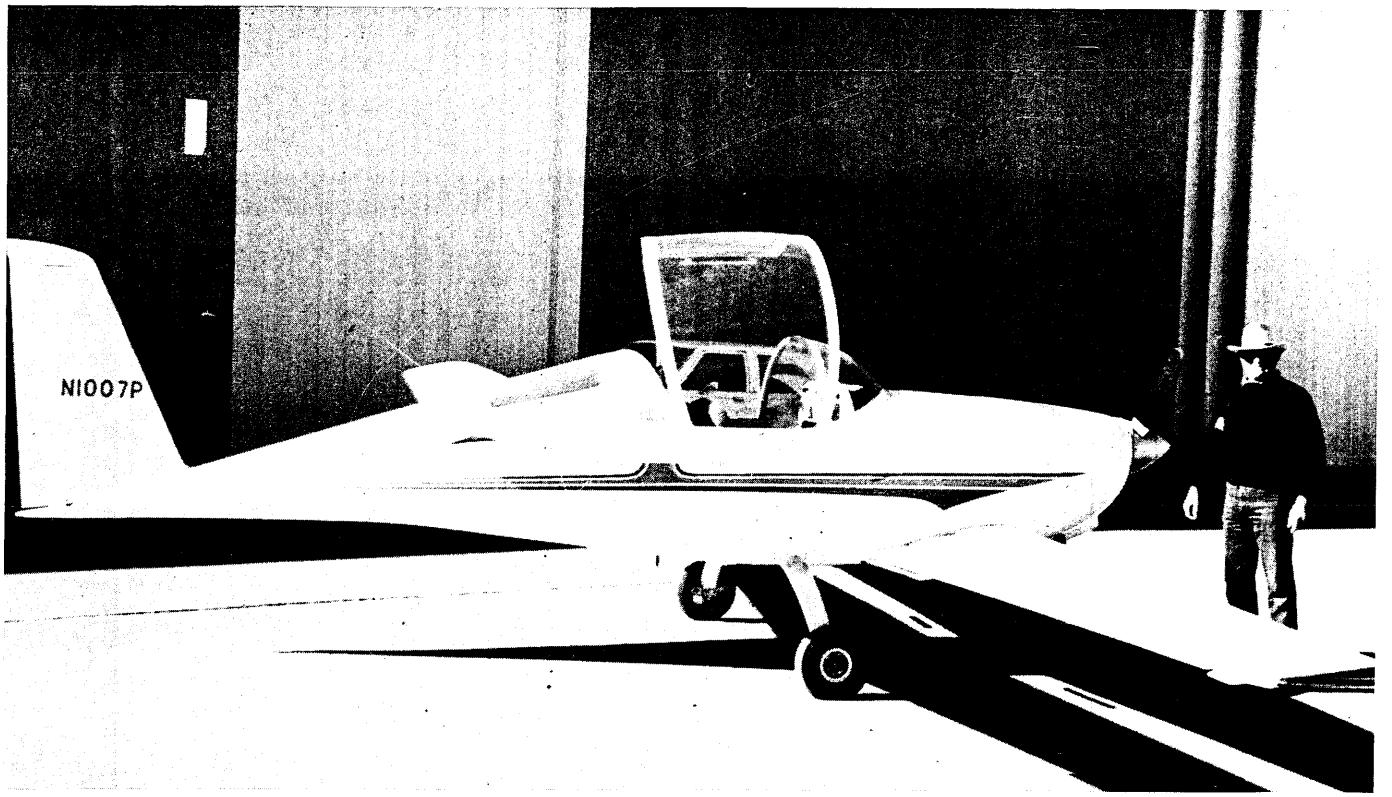
# DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICAL VOICE OF DRAGONFLYERS ALL OVER THE WORLD

VOLUME 53 MAY - JUNE 1994




# DON ZAHN OF LUBBOCK, TEXAS AND HIS TRI-GEAR "FAS-GLAS"

## What ever happened to the Fas Glas (alias the Phoenix!)

Back in the mid 1980's Courtney Bryan of Dayton, Ohio was forced to make an emergency landing in his Dragonfly because of a fuel pump failure (no back up). The plane was severally damaged. Courtney set out to design a plane of his own which incorporated quite a bit of the Dragonfly design, safety features and ideas. What he basically ended up with was a design looking very much what we would consider a tri-gear Dragonfly. Some of the changes that he did was; use of the LS-1 (0417mod) airfoil, Continental C-85, C-90 & 0-200 engines, speed brake and larger all the way around.

Courtney started to market plans for his new design under the name "Phoenix", but changed the name very shortly after that because of what I believe was some

type trademark/copyright infringement hassles. He then named it Fas Glas. The plane showed up at Oshkosh and we started to see some ads running in the magazines. Courtney died and the Fas Glas was sold as part of his estate and that was the last we heard of the Fas Glas..... Then out of the blue the other night I get a call from Don Zahn of Lubbock, Texas. He's the current owner of the Fas Glas. - Spud

To follow is a letter bringing us up to date on Don's plane.

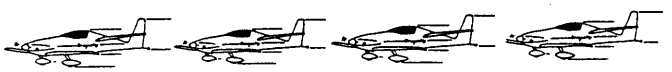
Hi Spud,

I bought the Phoenix/Fas-Glas from James Dooley in Post, Texas and I don't know who he got it from. It was built by Courtney Bryan.

I had quite an experience in it right after I got it. I had flown it about four hours and flew over to Possum Kingdom lake near Ft. Worth where we have a summer place and I descended from 6000 ft. down to about 1500 MSL, I didn't pull the carb heat on because I was told I didn't need it, "WRONG". The carb iced up and the engine quit running about 500 ft. above the ground. It would not restart and I had to choose between the trees or the lake.....I chose the lake. When it touched down (our should I say splashed down) just about stall speed, all it did was bust the cowling under the engine and mess up the wheel pants. Hey! This thing floats like a boat! The lake patrol came out with a boat and we tied a rope onto the nose gear. We then slowly towed it into the boat ramp. The next day my son and I went to where the plane was, lightly cleaned it up, drained this & that and prop started the engine (It started right up!) I then taxied (or should I say drove) it 8 miles down the road with a lake patrol escort to the airport. We fixed the cowling and flew it home to Lubbock a few day later. We've been flying it ever since and it performs great except it doesn't like to slow down. That is the reason why I need those back issues on the speed brake.

Don Zahn

Lubbock, Texas



## 1994 OSHKOSH SCHEDULE

There will be a Dragonfly Forum in Tent # 7 Friday night at 8:00 PM.

Then Saturday morning we will have a builders meeting at 10:00 AM at the Homebuilders Corner Building - on the Front Porch

We have not finalized any plans in reagrds to a Dragonfly -Quickie Banquet. Jim Masal and myself were disappointed in the way things turned out at the Oshkosh dinner. The food was excellent, but it was noisy and there was no way for the builders to mingle and talk shop. If we can come up with facilities that would give us a isolated area we will have that event. If we do not get you notified prior to Oshkosh. On arrival, check for signs/notices in the Q-2/Q-200/Dragonfly aircraft display area or the Great Plains Aircraft booth.

Patrick and Robin Taylor will be joining us for all Dragonfly events at this years Oshkosh. It has been a long time since they have been in a position to attend. Please make sure to give them a hearty welcome back when you meet them!

## VIKING ADDRESS CHANGE

The Taylors are moving again! Patrick Taylor is employed by Infinite Engines. He is in charge of new engine development. The engines that Patrick has been working for the last couple of years have proved to show great promise for the marine industry. The company was originally started in Carson City, NV. The company has since gone public. Well the powers to be (Stock Holders) feel the company should be right in the thick of things. One of the biggest producers of boat and/or engine drive combination is Wisconsin! The company felt very strongly about Patricks continued particaption in the progarm. So, by the time that you read this they will be moved to Elkhorn, Wisconsin which is 50 miles southwest of Milwaukee. Hopefully this new location in the midwest will allow them to attend the annual fly-in in Ottawa, Kansas and of course Oshkosh.

Their new address and phone numbers are:

***Patrick and Robin Taylor***
***Viking Aircraft***
***P.O. Box 646***
***Elkhorn, Wisconsin 53121-0646***
***Phone(414)728-7861 Fax (414)728-7862***

# LARIBEE'S STEEL GEAR LEGS

Dear Spud,

I have been getting numerous requests for information on the steel gear legs that I have been using for the past five years, about 210 hrs. worth. Readers can refer to DBFN#51 and see Fred Wiebe's great looking Dragonfly which has been converted to this gear. This gear has been designed as a retrofit to Dragonflies that had Viking Mark II fiberglass leg/kit assemblies installed. If Dragonfly (Quickie) builders have not built their canards yet, it will be even easier to install. Just substitute the steel legs for the fiberglass legs when building the gear boxes. My current gear evolved from modifications to earlier designs. One design failed on a hard landing and I had a looooong conversation with 4 FAA safety inspectors. It must have been a slow day for that many to fly in to check me and the Dragonfly out.

Far to many Dragonfly's have had prop strikes on hard landings. The measurements on the drawing gives about a 4 inch taller gear than suggested for the fiber glass ones using the Hapi wheel assemblies. (The Hapi assemblies have worked very well for me, just don't use 5 inch aircraft tires on them.) I have found that this is the minimum for my 54 inch diameter prop. The taller gear does not give me any visibility problem in taxing or takeoff. You can't see over the top of the cowl, but remember, this is a tail dragger.

This gear works! I've worn out a set of tires testing it. A fellow Dragonflyer, who installed this gear, aborted a takeoff after getting airborne and dropped (stalled) his plane in hard! He slightly straighten one gear leg, but there was no damage to the plane or prop. My material cost was under $25.00. Fred Wiebe's cost was $60.00, but he used a new spring.

The following is the material list;

1 - Overload spring from 1970-80's Chevrolet 1 ton truck.

2 - steel 90 degree angle 1/4" X 2" X 2 X 4"

2 - steel plate 3/8" X 3' X 9 1/2"

2 - steel plate 1/4" X 1" X 7 1/2"

2 - steel plate 3/16" X 1 3/4" X 4"

2 - steel plate 1/8" X 3" X 3 1/2"

4 - AN5 bolts and lock nuts

1 - 3-point farm tractor lift bushing that is used so category II equipment can be used on category III farm tractors (all farm tractor dealers have them).

The steel spring is an overload spring from an early 1980's 1 ton Chevy truck. It is 2 1/2" wide and flat (straight) in the middle where it attaches to the truck axle. This should be the same width as the gear box for the fiber glass legs. This overload spring is a progressive spring. That is, thick in the middle (where it goes into the gear box) and thin at the end (where the wheel assembly is attached). Do not use spring steel that is the same thickness over its length as the landing load will cause it to bend at the bottom of the canard (happened on my earlier designs). My spring came from the junk pile. New springs can be found at a spring shop that repair truck springs. I used an acetylene torch to cut the spring to length. Drill the holes using a drill press at the slowest speed. The hole for the bolts that holds the gear leg in the gear box should be oversize. Use a piece of rubber or vinyl hose as a bushing in this oversize hole.

Cut the fiberglass gear leg about 1/2 inch below the bottom of the canard. Cut the fiberglass leg wedge to mate with the steel gear leg to form a tight fit. You do not want the steel leg to be loose in the gear box. Use the exiting hole in the fiberglass leg wedge to drill the hole in the spring steel. You may need to use flox or a metal shim between the steel and the wedge to get a tight fit. You do not want the steel leg to be loose in the gear box.

Drill the holes for the axle assembly. Take the lift bushing and cut it in half. This bushing is to be fitted over the end of the "Hapi" axle that extends thru the steel side plate. Weld the bushing to the side plate. Clamp the flat steel and the gear leg to the angle before welding in place. Make sue everything is square and straight. Toe in or out can be taken care of by making adjustments before welding the angle to the side plate before welding the stiffeners to it. Watch out for hear distortion during welding. Drill both holes in the wheel assembly that will hold the gear leg. Drill only one of the holes in the gear leg that mates with one of the holes in the wheel assembly. Bolt the wheel assembly to the gear leg and place it in the gear box. Bore sight the axles to determine where the second hole should be drilled in the gear leg. Mark it and drill the last hole in the gear leg using the drill press. Paint it, do some high speed taxi tests, if everything tracks OK, go fly.

There seems to be a lot of concern among Dragonflyers about the landing gear. I don't think it makes any difference what type you install, it will not change the landing characteristics of this airplane. It is a very fun sports plane, but it's quickness requires you to treat it like a high performance aircraft in landing and take off. I have given numerous check rides to Dragonflyers and six CFI's. Pilots with flight time in multi engine, high performance aircraft, or Pitts take to it very quickly. I have had pilots with thousands of hours in tail draggers who had problems with it. I had adults and kids who

have never flown an aircraft do very well at controlling my Dragonfly. They didn't think they could fly it and did exactly what they were told to do, and they did fine. Rex Taylor knew exactly what he was talking about, get a check ride before flying your Dragonfly. Better yet, get an experienced pilot to first check out your Dragonfly and then check you out in it.

Build your Dragonfly according to the plans and it will fly like the original. Don't believe everything that is written in the newsletter unless it has already been tested over an extensive period of hours. Keep it light, don't make any changes that haven't been flight tested, and your airplane will be a joy to fly. The Dragonflies that are hangar queens are heavy and more horse-power will not fix them.

Anybody looking for insurance may want to call National Aviation Underwriters (1-800-628-4636) who quoted me $338 for $1,000,000 liability insurance my Dragonfly.

Here's some updating info on my Dragonfly; Mark II, 70 hp at 3000 rpm Limbach engine, Total time 230hrs., 210 hours on the steel gear legs, Basic empty weight is 671 lbs., stalls at 59 mph indicated solo & 68 mph indicated at gross, I cruise at 3000 rpm and see 150 mph indicated and it tops out at just a little over 160 mph indicated. I use a Aerotech 54" X 48" prop.

I also own a 1939 Aeronca Chief with a 65 hp Continental engine which I have completely restored. I enjoy this airplane, but I call the Chief my ***"Gas Guzzler"!*** Compared to my Dragonfly it uses twice the gas at half the speed on almost the same horsepower with less room. It just doesn't seem right, does it. When I just want to go out and kick around in the sky, I set my power at 55% which gives me about 120 mph indicated. It uses 2 1/2 gallons per hour at this setting/speed. I use 4.3 GPH at 75%/3000 rpm which is my cruise and get 150 mph indicated. I don't know of any other airplane that can supply this kind of economy at these speeds!

I hope to see everyone again at this years fly-in at Ottawa, Kansas, I'll be there!

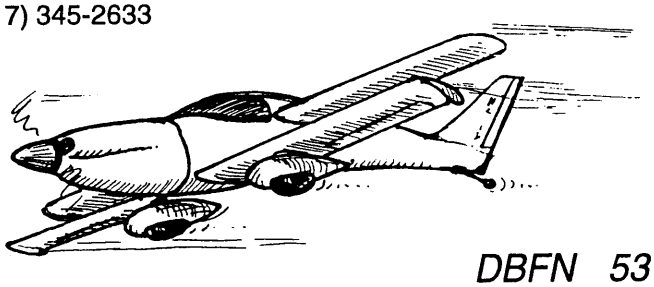
I welcome all calls from readers who want to talk to someone about building or flying a Dragonfly.

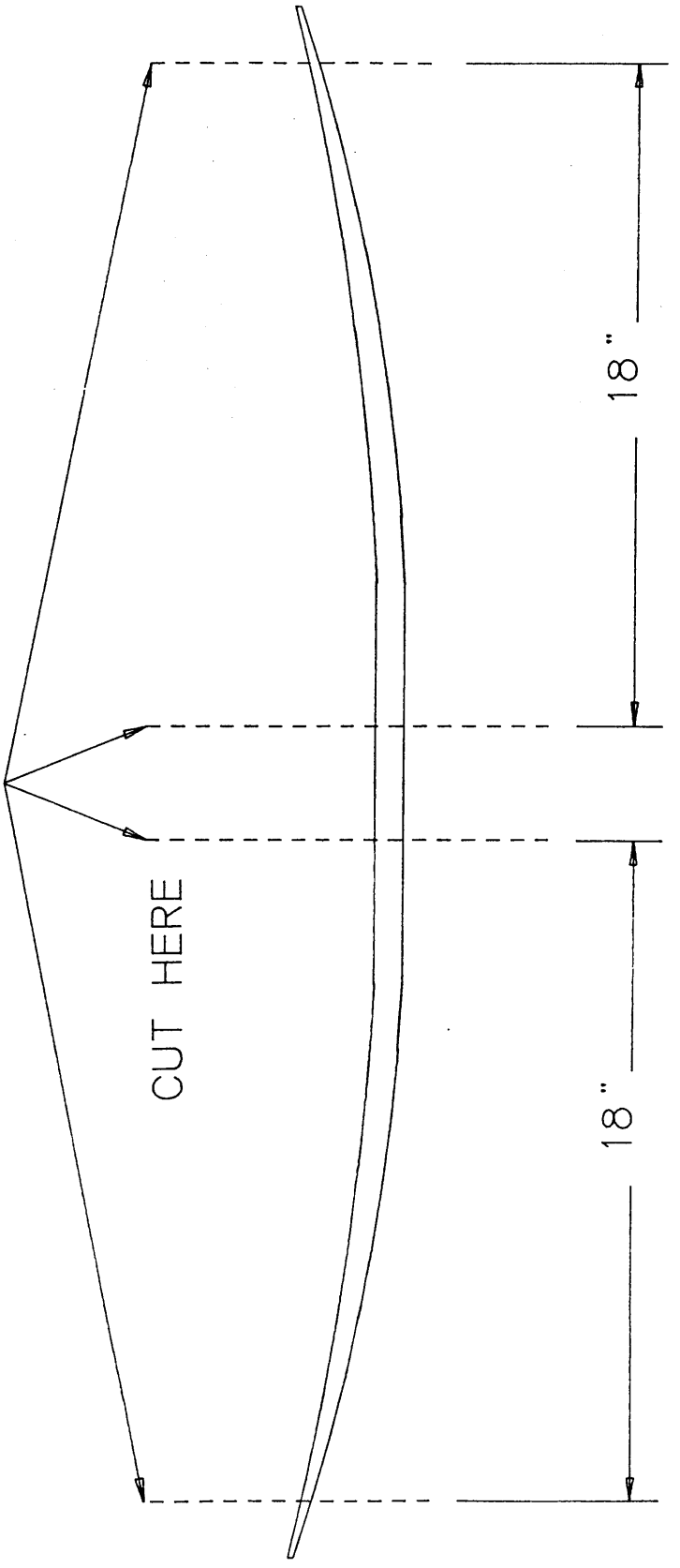
Steve Laribee

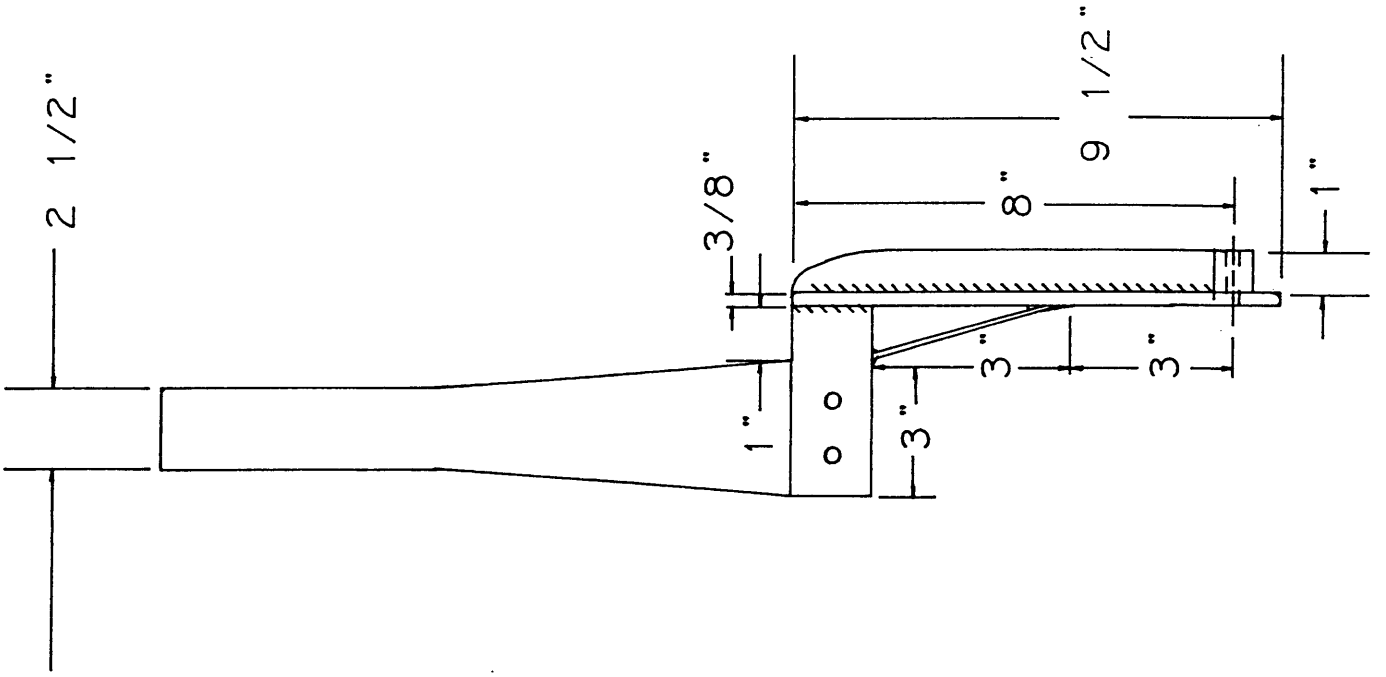
703 Timothy Circle

Charleston, Ill 61920

(217) 345-2633



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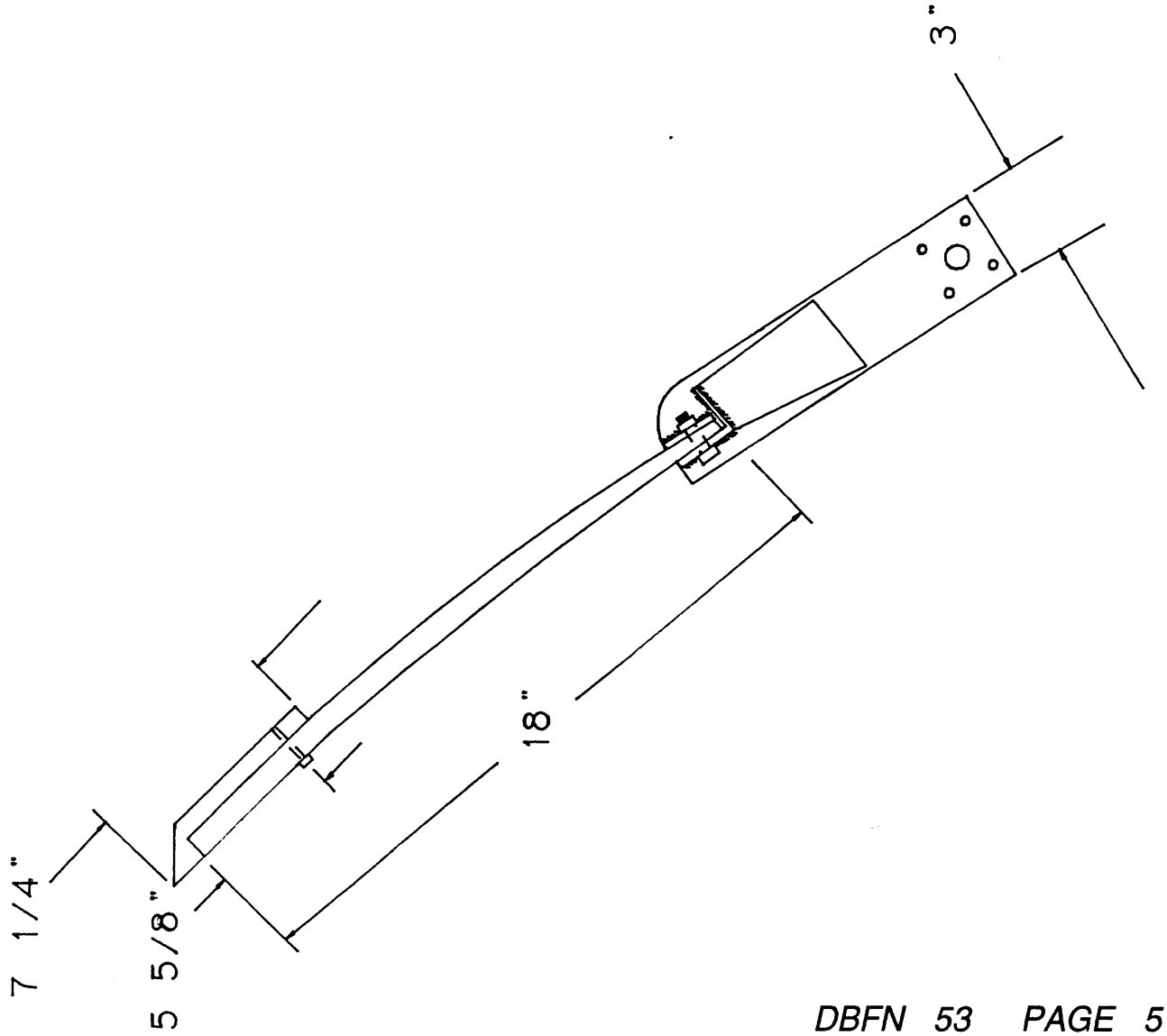

3"
18"
7 1/4"
5 5/8"

# DAVID vs GOLIATH!

## OR

# The Dragonfly vs The RV-6

I talk to a multitude of people every year about the Dragonfly and I enjoy every minute!. All to often the new potential builder doesn't understand **"The Mission"** of the Dragonfly. Also interesting enough quite a few of the current builders, old & new, loose sight of those same attributes that the Dragonfly brings to sport aviation.

The article/story to follow is not meant to undermine the RV-6 in any shape or form. The RV-6 is considered the premier SBS two seater in sport aviation and does everything very well. BUT! There are some things that the Dragonfly does very well also! Even better than a RV-6!!! I thought it was time we all could go for a little reminder, to get you thinking *(Hopefully a little humorous)* of the assets of our Dragonfly. All spec's & performance numbers are true and correct to the best of my ability

***First let's look at the contenders;***

**The Challenger, Dragonfly *(I mean David!)***

The Dragonfly comes in many shapes and sizes, in and outboard gear, engines ranging from 60, 65, 70, 75 & 82 hp VW based engines, Subaru's, etc. I chose a specific Dragonfly that is an excellent "Contender" to do battle for the Dragonfly group. It's Steve Laribee's of Charleston, Il. which we have all the solid numbers on, it has a 70 HP Limbach 2000cc VW engine, it's a Mark II weighing in at 671 lbs.. Not the smallest, slowest, lightest nor the largest, heaviest or fastest.

**The Champion, RV-6** *(I mean Goliath)*

We'll keep it taildragger VS taildragger using the facts and numbers for a RV-6 - 160 hp from Van's info pack. I've talked to several RV-6 builders and most RV's perform very close to Van's published numbers except maybe the take-off & landing distances might be considered best case.

**The Debating Ambassadors**

I have a very good friend out in the New England area that is a RV-6 builder, throughout the balance of this article we'll refer to him as the RVer and refer to myself(Spud) or as the DFer. Well you can imagine us going at it, discussing, debating, arguing and on & on & on! The information to follow is a recapitulation of all our discussions *(debates, arguments & B.S., that's right put your boots on, it gets pretty deep!)* on the assets & liabilities of these two planes before, during and after this years Sun N' Fun.

● ***"Hey Spudley! It isn't going to cost much more to build my RV-6, maybe you should be building one too?"*** Not in your life, Well let's check it out anyway!

***Cost of Construction***

**The Dragonfly**

On the Dragonfly I referred to Wicks Aircraft 1993 catalog, Viking Aircraft Price sheet and Great Plains Aircraft catalog.

Airframe.....$5800.00

Included in this figure was all the raw materials needed , cowling, canopy, Cleveland brake upgrade, Viking Mark II gear leg kit, $800.00 paint allowance, $200.00 exhaust system allowance, even a little extra epoxy (never enough).

Engine/Prop .....$5768.00

Included in this figure is a "New" Great Plains 70 hp 2180cc 1 mag - 1 electronic, Force one hub, prop and spinner.

Cockpit/Instruments/Avionics.....$5000.00

Included in this figure is all of the "Basic VFR" flight instruments, engine instruments, very modest interior, seat-belts, Basic nav/com, transponder w/Mode C, GPS (*no antenna's*). We will use this same figure for the RV-6.

Basic completed Dragonfly .....$16,568.00

**The RV-6**

Airframe.....$12,450.00

In this figure I used Van's Aircraft kit prices. I used kit prices because because the majority of the people do not have the tools/equipments to build a aluminum airplane from scratch. I priced out a RV-6 (taildragger) with a sliding canopy, tires, $800.00 paint allowance, $200.00 exhaust system allowance and $1000.00 for special tools. *(I'm sure this will raise some eyebrows! There is a full list of special tools that are needed that nobody has in their normal tool selection, but must have! A $1000.00 won't buy all the tools you'll be needing).*

Engine/prop.....$7500.00

I looked in the current issue of Trade-A-Plane, a mid to high time used Lycoming 0-320 160hp engine were running from $6000 to $9000.00 depending on TT, time since last overhaul & accessories included. We'll be optimistic and say $6900 for the engine and $600.00 for prop and spinner.

Cockpit/Instruments/avionics.....$5000.00

We'll simply use the same equipment and cost figures that we used for the Dragonfly for some consistency.

Completed RV-6.....$24,950.00

I'm sure that I missed some items and the price to build these airplanes will be higher, but for the most part if I failed to include something, I left it off both planes.

The Dragonfly is $8382.00 LESS than the RV-6! I don't know about you, but at my house that's a bunch a money! (*OK, I got him, but I'm expecting a counter attack soon!*).

● Next question from the RVer; ***Spud, the RV-6 will carry a bunch more weight than a Dragonfly, you need that to get your big butt off the ground?*** (*Very funny!*)

**The RV-6**

Designers gross weight .....1600 lbs.

Less fuel 38 gallons ..... -228 lbs.

Net.....1372 lbs.

Less empty weight .....-965 lbs.

After fuel pay load..... 407 lbs.

**The Dragonfly**

Designers gross weight .....1150 lbs.

Less fuel 17 gallons .....-102 lbs.

Net.....1048 lbs.

Steve's empty weight .....-671 lbs.

After fuel pay load..... 377 lbs.

OK, ya got me by 30 lbs, I'll go on a diet. (*"Honey, do we have plenty of Slim Fast" I knew he'd counter attack)* Or if I'm close to gross, I could leave out 5 gallons of fuel!

● ***Ok Spudley let's talk about the resale value?*** (*The RVer thinks he got me wounded so he back with another tough one).* The RVer says, I'll invest $26,000.00 in the RV-6 but I'll sell it for $10,000 to $12,000.00 over my original investment, $36,000.00 - $38,000.00. And over the last several years Dragonflys in good condition have sold for break even to a couple of thousand more than their original investment *(He now stands there definitely with his arms crossed at the chest and his head held high!).*

Ok ya got me again, but at least it holds it's value. It's not like buying a new car that starts to depreciate the minute you drive it off the new car lot!

● ***Also Spud let's talk about speed?*** *(The RVer has got me "seeing stars" with this triple attack, Oh Tears!)* The RV-6 will blow the doors off any Dragonfly made. Yeah, Yeah, but I thought the idea was to get more flying in. Let's make a couple of sample trips, 100 mile trip and a 300 mile trip. We'll factor back both airplanes 10 MPH for taxi, climb out. DF 150 to 140 mph. RV-6 191 mph to 181 mph.

**100 mile trip**

RV-6 .....34 minutes

Dragonfly.....43 minutes.

Beat the DF by a whole 9 minutes, Big deal!

**300 mile trip**

RV-6 .....1 hrs. 39min.

Dragonfly.....2 hrs. 9 min.

Beat the DF by 30 minutes

Yep got me again! But look, I get to fly **39 MORE MINUTES** than you!

● ***Ok RVer! Let's talk gas mileage?*** (*As the DFer comes back with a vicious upper cut! He's nervous now!*)

According to Van's info sheet, the RV-6 160 hp will travel 775 miles at 75% on 38 gallons at 191 mph. That figures out to 20.39 miles to the gallon. That's 9.7 cents per mile based on a price of $2.00 gallon for fuel.

Steve's Dragonfly will travel 593 miles at 75% on 17 gallons at 150 mph. That figures out to 34.88 miles to the gallon. That's 5.7 cents per mile. *(that's 10 mpg better than my car!).*

That's got the RV-6 beat by 14.49 more miles per gallon, 4 cents **less** per mile!

Let's go a little farther. I did a little homework *(talked to a bunch of people)* and came up with these facts; The average airplane owner (certified & experimental) flies their airplanes an average of 130 hours a year (*especially the long-EZ and RV boys*) and they own their airplanes 7 or more years.

**The RV-6**

130 hours a year X 9.36 gallons per hour X $2.00 a gallon = $2434.00 in annual fuel costs.

**The Dragonfly**

130 hours a year X 4.3 gallons per hour X $2.00 a gallon = $1118.00 in annual fuel costs.

That's a $1316.00 per year savings!!! That's a $9212.00 total savings over an average seven years!

●The RVer blasts back; ***Wait a minute, the RV-6 can get better mileage than that?*** Yes, your right. Going back to the RV info sheet it points out at 55% power it will cover 925 miles on 38 gallons at 172 mph. Now that's up to 24.3 miles per gallon or 7.08 gallons per hour! Well if you want to look at the other end, Steve Laribee's DF on 55% power will cover 816 miles on 17 gallons at 125 mph. Now that's up to 50 miles per gallon or 2.5 gallons per hour!

Now if you tie this $9,212.00 fuel savings together with the $8,382.00 initial construction savings. We have a overall savings of $17,594.00. Well, well, well, your $12,000.00 profit gain on the sale of your RV-6 just lost a lot of its punch! I'm $17,594.00 ahead and still own the plane! I guess you could fly your RV-6 only half the time (65 hours a year) that everyone else averages to cut expenses. *(Goliath falls to ground, he struggles to get back on his feet!)*

● The RVer; ***Let's talk about take off and landing distances?*** (*Oh no, I'm in trouble now! Mother!)* According to the Van's aircraft info sheet, the RV-6 will take off in 525 feet at gross and land in 500 feet at gross. Well this is no contest area for the Dragonfly ya got me cornered. But we have found out over the last several years that there is quite a difference in the efficiencies of Dragonfly pilots *(I'm sure this is true of some RV pilots also)*. There are DF pilots that are uncomfortable in slowing the DF down to proper landing speeds, thus they land hot and eat up lots & lots of runway and blame it on the airplane which is total B.S.. The sharp Dragonfly pilot that knows their Dragonfly can land around 1200 foot or less (*some can land under 1000 foot*) and also on & off grass strips. Then I got thinking (*Hmmmmmm*), Wait a minute, just how many airports are hard surface or turf

(grass) that are under 2000 feet???? (not counting restricted or private of course) I grabbed a Kansas sectional and started searching.....2!, only 2 on the whole sectional! Most were 2600 foot or longer. I then told the RVer that it didn't seem to be a real high priority. He came back and said the RV-6 can land just about anywhere, cow pastures, etc.,etc. I came back promptly with that if I had an airplane that was worth $36,000 to $38,000 that I would be pretty damm careful where the hell I was landing it, **PERIOD!!!!!!!**

● ***Spud, How about insurance?*** (*The RVer is relentless, he comes back again)* I called National insurance and asked for a quote of comparable coverage on both of these airplanes. The Dragonfly annual premium was $740.00 VS the RV-6 at $760.00, The RVer promptly spoke up "big deal! $20 bucks!" I couldn't resist.....Wrong Goliath, *(I mean RVer!)* that's 2 hrs & 20 minutes in a Dragonfly or I can fly 350 miles at 75% cruise speed on that $20.00.

● ***How about aerobatics Mr.DF?*** Let's see the Dragonfly do those? (*The RVer comes back again!*) I came back quickly. "I get sick every time!" on anything less than a nicely done roll (*Which according to Rex Taylor the Dragonfly "roles like it's on a string"*). Aerobatics - other than an occasional roll, I'm not interested.

● ***The engine and repair costs;*** (*The DFer comes back a swingin!)* The 160 hp Lycomings we found in Trade-A-Plane were all in the 1600 to 1800 hour & up range on a 2000 TBO, some were that high in hours in after there first overhaul having total times in the 3500+ range. The engine you will be buying, which you don't really know anything about will need a overhaul soon into the future. This will be between $4000 to $7000 depending on are far you go with it!. I also pointed out that the $5000+ dollars that I was shelling out was for a **"New"** engine, not used. I just finished a overhaul on a friends Continental O-470 out of a 1958 Cessna 182. Now this gentleman wanted nothing but the best. He has full intentions on keeping the plane forever. Nothing was skimped on, complete Ceramichrome cylinders, new cam & lifters, oil pump, trick roller rockers, new mags, remanufactured carb, etc, etc. We spent $12,400 on parts and machine work, no labor in this figure (*we didn't even have to weld the case, it was perfect).* Now this thing runs like a Swiss watch, but that's a lot of money!

He said wait a minute, the O-320 Lycoming has a TBO of 2000 hours and some people get nicely past that, most VW engines have a anticipated TBO of 1000 to 1200 hours. I pointed out that was just fine because of the low cost of service parts. I swelled my chest and said that I could probably overhaul the VW 6 times or more (*unless I had to replace the crank maybe*) to his one overhaul of the Lycoming.

● The DFer comes back; ***Let's look at repair parts?*** I called Superior Air Parts down in Texas for some random prices on parts that one use in freshen up a Lycoming O-320, like gaskets, rod & main bearings, Intake & exhaust valves, set of rings, etc. I referenced the Great Plains Aircraft catalog for the VW prices.

Lycoming Components

| | |
|---|---|
| Gaskets | $80.00 |
| Bearings | $120.00 |
| Int. / Exh. Valve | $70.00 to $100. |
| Set of Rings | $313.00 |
| Oil pump | $200.00 |

VW components

| | |
|---|---|
| Gaskets | $10.00 |
| Bearings | $38.00 |
| Int./ Exh. valve | $6.00 to $7.00 |
| Set of Rings | $25.00 |
| Oil pump | $25.00 |

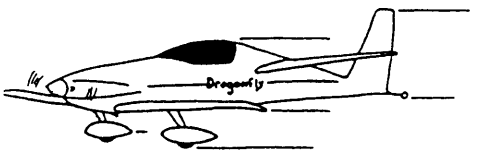
I then checked out the latest issue of Trade-A-Plane to price out Remanufactured O-320 cylinder assemblies for the Lycoming. Complete assemblies with chromed cylinders, new seats & guides, new valves, new pistons, pins, rings, valve springs. The average price for these are $680.00 each - exchange *(assuming you have a good core*) That's $2,720.00 for a set of four. I then went back to Great Plains Aircraft and priced out "New" cylinder assemblies, complete with new sleeves, new pistons, pins and rings. Also complete new cylinder head assemblies with new valves, new springs, etc. all set up for big cylinders, dual ignition. New Cylinders (4) & dual port head assemblies (2) For $555.00 Whoops! Another $2165.00 savings!(*Ladies and gentlemen! Goliath has fallen again! (The roar of the crowd is deafening!))*

***Who Won - Who Lost?*** It doesn't make any difference, this was meant to be a light hearted look at both of these airplanes and their proud builders. The important part is that **YOU** understand some of the **VIRTUES** of the Dragonfly so you can decide if the Dragonfly is the airplane for **YOU** to build and/or own!

One of the biggest virtues of the Dragonfly is it's economics of construcition, but as important or more is it's after completion/operational expenses! The Dragonfly, the Q-2, the KR-2 and the Soneri, etc. have allowed many, many people to enter sport avaition that may have never had the oppurtunity if it was not for these economics of these planes and the VW based power plant!.

Very Best Regards, Your humble David, I mean Editor, I mean DFer, I mean Spud, Oh.....Whoever I'am!

## *Spud the Dragonflyer*

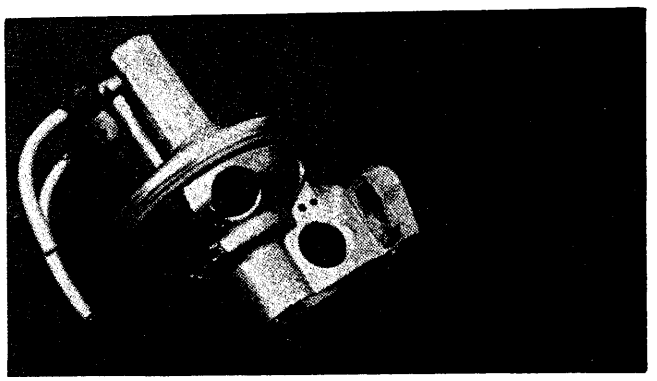


# BUILDERS TIPS

Hi Spud

I'm hoping my schedule will allow me to attend Oshkosh or Ottawa this year. I have about 75 hours on the Q-115 ( Q-2 + Lycoming O-235 powered) and I'm still thrilled with the results of my efforts, a little more on that later, but first I have 2 items for the "Builders tips" section of DBFN.

One idea that I incorporated into my Q-2 which could be somewhat adapted to a Dragonfly was a unique standby fuel transfer pump. After flying for 2 1/2 years in the Q-2 version with the squeeze bulb,(Q birds use a marine type squeeze bulb for a fuel system back-up) I tried to pump some fuel and found the bulb had become very stiff. I also discovered that pumping a gallon of gas even with the new bulb required the forearm of a weight lifter! I then considered a second electrical pump but was concerned that an electrical failure would transform both pumps into extra ballast. After considering a few other options I modified a Ford automotive (mechanical) fuel pump which I mounted to the bottom of the header tank so it can be operated by foot. When modifying the fuel pump I cut off all excess metal and drilled holes to lighten the unit (see photo). I found that the spring in the fuel pump was too strong so I cut away enough of the pump to access it and then cut some of the spring off with a Dremel cutting wheel. Don't cut too much off or the pump capacity will be reduced. The pump should operate easily by hand when the tension is correct. I then floxed aluminum tubing into the fuel ports in order to lighten and simplify fuel line connections.

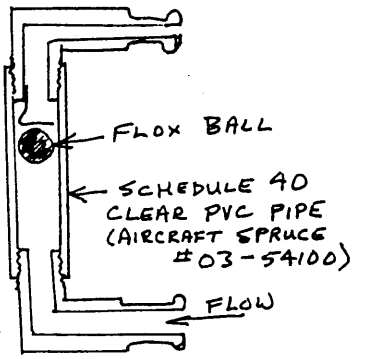


When installing the pump I recommend installing a stop so that when you push on the fuel pump lever you don't over extend the diaphragm.

When using the pump be sure to allow the lever to return to its normal position before pressing on it again. The fuel is pumped during the return stroke of the lever.

I also made a flow gauge to indicate if the transfer pump is operating. I used about 2 inches of 1/4" clear plastic pipe available through Aircraft Spruce and tapped the ends for threaded brass or aluminum fittings. From flox I made a ball just small enough to move inside the tube without binding.

I soldered a small piece of wire to one of the brass




fittings so the ball could not be pushed up against the fitting and restrict the flow. I then mounted the indicator in the instrument panel (with the soldered wire at the top of course) and plumbed the fuel pump to the bottom and header tank fill line to the top - works great!

Second item -- Reminder!! Never lay an incandescent (ordinary) trouble light on a wing, canard, etc. since the heat will melt the foam away under the fiberglass causing a potential structural failure. There will be no visible sign of the problem although tapping the surface lightly with a hard object and listening for the hollow sound sometimes works. The preventive solution is to always use a fluorescent trouble light when working on fiberglass aircraft!

Hope my few tips will save some members some trouble.

Now a little info on my Q-115 (on back cover). I spent about 1800 hours building it as a Q-2 and flew it for about 2 1/2 years. I had numerous engine problems with the Revmaster and then in 1987 the case cracked while on a cross country trip. Fortunately it kept running and I landed at a nearby airport.

Since then I have made several modifications including designing and building a new flat canard (Dragonfly style) using an LS1 air foil similar to the Q-200. I designed the new canard structure using basically the Dragonfly type of layups with carbon fiber spar caps and E-glass shear webs. Strength was calculated using Martin Hollmans book on composite design, and I designed the structure for +8G's, -4G's, As you can see I'm using a Dragonfly Mark II landing gear. I installed a Lycoming O-235 rated at 115 hp. My new gross weight,

is 1150 lbs.

Performance is excellent, top speed being just over 200 mph TAS at 6000ft., I cruise at 175 to 180 mph. Climb is very impressive with rates in the excess of 2000 FPM at 110 mph IAS, solo during the cool weather. At gross it seems to be around 1500 FPM. Landing are a pleasure with the Dragonfly Mark II gear. I have learned to keep the tire pressure below 18 PSI to reduce bouncing off the runway irregularities on roll out. I guess I'm using the tire as somewhat of a shock absorber.

I hope to see everyone at this years flyin at Ottawa, Kansas (if my house construction proceeds smoothly).

Yours Truly

Kimbull Mc Andrew

Dewinton, Alberta

Canada


# 1994 ANNUAL FLY-IN !

## 4TH ANNUAL!

Wow! Here we are coming up on our 4th annual Dragonfly/Quickie/Q-2/ Q-200/ Fly-in! Everyone needs to start planning right know and mark those calendars. It's September 2nd, 3rd & 4th (Friday afternoon, all day Saturday, and Sunday till noon). It's business as usual, The forums including Steve Bennett of Great Plains, Patrick & Robin Taylor of Viking Aircraft, The awards banquet and more!

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Please find enclosed your registration and info sheet enclosed.

**Please mail it soon!**

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# THE CLASSIFIEDS

***Free Jigs:*** I have the forward and rear turtledeck jig/molds who ever wants to pick them up - free. I got them from Paul Zimmerman on the condition that I would would pass them. David Morris - Garland,Texas Dallas/Ft Worth area) (214)414 3717

***For Sale***: Sterba 60X68 prop $250.00, spin-on oil filter adapter for continental $125.00, two new Lamb 11:00X400 tires $50.00 Day (508)668-4784,Eve(508)668-5285 EST

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***For Sale:*** Dragonfly plans/newsletters and all three Hapi construction videos, all never used. Also looking for an unused set of CYGNET plans which Hapi once sold. Tim (403) 594-5675 POB 3114, Medley, Alberta, Canada T0A 2M0

***Wanted:*** A ride in a Dragonfly for prospective builder. Close to western New York state. Some time before winter. Al Germann, 12440 Meahl, Akron, NY 14001

***For Sale:*** Original Mark I Dragonfly, no canard or prop, Hapi 60-2DM engine. Flight instruments, Whelen strobes, unwrapped "bow" style gear leg. $5800.00 Paul Dickson (606) 654-83984

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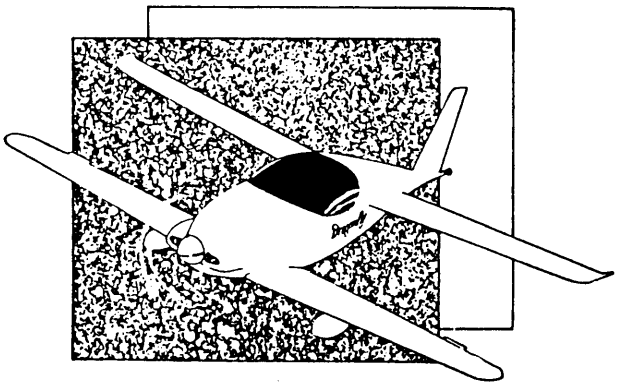
***For Sale:*** Task Research "Snap Dragon" Dragonfly kit, complete with MK II gear leg kit, canopy, computer cut canard/wing cores, Tri-ply cloth, carbon fiber, all hardware, engine instruments, video's and plans. Engine with Scat heads & Diehl super case. Will sell engine seperate. Will make someone a great deal. Call days (703)667-2130



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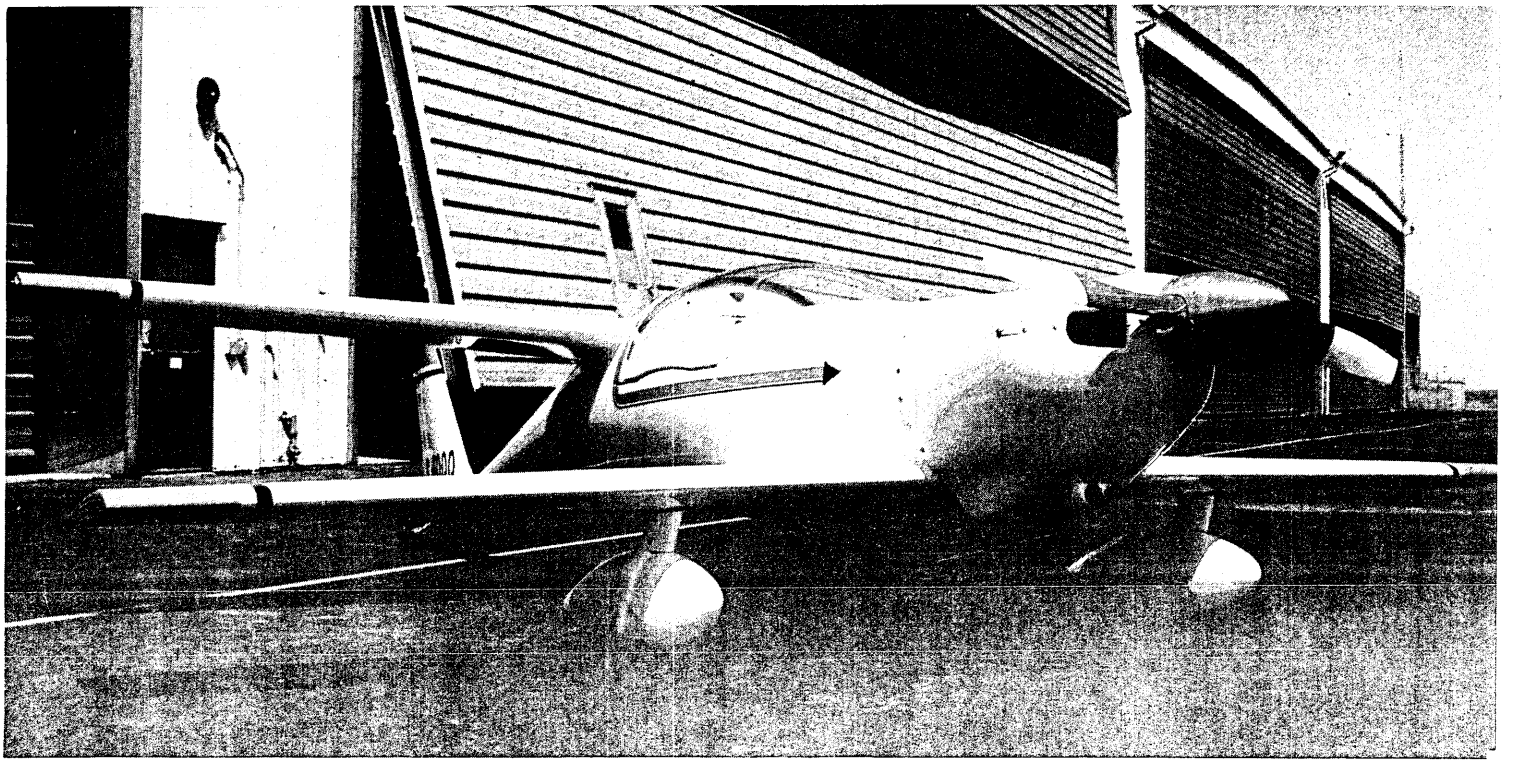
DRAGONFLY



*KIMBULL MC ANDREW OF DEWINTON, ALBERTA, CANADA*

*QUICK! WHAT KIND OF PLANE IS IT? SEE PAGE 9*

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