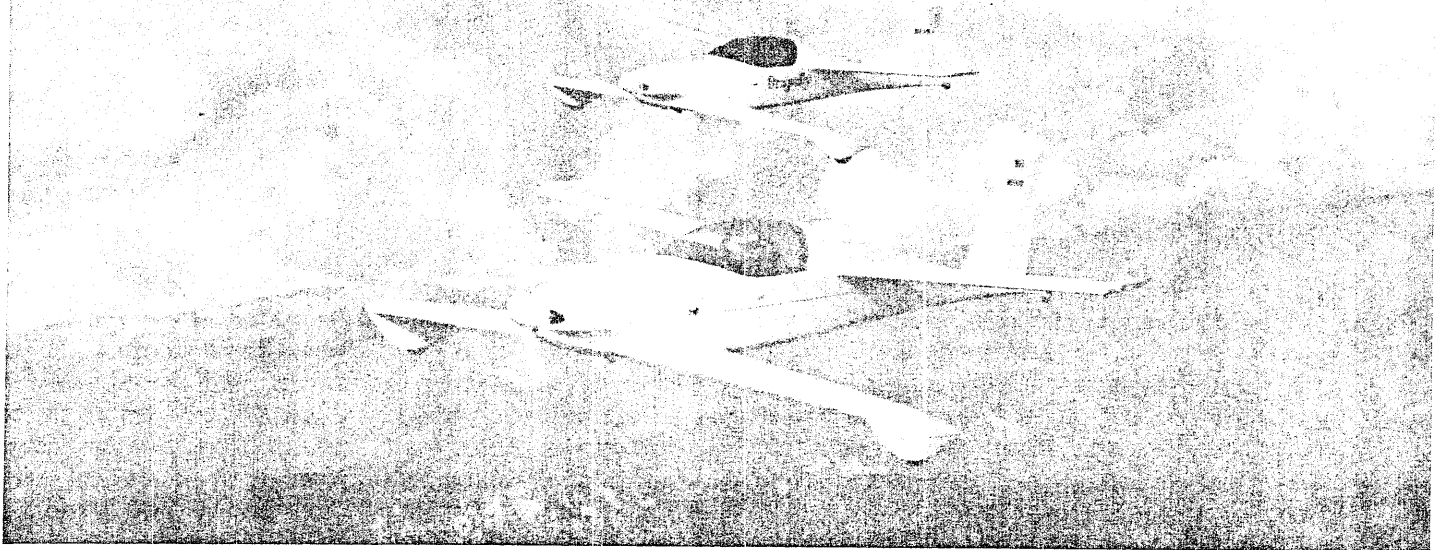


Dragonflyer



Dragonfly Newsletter No. 10 • Spring Issue 1983

Subscription Price \$8.00 per year — \$10.00 per year overseas

It doesn't seem like three months have past since the last newsletter. So many things have happened that days are just flying by with no real concept of time.

The lead photo is a real first. Terry Nichol's **DRAGONFLY N5MN** is in the foreground and the prototype is in the background. These photos were taken from Nate Rambo's 152 over Ventura, California. This was the first time that we have had two **DRAGONFLY'S** in the air together and it was all very exciting for me and Terry. Don Hawes and his wife were there that weekend to ride in the prototype as were several others including Nate Rambo. Both Don and Nate are builders. Nate is to the point of installing his engine.

Don is a former NASA employee with extensive experience with airfoils in the wind tunnel. Don has been developing an article for later publication concerned with the effects of rain or bugs contaminating the airfoil causing loss of lift on canard-type aircraft. We provided Don the opportunity to fly in the prototype and get some stick time and actually fly it through a series of maneuvers designed to explore its capabilities. I believe Don was very impressed. We might possibly be able to get him to comment in the next newsletter. Burt Rutan provided Don with the opportunity to fly in the **LONG EZE'S**. He wanted also to fly in the Q-2, but they did not have an airplane ready for flight. They are changing their canard and putting in a bigger engine.

DRAGONFLY'S FLYING

Terry Nichol's **DRAGONFLY** is now out of restriction and I predict a mantle load of trophies in the years ahead. It is really pretty. We have several other **DRAGONFLY'S** flying now. Bob Violet of Ohio and Courtney Bryan of Dayton, Ohio are high timers. They may possibly even be out of restriction by the time you read this. Interestingly, these builders who have followed the plans closely have had no

problems in getting their airplanes flying and trimmed out. They have had no pilotage problems. Terry and Bob both admit blowing a couple of landings and having to go around, but they are recognizing a problem and getting out of it before it becomes a catastrophe. This is particularly interesting in Bob's case in view of his experience as a pilot. Bob had only twelve hours total time as a pilot when he first soloed his new **DRAGONFLY** with virtually no time on it. He and N48RV have learned to fly together. Bob's letter follows:

I am happy to report that my **DRAGONFLY N48RV** is flying well with no damage after about 30 flight hours. I started on my project in November '81 and first flight was in September '82 after about 1700 man hours and about \$5,000 invested. I am quite pleased with the plane in general and I feel the plans are great.

Our flight tests were made on a 75' wide 3500' long, paved strip and this should be considered minimum for test flights with a very proficient pilot. The use of a test pilot should be strongly considered unless you are very comfortable in a tail-dragger and are used to the very low drag of a sailplane. In my case, I elected to let my flight instructor, Roy Venekotter (a current **DRAGONFLY** builder), do the initial flight testing. Keeping my plane in one piece was more important than my ego and Roy was the best man for the job. With his assistance, I was able to solo in my **DRAGONFLY** with only about 12 hours in certified aircraft including about three hours in tail draggers and I am currently flying on a student certificate. I find it very easy to overshoot an approach now and then with slips being only slightly effective. Reducing airspeed to about 65 will help establish a steeper glide angle, but you have to be careful not to get too close to the ground with a high sink rate and low airspeed unless you use power to stop the sink. I've have to



BOB N48RV RAY

about two landings so far out of about forty because of delaying use of power to cancel my sink rate. My best landings are similar to the prototype as far as airspeeds go.

As for performance, I'm getting a full cruise around 160 IAS, best rate of climb at 2000' MSL of 1200 fpm solo, minimum speed of 59 mph IAS at idle and 55 IAS at full power, and use under three gph of fuel for normal use. Empty weight was 609 lbs.

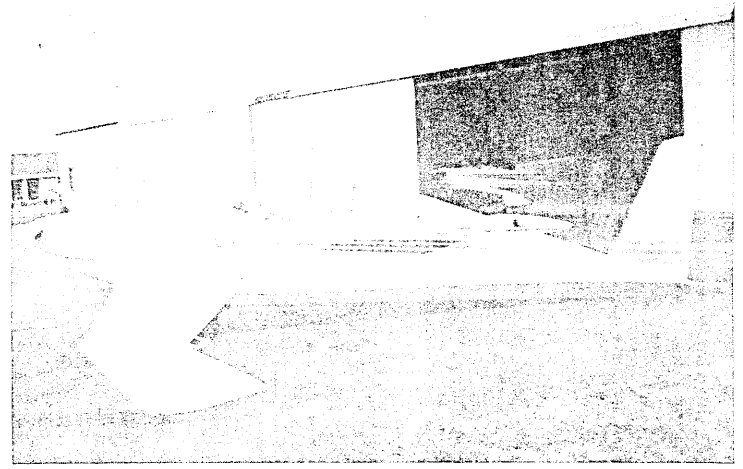
The plane lands and takes off better if ballasted more towards the aft cg limits primarily because of better directional control since there is a greater overlap of rudder and tailwheel effectiveness. Toward the forward cg and in a crosswind I have had some difficulty around 40 mph due to the less effective rudder and very light tailwheel. Trim tabs on the elevators should probably be floxed on as mine also blew off at 165 IAS but now they are floxed and holding. Those electing to use the Azusa brakes should first check their wheel halves to see if one half is truer than the other (as mine were), then the drum should be bolted to the truer half and the entire assembled unit should be trued on a lathe. Also the cam actuating lug that rides against the brake shoes should have its corners slightly radiused and lubricated with grease. I found after one flight that my right brake was dragging and the cable was slack. Upon disassembly, I found the sharp corners of the very hard actuating lug had dug into the softer steel of the brake shoe and could have potentially locked the brake up even tighter than it was. I've have no further problems with them after doing the aforementioned step. Another potentially serious problem happened just recently with my 32mm Supercarb. After about ten minutes, I noticed the engine running rough at only 2600 rpm. It did not want to take full throttle so I came in for a landing. By the time I got down, it would only take enough power to maintain altitude and I finally landed and got stopped about 30' from the end of the runway. I was fast over the threshold (100 mph IAS) at about 20' and it took me 3400' to get it down and stopped. The problem turned out to be that the mixture needle had rotated about 150 degrees which, of course, drastically affected the fuel delivery. Builders should check the plastic friction sleeve on their Posas to see that this doesn't happen.

All in all, I'm very satisfied with the airframe and hope to build on aerobatic plane next. Hope to see you at OSHKOSH!

Bob Violet

FR #2

Delphos, OH 45833



COURTNEY BRYAN'S N1711D

Courtney Bryan has about 40 hours in his **DRAGONFLY** at last report, though the aircraft is down now with the engine apart. Courtney found out, to his dismay, that he has a Revmaster engine built with a cast iron crank shaft and decided to ground the aircraft and replace the cast crank with a forged steel unit. There have been several instances of Revmaster cast crank breakage in the United States. Both Australia and New Zealand have grounded the Revmaster engines for inspection to determine the type of crank shaft that was installed at the factory. All cast cranks must be replaced with forged steel units before returning to service.

Bob's experience with the needle turning in flight and one other has caused concern at Hapi and prompted the issuance of the following service bulletin which will identify and correct this problem if it exists on other aircraft.

POSA CARB SERVICE BULLETIN - FEBRUARY 23, 1983

Affects all models of POSA carburetors

Two incidents of the main metering needle turning in flight, causing fuel starvation have been reported. POSA's are equipped with a plastic insert around needle to restrain needle from moving from moving when subjected to vibration. This plastic material is subject to shrinkage and embrittlement with age or when subjected to high temperature over prolonged periods.

If you are using a POSA carburetor, before next flight, remove dust cap, check torque required to turn main metering needle. If positive resistance to turning (approx. 4 inch lbs.) is not present, remove from service and replace needle lock bushing, POSA part #LS18-008. This part should be replaced every two years.

This procedure should be followed at each carburetor adjustment. Periodic inspection at each 25 hours of flight and at each annual inspection is also recommended.

PREFABRICATED FIBERGLASS FUSELAGE Task Research, Inc., of 848 East Santa Maria Street, Santa Paula, California 93060; phone (805)-525-4545, will have the all-new, totally prefabricated fuselage ready for delivery by mid April.

DRAGONFLY has had a disadvantage in the past due to the fact that prefabrication was not available. Many builders simply did not have the time to spend to put an airplane together. They insist on a high degree of

prefabrication before they will consider a project. We began looking for the best source of prefabricated components several months ago, and we were directed to Task Industries, being told that they were the best in the business. Jim Kern, president of Task, is a long-time home builder and one of the originators of WAR Aircraft Replicas. He has built up an organization of talent and people now producing high-quality fiberglass components for Northrop Aircraft and also some exotic leading edge work on the rotor blades on Sikorsky helicopters.

On the commercial side, they produce the molded parts for VARI-EZE's, LONG-EZE's, and they will be producing the molded parts for Bert's new Solitaire. They are also involved in producing some of the structures for Dick Rutan's Voyager, designed to go around the world the world, non-stop without refueling.

The fuselage structure at Task that has been designed for **DRAGONFLY** utilizes pre-preg cloth and HEXCEL NOMEX honeycomb cores in many areas where its ability to conform to highly contoured shapes is advantageous. Foam cores are utilized where structures are basically flat or simple curves. All the Task-built parts are vacuum-bagged and thermo-bonded so that the fuselage is considerably lighter and much stronger than the built-up from the plans structure.

These fuselages will be provided to the builder by Task and will include all the bulkheads and such with everything precision-trimmed and locations of bulkheads, etc., accurately marked so that the builder will have no doubt where everything is supposed to fit. The fuselage is also made in sections which are fixed together with bias taping. The seam lines are recessed below the skin's surface. After taping, micro is squeegeed over the tapes to hide them completely. The outside finish requires only scratch sanding and painting to finish.

The prefabricated fiberglass fuselage will gain very little weight in the finishing and painting process because it is molded completely slick and finished on the outside. Many times a builder who does hold his weight down by mopping out excess resin and doing all the little details internally, finds that his weight control program gets away from him when he starts working towards that beautiful finish that everybody wants. Of course another great advantage will be the labor saved in not having to do many, many hours of sanding, filling, and preparation for final paint on the fuselage. We haven't yet come up with a way to bypass the finish work on the flight surfaces, but with prefab, the finish work should be done on the entire airplane before you're so sick of it you're ready to burn the whole thing.

Task also has in production fiberglass wheel fairings, wing fillets, and all other small, sculptured parts that are difficult for the builder to shape exactly like the prototype. The molds for all of these parts were taken from the prototype, so **DRAGONFLY'S** beautiful lines have been duplicated exactly. Contact Task directly for more details and prices.

FIRST ANNUAL **DRAGONFLY** SWARMING

We are going to hold our first annual gathering of the **DRAGONFLYER'S** here at Eloy Airport on October 7, 8, and 9. Our plan is to get all the **DRAGONFLYER'S** together for a real good time, and make it educational as well as fun. We will have people here and workshops going on Friday afternoon and all day Saturday. They will be teaching the best methods of building the **DRAGONFLY** with experts in the fields of fiberglass, metal, paint, and engines all sharing

their knowledge with you. There should be several flying **DRAGONFLY'S** here by that time and it is hoped that every builder can get a ride in a **DRAGONFLY** before the weekend is over. There are adequate facilities at Eloy for tent camping, recreational vehicles, and plenty of motels within two miles. Transportation will be provided free of charge to those of you who fly in. There are numerous attractions other than aircraft in the adjacent area such as the Casa Grande Ruins, the Indian Heritage Center, the Sonora Desert Museum, Kit Peak Observatory, Old Tucson, the Phoenix Zoo, etc.

Doug Champlain's Fighter Museum is in Mesa, 30 miles away, and the Pima Air Museum is about 60 miles in the other direction. Pima has some aircraft on display that are the last intact examples of their kind.

Weather at that time of year is generally in the 80's with cool nights. It is our best time of year. A genuine Western Barbecue dinner will be provided by Viking on Saturday night for the **DRAGONFLYER'S**. We hope that you will plan to attend. Even if you come by commercial air, we are only 50 miles south of Phoenix, and therefore you'll have easy access to us. The knowledge and experience you will gain during this weekend would probably more that offset the cost of an airline ticket, so make plans to join us. Let us know by September 15 that you plan to be here so that we may provide for you.

FINISHING YOUR **DRAGONFLY**

Several builders have advanced the idea of using peel ply on the exterior surfaces of the airplane hoping to get a better finish with less effort. Terry and Joan Nichols tried the peel ply system on their **DRAGONFLY** and Joan's comments follow: RE: Peel Ply

I firmly disagree with those that say peel ply everything. When you go to finish (sand, micro, etc.) is where you will not like to peel ply effect. It looks smooth (which it is), but it makes scratch sanding more difficult, especially if you have the area a little too wet. Also, on the overlap of fiberglass, it makes it a bigger fill area unless you sand through the fiberglass, which you do not want to do. Also, the micro is much easier to put on the glass area vs. peel ply. It's great on the inside of the fuselage where no finish work is planned.

I would like to add that Bob Walters was right about the finish. We got darn sick of it and threatened every day to just quit and go fly it. I even considered starting EABA, Experimental Aircraft Builders Anonymous. We have weathered it and it's at the Camarillo Airport and it's gorgeous (prejudiced view).

Joan Nichols
Ventura, California

The Nichols' **DRAGONFLY** is the prettiest one I have seen so far, but did come out a little heavier than some of the other ones. I strongly recommend that you read Bob Walters' article in Sport Aviation about finishing composite structures before deciding on a plan of attack. I have heard several builders capable of show-quality work such as Brian Henneman, comment that Bob's finishing method is the way they do it, and the easy way. Brian's KR-2 picks up a trophy at every fly-in and is beautifully finished.

ANTENNA PROBLEMS

Bob had commented in the past that he felt the antennas in **DRAGONFLY** were not operating at optimum and needed improvement. Shortly after arriving here in Arizona, the radio

went kaput and was sent in for repair. After the radio was repaired, all the antenna problems disappeared, with a capability now to reach out as much as 100 miles at altitude for a VOR and transmit capability is a strong 25 miles to a ground station. At this point, I feel the Nav-Com receive antenna in the fuselage bottom is more than adequate. The transmit antenna could probably be improved on. The next time the wing is off the fuselage, I intend to install a bent broad band commercial antenna inside the rear fuselage cone hoping to increase the transmit range some. We'll report later on the results.

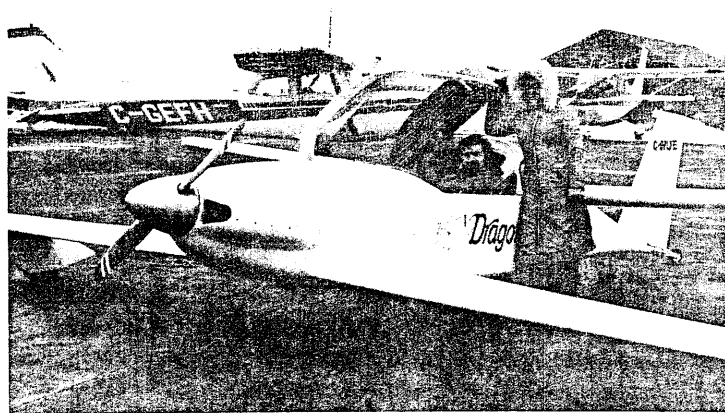
FIRST CANADIAN DRAGONFLY TO

FLY By the time you see this Newsletter I hope to be flying my Dragonfly C-GFUE. I never thought I would see myself in this position. My partner's nine-year ordeal with his Sidewinder had me sworn to never consider the prospect: BUT !! about March, 1981, I was shown this beautiful picture of a **DRAGONFLY**, and after some frantic reading, I was hooked. By mid July, I had my material and was off and cutting. Too busy for Oshkosh!! My wife was a little skeptical at first but actually got into the act, hot wiring and laminating. As a first time builder (of aircraft) I found Bob's plans to be excellent, very clear and straight forward. My plans Number is 086, so I did have a few type errors to deal with. By the end of September, things were really taking shape. It actually started to look like something. But!! the word was getting around to visitors, fellow builders and area pilots started to come by and see.

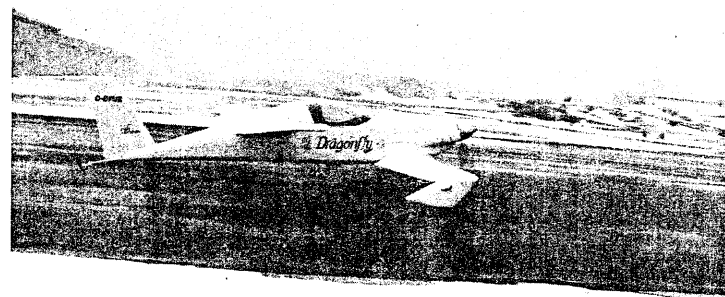
Now the complications start to set in. I will backtrack this story a little. As I mentioned, my partner has his "Sidewinder" flying, and is a long-time pilot. I have been flying two and one-half years, and our business is Aluminum fabrication. As you may have guessed, we have been helping homebuilders with metal supplies and fuel tanks, etc., etc., for a number of years. Now this foam and glue stuff just was out of our line, (again) but!! our business "Unitech Mfg., Inc." imports and exports on a regular basis, so we had this brokerage and customs game down to a science. Who could turn down a fellow builder??, who asks if I can get him some of this fancy foam, glass and glue. Well, enough asked that I brought in enough for 6 **DRAGONFLY'S**. Plus some misc. stuff all in one shot. Did that ever get some attention!! We had to decide what to do with all of this. So; "Axis Aviation" was born December 1, 1981.

Now remember, I'm still trying to build this **DRAGONFLY**. Fortunately, it is a very nice project to work on, it soothed my nerves after a long day and with my wife's everlasting (but growing thin) patience, all went well. A brand new 1835 Hapi Engine was purchased, and that did it again. More questions, more inquires. By March we hired Mark Aicken as our parts and customer service man, and my wife (Linda) was demonstrating hot wire cutting and laminating to customers at EAAC meetings which we were invited to. I think she might have been checking on me to make sure I was doing what I said I was, but she fell in love with talking to customers, helping at air shows, and selling all of those neat parts. She is now doing the books, too.

As some of you may have heard or seen, my **DRAGONFLY** was on display, painted (freshly) for our 1st Annual Exhibition (Nov. 20/82) in our plant at Woodstock, Ontario, Canada. Rex and Phyllis made it to our show as guests,



DAVE & LINDA



DAVE STEINBACK'S C-GFUE

and the turnout of about 350 was very satisfying.

Well, the slow part of the project occurred at the wiring, instrument attachments, engine mounting and adding all the neat things that the MOT in Canada insist upon. Finally, by Jan. 15th, 1983, C-GFUE sat proudly at Brantford Airport looking like a finished project. Was that a wrong impression. With final adjustments and odds and ends, and a 20 mile drive to the shop it is now Feb. 17th waiting for my last inspection.

In October of 1982, Linda and I toured the U.S.A. for a little holiday, looking for suppliers, meeting present suppliers and visiting many friends made in the past year of Aviation. In Eloy, Rex took me for a check flight in NSWN to Phoenix and back. That flight, and taxi routine wiped away many of my concerns of no taildragger time, and all of my concerns about in-flight handling. It was just great. Handling was smooth and responsive, visibility was great, cockpit noise was much lower than I had expected. I have now taxied C-GFUE and am nicely getting the feel of her, the Hapi Engine purrs smoothly, but watch those brakes!! I had a minor mishap while taxiing through a little snow and got swung around and dinged my prop. I keep hearing comments on individual brakes, but I don't see how anyone could keep things under control without smooth but even braking action. I have had no trouble maneuvering with just tail-wheel steering.

I think I've said enough for now. A flight report will be available shortly, weather permitting.

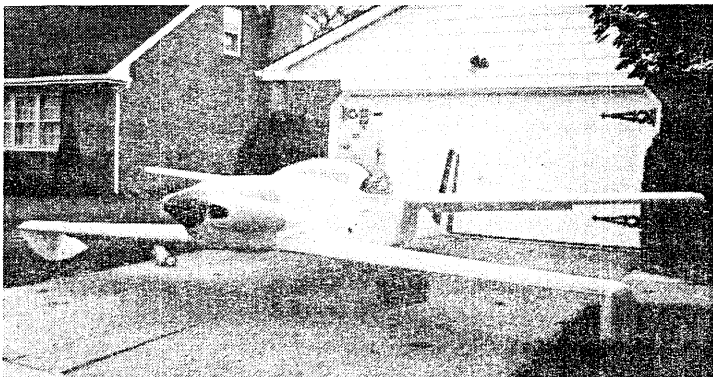
Equipped with: - MK12 - 720 CH NAV COM

- Artificial Horizon
- DG
- Lights and Strobes
- ELT
- Fire Extinguisher (Law)
- Hapi Quad Instruments
- Great American Propeller, 52X42
- Hapi 1835 - Dual Ignition, Electric Start

Yours Sincerely,
 Dave Steinback
 President, Axis Aviation

AXIS AVIATION has been appointed dealer and distributor for both Viking Aircraft and Hapi Engines in Eastern Canada. They are stocking a full line of materials and hardware for the **DRAGONFLY** including all of the Hapi Engine's built parts designed especially for the **DRAGONFLY**. Having went through the ordeal of building a **DRAGONFLY**, Dave is in a position to offer building advice and help to builders in the Ontario area and one day soon we hope to be able to give rides and familiarization flights in C-6FUE. This announcement comes a little late. It was intended for the last newsletter, but we ran out of available space. If you live in that area, get acquainted. We think you'll find them both knowledgeable and helpful.

JIM NALLEY WILL FLY SOON, TOO!



The photo above is Jim Nalley of 1812 Glen Allen in Toledo, Ohio, with his near-finished **DRAGONFLY**. Looks like we have another beauty in the making here. At this point in time, it appears that you guys in Ohio are leading the pack in aircraft completed. We would hope to see all of these **DRAGONFLY**'s at Oshkosh this year and there will be a nice trophy awarded by Viking for the best **DRAGONFLY** there.

CHANGING YOUR DRAGONFLY

Rarely does a day pass by that we don't receive a letter in the mail from some builder asking a question that usually goes something like this, "What do you think about my using a Continental O-200 or a Lycoming or it could be any kind of an engine in my **DRAGONFLY**, would it work?" Or maybe the question is, "What do you think about changing the airfoil on the canard to whatever the builder's preference might be, would it work?" Or the builder may say, "I don't like the Joy sticks in an airplane, I've always flown with control wheels. What do you think about putting control wheels in, would it work?" The list of "Would it work" questions is endless.

Bob always took the attitude, and we must take the same position, that we cannot and will not approve any changes to the **DRAGONFLY**, unless we make them ourselves, put them on the prototype airplane, fly adequate flight tests to prove that the changes are worthwhile and add to the performance, utility, safety, or whatever we may be concerned with at the moment.

You builders must understand that what you purchased when you bought your **DRAGONFLY** plans was a record in the form of words, drawings, and pictures of the construction of the prototype **DRAGONFLY**. If this record is followed to the letter, you should be able to build an exact duplicate of the prototype which will fly just like the prototype does. When we are put in the position of passing judgement on whether the idea advanced by the builder is good or bad, we are, in a sense, endorsing that builder's idea without having seen it, or having any control over it, or without having tested it. Which, of course, is a very poor policy. If you follow the plans and do build an exact duplicate of the prototype, then you have something that we, the bunch here in Arizona, as of the last few months, have worked with an aircraft that's put a lot of time in the air. It is something that has been tried, tested and proven. The proving is an ongoing thing that is more proven with every flight. Seldom a day goes by that one or more builders, or potential builders, don't show up here at Eloy and are given rides in the prototype. I take particular delight and pleasure in getting these builders and would-be builders in the prototype and going through a little 15-minute flight routine and demonstration showing exactly what the airplane is capable of. Many of the builders come here and say, "Well, I'm thinking about changing this, or I'm thinking about changing that," and I say, "Well, let's take you up in the airplane and give you a chance to see what the airplane is and then see whether you want to change it or not." I have yet to meet the first builder who, after flying the airplane, (incidentally, the builders do most of the flying on these little 15-minute demo flights) wants to make any changes after being made fully aware of what **DRAGONFLY** is capable of as originally designed. The performance literally blows their minds. I love to get the kind of person in here who is still shopping around, and hasn't decided whether he wants to get into a **DRAGONFLY** or into that look-similar Brand X competitor and has read all of the performance figures on both the **DRAGONFLY** and Brand X. I get this potential builder in **DRAGONFLY** and ask this person to pay particular attention during the flight to the airspeeds, both stall speed and top speed, the rate of climb, take-off and landing distances, and all the other pertinent data that describe the airplane's performance and see if they match with the figures printed in the brochures. It seems that people in this enlightened age are so used to being lied to in advertisements, that they fully expect to have a certain amount of exaggeration built into all the performance figures. They are totally surprised and almost flabbergasted when they get into the aircraft and find out that it not only meets the advertised performance figures, but slightly exceeds those figures even though they are flying. It doesn't have to be a perfect day with a 90 pound test pilot and two gallons of fuel aboard to reach the kind of performance stated in **DRAGONFLY** brochures, **DRAGONFLY** will get the kind of performance we advertise any day of the week, any place, with any two people aboard, and that's the main reason I first became interested in the aircraft. Like a lot of other people, when I first met Bob and heard the figures he quoted for performance,

I, too, was skeptical. My first flight with Bob was a real eye opener. The airplane did indeed do what he claimed.

I don't know how we can put more emphasis on the inadvisability of changing the aircraft and hoping to improve the performance. I wish that it were possible to get every **DRAGONFLY** builder here and get him some stick time in the prototype before he starts building his aircraft, or certainly in the very early stages. It would seem to me that before you can make a change that will truly improve the performance of the prototype, you must know what the performance of the prototype is. If you don't know where you're at now, it is very difficult to figure out how to get from here to where you're going. It is interesting to note, that so far with approximately 15 **DRAGONFLY'S** having made their first flights, not one that has been changed, particularly the ones that have installed the 2100cc engines, have even come close to the performance of the prototype. Bob Violet's airplane, which carries an 1835 Hapi, is built per plans, and the performance equals the prototype. Terry Nichol's airplane is slightly heavier, but the performance is right up there with the prototype. I don't know how to more strongly emphasize the plea, "Please don't change the airplane!" Bob Walters didn't just put a lot of pretty lines on a piece of paper, build the airplane, and go out and have everything work out ideally on the first flight. Many hours of very subjective test flying were involved and several changes were made before the aircraft was ready for market. Many of you will remember that you waited quite a while before the plans were market ready. One of the prime reasons for the long wait was to make sure that the aircraft was in its final form and was market ready before the plans were released to the builders.

I think that Bob can well point with pride to the fact that the prototype aircraft was built, taken to the airport, and assembled, and to this day has never had to be disassembled and rehased to cure any problems. The only time **DRAGONFLY** has been apart was very recently when Task Research removed the wing to pull the molds off the fuselage. Bob did a very, very good job of calculations and engineering in the first place, and consequently, it has not been necessary to go back and correct a lot of problems. The aircraft is very conservative in design, carrying a lot of wing area, with a very light wing loading. It has a very large margin in several very important aspects such as weight-carrying ability, stability, and has a very long flight envelope ("flight envelope" being the current term used to describe the speed range that the aircraft flies in). In **DRAGONFLY'S** case, from 52 mph to 180 mph. About the only real changes we have seen fit to make since the plans were finalized, have been brought about by experience gained over many hours of flying. The rudder horn to rudder post attachment has been found to be subject to wear over the long term, and does need to be changed to a better system. The new, revised rudder horn drawing is found later in this newsletter.

There have been some problems with the brakes, although it appears that the problem is not necessarily the brakes themselves, but manufacturing quality control problems at Azusa that were not present in the set of brakes that were installed on the prototype **DRAGONFLY**. Experiences with the brakes, such as Bob Violet's, are leading us to the trouble spots so that based on someone else's experience, we can avoid these problems, rather than experience them. The hydraulic

brakes are, of course, much better brakes. They are of infinitely better quality. But then, of course the price is considerably higher, too. "You pays yer money, and you takes yer chances!" You'll have a lot more hassles with the inexpensive brakes. But maybe a little bit of hand work in going over the brakes initially and solving the poor quality problems can offset any functional problem in use.

The prototype now has 380 hours on it, and by the time you read this it should have arrived at Sun "n" Fun with probably over 400 hours on it. What this means to you is that the prototype is stacking up hours very quickly and any part or structure that proves to be vulnerable to wear or any type of deterioration with either lots of flight hours or age, is logically going to show as a problem on the prototype long before you experience it on your aircraft. Hopefully if we do come up with those kinds of problems, we can correct them and get the correction incorporated in your aircraft.

DRAGONFLY FILM SOON AVAILABLE

We have been making a 24 minute movie of Dragonflies in flight, and the people who build them. The film is interesting, informative, and will show what a Dragonfly is really capable of. It will answer a lot of questions about take off and landing, performance, etc. The film will be loaned free to EAA Chapters and builders groups. Viking will pay the UPS delivery charge to you, you pay for the return. There is a \$100.00 refundable deposit required. Lou Gonterman will be scheduling these films for loan after June 1, 1983, make you arrangements early!

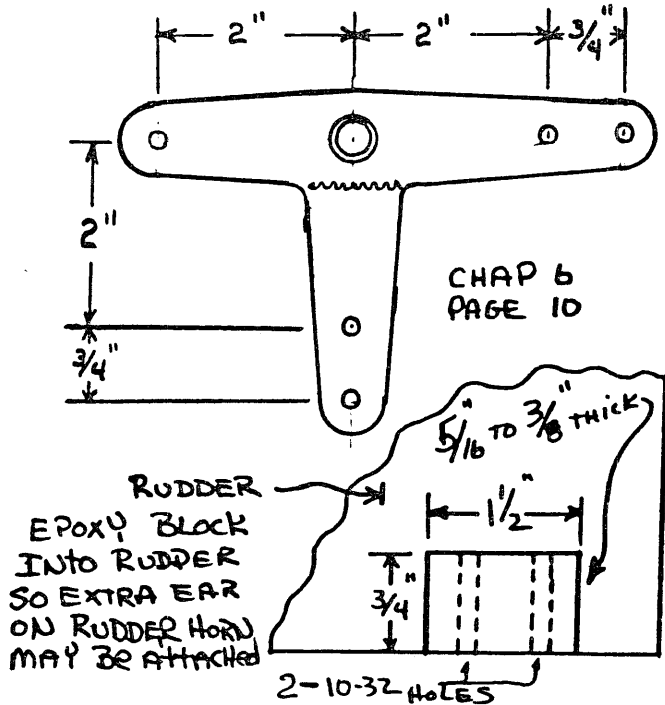
UPDATED BUILDER LISTS

In the past, it has been the normal practice to update the builder list and include it in this newsletter from time to time so that you builders might be better able to find each other and share the joys and tribulations of building your own aircraft.

It was our intentions to include an updated builder list in this newsletter you're now reading. However, when ODIN started printing out the builder list, much to our surprise, we found that it was going to take five pages to get all the names on it. This placed us in the position of using five of an eight-page newsletter for a builder's list. Of course, one page is used for a front and back cover which would result in only two pages for the news part of the newsletter. We had to make a decision. We decided to omit the builder's list in the future because it is simply getting too large to include in the newsletter, and give you a full seven pages of builder news, including flying hints, new products, new services, etc. We do want you to have the builder's list and will be glad to send you an updated builder's list separately if you would like to have one. If you want one of these builder's lists, send in one dollar (\$1.00) and we'll be glad to send you one. If you are part of a **DRAGONFLY** group of builders, and someone has access to a Xerox machine, you have our blessing to go ahead and copy it. We're not going to make any money at a dollar apiece for them. There are getting to be an awful lot of you builders out there, and this is the only method we could come up with to get the information to you in such a manner that we could live with it.

RUDDER HORN MANDATORY CHANGE NOTICE

The rudder horn to rudder post attachment method on the prototype and as shown in the plans, has proven to be a problem area. The rivets tend to loosen in service allowing the rudder horn freedom to move without moving the rudder. No incidents or accidents have been caused by this problem. The enclosed sketch details the change and should be included in every **DRAGONFLY**. Ken Brock Manufacturing Company has the change in house and all the new hardware sets from them will incorporate this change. Those of you who have Brock hardware in hand, can return the rudder horn only to Brock for update to this change at a slight charge. The prototype **DRAGONFLY** had this change incorporated in the rudder approximately 50 flight hours ago.



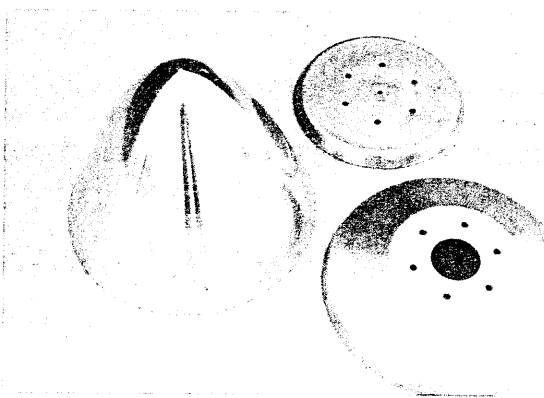
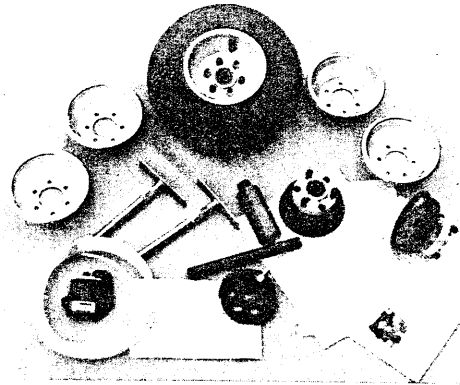
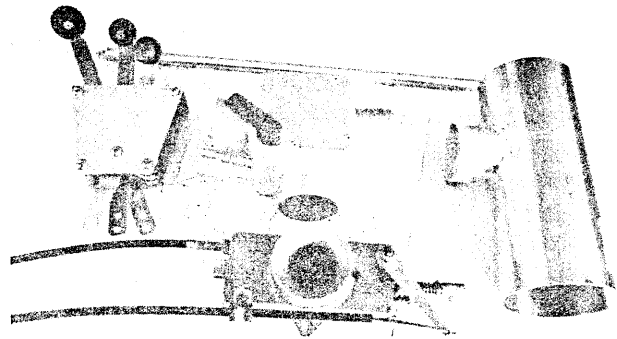
HAPI has several new products for the Dragonfly builders that you may be interested in. The first photo shows complete carburetor, carb heat, throttle quadrant, and engine control cables kit. It seems that many of the builders are having problems getting everything in this vital area compatible with each other. All the parts shown are available separately. The new throttle quadrant shown mounts nicely inside the left console with only the levers exposed and can impart either a push or a pull motion to the cable making it very versatile. Best news of all it sells for only \$36.50 separately.

Hydraulic Brake Kit

Photo shows exactly what you get with HAPI's hydraulic brake kit. The assembled wheel also shown in the photo mounts an 11/4.00 X 5, 6 ply tire. The rims will also accept the standard 500 X 5 aircraft tire, which gives a slightly larger diameter and wider foot print. Brakes sell for \$279.00.

Spun Aluminum Spinners

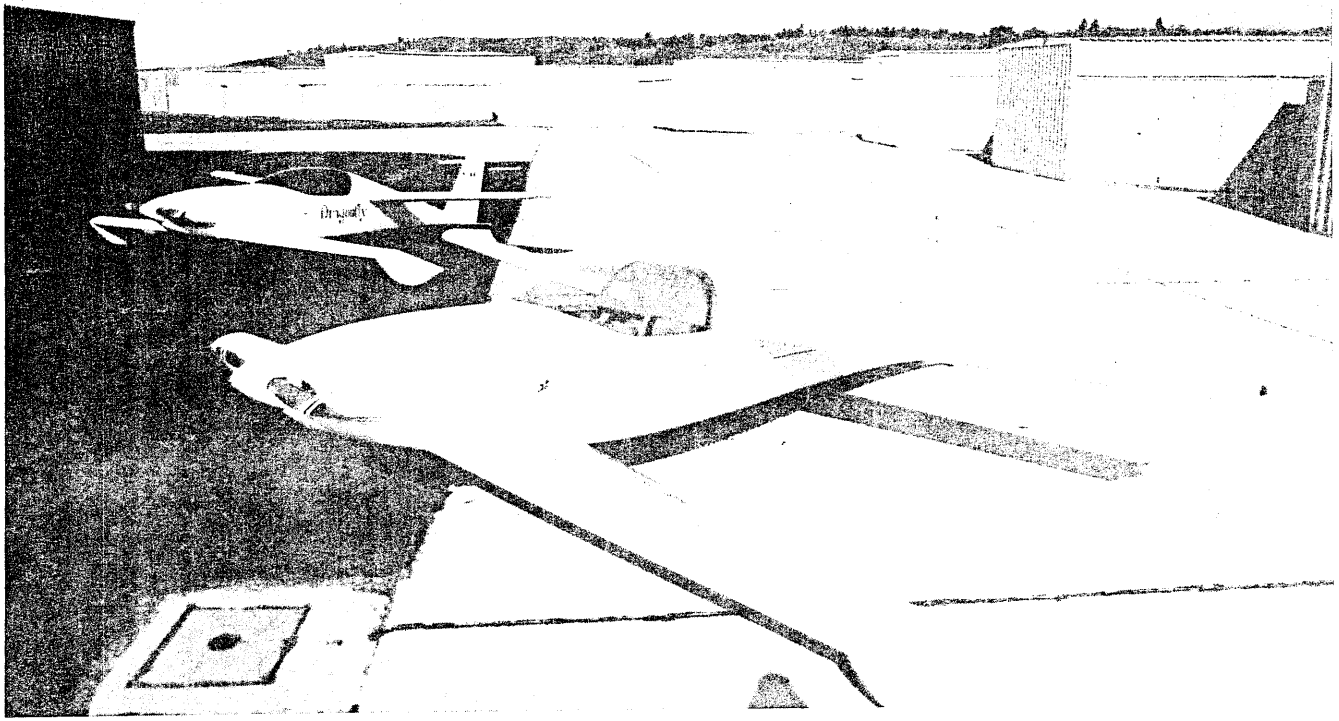
HAPI now has in stock a new spinner kit, an exact duplicate of the profile on the prototype with the back plate and lead plate predrilled in the standard VW pattern of 6 holes, equally spaced on a 4 inch diameter bolt circle. Sells for \$98.00 and is also available without holes for \$78.00.



INSTRUMENT PANEL AND HEADER TANK MODS

We had intended to have the prototype modified to the new instrument panel configuration by this newsletter. It was necessary to have the prototype at TASK Research to have the molds taken from the fuselage and this cost us several weeks. The holidays and a bout with the flu also cut into our time. About the time we were ready to actually tear down the prototype we realized that we would never get it back together in time for Sun'n Fun. I know that some of you guys are waiting for this mod and we will include it in a special no charge newsletter that will be coming to you very shortly. That newsletter will also include a lot of advertisement from different approved vendors who are providing parts for the Dragonfly builders.

Well kids that's gonna be it for this time. Within an hour Dragonfly and I will be on our way to Sun'n Fun. About two weeks after returning from Sun'n Fun I'll be off again to Mangalore in Australia and then New Zealand before returning home for a week for a weeks rest, then to England, France, and Ireland to talk with builders there. Hopefully I will be able to show some pictures of what our foreign builders are doing in the next newsletter.



ITEMS AVAILABLE FROM VIKING

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

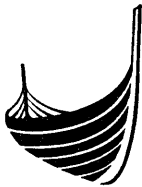
INFORMATION PACKAGE: \$7.50 (\$8.50 overseas) includes color lithograph.

QUARTERLY NEWSLETTER: \$8.00/year (\$10.00 overseas)

ALL PRICES INCLUDE AIRMAIL POSTAGE.
ARIZONA RESIDENTS PLEASE ADD 5%
SALES TAX. OVERSEAS CUSTOMERS
PLEASE SUBMIT U. S. FUNDS ONLY.

Dragonfly now  *approved*

(Details in next newsletter)



VIKING AIRCRAFT

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

SPRING ISSUE

