the canopy at the stub of a brand new Warnke prop. I also broke the tail wheel bracket. By that evening I had the tail wheel bracket repaired and the spare prop on and was ready to go, again. The cause of the ground loop had been a grabbing left brake.

To make a long story short the plane flew beautifully and I found what had caused the three previous owners engine problems. The carb was extremely susceptible to carb ice. On a humid morning you had to use carb heat for takeoff.

Per Rex's advice, I tore down the engine, found a cracked crank. When I moved to Virginia I took the engine with me and rebuilt it to Rex's book. I also have installed a Posa Super Carb on the engine which is a 1835cc, single mag with a Hapi accessory case. I bench tested and broke-in the engine in Virginia.

Back in Texas; After re-installing the engine on my DF I started testing and checking things out. I was having problems with the Posa carb, so I installed a Tillotsen carb I had used to test the engine with. After running the engine extensively at various power settings, draining and replacing all the fuel filters and have the Annual done (I didn't build her myself). I took off for a test flight. She flew beautifully, as always but on the base-to-final turn the engine quit. I gave her a shot of primer and hit the starter button.....she fired right back up and I assumed that I had the idle set to low. When I pulled the carb heat on it slowed the engine down enough to cause it to quit.

Back on the ground I set up the idle up a little, topped the tank and prepared to blast off to Virginia. A friend in a 182 Cessna took off behind me to escort me on my first leg. He was as shocked as I was when at 300 AGL my engine quit and the prop stopped, Dead a head was large corn field roughly circular with half of it harvested. I headed for the field and in desperation I hit the primer and the starter, The engine started, but quit immediately. I shut off the carb heat, which I had taken off with as a pre-caution. I tried it again with the same results. Next time I kept pumping the primer and got bursts of power but not enough to keep her flying. By this time I was staggering around the field counterclockwise and actually made wheel contact with the rough field once just as a power surge pulled me back up. Again I was going down so I aimed for the standing corn, dodged a combine and a pickup and I prepared for impact. The wheels just started to hit the ground 150 ft. from the corn and the engine surged back to life. Knowing it would quit again I should have pulled the throttle back and prepared to harvest some corn, but instead I hauled the stick back and pulled over the top of the corn expecting to mush back down into it. Instead the engine stayed running, purring like it didn't have a care in the world!

I flew around the airport a few times with my friend in the 182 on my wing trying to get my pulse rate back to normal

and landed. I pulled N114LP into the hail shed. I went back with a truck to get her. She's now in the back yard getting prepped with a new paint job and a few of the newer mods.

I still don't know what happened unless it was vapor lock. I now have the Posa back on and the engine runs great. The next take off will have a pucker factor of 10.

One piece of advice! My Posa had nothing really wrong with it. When I shut down the engine for the last time for nearly a year, I pulled the mixture to full lean. When you move the cockpit lever to full rich it "allows" the carb jet to return to rich via spring loading. My jet had stuck to the needle. Although the lever said "Rich", the carb was at idle cut-off.

I have not performed the mod Rex talked about involving running a vent line from the gascolator up to the vent coming off the header tank.

Well enough for now, I'll try to have N114LP at Sun N' Fun this year and the September Fly-in in Kansas.

Keep up the good work!

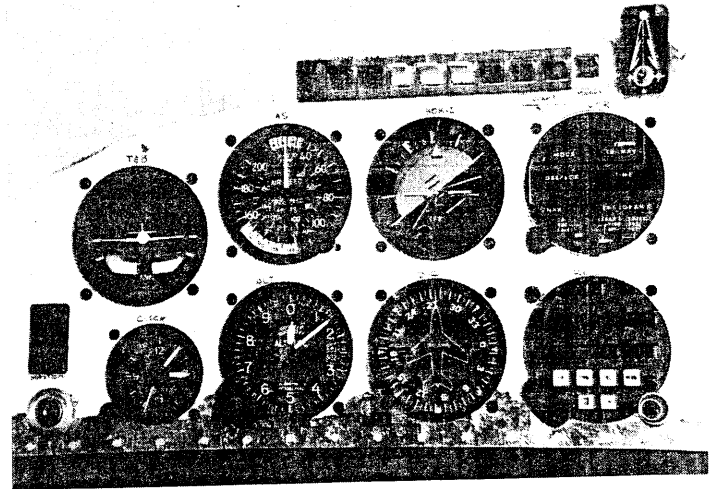
Ron Morton - Highland Springs, VA.

Hi Spud

Here's the status of our project. Our Dragonfly N303BJ, plans #348 is primed and I am beginning to install the control and trim linkages, instruments and the associated wiring & plumbing.

Panel: Terra Nav/com w/glide slope (Terra Omni/Loran CDI) Loran is II morrow # 612C (The round one) Transponder is a King KT-76A w/Ameri-King Alt. encoder. Marker Beacon is By RST. ELT is a EBC. Compass is a HI-400 Vertical card. Horizon & DG will be driven with a venturi inside the cowling per a brief article that was in Sport Aviation a few years ago. Flight instruments are as follows; airspeed indicator w/ true airspeed window, altimeter, rate of climb, electric turn & bank. Engine health; Westach quad w/CHT/EGT/oil pres./oil temp ("hope it works") electronic tach, manifold pressure, electric fuel gauge (main), Vari-EZ site gauge for the header. Sundry items; outside air temp, Hobbs meter. RST neat-o tenny little amp & voltage gauges (*I don't remember seeing those????-Spud*), cigarette lighter receptacle for aux. power source, Cessna split master/alternator switch, a batch of switches and circuit breakers, Whelen wingtip strobes/position/tail/lights. The pitot and static inlets are mounted in the fin.

When I get to the test flight stage, I intend to do the initial flights with the original Great American, then switch to a three blade **IVOPROP**. The designer gave a presentation on these unit at our EAA Chapter #96 back in Torrance last spring. I and others were quite impressed. It is light, it is electric, it is amazing simple, it is relatively inexpensive, and unlike most in-flight variable pitch props that have come out for homebuilts over the years, it does not shed the blades!



BUCK AND JO'S PANEL

I've always guessed at about 675 lbs., but I'll put off the truth as long as I can.

Forward hinged canopy gas struts: Spring lift (located in Arkansas) will supply these struts with the pressure you order. I requested 20 lbs. and I am quite pleased with them, but I think about 22 to 24 lbs. would be best. Typical store-bought struts have 2 to 3 times this pressure and are far to stiff.

Jo and myself would like to offer an open invitation to any DragonFlyer passing through our neck of the woods to stop by and visit - we've got lots of room for overnighters (especially if you've brought you sleeping bags) plenty of bathrooms, too!

Pine Mountain Lake airport (3 digit designator Q68) has a 3600 ft (+400 ft. overrun) asphalt, lighted runway. It is beautifully maintained and has many homes with hangars, and some rather picturesque taxiways. PML is located 46 statute miles out on the Merced O degree radial, about 120 miles (statute) east of San Francisco. The runway is 27/9, traffic for both direction are on the north. Pattern altitude is 3900 ft. Unicom is 123.0. fuel is 80 & 100. Corsair coffee shop near the transient perking.

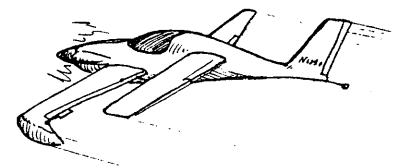
Our home is at the northwest corner end of the runway and is the last one that is adjacent to the runway.

Buck & Jo Buchanan

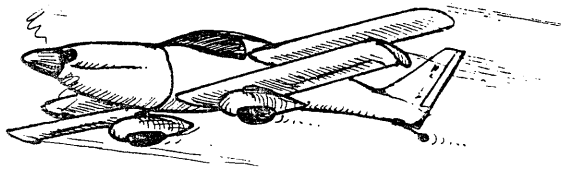
20925 Woodside Way

Groveland, California 95321

(209) 962-7262



Ok you California guys. Look like you just got a good excuse to go fly some where. Especially you people in the mid part of California! Looks like a nice hop for Shafer, Evans and Sledge.



letters continued

The way home the hard way.

Hi Spud

A little bit more about our trip home. We didn't get out of Ottawa until Monday afternoon about 1 P.M. (weather). Another fellow by the name of Walt Halloran from Rochester, Minnesota went with us in his Tri-Q (nice plane). He led the way with his Loran to Fremont, Nebraska. We had some low ceilings most of the way there. I picked up a lot of bugs just before Fremont, Walter landed first and I followed. We had I would guess 25-30 mph crosswind. So with the bugs and the crosswind I bounced 2 or 3 times and was headed off the runway, so full power and back stick. It started to build speed, but I noticed it didn't perform well. Deb (his wife), I noticed she had tensed up and said OH!....(I heard something scrape-Deb). Because we weren't climbing well and we were looking at a cornfield (*this group has something about cornfields-Spud*) under the left wheel & the left side of the runway lights under the right wheel--ahead was a power lines and a semi-truck on the hiway a head of us (I shut my eyes for this part-Deb)--up and over these but there was a building with three SHUT garage doors on the other side (I saw this part!-Deb)--NOT A GOOD MOMENT!!! I calmly said to Deb relax we'll make it (he didn't hear the prop strike-Deb). So we did a go around and used a different runway that was a lot shorter, used the brakes as soon as the wheels touched. Taxied in and shut down, that's when I noticed about a 1/2" gone off each blade tip. Didn't even vibrate, getting better at grinding props don't you think? Well Walter was concerned about us that maybe we shouldn't fly the plane home, I agreed with him. He couldn't stick around and felt bad about leaving us.

Walter is an interesting fellow. Retired Air Force, SR-71 & U-2 pilot -- and he's just one of our gang-- Lots of neat stories from him. Well, back to the story. A couple weeks later I returned with a borrowed prop which I put on and flew home without any problems. I talked to Props Inc. and they said that this type of damage can be fixed.

I need to get a spare prop and put vortex generators on the canard. Do you think that might help my landings???

Yes, the vortex generators have definitely helped people that have had a sensitive canard. I would try the gap seals first that Reg Clarke had such good luck with (back in DBFN # 44). He said it eliminated his need to trim for rain or bugs and lowered his stall speed. - Spud

Wayne & Deb Ulvestad

Volga, SD

MULTICOM

● 1993 Dragonfly/Quickie/Q-2/Q-200 Annual Fly-in

The date has been set for this years fly-in. The dates are September 3-4-5. This is Labor Day weekend. Mark those calendars and start making the plans right now! Details later on in a future issue.

● Tri-ply vs Uni

Hi Spud, The gang out here in Chino always felt that the TRI-PLY would be heavier (in weight) per sq. ft. than the original UNI for the wing & canard. I decided to check this out. I did two sample layups done at the same time with the same mix of epoxy on a sheet of glass under a vacuum bag at 14 psi. and allowed to fully cure. The samples were trimmed to exactly 1 square foot. They both weighed 104.5 grams each! This was a real surprise to me! The texture of each sample was very similar, however I have noticed a big difference when used on wings. I may do a test in the future with hand lay-ups on foam to compare the weights, but even then I do not expect a big difference. UNI provides a much better surface to work with when cured and is in general much easier to work with. I have participated in building a half dozen DF wing / canards using both materials. I personally would never use TRI-PLY again on any flying surface. The finished product with the UNI is definitely superior. If there is someone who has purchased tri-ply and can not bring themselves to trash or sell off there investment, I would have to say go ahead and use it. as it appears at least there will be no weight penalty if they keep there layup lean of any excess epoxy. If anyone wishes to contact me about this or anything else, I always like to talk Dragonflies. Best time is in the evening after 7:00 PST. Keep em flying! Stan Meleski (714) 843-4992

● More engine problems at Moslers

Hi Spud, We have been trying to set up a new motor for Jack Shafer, but are have some great difficulties. We sent a new engine case to Mosler the end of September to get the new two piece bolt-on, not glue on, crank seal installed so we could rebuild Jacks engine which had a cracked case. After 3 months of being danced around by them, I finally found out that Tim Kern is no longer with Mosler anymore and that the new seal doesn't work! Their new fix is to machine off the "shrunk on" hub and to taper the crank just like Great Plains Aircraft has been doing all along. This little fix runs in the excess of \$400.00, plus a new case if you don't already need one, what a deal. We switched over and are now having Steve at Great Plains do the machine work and I expect the parts back shortly.

Gene Evans - Visalia, CA.

● Possible Hyd. lifter problem

Spud please mention in the newsletter that I would like to talk to anybody that has installed the CB hydraulic lifters in their VW engine. The heat treater missed on the hardness on one batch of lifters. Have them give me (Gene Evans) a call at (209) 733-8358 so I can see if they need to have them replaced, No Charge of course

● West-coast fly-in in the works

We are planning a west coast fly-in in early June. We will have the where and dates finalized for the next newsletter - Gene Evans

● Comment on the last issues Engine shop article:

Bob O'Connell out ^{of} Dana Point, CA. called and asked why I had left out the Revmaster 2100 engine which both him and Jerry Scott have in their Dragonflies. I explained to him that I had just used the 75 HP rating as a middle horsepower (somewhat of a split between the 60 and 82 hp) for the Type 1 VW. I had been told that in the past by several people that Revmaster several years ago had chose not to build engines anymore for aircraft applications. Bob said that was not true. So the next morning I dragged out some really old Revmaster cataloging. Dialed the number..... A sweet young gal answered the phone, GOOD MORNING REVMAS^TER! I asked for the sales manager or manager. I then explained who I was and my main question was if they still did engines for aircraft. SURE! He seemed like he didn't want to talk and seemed a little preoccupied. I asked him to send out all of his current cataloging. When the info gets here I'll review it and comment in a up coming newsletter - Spud

THE CLASSIFIEDS

For Sale: Brand new unassembled 2167cc VW engine, split port heads (Scat), Revmaster accessory case, exhaust manifolds and prop. \$4400.00 invested in 1986 dollars, have receipts. \$2500.00 for everything. Call Chuck Kaplan - Walpole, Mass. (508) 668-4784

For Sale: New Viking Mark II gear legs, Hapi wheels and brakes with Lamb tires \$400.00 Chuck Kaplan - Walpole, Mass (508) 668-4784

For Sale: 100HP Subaru 1800cc OHC engine with Ross Aero reduction, 3 blade Warp Drive HP prop. dual module distributor, Ellison injection, aluminum radiator and other trinkets. \$4000.00 Alpha plastics cowl \$100.00, 1 pair of Viking Mark II gear legs \$200.00 (604)743-4916 Dean Cramb RR#1, Cobble Hill, British Columbia, Canada V0R 1L0

For Sale: Dragonfly fuselage and engine cowling. Plans built, all bulkheads, seat and tank installed. Plans included. Can be inspected no filling or priming done. Excellent workmanship. In Wisconsin -\$1000.00 contact Phil (414)367-0181

For Sale: Zero time VW engine in San Diego. Single ignition, Posa carb, Alternator, Intake manifold. \$1000.00 Contact Phil (414)367-01819 -

For sale: Task Dragonfly engine cowling, "beautiful piece" \$300.00. 12" fiberglass spinner shells, 8 oz. \$75.00 ask for Stan (714) 843-4992 -

For Sale: I have an extra plans built fuselage-boat stage, canard & wing, MKII, foam for fairings & control surfaces. Midwest area, make offer (616)979-3951 after 5:00 PM EST

For Sale: "Zero Time" rebuilt Continental O-200 - 100hp complete with Mags, harness and carburetor with log books - \$6500.00 outright no exchange. New Cessna 150 prop Gene after 6:00 PST (209) 733-8358

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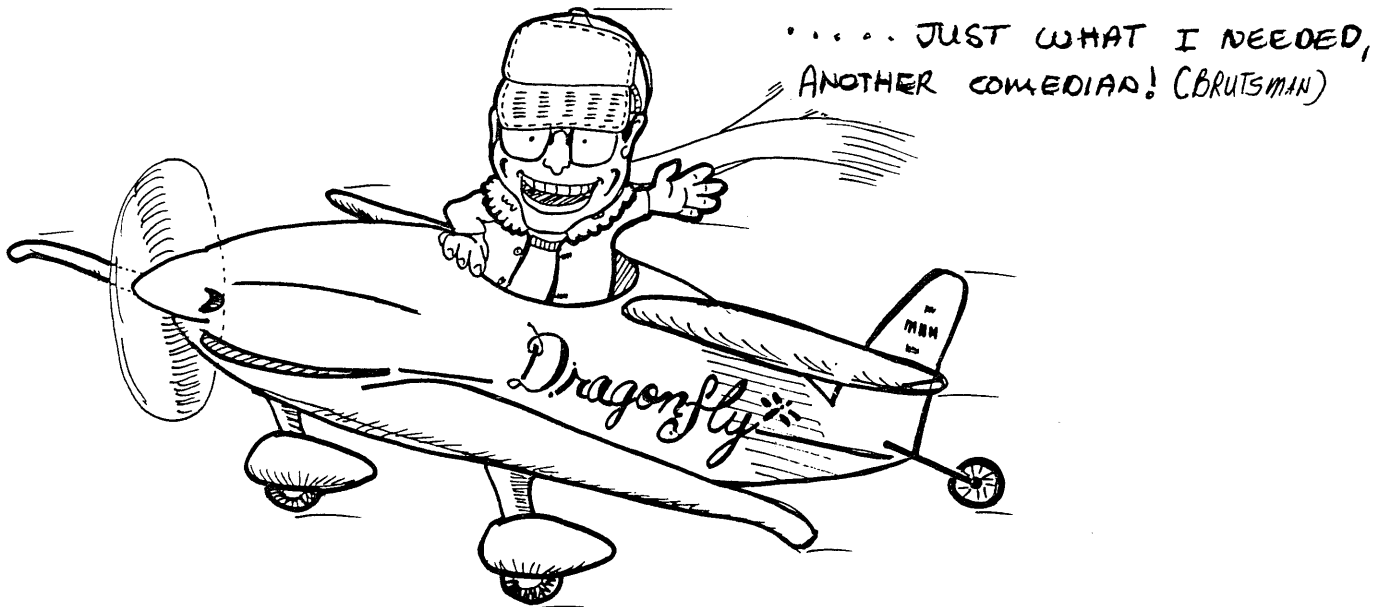
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The use of "VW" by DBFN is for the sole purpose of application and description only and is not intended to infer or imply a direct connection between DBFN and Volkswagen.

PHONE (913) 764-5118



GOD is my co-pilot...
'cause no one else would take the job.

This cartoon is of my very good friend and Dragonfly builder Bill Brutsman of Lenexa, Kansas who I have had the opportunity to fly with. This couldn't be a more ACCURATE, CORRECT, TRUE and RIGHT ON of a Statement!



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