

CHARLES BUCKLOW'S DRAGONFLY - The first to fly in South Africa. First flight was 100 miles to EAA Flyin at Margate.

**DRAGONFLY
NEWSLETTER**

Dragonflyer



#26 SUMMER

**SUBSCRIPTION PRICE \$15.00 A YR. U.S., CANADA AND MEXICO
\$20.00 A YR. ALL OTHER COUNTRIES**

DOUBLE NEWSLETTER

When I started this newsletter it was to be just one issue, but there wound up being an awful lot of text to go in it and this little problem with my belly wasn't anticipated then either. I find myself with a tremendous amount of material, enough to fill two newsletters, so we're going to send you two newsletters this time, #25 and #26 in the same mailing. There's plenty of material to fill up both of them and I think you might enjoy it.

1987 DRAGONFLY SWARMING

We're going to move the date of the Dragonfly Swarming up a little bit this year to the 9th, 10th and 11th of October rather than in the latter part of the month as we have had it in the past. Several people have indicated that an earlier date in October might be a little more convenient for them and we hope that that's so. We're getting an awful lot of these airplanes flying now, so we should have a good turn out this year. There will be some hands on workshop experience this year. Most probably showing how to rig the airplanes, and for you guys who are already flying, we're going to do a lot of talking about

1

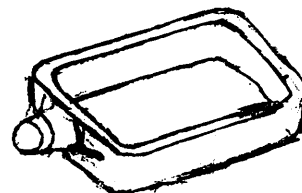
carburetor adjustment, trimming the airplane out for speed, flight testing, a lot of the other things that come into being and become concerns after you get the airplane flying. So the heavy emphasis will be on that this year. We haven't got a full firm schedule worked out yet. We'll have a little more detail about that in the next newsletter.

You can expect to get your next newsletter in July just preceding Oshkosh and another newsletter in September just preceding the Dragonfly Swarming.

T.O. McClain
Denton, Texas
Dear Rex and Family,

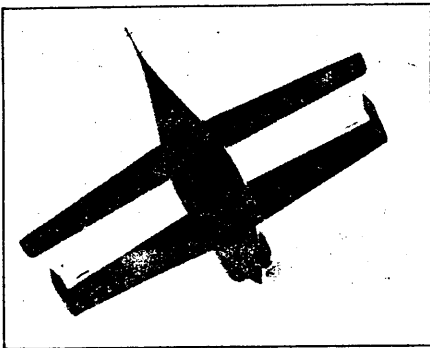
You recomend the use of small bread pans to sort parts while working on an engine. I agree and have found the tip most useful. I made some small pans from Penzoil quart plastic containers. They work well and also they are free which leaves cash for parts.

Yours, Tom



Cut out one side on Bottle.

THE "DRAGONFLY" by Charles Bucklow



*The unusual lines of the Dragonfly
ZS-VHV*

Anyone who has built an aircraft will understand my reluctance to try and put into words the what, why and how the "Dragonfly" was built. Anything written can only amount to at best, a success story of a man trying to create an aircraft and at worse, another futile attempt to try and emulate nature.

What follows however cannot be left unrecorded, not as a normal record, but because it is truly representative of what 'flying' creates in people like you and me.

During my visit to Oshkosh in 1982 I saw the prototype of the "Dragonfly" this was the second time I had seen it because I was present when it arrived in 1980, but was unimpressed at that time. My second look however "turned me on" and yes, I was bitten. Plans were purchased and I started to shop around for materials.

It was much later that the large box arrived at my house in Warner Beach Natal and I was able to start building. I was very fortunate that in Durban we have possibly the "doyen" of fibre glass and resin in the form of Gordon Henderson, and having no experience in the complete composite construction, it was inevitable that I would go to him for advice; his words to me were — "Charles, just go for it - its a piece of cake" which I did - and he proved to be correct.

I enjoyed every moment of the building and except for one occasion, I was never demotivated. I followed the plans and manual to the letter and except for a canopy modification, made no changes.

Upon completion of the aircraft, I assembled it at Oribi Pietermaritzburg. The aircraft was signed off by Bruce Vivian and the Authority for proving flight was granted by the Department of Transport.

It was intended that the aircraft was to be test flown by "The Captain" Brian Stapleford, and the objective was to be at the EAA Convention Margate, on the 8 May 1986, but due to business commitments in Cape Town, I was unable to finalize everything and finally had to accept that I would not, make

Margate, either myself or the Dragonfly, due to the SAA having full bookings. Again its a question of who you know that counts and I was able to arrive at Margate, albeit without the Dragonfly but very happy to be there!

During the show I was approached by 'the big guy' - Derek Hopkins, who asked me if "The Captain" could fly my aircraft. "What a question - of course!" said I, knowing full well that she was a hundred miles away at Oribi. 90 minutes later, the first rumours started that the "Dragonfly" was airborne and on her way to Margate! Those of my friends who were present at the runway when the "Dragonfly" arrived in the dusk, will be aware of how I reacted, and I make no excuses for the emotion. She had made it - her first maiden flight — 100 miles, and arrived at the EAA Convention, not by overcoming the forces of lift and drag, but by the enthusiasm of two friends and by the spirit of the EAA. To speak

of the quality of these two people would embarrass them I know, but I am truly indebted to them for what they did.

Those of us who have experienced the building of an aircraft, know that it cannot be done alone, and in my case many people, other than Brian and Derek, contributed to the Dragonfly, and I would like to acknowledge them. To:—

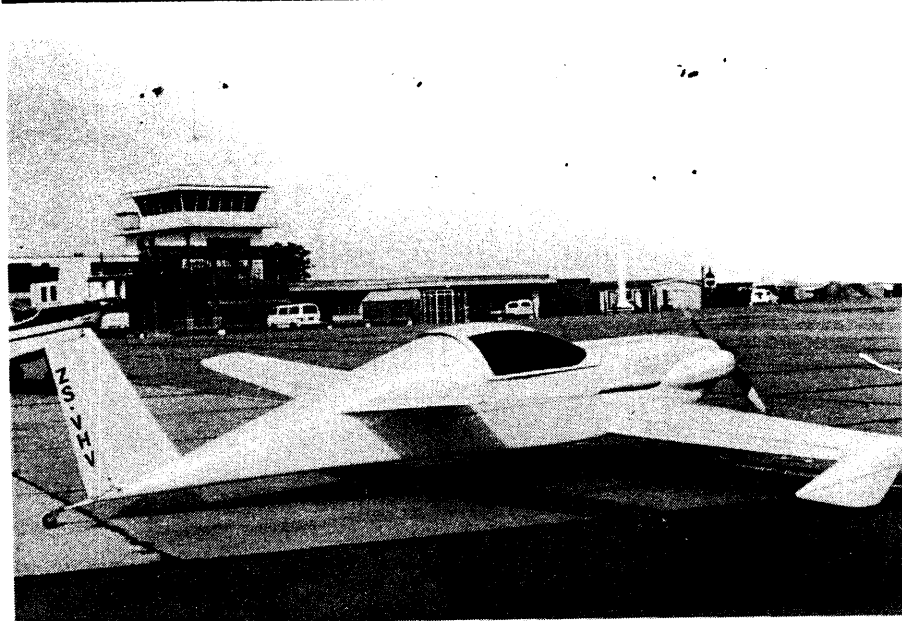
Gordon, who pushed me with the first step. Bruce, who was always there for advice. Jan, for his expertise. Ronny, for his patience. Peter, for his moral support and all the EAA members at Oribi and to the Department of Transport, for the flexibility that I never knew existed in a government department.

To my wife Joan, for her support over the two years - my crew chief - Lorna (my daughter), my lifting crew - David, Emily and Lynne — thank you.
ZS-VHV



Pic. Athol Frans

Coming into land at Margate - Captained by Brian Stapleford



I have had quite a bit of input from builders who have been kind enough to send pictures and such of their new airplanes flying around the world, so I'm going to use part of the newsletter 26 to include some of those airplanes. There's really being some beautiful airplanes built now and a lot more foreign airplanes taking the air. I look forward to seeing as many as possible of you here in October. We had an awfully good swarming last year. Hoping to have an even better one this year. Plans are to do the whole roast pig thing again, like we did last year, so please do plan to attend. We'll have a real good time.

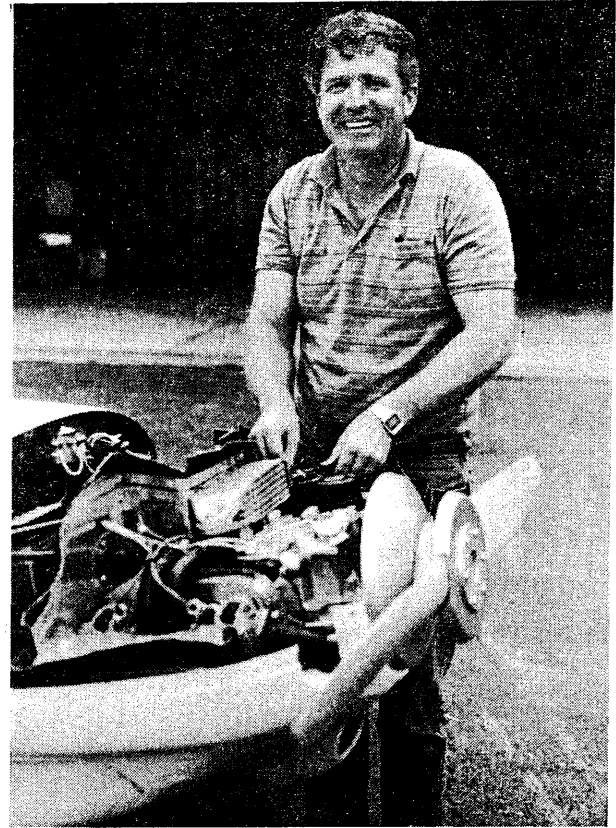
John Kunz
Baden, Ontario, Canada
Viking Aircraft,

Enclosed you'll find a cheque for my subscription to the Dragonfly Newsletter. Please keep my newsletter coming.

Thanks

P.S. Also enclosed is a photo of my Dragonfly. I'm hoping it can be pictured in a future issue of the newsletter. It's then ONLY Dragonfly flying in Ontario, Canada that we are aware of.

Yours Truly,
John Kunz



Bob Berube of Brandon, Fla. puts the finishing touches on his beautiful Mark I before it's first fight.

JOHN KUNZ DRAGONFLY



John A. Owen
Davidson, N.C.
Dear Rex,

Thought you might like to see a few pictures of my recently completed Dragonfly-N39DF. It was signed off by the FAA on 21 Nov 86.

I am now doing taxi tests and some minor de-bugging as the weather and time permits as the holidays approach. Due to the limited time available and my own lack of current flying hours, I expect it to be sometime in the late winter or early spring before first flight.

The plane is build pretty much to the plans-1835 HAPI engine, Props inc. 52x42 prop, basic VFR instruments, HYD disk brakes (non-split), forward hinged canopy, etc. It still lacks the upholstery being installed.

Thanks very much for all your help with the plane and building my engine kit.

Yours, John A. Owen

DRAGONFLY ACCIDENTS

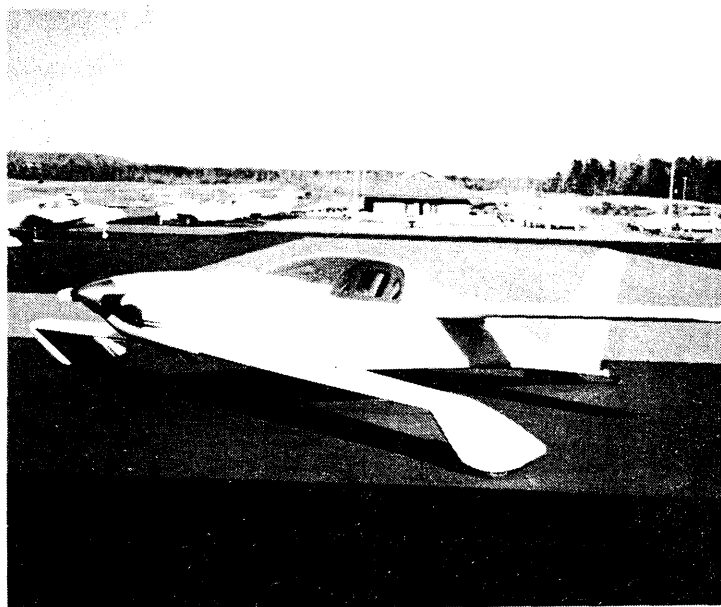
We've been very fortunate with the 170 or so Dragonflies flying to have had very few accidents.

It has been suggested that we cover up accidents and don't tell people what has transpired. To put it in simple words that any one can understand, that is a lie.

I was sitting here in my office one day when the phone rang. It was a TV reporter from Raleigh Durham, North Carolina wanting to know what I knew about the Dragonfly that just crashed back there killing it's pilot. What could I tell him about the accident? I told him that I could not tell him anything about it. I didn't even know that there was an accident. All I knew about it was what he had just told me.

In the next couple of days I had probably six different phone calls. They wanted to interview me, and ask all kinds of questions about an accident that I knew nothing about. They wanted me to speculate on what happened. Ultimately the cause turned out to be not the aircraft's fault at all. It was simply that the pilot had had a massive heart attack in the air.

When an aircraft accident happens, that is to say one of a very serious type or one with a fatality, many times it requires months for the FAA and the NTSB to correlate their findings and determine exactly what did happen to cause the accident. Sometimes the cause is never found, as is often the case when carburetor ice causes engine shut down. Within a short time after impact the ice has melted and all traces of what caused the problem are gone, just to give you one



OWEN'S DRAGONFLY

small example.

I've decided in this news letter to give you a briefing on the two fatal accidents in Dragonfly's and a minor incident that happened here on our airport just a couple of weeks ago. It was easy to find the cause on that one because we were directly involved in the investigation.

I would hope that the next time that there is a a an accident involving a Dragonfly, people would just relax, wait and see exactly what happened before jumping to some erroneous conclusions.

ACCIDENT REPORTS

There have been several times in the past where people have accused me of withholding information when an accident happens and not telling them immediately the full details. The plain and simple fact is that it many times takes months before the full and complete details are known. We have had two fatal accidents with Dragonflies. The first of these accidents happened in Raleigh Durham, N.C. on a first test flight. The aircraft was being flown by a TWA Captain who was a very well qualified pilot and I had checked him out here. He flew very well. The airplane made a normal takeoff, a normal crosswind and was in a normal downwind pattern with no apparent difficulties of any kind when it suddenly nosed over in a vertical dive and impacted.

As is the norm, there were all kinds of wild stories as to why that airplane went in. It took five months for the FAA to

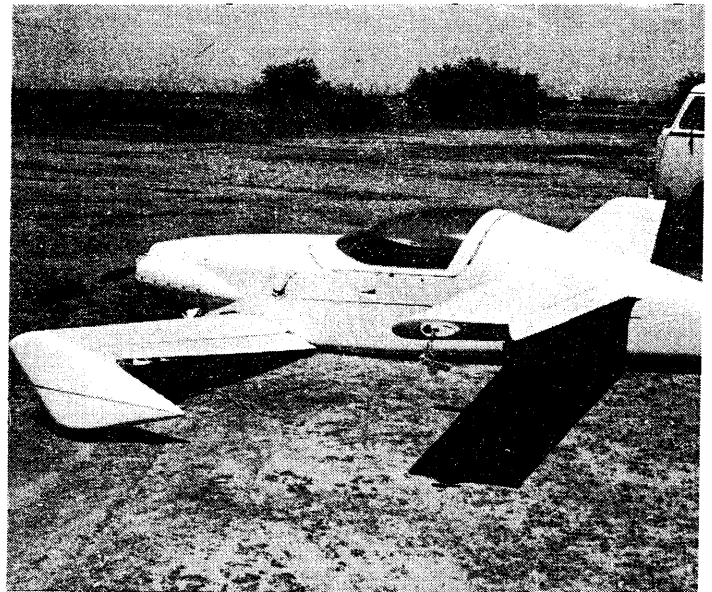
issue an official ruling. The pilot had had a massive heart attack while in flight and was probably gone before he hit the ground. There was absolutely nothing wrong with the airplane.

The next accident involved two partners who had built a Dragonfly. They were on their way home from a long cross country and had an engine stoppage at approximately five miles away from the airport. They radioed a Mayday to the airport indicating that they thought they could make the field. Unfortunately, they wound up in a grove of trees some distance short of the field with fatal results for both of them. Post crash investigation disclosed the fuel system totally contaminated with water and various other trans. The pilot's widow stated that the engine had stopped on three previous occasions for the exact same reason. Again, it took the FAA quite some time to make a determination of what was the exact cause.

When something like this does happen, we here at Viking are just as much in the dark as you are and we're certainly not going to start jumping to conclusions as to what did happen, when in fact, many times it takes considerable investigation to know the cause. We have no desire to suppress information. We simply want to make sure that the information we give is the correct information according to the FAA and NTSB.

About two weeks ago, Capt. Ed Cunningham of Nellis Air Force Base, Las Vegas, Nevada was bringing his Dragonfly down here for an annual inspection and some minor work. The flight from Las Vegas to here is just about maximum of the aircraft's range. He used up his main fuel supply and went on the header tank while approximately ten miles away from here. As he got within three or four miles of our field, the engine began to surge and lose power, even though the header tank still had two gallons of fuel in it. Unable to make the field, Ed had to make an off airport landing on flat country with some brush and unfortunately, hit an irrigation canal bank destroying the canard on the airplane bouncing it up into the air and over the canal where it came to rest on the far side of the canal. Ed suffered a sprained back, but no other injuries. The aircraft suffered a broken canard and very minor other damage.

Now the cause. In the post accident investigation, we discovered that the fuel filter and gascolator were both contaminated with an excessive amount of sanding dust and other debris left over from the construction of the airplane. Incidentally, this airplane has been flying almost four years. The primary reason for this was that there



was no in-line fuel filter installed between the main tank and the header tank. There was a fuel filter between the header tank and the gascolator, but both that filter and the gascolator showed a lot of signs of contamination.

What apparently had happened is this. After having run down drawing the final available fuel out of the main tank, he picked up an excessive amount of trash that had been there for quite some time, pumped it up into the header tank where it made its way into the fuel filters and ultimately plugged the filters enough that the engine couldn't continue to develop full power.

The aircraft is repairable and will probably be rebuilt as a Mark II rather than a Mark I.

Other than the fatal accidents that have been mentioned here, to my knowledge there has never been an injury accident involving a Dragonfly. We've had several guys bust canards and run off the runway, ground loop, do all sorts of wild things, but no one has gotten hurt and I think that's a great tribute to the strength built into the airplane. Had you been able to see what Ed Cunningham's airplane went through, how little damage it sustained for the beating it took, I think it would really bolster your confidence in the integrity of the design.

ACCIDENT/INCIDENT INPUT

I have received a complementary copy of the Canard Pusher newsletter from Rutan for several years now and I find a lot of useful information in their newsletter, particularly the builders who have had a problem, generally brought on by something they didn't know or didn't do, who take pen

in hand and write into the Canard Pusher and tell the other builders what problem they had, why they had it, and how other builders can avoid it. I sure wish our builders would do the same. Certainly, it's kind of embarrassing to go out and maybe bend or break your bird, but what you learn by your misfortune might possibly save someone else from repeating the same circumstance in his. Think about it guys. Send those letters in. If you would prefer that your names not be used, that's not a problem, just send in the circumstances and what happened. We'll omit the names completely, if you think it might be embarrassing.

JUSTIN MACE WROTE THIS JUST BEFORE HIS FLUTTER PROBLEM.

As some of you builders know, my Dragonfly has been undergoing flight testing for some time. No longer! N764JM is now out of restriction. No major problems were found with the aircraft.

Having been involved with three fiberglass race cars, I knew that I was in for many small problems before the plane would be out of restriction. I wasn't wrong! The first thing was that the electric fuel pump was pumping more fuel into the header tank than the drain back to the main tank could handle. This was easily fixed with a flow restrictor. However, a larger diameter drain back line would have been a better fix.

One of the other problems was also related to fuel. For the first 15 hours or so I was using 100LL, with good results. Then I thought that unleaded premium would be a good fuel since the VW engine will run on it. Well, the engine ran fine until the temperature got above 30 degrees F. Then we noted the engine ran rough on the base leg and on final. Carb heat only aggravated the condition. We finally drained the unleaded fuel and went to 100LL. The engine ran great with no sign of the previous roughness. It was also noted that the oil temperature was about 10 degrees cooler. I will now only use 100LL in my engine.

My left side NACA duct for cockpit air is in the prop wash area and doesn't supply proper air. To correct this problem I added a small scoop to the duct. I have a gale now. This brought on another problem. Prior to the scoop, the performance was really close to plans, but after I added the scoop to ram more air into the cockpit my performance appeared to suffer. The instrument static system is cockpit air and not connected to a static vent system. The excess air being rammed into the cockpit pressurizes the instrument static system

thereby reducing the indicated air speed by about 10 mph. I may have to go to a static system for the instruments to get the numbers back to normal. I have seen a few Dragonflies with inadequate air outlets. This could be the same type of cockpit pressurization that is causing some builders to come up with low numbers performance-wise.

Some of you may know that my plane flew before being painted. The paint process added 60 pounds to the plane. Don't get carried away with paint. The plane can't stand too much excess.

I am now undergoing primary flight training in my Dragonfly. In fact, I soloed on March 1, 1987 in my very own homebuilt. What a day! Ground handling at slow speeds was never a problem, nor was high speed taxi. Not having tail dragger time, the problem came at touch down. My feet would seem to cross. My instructor would have to bail me out. About 6 hours were required to get everything sorted out. This is the only plane I have ever flown and I am told that the time to learn taildragger was not excessive.

With 32 hours flight time so far, I hope to have my private by June. Just having a ball "driving" all over the desert sky. I am looking forward to the Swarming in October. See you there!

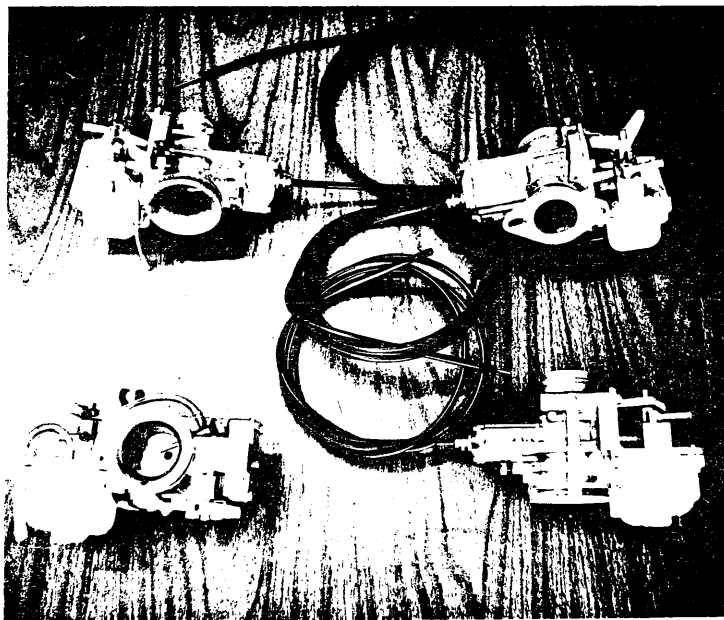
P.S. The engine in my Dragonfly has been doing very well, but I would like to build up a new Magnum Plus to accommodate the high density altitude encountered in the desert southwest. Therefore, my HAPI 60-2DM is for sale with Dragonfly baffling and exhaust system included for \$3,300.00. This engine has the new centrifugal advance dual electronic ignition. The engine still has break-in oil in it. This engine will be flying until someone buys it or I accumulate enough money for a new big engine. I can be contacted at (602) 744-3532, no collect calls please!

Ultra-Carb Carburetion Systems

In the picture below you will note several different variations of our new Ultra-Carb. We are making it in quite a few different options so it will fit almost anything. To begin with throat sizes are anywhere from 30mm to 42mm allowing it to fit anything from 1200cc's on up to 180 cubic inch Lycomings. You can have the carburetor either up draft, side draft, or down draft depending on which way we fit the float bowl in relationship to the venturi.

Carburetor in the upper left picture is the standard carburetor used in most

Dragonflys. A side draft hose mount. The one on the right upper corner is the same carburetor but with an additional flange for a flange mount and we can put any kind of a flange on the carburetor that the customer might want. Just send us in the flange pattern and we will adapt it. The carburetor in the lower right hand corner is a hose mount up draft carburetor. I use one just like this on my own Dragonfly and it tucks up behind the engine leaving the bottom of the engine with a lot more room under it. The carburetor in the lower left hand corner might be of particular interest to some of you. It is a lever operated throttle, meaning it can be hooked up to something like a push-pull Cessna throttle. The throttle itself is operated by the lever that you see on the bottom side of the carburetor.



All of these carburetors feature automatic mixture enrichment, with a totally separate mixture enrichment circuit, stainless steel sculptured needled matched to the fuel delivery characteristics of your engine. You tell us what size engine you are going to run it on, what RPM you are going to run it at, and we will send it to you with the proper needle already fitted. Very little, if any, adjustment will ever be required on it. If you are interested in one of these carburetors send a self addressed stamped envelope and we will send you the eight page instruction booklet on how to put them on your engine that will tell you more about the carburetor that I could in the short news letter.

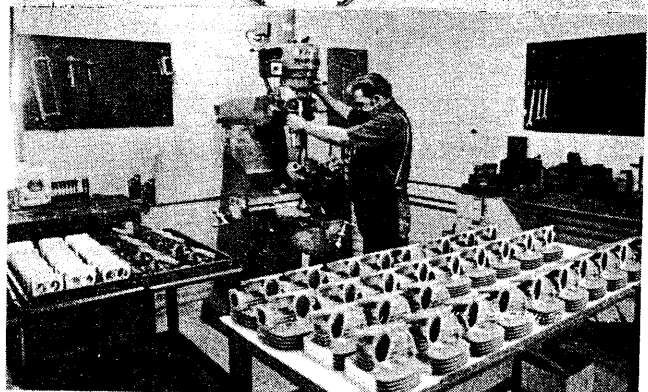
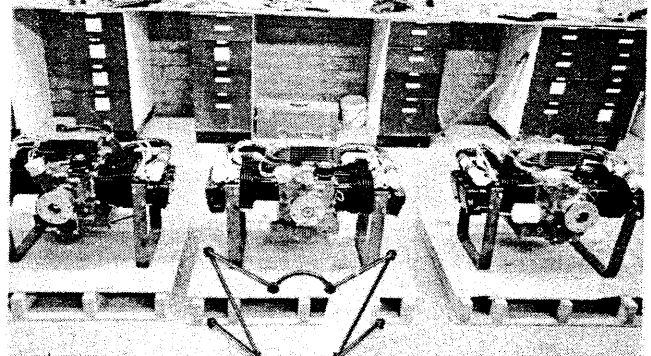
What I can tell you about the carburetor is that I put it on my Dragonfly in June of last year and the carburetor has

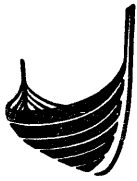
been absolutely totally untouched since then. It hasn't required any adjustment of any kind.

Dragonfly Spinners We have approximately fifteen backorders existing now for Dragonfly spinners and I am sorry to say that we are unable to ship them. The problem is simply this. The company that has always made the Dragonfly spinners for us has filed bankruptcy and even tho we own the tooling for the spinners we are uncertain at this time exactly where they got the spinners made or if we will ever be able to get our tooling back.

We do have another the spinner, the Ken Brock spinner, in stock. I think we have about twenty of them that can be used. They are a little different shape than the original spinner but it may be the only game in town.

We will do our best to try to pursue the situation to at least get our tooling back and get our Dragonfly spinners made somewhere else. But at this point the time and sutation looks kinda grim.





VIKING AIRCRAFT

ELOY MUNICIPAL AIRPORT
R. R. 1, BOX 1000V - ELOY, AZ 85231
Telephone: 602/466-7538

Dragonfly
Now  *Approved*

First Class Mail



ITEMS AVAILABLE FROM VIKING

PLANS: \$175s (\$200 overseas) includes 1 year subscription to quarterly newsletter.

INFORMATION PACKAGE: \$10.00 (\$15.00 overseas) includes color lithograph.

QUARTERLY NEWSLETTER: \$15.00/year (\$20.00 overseas)

ALL PRICES INCLUDE AIRMAIL POSTAGE. ARIZONA RESIDENTS PLEASE ADD 7% SALES TAX. OVERSEAS CUSTOMERS PLEASE SUBMIT U.S. FUNDS ONLY.

FIRST CLASS MAIL