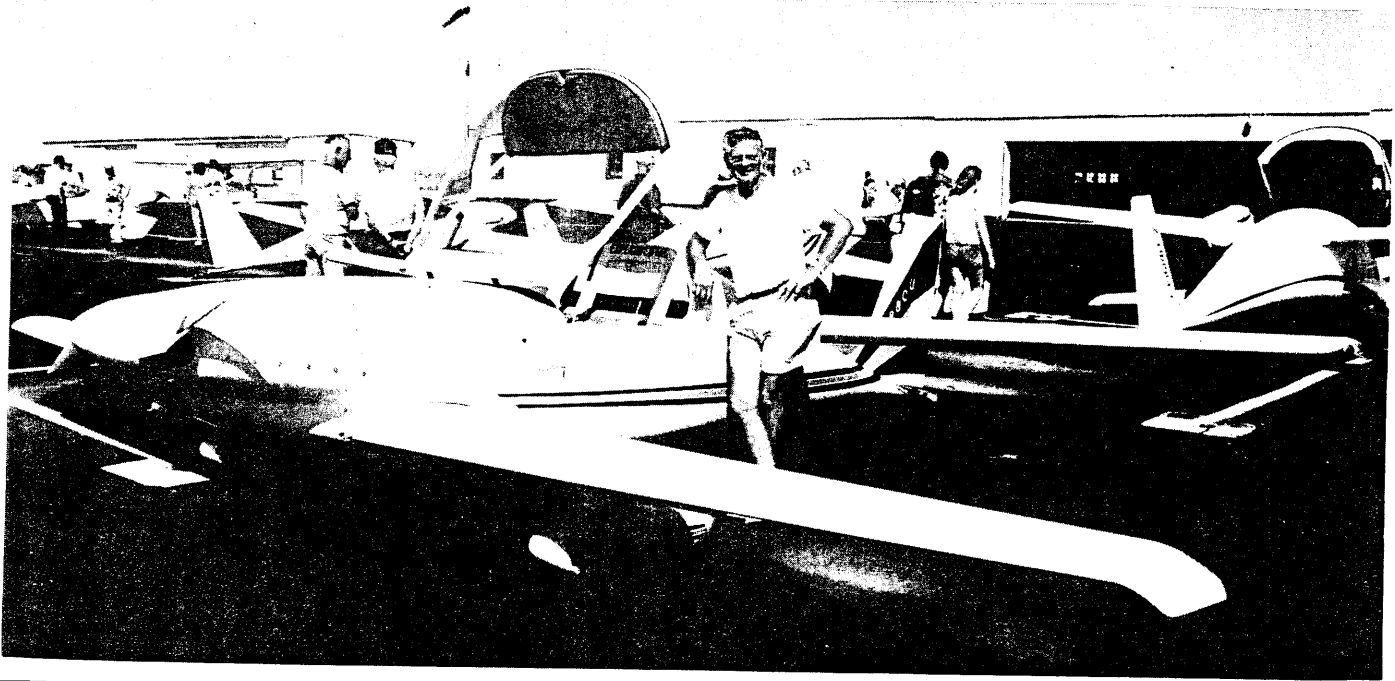


DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICAL VOICE OF DRAGONFLYERS ALL OVER THE WORLD

VOLUME 49

SEPTEMBER - OCTOBER 1993



CHUCK UFKES OF OCALA, FL BEST OVERALL DRAGONFLY - OTTAWA 1993

OTTAWA 1993

By Jim Masal - Q-talk editor

It was a picture-perfect day in Ottawa, KS, the land of gently rolling farms, Holstein cows, red barns and... the golden McDonalds arches, Wal Mart, and the Sonic drive-in. A cold front flew through just recently and the flying and gawking couldn't have been better. It was cool and dry, for those of you who just barely remember such

times.

When I got home from my first Oshkosh in '73, what stuck in my mind even more than the profusion of airplanes was the cleanliness of the grounds. At Ottawa what stands out most was the teamwork. Airport operator Chuck LeMaster had his folks repaint our hangar meeting area a sanitary white and clip the green expanse of grass where we'd park. All the folks with cars made sure everyone got delivered to the motels, Ottawa University for the awards banquet, and to the airport each morning. Best of all, the pilots were rarin' to ride,

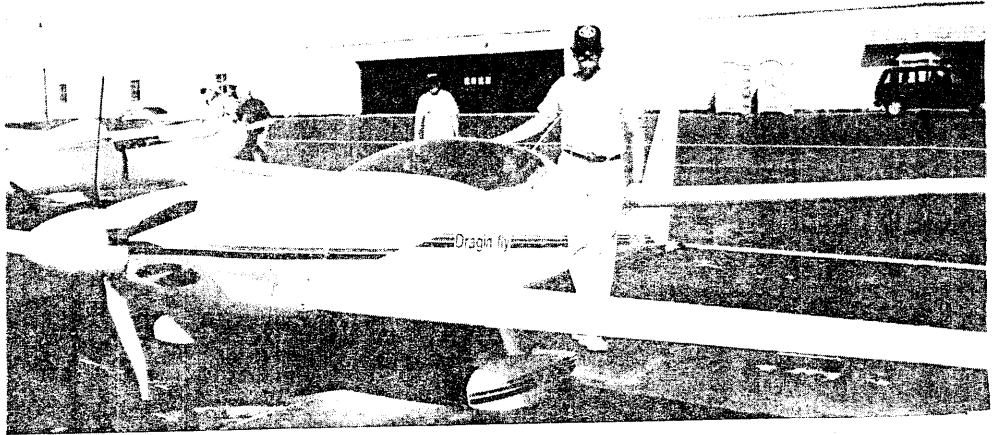
and anybody with even the least bit of gumption to ask could get a ride. In fact, I got the last Dragonfly ride of Saturday from Steve Larribbee of Illinois who had already put in several hours as chauffeur. I just happened to be conveniently standing by when he taxied up, disgorged his latest passenger and asked "Who's next?" His long line had suddenly dried up. Being a fast person on the draw, I immediately recognized the opportunity, I hopped up and down about about 6 times shouting "Me, me, me." I got a fun ride behind Limbach power.

From the outside, our Q's have an obvious speed advantage and the Dragonfly seems capable of handling more payload, but when you're inside the Dragonfly on the climbout, it doesn't make a flip of a difference. They feel about as much alike as they look alike. Steve let me do tight turns, power on and off "stalls" and even a high speed pass (to what I naturally imagined to be a cheering crowd, but which were actually busily stacking airplane away in the hangar as the day drew to a close). The landing approach is slower, lower 70's, but it has the same feel and slight "goosiness" on the rollout. Landing critics didn't know it, but the runway had a slight bump about 100 yards from the north end that tended to "Launch" our planes unexpectedly.

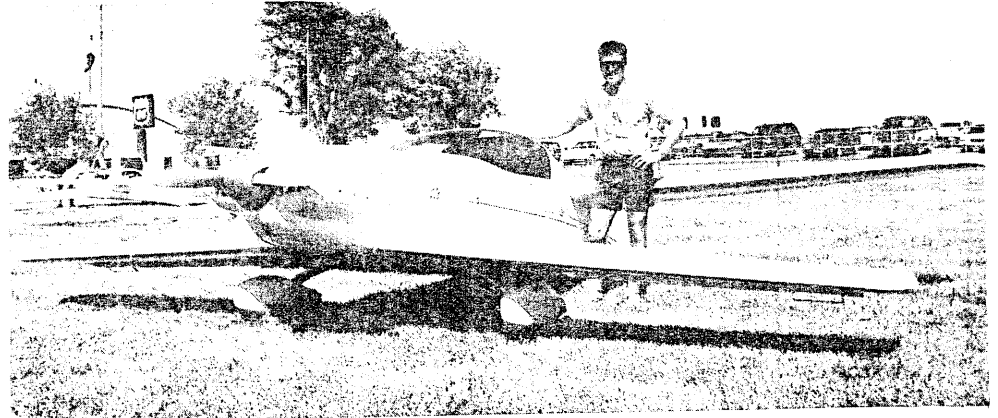
This was what the fabled "grass roots" fly-in should be. Lots of aircraft in the air except during the mid-afternoon hot spot, lots of hotlaps in singles, doubles and triples for the shutterbugs and an occasional grandstander to set the heart-a-twitter.....nothing foolish, but a visual treat to take back home to the workshop.

There were upwards of 60 to 70 people in all the forums which covered flight test tips, Q & DF tips and tricks in general, and an especially interesting one on VW and Subaru non-aircraft powerplants.

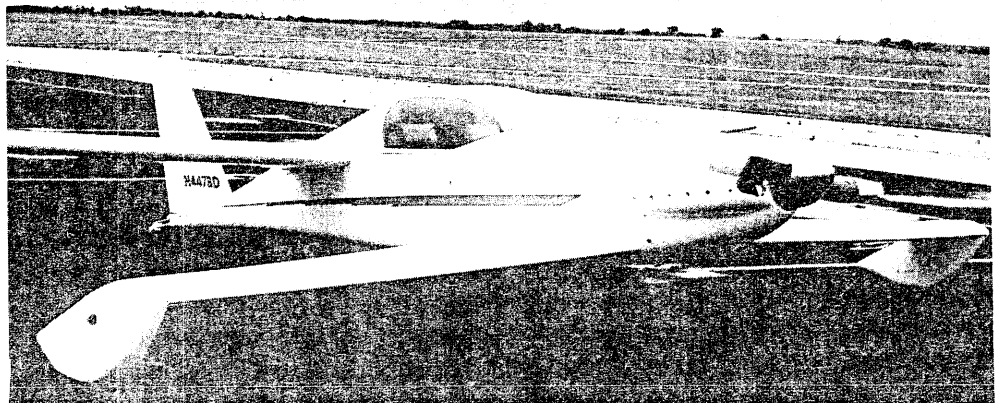
There was the typical diversity there this year. Capturing a special rap attention were the two Subaru powered



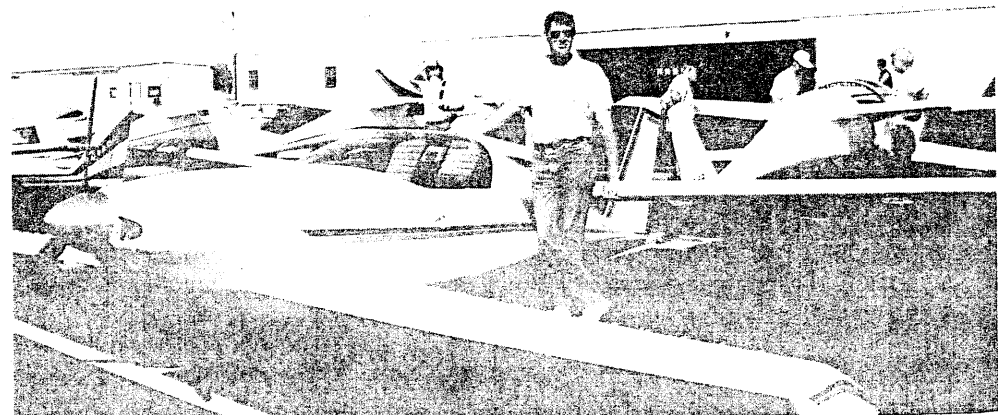
JUSTIN MACES'S MK II OF TUCSON, AZ.



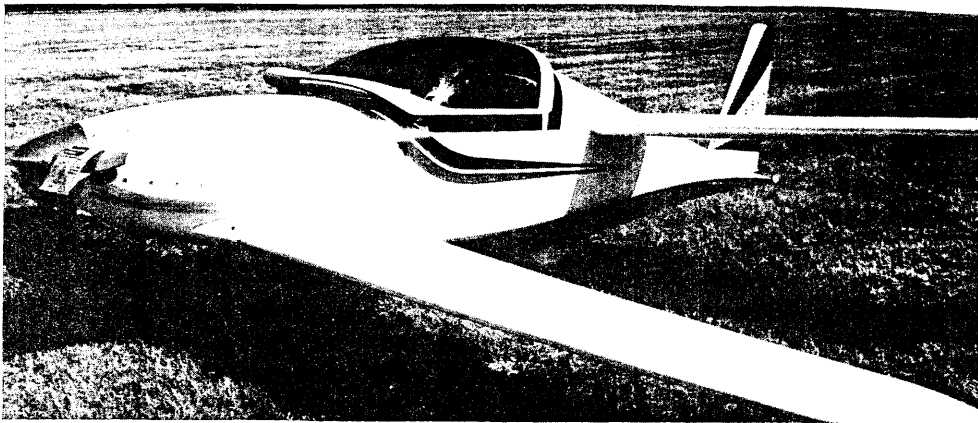
SKIP LAWRENCE'S MK II OF OXFORD, OH.



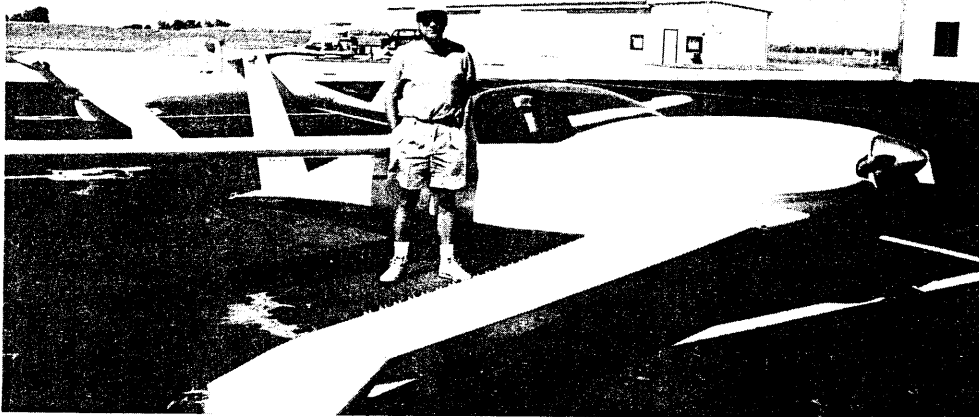
BRUCE DIXON'S MK I OF LAWRENCE, KS.



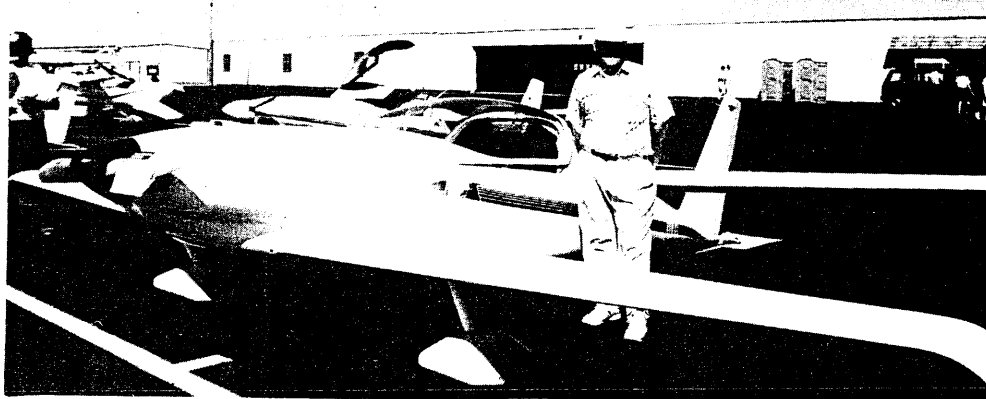
WAYNE ULVESTAD'S MK I OF VOLGA, SD.



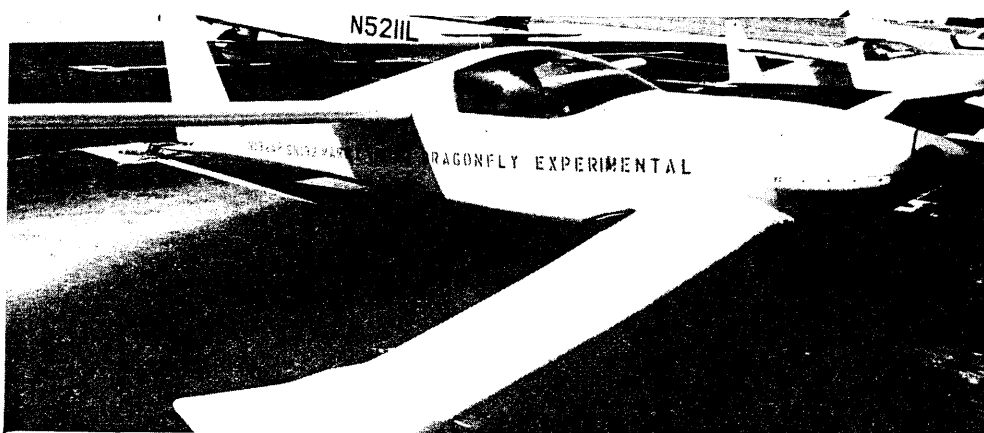
RICHARD WERNER'S MK I OF CHESTERFIELD, MO.



ROB KERMANJ'S MK I OF BOCA RATON, FL.



STEVE LARIBEE'S MK II OF CHARLESTON, IL.



ALLEN PERKIN'S MK I OF WILLIAMSTON, MI

Dragonflies. And these 2 ain't just in the tinkering around stage either. Reg Clarke "drove" his direct-drive Subaru in from Canada - 8+ hours - and took the longest distance honors for the Dragonflies guys. Justin Mace brought his geared Subaru in from Tucson, AZ.. It has a lean, mean look with his 5 bladed prop and features reminiscent of a P-51. Justin's not tickled with the weight of his installation (Reg Clarke's is 100 lbs. lighter), but he's plied the skies in it for some 210+ hours. It's not just a pipe dream.

We had 23 airplanes on the field including 10 Dragonflies, 2 quickies, 6 Q-2's & 5 Q-200's. And we had a ball!

Reports from some of the 83 folks at the banquet are that it was a hoot. I can't say, inasmuch as I was preoccupied with diligently exercising my M.C. duties with my customary intensity. And it was tough, too, with all the guffawing and heckling going on. The rascals at the front end of table #1 were especially meddlesome. I have good mind to print all their names before next years fly-in so my "friends" can bloody their noses. And that goes for Spud too who was egging them on (in case he thought I didn't notice).

The ladies of Ottawa University put on a wonderful feed (prime rib, fish, baked potato, trimming) and with good service. In spite of our last minute upping of attendance numbers they prepared plenty for all and even had some leftovers.

Instead of the after dinner cigar, for health reasons we had awards instead.

Best Dragonfly.....Chuck Ufkes, FL
(Ulvestad, SD - runnerup)

Best DF interior.....Reg Clarke, Canada
(Bruce Dixon,KS - runnerup)

Hi-timer DF....Rob Kermanj - MK I 916hrs

Longest distance DF...Reg Clarke - Alberta, Canada 1400+ miles

Best Q-1.....Robert Bounds, NE
(Hardy, CO - runnerup)

Best Q-2/Q-200.....Homsley, AR

(Fisher, IL - runnerup)

Best Q interior.....Fisher, IL

(Homsley, AR - runnerup)

Longest distance Q....Hardy, CO (Q-1) and Harris, CO (Q-200) (we're sawing the plaque in half, from same airport)

A good time was had as we awarded various trinkets and catalogs as door prizes. Paul Fisher, Q-200 driver from Illinois had a bunch of gag gifts made up; A name-tag sized plastic placard refrigerator magnet saying

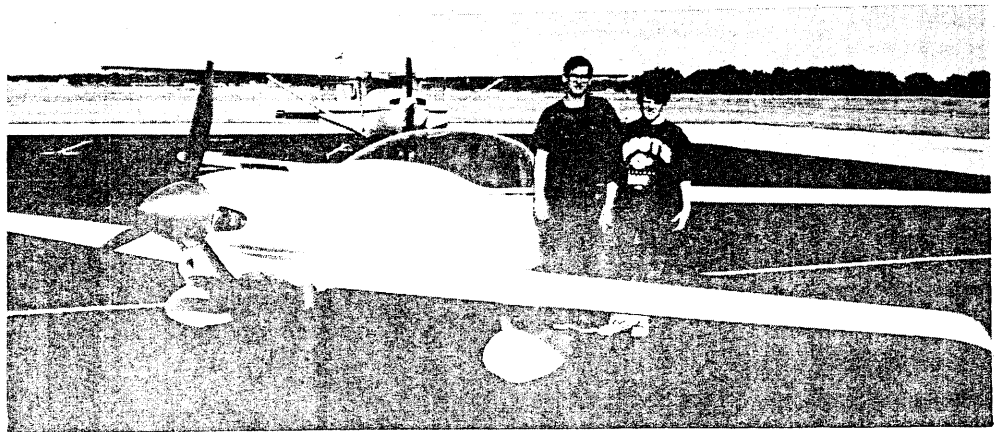
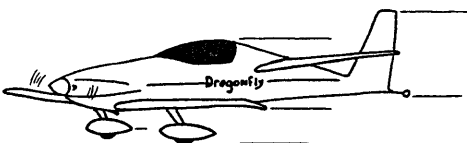
"FRIENDS DON'T LET FRIENDS FLY METAL AIRPLANES."

Truer words were never uttered.

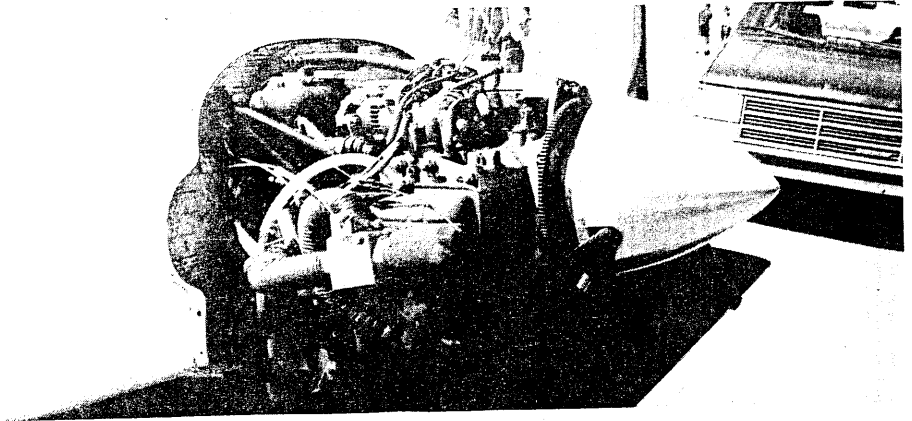
Sunday morning I mistakenly had a second cup of coffee before leaving for the airport at 7:45 AM and nearly arrived at an abandoned aerodrome. Most guys had skeedaddled in advance of an approaching cold front that the weather channel promised (it eventually came sauntering through along about 6:00 PM) But nobody wanted to chance a repeat performance of last year even if they DID have an extra day to get home.

And that brings me to a final point. This Labor Day date was of great concern to us. We wanted an extra day to out-fox any wrinkles the weather Gods might throw at us, but word on the street was many wouldn't be able to come due to family commitments on the last long summer weekend. What to do?.....We took a chance. It worked out just fine. In fact, nearly half the planes that showed were ones that we hadn't seen out in the open before. Guess when we'll be holding this fly-in next year? Yep! You got it! See you there. *Jim Masal*

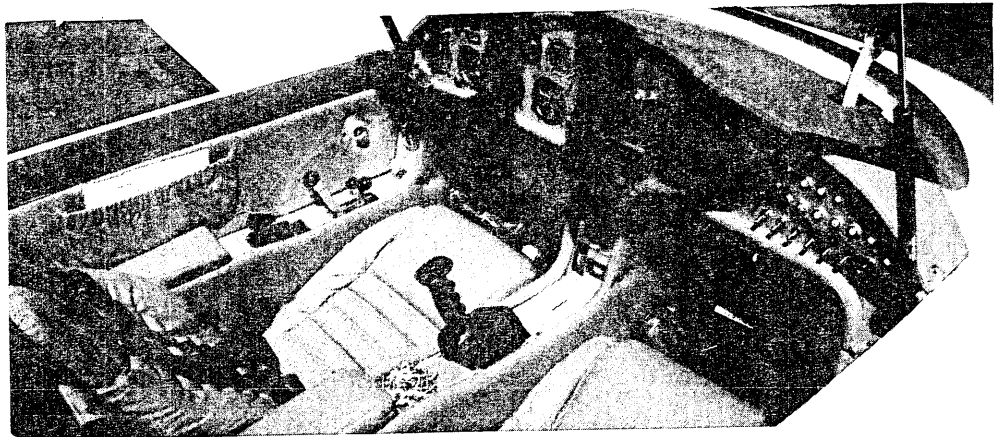
more on the fly-in on page 10



REG CLARKE MK II OF WESTASKIWIN, AB, CANADA



REG CLARKE'S TURBO/SUBBY INSTALLATION



REG CLARKE'S BEST OVERALL INTERIOR



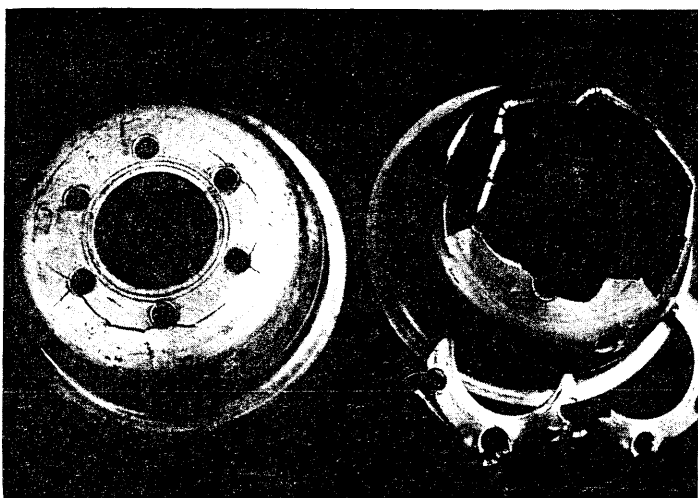
ONE OF THE MANY WEEKEND FORUMS

WHEEL PROBLEMS

We need to talk about some of the wheels that have been used on Dragonflies, I would like to give some recommended inspection practices at every annual you should make from now.

At our 1992 annual fly-in we had a gentleman (sorry I forgot his name) show us an aluminum wheel from his Dragonfly. It looked like it had exploded. No one in the forum was sure what brand it was (several people felt it was not a Hapi) and none of the Dragonfly drivers there had not experienced any other problem like this. We chucked it up as a one time situation.

At this year fly-in, Richard Werner of Chesterfield, MO brought both of his aluminum wheels. One had blown apart while he was taxiing and as a result damaged his Mark I wheel pant to the point that he had to do several glass lay-ups & repaint to make the repair. Richard feels that this was aggravated because of severe over-inflation of that wheel & tire assembly. The one thing that we had noticed during the forum that there was cracks coming out from the bolt holes on both wheels. See picture.

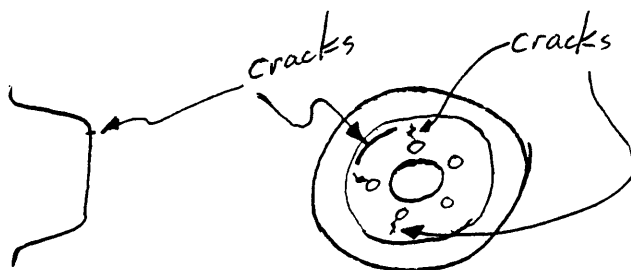


Then right after the fly-in I received the following letter from Peter Judd of Vancouver, British Columbia, Canada.

Hi Spud, I recently discovered cracks in the original aluminum wheel rims that I purchased from Hapi back in 1983. Part no.#70-001 in their old catalog. I found the cracks because a sharp edge punctured the tube. The crack had started from the bolt holes and progressed radially outward. Cracks then started traveling around the rim where the rim bends outward to go towards the lip of the tire. See sketch in next column.

The cracks were only present in the rim halves on the

opposite side of the drum assemblies. I had about 400 landings on the aircraft at that point. Cracks were present in both wheel assemblies.



I would recommend that anyone that is using these rims have a very close inspection of them for cracks. I replaced the whole wheel and brake assembly with a set of Hapi wheels and disc brakes that I bought from Hapi along with the Mark II conversion kit which I had never installed (still flying the Mark I). Does any one know where I can get replacement brake pads for these newer Hapi disc brakes? (Patrick Taylor should be able to help us here).

P.S. Spud, keep up the good work. There's no other way for us to share this kind of important information.

Thanks

Peter Judd

I feel that this has started to form somewhat of a pattern that we need to react to. This does not mean that there is anything wrong with these wheels. We all make far from perfect landings. And we impose tremendous side loads on these little wheels with our "most of the time slightly overweight" airplanes.

I highly recommend that everyone start making a thorough inspection at every annual time of their wheel assemblies and anyone with 100 hours or more that has not inspected, do so soon (read that as now, PLEASE!).

To do a proper inspection, the wheels will have to be removed from the aircraft and disassembled. The wheels need to be disassembled because they have washers and/or a retaining plate covering the bolt hole and surrounding area. Richard and Peter were not able to see these cracks until they removed this plate.

This potential problem should not be taken lightly. If you would have wheel failure like Richard Werner did at moment of touchdown, this could really ruin your whole day and mostly likely your entire week. Ok gentlemen, if in doubt, let's tear'em down.

Spud

DRAGONFLY
BUILDERS & FLYERS
NEWSLETTER

LETTERS, LETTERS

Back in issue #47 I published the reportings on two Dragonfly accidents. My goal was tell it just like the way it was and hopefully hit a nerve with everyone a little bit, we all need constant reminders. The flying in any aircraft certificated or experimental is serious business, it demands your attention and respect every minute your near or in the airplane. I take nine or ten other newsletters, these problems are in every other homebuilt type community composite, metal or tube/fabric. To follow is two letters from people who have some additional good thoughts on the subject. - Spud

Hello everyone,

I must comment on a common thread that runs through most of the accidents for which I have read the accounts. Were these accidents not exactly parallel in circumstances to those that happen in every single type of aircraft, I would not comment, but they are!

I am a multi-engine instructor with a couple thousand hours, but I still find the Dragonfly one of the most fun airplanes there is to fly - it certainly has not finished going through its evolution. I have test flown my BD-4 and other people's homebuilts, including a Rotax-powered Rans S-10, and once I established the basic controllability of these airplanes the one thought the preoccupied my mind was where would I put the airplane down if the engine quit at that instant. As has been so often stated, when you first fly an Experimental aircraft (read that as at least the first 40 hours or any time after you have changed or corrected **ANYTHING**) you are a test pilot in the truest sense of the word. In my own experience with an engine failure, there was no decision to be made at that instant of failure, just fly the plane, troubleshoot, and do the Mayday thing. The only thing that saved my day was knowing on departure that twenty degrees left course correction would land me on an interstate. This was at 45 hours of testing with a certified engine/prop combination. I spent my first fifteen hours within known gliding distance of an airport of at least 4000' length.

The two accidents listed in DBFN #47 have the common factor of an unanswered question: What was somebody doing at 2000' AGL on a first test flight or 1/2 hour into a test flight after a known problem without an airport **UNDER** them? Ian and Bob, I wish both of you a full and speedy, pain-free recovery, and hope you both will fly the Dragonfly again. When any of us make the decision to test fly, the more options we leave ourselves, the better the odds of walking away when some option is taken away. When you take away the option of landing on an airport, you should be able to say to yourself, "I now accept the probable outcome - a seriously damaged plane and a hospital stay - if I don't hit someone on the ground. "Most insurance

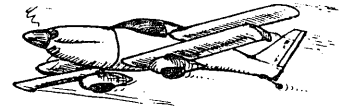
policies will not cover liability during Phase 1 period of testing. You **WILL** lose everything you own if you are unfortunate enough to involve someone else.

Please, fellow pilots, give yourselves the option to fly another day and share the beauty we are lucky enough to touch now and then.

Sincerely,

Darryl Wright

Barrington, NH 03825



Dear Spud:

I think that our DBFN is absolutely fantastic thanks to yourself and those who submit material. Volume 47 was particularly eye-opening because of the safety of flight items which involved three forced landings, extensive damage to two beautiful aircraft, and an injured pilot who spent 19 days in the hospital. I hope that every subscriber reads and thinks in depth concerning those three incidents. What the builder's letters say is preeminent to safety and avoidance of premature death.

There is an old aphorism "**Feed an engine fuel and electric and it will keep running**". But we continue to crash 'Flies for the same old reason ... not enough fuel.

The Ian Kinross and Bob Meader letters stated quite well what we are dealing with regarding tank residue and filter stoppage. Ian and Bob are not the first to crash because of this recurrent problem and my hat is off to them for telling us about their experiences. I have been there and know from less catastrophic occurrences that filters must be kept clean. I can only add that if you insist on using the little limited-area glass filters (per plans) never try to clean the elements. The visible residue can be removed but the pores remain clogged. Throw the damn element away and install a new one. Better yet, throw the whole glass assembly away and use canister type auto or truck filters.

Next to clogged filters the most potentially dangerous shortcoming in our fuel systems concerns the lack of gravity "head" and/or vapor lock associated with same. In DBFN #47 Lew Creedon analyzed the engine failure absolutely correctly. The airplane needed a boost pump to augment gravity. We could spend pages discussing the probable exact cause (such as fuel boiling in the hot carburetor, fuel lines, or gascolator) and marginal band-aid fixes (gascolator vapor relief tubes, etc.) but a boost pump is the simple and proven way to really correct the situation.

Lack of head pressure from the header tank has caused numerous engine failures and engine sags during high

attitude climb and take off acceleration particularly during hot conditions. Some aircraft with gravity-only systems have not experienced the problem at all while others have been elusively plagued by the problem. In spite of repeated design authority denials a number of our builders report that they found they needed one to two psi pumped pressure. I think that every case involved the old HAPI float bowl (Tillotson) carburetor. I have no information that systems using floatless carburetors like the old Posa or for that matter systems with other carburetors of any type exhibit such problems. (Ellison of course calls for pressure on their diaphragm-type carburetor.) Perhaps other readers can provide added information on other carburetors.

My current installation includes two boost pumps plumbed in series to feed my Ellison. The second pump is for emergency back-up purposes only. A gravity bypass valve and fuel line are also installed around both boost pumps as a last resort. Don't leave that goody off or a total electrical failure can cause you to be worse off than if you didn't have the pumps! Yes, my pants are supported with belt, suspenders, and safety pins too?

One necessary procedure involving boost pumps is to select pumps that give the proper pressure for the carburetor used and/or install a pressure regulator. Too much pressure can cause frightening problems. My system includes a pressure gauge on the panel for reference. Also pick a pump with proper (usually 3/8 inch or AN-style 37 degree dash 6) fittings. I use Facet #40104 (NAPA 610-1052) boost pumps. These are rated at 1.5 to 3.5 psi. Do not use Facet 40023, 480615, or 48616 anywhere in the system; these have unsafe Viton internal foot and plunger valves.

Now, let's talk about keeping the header tank full. I again use two Facet pumps plumbed in series. One is the service transfer pump and the other the backup. I use and strongly recommend the header low-fuel-warning light as discussed by Bob Meador who sees the value when filters clog. But also remember that a transfer pump, associated switch, or fuse will sooner or later fail and cause the same problem. In any case a big red light will warn old slow-witted pilots like Nate to do something. In my case I turn on my back-up transfer pump. That pump and my back-up booster pump are wired through separate fusing to one "EMERGENCY" switch. Three nanoseconds after seeing the red warning light or after any other hinted engine problem my hand hits that switch to "ON".

I'm sure that persons ridicule me for having four pumps and all that extra plumbing and electrical garbage. They shall remain free to follow what may be the Primrose path as shown in the plans. In the meanwhile I'll remember history and scares of the past. And pumps weigh only 1.1 Newtonian pounds and cost a mere 29

or so Clinton dollars.

Something also not covered by the plans is good tank venting. Many of the high output pumps transfer more than 30-35 gph when functioning in our installations. Some of us have seen fuel pile up in the return tube because of air-lock. The result is fuel pumped overboard from a vent that is out of sight. A gallon per hour may be pumped overboard and the pilot never knows it. The input flow to the header can be reduced by crimping the input delivery tube or adding a small adjustable valve. I also took a "T" line off the vent hose near the header and ran a tube down to vent the main tank. That lets pure fuel run back down the return line without air returning in that same line. Some of us have also temporarily or permanently plumbed the header vent up to an outside ram tube on the top of the cowl where overflow can be observed. The safety tradeoffs are that the new location removes the vent from hot carbon exhaust showers but allows fuel to drain from the vent after a nose-over accident.

Incidentally, many of us out here on the west coast have special header tanks. These are placed forward of the standard header location and are configured to run athwartships (i.e. from side-to-side). This permits us to install avionics on the starboard side of the instrument panel where the original tank was.

I recommend that every builder examine his existing or intended fuel system and run a brain storming fault analysis of everything imaginable that can and eventually will go wrong. Think out a better system. Talk it over with knowledgeable people. Adequately and safely test your system on the ground and in the air. Remember that what I or others recommend and use may not be suitable for you and your particular engine, carburetor and so forth.

Best regards to you and all my 'Fly friends!

Nathan Rambo

Camarillo, CA

REMINDER!

Great Plains Aircraft Supply has moved! Their new address is;

Great Plains Aircraft Supply

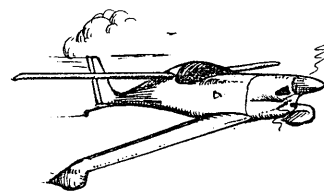
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CUSTOM WINGS

Hello Spud

I would like to bring you up-to-date on what I have been working on. As you know I have been redesigning and recalculating my Dragonfly, which I now call my "Fancyfly". We have been working on building canard & wings using the hollow core style construction similar to Lancair, Glasair style airplanes.

The MTOW (maximum take off weight) of my conversion will amount to 1435 lbs (650 kg). With an empty weight of 770 lbs (350 kg), the payload 665 lbs (300 kg).

The max. safe load at 4.4 g on the canard itself is very conservatively calculated to 4000 lbs. (1800 kg). One half of the canard therefore must be charged with 1985 lbs. (900 kg) first and then up to 1985 lbs. X 2 = 3970 (1800 kg) to demonstrate the safety factor of 2. The halfwing is fixed solid to steel supports by its main and load transfer bolts. This construction must stand at least the force which will break the entire canard since I plan to treat my original canard the same way.

The rear wing will only be charged to 4.4 g to test the bulkheads. The wing is strong by itself. If calculated regarding its load it would come out pretty soft, so stiffness is the name of the game here. Before performing the official load test the wings must be heat-treated in special ovens.

Bob Walter's airfoil will continue to be used. We have found out that the sensitivity to bugs and rain seems to be very minor problem to the airfoils, but to a much larger extent the problems arise from difference in the angle of incidence. Tandem wing aircraft compel the constructor to harmonize the two flying surfaces which influence each other. To solve this task the wing lift load transfer construction is designed to allow adjustment of the wing's angle of incidence between plus one to minus one degree adjustment (2 degrees is very much!) Starting with Bob Walter's original configuration there is now the opportunity to tune up the airplane.

Wing and canard will be sold complete, not as a kit, with all control surfaces, fittings, inspection holes, tie down rings, with load transfer parts, main bolts and so on. Also another big plus is that both the canard and wing will be completely filler-painted.

The canard & wing can be fitted to an already completed DF airframe. You fix the load transfer construction to existing bulkheads using floc and glass as usual. You will install a new undercarriage. Guenther Kirschtein's solution seems to be a very good choice. You install it between tank and canard drag bulkhead. Thus you will land airplane on the fuselage and not the canard.

After installing the wings, fix that loose hat over the wing and make a fairing under the canard to close out the fuselage bottom. Maybe I will sell this part premolded also. Result will be higher torsional strength since the fuselage is closed out under the canard and above the wing. Additionally build small fairing where the wings attach to the fuselage. I estimate the whole work to about 200 hours for installation.

I have sent you several pictures and sketches to share with the group in the newsletter. The next area I am working on is the construction manual, this may a little bit of a problem for me because my English is not as good as it should be (you seem to be doing just fine to me!- Spud).

I will be working on shipping estimates. The shipping crates will be 12 X 4 X 4 ft., the crate charge should be approx. \$250.00 US. The cost for both wing & canard assemblies will be \$8500.00 US. Order will require a \$5000.00 down payment to start a order and the balance before shipment. Production time will be 3 months.

I look forward to hearing from the Dragonfly builders around the world.

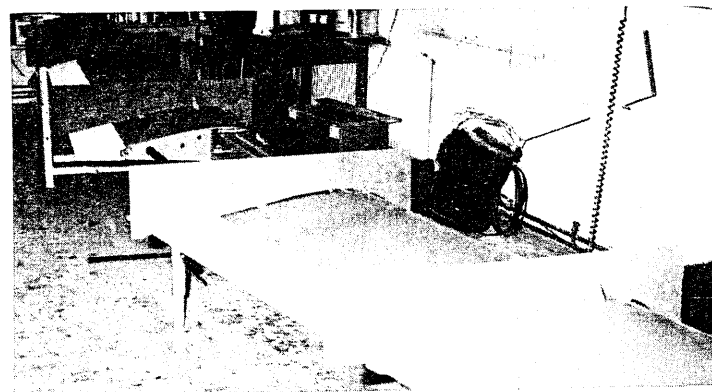
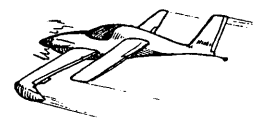
Best Regards

Hans Graesser

Markstr. 56 D-71364

Winnenden, Germany

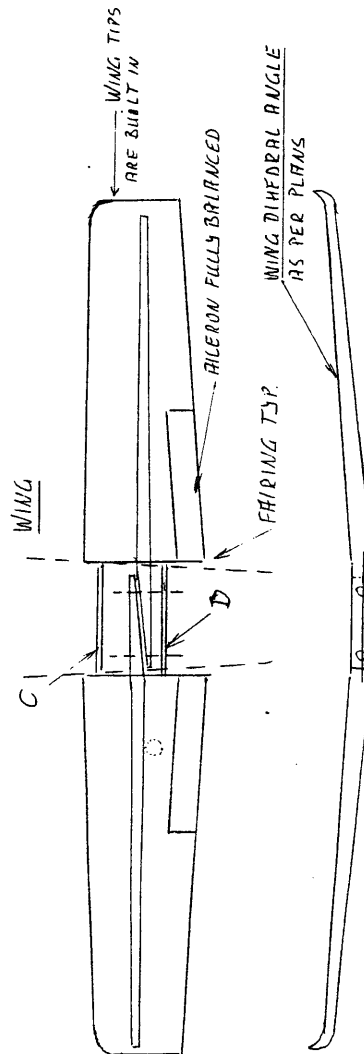
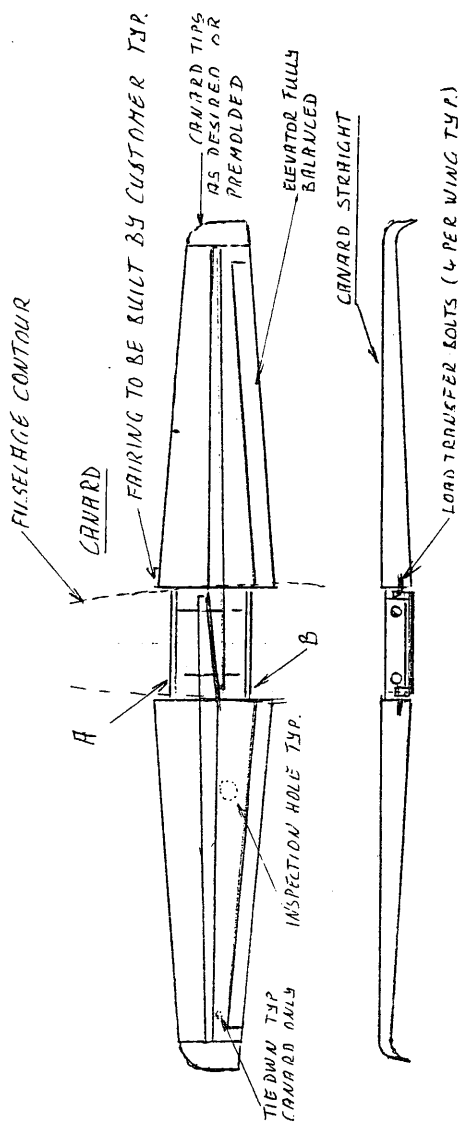
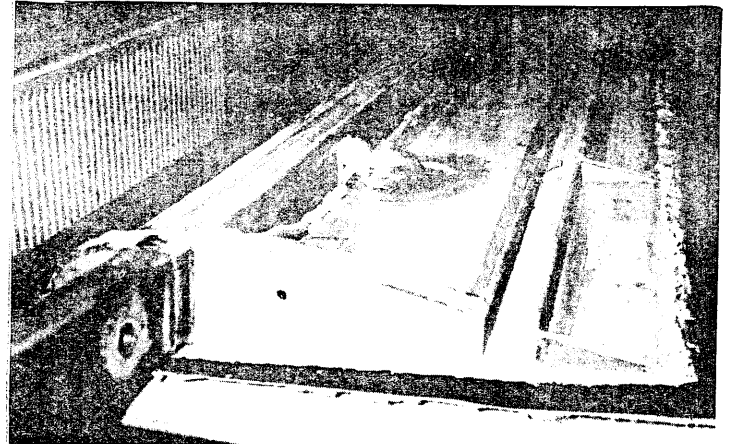
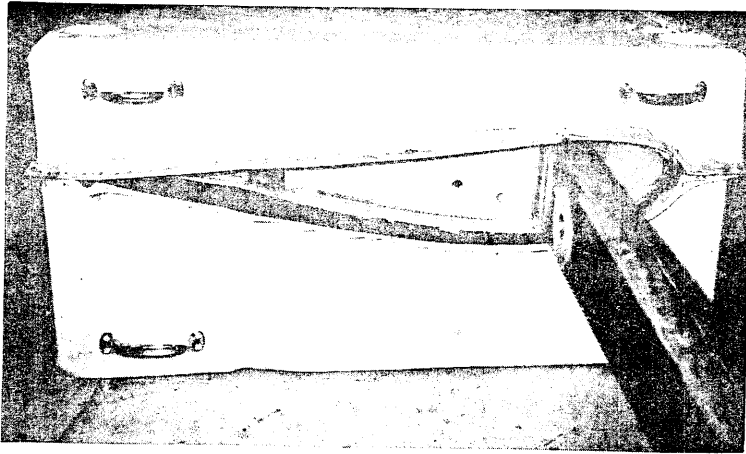
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CLARK FOAM UPDATE

From Pat Taylor - The replacement for Clark foam is produced by General Plastics (50yr old co.). The people at Featherlite have tested the material to everyone's satisfaction and meets or exceeds the Clark. The name of the foam series we'll be using is "Last-A-Foam" and is available in all densities. Wicks, Aircraft Spruce & Alexander all have a fair amount of Clark still on the shelf and all three have the new material on order.

HANS'S PHOTO'S AND SKETCHES



- A CANARD FWD LOAD TRANSFER TUBE WITH BOLTS (FIXED TO CAN. LIFT BULKHD)
- B CANARD REAR LOAD TRANSFER CONSTRUCTION (FIXED TO DEAG. BULKHD)
- C WING FWD LOAD TRANSFER CONSTRUCTION AT NEW BULKHD. ADJUSTABLE TO $\pm 1^\circ$ ANGLE OF INCIDENCE VARIATION
- D WING REAR LOAD TRANSFER TUBE

MORE OTTAWA 1993

by Spud Sponitz

Wow! NO, Quadtriple WOW! What a great fly-in! Everything just went perfect. We had a good airplane turn-out, lots & lots of builders, weather was awesome, I'm very pleased the way it turned out and I already can't wait for next year.

Chuck Ufkes of Ocala, FL was awarded the **Best Overall Dragonfly**. He has an excellent example of a Dragonfly. Runner up to Chuck was Wayne Ulvestad of Volga, SD. We also gave honorable mention to Bruce Dixon of Lawrence, KS who has one hell of a Dragonfly and is a award winner at any national event. He has the airplane completed and is just starting on his taxi testing.

Best Interior went to Reg Clarke of Westaskiwin, AB, Canada. Runner-up was Bruce Dixon of Lawrence, KS.. Both these interiors were just excellent, it was a hard decision for the judges, as we look back now it probably should have been a tie!

Hi-Timer award went to Rob Kermanj of Boca Raton, FL. Rob has 916 hours on his Mark 1! Rob also continues to prove that a Mark 1 can successfully flown without mishap.

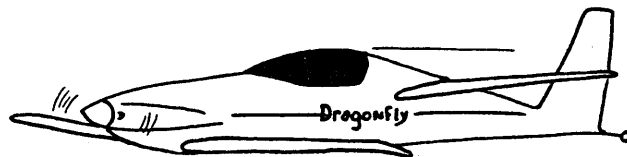
Long distance award went to Reg Clarke of Westaskiwin, Alberta, Canada. Reg's trip was 1400+ miles one way!

Justin Mace of Tucson, AZ was there again this year with his Subaru Legacy/Ross reduction Dragonfly. Even though Justin is not totally happy with its new 850+ weight, the plane now has well over 200+ hour in the air and the engine & the drive have both performed flawlessly. One of the other advantages of Justins conversion is that he has installed the engine with its factory computer, oxygen sensor and so forth. All weekend end long he burned unleaded fuel from the local Texaco station at .96 cents a gallon! Another feature of the Subaru factory computer is

that it is self altitude compensating, no mixture control needed, he's had it to 14000 feet.

Another interesting Dragonfly was Reg Clarke's, his plane has the direct drive - turbocharged 1.8 Subaru. Reg already has 80+ hours (260 TTAf) on this conversion and did demonstrate some pretty impressive performance numbers. Reg said during the engine forum that the weight increase was 40 lbs over the VW installation that he removed and the Suby fit right back into the stock cowling. Reg is boosting a maximum of 7 PSI during his initial takeoff and then primarily using the turbo to normalize the engine at altitude. Climb is 1100 ft at gross and 1400 solo. Reg took a gentleman for a ride Sunday morning that weighed in at 285 lbs., the plane still climbed better than most. His high altitude speeds are trueing out at a top speed of 190mph TAS and he cruises at 170+ mph TAS. Reg says that he has been really pushing the engine very hard trying to find out where the weak spot is going to show up, he says he hasn't found it, YET. It will be interesting to see how Reg's testing works out, I think the main area to keep a eye on is the aluminum cylinder heads themselves. We'll keep everyone posted. On top of all that Reg was awarded best interior. His interior looks like it just came out of a 1994 Chrysler New Yorker. Reg has an advantage here, you see, that is what he does for a living, he owns Clarke Upolhostery of Westaskiwin, AB, Canada.

Wayne Ulvestad of Volga, SD was there with his 60 hp Mark 1, he has been playing with a new 3 blade ground adjustable Warp Drive prop. It really looks good but he's having a little problem getting things to work out. When he sets the pitch for a good climb he loses 10 mph in cruise and top speed. When he sets it for his regular cruise speed his climb is marginal at best. Has anyone else had these kind of results out of a Warp Drive? Let us know.



OWNER	ST	TYPE	N-NMBR	HP/ENG	E.WT	CRUZ	TOP SPD	TT	YR FLY
CLARKE	CN	MK II	C-FRWC	T-SUBY	755	170	190	260	1991
DIXON	KS	MK I	N447BD	75HP VW	742	*	*	*	1993
LARIBEE	IL	MK II	N88SL	70HP VW	671	155	165	130	1988
LAWRENCE	OH	MK II	N4241A	62HP VW	620	140	160	180	1992
KERMANJ	FL	MK I	N515SK	80HP VW	709	145	155	916	1986
MACE	AZ	MK II	N764JM	SUBARU	875	150	160	440	1986
PERKINS	MI	MK I	N192AP	60HP VW	660	145	155	330	1986
UFKES	FL	MK II	N88CU	80HP VW	750	150	160	350	1989
ULVESTAD	SD	MK I	N69DF	60HP VW	648	120	140	425	1988
WERNER	MO	MK I	N4862H	63HP VW	742	135	160	230	1985

**OTTAWA
1993
FLY-IN
STATS**

* HASN'T FLOWN YET

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: Dragonfly MKII - 70 hrs.TT, 75HP Revmaster, Terra Com, transponder mode C, Micro Engine monitor, Loran, intercom, inboard gear, flies great. \$17,500.00 Call Bob O'Connell (714)496-4257

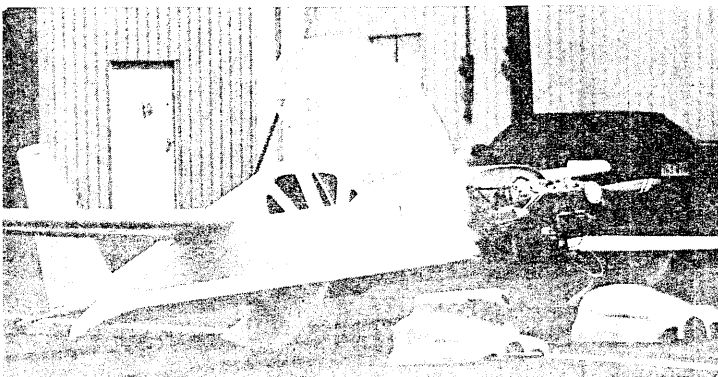
For Sale: Mark I Dragonfly 840 hrs. TT. 525hrs on 80 Hp Limbach engine. Cleveland brakes, Aileron reflexor, Vortex generators, Quality workmanship. \$11,000 less radios, \$13,500 with Terra digital Com, King transponder, Narco encoder, David Clark intercom, Apollo Flybuddy loran and ELT. Ask for Rob, evenings (407) 395-9267

For Sale: Tri-Q200 480TT, 1800 SMOH, Loran, Com, Encoding transponder, VFR instruments, Flies good, engine removed to install starter, might consider parting out or \$10,500.00 obo for all. John Dawson (805)682-6327 Santa Barbara, CA. Call and if not in leave message, I'll return the call.

For Sale: New Viking "new style" engine mount for Revmaster or Diehl accessory cases (not Hapi)-\$100.00 New Viking/Mosler Dragonfly VW exhaust system - \$175.00 Chuck Kaplan - Walpole, Mass (508) 668-4784

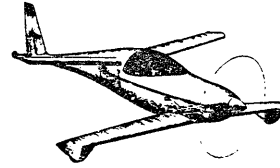
For Sale: Mark II Dragonfly airframe - complete and painted. Cowling needs painting. Revmaster 2100D mounted, 10hrs TT approx.. Also includes Prop, inboard gear, tachometer and quad instruments from Westach, basic flight instruments, strobes, center stick, reflexer, tires and brakes. All \$7800.00 Bob (214)980-3733 days & 934-3529 nights/weekends

PHOTO



For Sale: Mark I Dragonfly 240 hrs., plans built less canard & engine. \$4500.00 Call Kenny for specs-(402)593-9492 after 6:00 PM CST

For Sale: Dragonfly project 90% complete, all instruments and controls less radio, Loran & transponder, 82 HP Hapi engine. All for \$8900.00. Flybuddy with central U.S. data card-\$1190.00, Narco Com 810 radio - \$935.00, Narco AT150/AR850 transponder/encoder - \$955.00 Temper foam for Dragonfly/Q-2/Q-200 seats and head rests - \$385 Tom Thompson 5209 Gates Dr., The Colony, TX 75056 (214) 370-1822



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