

Fly by at '87 Swarming

Photo Thanks to Nate Rambo

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Here it is time for the last newsletter of this year and frankly, I don't know where the year went. It seems as though it has been terribly fast paced and we've been on the run all the time.

This past year has been a very satisfying one for me personally and I think probably has seen the evolution of the Dragonfly design reach maturity.

There have been several new Dragonflies finished and flown this year and there are some very beautiful airplanes among them. I'm going to devote a good share of this newsletter to picturing some of those Dragonflies and request that all of you builders send in pictures of your project, because they do make the newsletter a lot more interesting to others who are still in the building process.

This years Dragonfly Swarming was a good one. We didn't have as many airplanes here as I would have liked, but everybody who was here had a real good time. We did a lot of flying. A lot of people got rides in the various airplanes. There was just a great feeling of unity and sharing among the group. We're looking forward to a really good Dragonfly Swarming next year. The majority of the airplanes here came from California, with Jack Shafer and Gene Evans flying Mark II's from up in the San Joaquin Valley area, Troy Burris and Jerry Scott out of Chino in Mark II's and Nate Rambo from Camarillo, CA flying a Mark I.

Of course, the prototype was here and we got in the air for some nice formation flying. Builders still in the building side of the process found all kinds of little neat things in each of airplanes here. A lot of the ideas were adopted and I'm sure will find their way into the airplanes yet to come.

All of the California guys except possibly Nate Rambo got rained on real good going home, but all arrived safely. Troy and Jerry had their wives with them. Jerry Scott has a beautiful interior in his ship, really nice and plush, that his dad did for him. It's almost too pretty to sit in.

Gene Evans' recently completed Mk II is a fantastic finishing job and I predict will gather it's share of trophies in years to come.

Some of you have mentioned that you don't see advertisements for Dragonfly anymore and wonder what's happening. Those of you who have been reading this newsletter for a long time are aware of the law suit that Al Nelson has laid upon us. The court ruled for us in summary judgement two years ago. Nelson appealed that judgement. The appeals court ruled in our favor last year. Nelson appealed the ruling on the appeal. The whole thing now sits at the ninth circuit court of appeals level and it will probably be another year before the court hands down a ruling because criminal proceedings have priority over civil cases.

There seem to be a lot of crooks that are getting ahead of us.

We've worked very hard at Dragonfly and trying to make something of it and it seems as though every dime we've ever made out of Dragonfly has gone into the legal hassle, so we just decided not to put too much emphasis on it about a year ago. The thing was keeping me stirred up emotionally and was a big pain in the posterior. Since we do have to eat, we have concentrated in the last year primarily on HAPI and the engine side of the business and have had a pretty good year that we are very thankful for.

The Magnum Plus engine is really catching on now. We've delivered quite a few in the last year and are beginning to get orders from aircraft manufacturers around the world for testing in various designs that will be produced commercially. Limbach used to have that market all to himself, but that's not so any more. We had a very nice article in a recent issue of Sport Pilot about a motor glider where we replaced the Limbach engine with a Magnum Plus and more than doubled the rate of climb on the airplane. Take a look at the article. It may help you in your engine decision.

I want to express my appreciation for the concern that so many of you builders mentioned in telephone conversations and in letters to me about my problem with my stomach earlier this year. I am happy to report that it is back on line and doing fine and I am feeling better than I have felt in some time. Thanks also for the concern that many of you have expressed for my wife Phyllis, who has had her problems with her feet in the last couple of years and has had both of them operated on. She just finished having a bone spur taken off of one foot and is still a little tender footed, but is expected to be fully recovered in the next few weeks.

This past week I went back to Osage Beach, MO to pick up Del Bradley's beautiful Mark I Dragonfly and ferry it out here to Arizona to its' new owner, Les Price of Phoenix, AZ.

Del has been having some health problems and had decided to sell his Dragonfly. Les Price is a student pilot with just two or three hours behind him at the moment, but expects to be a full-fledged private pilot in a matter of months. Part of his instruction he'll get in his Dragonfly.

I didn't realize what a beautiful airplane Del had built even though he's won the best Dragonfly of the Year award two years in a row at Oshkosh. Del's Dragonfly performed beautifully on the trip back to

Arizona, through some pretty terrible weather. I was grounded for two days in Ponca City, Oklahoma waiting for it to stop raining.

Del's Dragonfly is one that is just beautifully constructed and full of good ideas and we are going to document several of those ideas in the form of video tape. Pat and I are putting together a new video tape of a lot of different things on different people's airplanes that will give you guys who haven't had the opportunity to see a lot of Dragonflies, a whole lot of ideas, some of which you might want to incorporate in your airplane. Del's Dragonfly is light, 640 lbs., and it has all kinds of goodies in it.

In the future issues of the newsletter, unless you guys tell me that you want something different, we're going to concentrate heavily on airplanes that are flying with lots of pictures and perhaps some little sketches and drawings of different things that the different builders have included in their airplanes.

INCIDENCE JIGS

The incidence jigs have been floating around all over the country and have been in dozens of different builders hands so that they might either check out a flying airplane or set the wing and canard incidence on one being built. We only have one set of loaner jigs and we have asked that you use them very quickly after you get them and then send them back to us so that the next guy can have them. There is always a waiting list. I do want to commend you builders who have had the jigs in your hands and sent them back. You have been using them very quickly and cycled them back so the next guy could have him and we really appreciate that. Keep up the good work.

MARK II GEAR LEGS

We've been selling a lot of Mark II gear leg kits to the new builders. Most of them seem to be building Mark II's now and several kits have gone to people who own Mark I's and are converting them to Mark II's using the existing canard. We call that airplane a Mark I and 7/8 ths. It is not difficult to convert the Mark I canard to Mark II. It was detailed verbally in the Dragonfly newsletter issue #18.

Joe Ping of Ohio is flying his converted Mark I, as is a Norwegian builder, Olle Bergquist. There are three or four others who are flying whose names escape me at the moment. At any rate, it is a proven conversion and does save you from having to throw away your Mark I canard.

We'll include a letter we received from

Troy Burris in this newsletter where he directly compares his Mark I with Mark II performance. He has just recently built a new Mark II canard for his airplane.

I had the opportunity to compare the two airplanes after putting a lot of time in the prototype as a Mark II and then getting in Del Bradley's airplane. In the air, they both fly very well. Mark II has better roll stability. It seems to fly longer, no hands, on the roll axis. Landing characteristics on the Mark II are superior to the Mark I. It handles better. With individual brakes the ground steering has much more authority. The Mk II gear legs don't have the excessive rebound that can get you into trouble on the Mk I. Should you really drive it into the ground, the gear leg will break and save the canard. We haven't had anyone with a Mk II ever break a canard.

We have had a supply problem in getting the Mark II fiberglass gear legs in the past, so in the past few months we went to a totally new vendor who is giving us fine quality gear legs and good delivery. By the time you have this newsletter in your hands, we will have gear legs in stock for immediate delivery unless we get a big flurry of Mark II gear kit orders. Most times we should be able to deliver them from stock.

I've just machined up a new mold to make fiberglass tailwheel springs. The one that we have used for several years is no longer available. By mid-December we'll have new production tailwheel springs in house.

We have had a problem getting spinners. They were being made for us by John Monnet and later INAV who went into bankruptcy. Monnet actually had a metal spinning outfit doing the spinners, but we didn't know who that was. We have now located the metal spinning people, are dealing directly with them and have Dragonfly spinners in stock as well as Sonerai spinners.

We're looking forward to 1988 as being the year that a lot of Dragonflys will take to the air and we hope to fill a whole line at Oshkosh this coming year with Dragonflys.

We now make all of the control system hardware, hydraulic wheels and brakes, spinners, landing gear kits, and have the molds for the canopy in the hands of Aircraft Windshield who keep canopies in stock. We've got all the hard to make parts pretty well taken care of and we feel we'll be much better able to take care of our builders in 1988 than we have been at some times in the past. So, get to building those Dragonflys and get them in the air. They are a beautiful flying airplane and capable of real long distance flying.

The Taylors
Rex,

First let me, say thanks for your hospitality on November 7 when I dropped in on you and your business. That you could take the length of time you did to show me around and let me fly the "old girl" speaks a lot for your priorities.

As I explained, the work on my Mark II has been halted by my attempt to complete my BD-4 (we will be at Oshkosh with it for the 20th Anniversary of the BD-4 design), but the flight time you permitted me in the Mark II has mustered more enthusiasm than any other single event. Yes, you could say I am hooked! The flight characteristics are just as portrayed; a very honest airplane that won't reach out and bite you. I believe the noise level at cruise is quieter than the Skylane II I picked up and flew back. Its handling is very predictable, and as a flight instructor, I would say its handling is most similar to the Aerospatiale Tobago or Trinidad, and will do a very nice wheel or three-point landing, contrary to some of your critics' comments. I will attest to its ability to fly the entire final at 75mph, and timed properly, have reserve for a flare and three point. I also cannot see how anyone could get into trouble in a stall (short of a whip stall) and believe it would actually make an excellent primary trainer, especially for someone willing to learn conventional gear techniques. In short, a wonderful airplane!

I will look forward to seeing you at Oshkosh this summer, and again in my Mark II in August 1989.

Thanks again to you and yours.

Warm Regards,
Darryl Wright

Hi, Rex,

I'm a bit slow, but I just wanted to drop you a line to say thanks to you and Phyllis, Patrick and everyone else who made the Dragonfly Swarming such an enjoyable and informative event.

I'm sending along a couple of enlargements for your pleasure and also the magnificent prize winning certificate for you to cherish.

My highlight of the Swarming was getting my first Dragonfly ride with you on Sunday.

Having heard and read over the past few years, numerous descriptions by you and others as to how the Dragonfly handles, combined with my own experience of a couple of hundred hours in a half-dozen "tiny" homebuilts, I expected an interesting ride, but nothing "new".

I duly noted during your apt demonstration that the performance

3

characteristics of the Dragonfly are "as advertised", just as I expected. Its' slow speed handling characteristics are superb. Its' cockpit visibility is superior to most fixed wing aircraft. The significant ground deceleration afforded by full "up" (down deflection) elevator after touchdown is a neat plus.

But these were all things that I expected to experience. What I didn't expect was the impression of an aircraft larger and with a heavier wing loading than Dragonfly. Reaction to control inputs were positive but firm. Of course, someone with no homebuilt flying experience would find it much more sensitive than his Wichita Tin Monster, but that's because he's used to excessive control movements and resistances.

What it boils down to, is that I'm getting a better cross country platform than I'd hoped for, and that's just OK by me! I thought I was too damn smart to be impressed!

Thanks again for a great time, and with a little bit of luck, (meaning work), we'll be there for the '88 Swarming without having to rent a 182.

Love & epoxy,
Buck Buchanan
Torrance, CA

NEW VIDEO TAPES

In the small amount of spare time that we have, Pat and I have been filming video tapes of special areas of interest to our builders. In the past year or so we have filmed a tape on "How to build a Dragonfly" using the prefabricated kit. This film was shot mostly here in our building school, when we were operating that, and takes you through all of the basics of Dragonfly construction.

We finished a film a couple of months ago on "How To Build a Reliable VW Aero Engine" on video tape, that pretty much takes the book that I wrote some years ago and performs everything in front of the camera. When we get to putting the heads on an engine, both the stock VW heads are described and our own individual cylinder head assembly on the engine is shown. We've also used the film to show builders how to set up the hydraulic lifters in the engines and of course, we still explain how to set the old mechanical lifters. If you're going to build your own engine, you might find it a very helpful guide. The nice part about the video tape is, if you don't quite understand the point that we're working on, you can back the tape up and rerun it until you thoroughly understand what's going on.

In the area of engines, cowling and

cooling have always been one of the major stumbling blocks for the Dragonfly builder. It is so important that you get the cowling and baffling done correctly. Having air get into the cowling and not go through the engine properly is equivalent to not having enough water in the radiator in your water cooled car.

Justin Mace of Tucson has sold his 60-2DM engine out of his Dragonfly and is installing a new Magnum Plus. As this is done, we will follow it from start to finish in as much detail as possible to show how to properly baffle the engine so that the cowling and cooling system works properly.

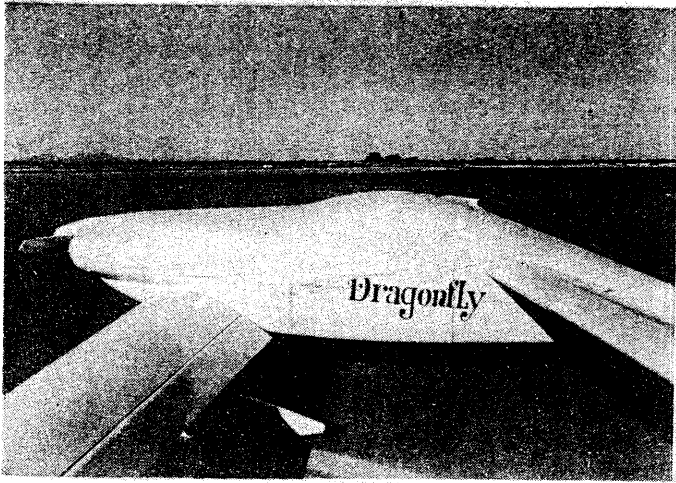
Pat and I take a lot of troubleshooting phone calls and one of the biggest problems seems to be cooling, which is virtually totally related to baffling and cowling problems or over-lean conditions in the engine. Sometimes you find both of them in the same airplane.

We have a video tape on how to adjust the Posa carburetor that sells for \$29.50 and is a real bargain, I think. There's an hour and a half of video there. People either run 100% enthusiastic about Posas or they hate the carburetor. There doesn't seem to be any area in between. If you use the tape and learn how to adjust the carburetor properly, there isn't a carburetor anywhere, regardless of what price you pay for it, that will work any better.

We're also putting together a tape for you Dragonfly builders that will include a lot of video footage of all the little nice goodies that builders have built into their airplanes. Del Bradley did a fantastic job on his Mark I with access hatches and canopy warning horn systems, just all kinds of little details of fine workmanship that would fill a whole newsletter up. Gene Evans, Jerry Scott, Justin Mace, Troy Burris, are just a few of the names that come to mind when I think of nice touches in the airplane. We will include video footage of details in all of these guys airplanes, not necessarily a construction tape, but most of you builders are capable of building some of these little nice things into your airplane, if you simply see some video footage of it and say, "Oh, yeah, I can do that", and you won't need any real drawings. I do believe the tape will give you a lot of good ideas to help you complete your airplane.

DRAGONFLY COVERS

Most of the builders who have finished their airplanes and are now flying, have had to leave them sitting outside sometime,



whether at an air show or, a few of the guys are even letting them sit tied out and don't have a home in a hangar.

Del Bradley's airplane sat out for two years on a tie down line in Missouri and is still beautiful. It did start out with a good paint job initially.

If the rain comes, the Dragonfly has the world's most efficient method of gathering up water and putting it inside the fuselage. After just a little bit of rain, you could start a gold fish farm with the water accumulated inside the fuselage.

I have always felt that a really good cover that covered the whole upper fuselage from the spinner right on back and over the cockpit, aft wing cover and out over the tail cone would be just ideal, but until now none have been available.

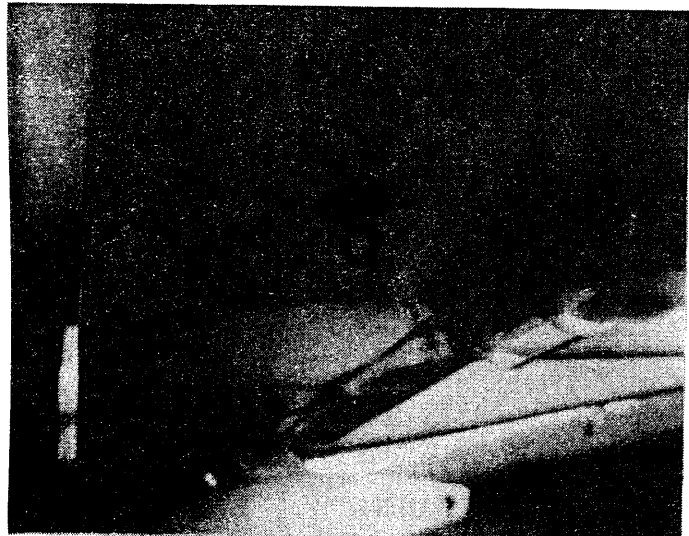
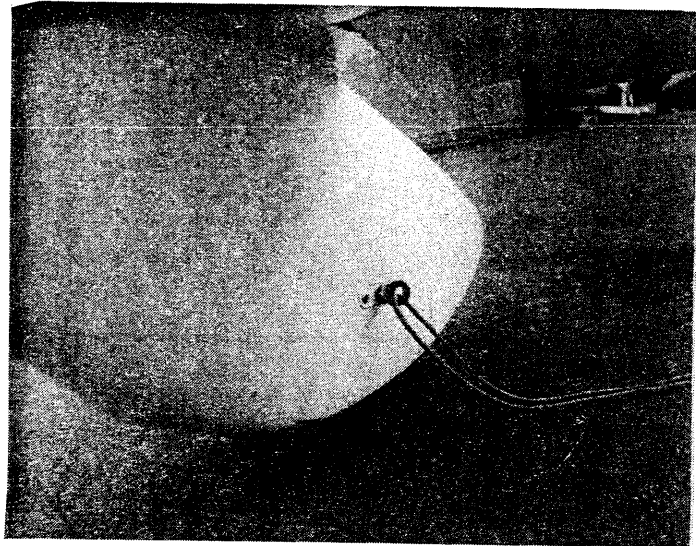
I've got a local expert seamstress making custom covers to your order, as the picture shows installed on the old prototype. They are made of an acrylic canvas which sheds water, but also breathes, so it shouldn't accumulate mildew underneath. Note that it covers up the intake openings in the cowling and even has little boots that cover up the propellor blades. The boots are held together with velcro and loops are provided on the edges of the cover in strategic locations to hold it down on the airplane. The cover not only will protect your Dragonfly from the rain, but also keeps prying eyes from seeing the avionics and such that might be inside. It probably will offer a certain amount of security protection. The price is ~~CALL~~. Order through HAPI and allow 45 days from date of order for delivery, as they are custom made to order.

TIE DOWN "D" RINGS

Don't forget to build in a means of tying your airplane securely to the ground. It won't always be in the hangar probably.

Del Bradley included a threaded hole in the ends of his axles on the Mark I and when tying the airplane down, you just screw in the D-ring, which is normally housed in the stow-away bags in the airplane. With the D-ring firmly in place, he's got a place to tie down with ropes or chains.

Justin Mace has done about the same sort of thing in his Mark II, except the threaded holes for the D-ring are in the bottom of the canard. We inserted a small block of 3/8" thick aluminum during the building process and then drilled and tapped into it to provide a hard point to screw the D-ring into. Don't forget some means of tying down your airplanes during the construction process. I particularly liked this system, because it leaves no clutter on the outside of the airplane during flight. Clutter means drag. The fast airplanes don't have a bunch of garbage sticking out of them.



BARGAIN AVIONICS

HAPI is a dealer for Terra radios. Terra makes a complete line of very small lightweight transmitters, receivers, Loran transponders, altitude encoders, and etc. We can offer you a tremendous discount off the list price. If you are interested in Terra's radios, give me a call and get a firm price quote on the phone. You'll be amazed at how much money we can save you. No, we don't stock the radios, you make your order and we call Terra to place the order and have them drop-ship to you direct from the factory. Most times they have whatever you order in stock for immediate delivery. I think Terra has some of the best warranty programs on their equipment of anybody in the business.

HYDRAULIC BRAKES FOR MARK I'S

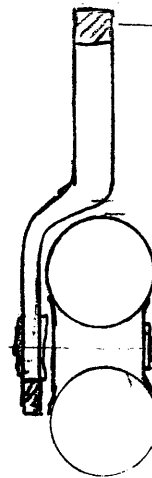
Patrick has designed up a retrofit set of hydraulic disc brakes to go into the Mark I's. We have found that toe brakes on the Mark I can be handled quite easily giving you individual braking. I must admit that I had felt this might be a hand full to handle before I had the opportunity to fly two or three airplanes with individual brakes on the wide-span wheels. To my surprise, it does not create a problem. It is a custom built item. We don't stock them, but he can make you one in a short amount of time. It's not really too different from our Mark II set-up except in the axle section.

MARK II GEAR LEGS

It is important when you start setting up a Mark II that you first decide what tire size you are going to use on the wheels. We can go from the 1100 X 4 X 5 tire, which is quite small, which I use on the Prototype, to the standard 500 X 5 aircraft tire on the 5" wheels/hydraulic disc brakes that we supply. After making the tire selection, the axle should be placed as high as possible leaving clearance for the inflated tire to rotate on the gear leg. (See sketch)

This is very important because the longer flat spring portion we have on the leg, the better springing action we get. A couple of builders have put the axles clear down at the bottom of the gear leg as supplied, left a very short spring section and consequently have had less than desirable spring action. Also make sure that your gear leg is going to 100% depth in the socket in the gear box. The landing loads on the gear leg are pretty severe and must have full depth engagement to spread the load properly as designed. One builder reported a problem in a gear box socket, but found that the problem was caused by having

the leg only about half as deep in the socket as it is designed to go.



CUT UPPER END OF GEAR LEG LAST TO ESTABLISH DESIRED PROP CLEARANCE.

KEEP TIRE AS CLOSE AS POSSIBLE, CUT OFF LEG BELOW AXLE



DRAGONFLY BUILDER HATS

JACK O'NEAL
SHIPPING

We have found a supply source that can provide us with a very good quality cap at a reasonable price. The caps are a silver gray in color and have the Dragonfly builder emblem attached to them, as shown, when you receive it. The prices are \$6.95 per cap, please add \$1.00 per cap for postage and handling. The caps are better than average quality. We think you'll like them.

SETTING THE ELEVATOR STOPS

IMPORTANT!

We have had several broken canards on Mark I Dragonflies. I've written a whole lot of words about how to fly the Mark I and avoid getting into a bad situation with it. At the Dragonfly Swarming here, we were discussing flying the airplane, how to make a good landing with it, and the subject of elevator stops came up.

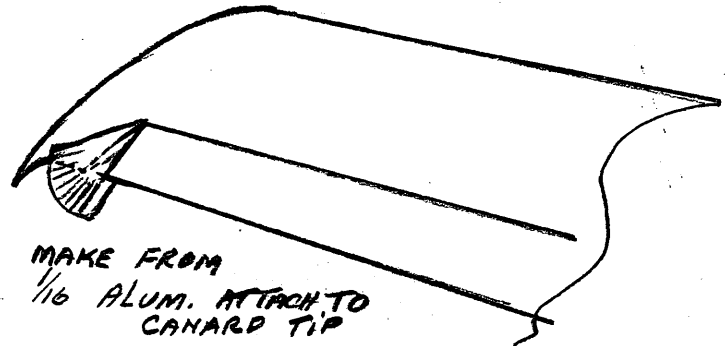
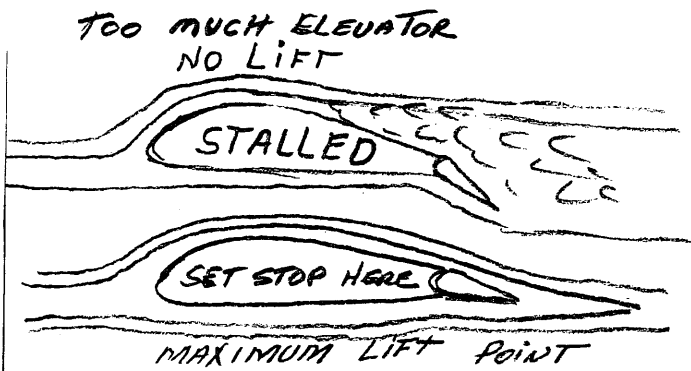
Perhaps I haven't made enough emphasis on the importance of setting the elevator stops very early in the test flight program so that the elevators don't cause you to lose lift on the canard at low speed and fall on your nose, thus setting up a chain of circumstances that sometimes breaks a canard.

In the little sketch I've provided here you can see what happens when the elevator is deflected too far and the front canard transitions from lift to drag. This is a condition we definitely do not want, particularly if we're three or four feet above the ground on landing.

It is super important that you go up and fly the airplane at progressively lower speeds, power off, and find the point at very low air speeds, where the elevator transitions from lift to drag, then put the stops in so that you don't exceed the maximum lift point in the flare attitude.

I suggest a little plate made out of sheet aluminum with a series of graduations on it at the outboard tip of the elevator. Watch it as you're stalling and find out what number it stalls at, then put in the pitch stops so that your stop keeps you a little bit short of that deflection point that you know from experience causes the elevator to stall.

The center of gravity also comes into play when setting these stops, so it's wise to check it at the most forward C G that you would normally fly at, because that's where you'll get into the most trouble. With an aft C G, the canard isn't carrying as much weight and consequently can carry it at a lower airspeed.



**TEMPORARY DEGREE PLATE
INSTALL FOR STALL TESTS**

which amounts to about 60% of the engine, are going to cost much more landed in this country. We have to pass that on to you. So far, we have not had to raise prices, but we do expect prices to go up very shortly to us and we'll have to pass them on to the customers. Engines are never going to be any cheaper than they are right now.

WHAT KIND OF A NEWSLETTER DO YOU WANT?

It would help me greatly to organize material for this newsletter if I had some input from you builders telling me exactly what you'd like to see in a newsletter. Please take the time to put a few lines in an envelope or on a postcard and let me know what kind of material you'd like included here and we'll try to get that kind of material in the newsletter.

We encourage you to send in pictures of your project in progress, or pictures of your airplane finished for inclusion in the newsletter. We enjoy seeing them and I know that the builders enjoy seeing what some other builder has done. Every finished airplane does give a builder who's yet building a little shot in the enthusiasm department.

Please though, when you send pictures, put your name, address and other details on the back of the pictures. Sometimes the pictures and letter that came with them get separated and I have a hard time figuring out who the picture came from then. **CONT. P. 9**

USED ENGINE - BARGAIN

Les Price, the new owner of Del Bradley's gorgeous Mark II, has ordered a new Magnum Plus engine for it.

We have taken in trade the 60-2DM out of the airplane, which has 87.4 hours total time on it. It can be picked up at a bargain price. If you're in need of an instant engine and want to save some money give a call. We'll check the engine out and it will be sold with a new factory warranty.

MAGNUM PLUS ENGINES

If you're going to order any new HAPI engine, the time to do it is now! You're all aware, I'm sure, that since Black Monday in the stock market, the value of our American dollar has been in decline and the foreign currencies are getting stronger. What this means to us and you is that all of the engine parts that are made offshore,

August 12, 1987

Dear Rex

First I wish to thank you for having sent a copy of the plans for modifying the elevator control system of the Dragonfly. It is well thought out, and should eliminate sloppy control installations. I also like the idea of being able to remove the elevators without having to remove the canard. I have reservations about removing 36 sq. inches from the Mark I elevators. I say this due to having recently converted my plane to the MarkII configuration. The comparison of elevator authority indicates to me that the MarkI area should not be reduced. However, I am not an engineer and 36 sq. inches is most likely insignificant.

Here are some of the differences I have observed between the Mark I and MarkII Dragonfly. As you have said the Mark II does have greater elevator authority. The large elevator coupled with the increase in canard area allows lower landing speed and a higher nose attitude during landings. The following chart provides some information regarding the two configurations of my Dragonfly.

	Mark I	MarkII
Empty weight	625 lbs.	643 lbs
Empty weight CG	54.47 in.	54.17 in.
Stall Speed (1030 lbs)	58 mph	52 mph
Top speed	168 mph	to be determined
Touchdown speed	64 mph	59 mph
Three point landings	very seldom	ALL
Sparrow strainer angle	35 deg.	25 deg.

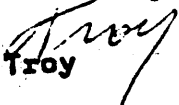
The trim requirements changed in that the Mark II requires almost neutral tension on the elevator trim springs. The sparrow strainer angle of attack had to be reduced 10 degrees to bring the trim system into a good range. I am not concerned about the incidence angle as a sparrow strainer parted company during flight and required two thirds of the elevator trim control movement to eliminate the back pressure.

The Mark II handles as if the CG had moved aft when in fact it moved forward .3 inches. This is probably due to the increased lift produced by the increase in canard area.

I have been busy flying with Dragonfly builders who are approaching completion of their projects. Jule Geiger should make his first flight in a few weeks. In case you have not already heard Jerry Scott first flew his Mark II on August 10, 1987. His flight was very good and only minor adjustments are needed in his aircraft.

Rex, I hope you enjoyed your trip to Oshkosh this year. Looking forward to the swarming--see you in October.

Sincerely


Troy

I keep getting requests for the weights of different assemblies on the airplane, like the wing, the canard and etc., but I've never had any real feel for what these components should weigh. We'd have to establish exactly what comprises one of the assemblies and at what point you would weigh it. I've heard some weights, but not knowing if the canard was finished for instance and includes the elevators or whether that's the bare weight of the canard with no elevators and no finish, without a lot more input information than just weight, I really don't have anything.

HONDA ENGINE

I am doing a series of articles in Kit Planes now detailing the conversion of a Honda Prelude engine to aircraft. A couple of Dragonfly builders wanted to know if that engine is scheduled for the Dragonfly. The answer is "definitely not". It's going to wind up way too heavy for a Dragonfly and we have absolutely no intention of putting it into Dragonfly. It is designed for an entirely different purpose.

BACK ISSUES OF NEWSLETTERS

Many of the questions that you builders phone in and ask about concerning problems you run into as you build the airplane have been dealt with in previous issues of the newsletter. The Dragonflyer newsletter is considered to be an 'in addition to' the plans and when we do have a mandatory plans change, the newsletter is the means of notifying our builders.

The Dragonfly design is almost eight years old now and about 175 Dragonflys are now built and flying.

Some of these finished airplanes have changed hands and now have new owners, many of the projects have changed hands during the building process. There are several different reasons why builders are calling here for builder support asking questions that have been covered in detail in the Dragonfly newsletter. I wish we did have the time available to talk at length to all of the builders, but we'd soon be out of business if we had to spend that much time on the phone.

If you don't have all of the back issues of the newsletters for reference when building this airplane, you're really operating at a disadvantage. I'd like to suggest that all of you new builders, before you really do much work on the airplanes, read through all the old newsletters so that you'll understand the evolution of the design. You can pick up an awful lot of labor saving and money saving tips in the

old newsletters that will more than off-set the cost of them.

You'll also get a lot of insight into flying a Dragonfly from the many letters we've received from builders who have finished and flown.

We still have copies of all the newsletters dating back to number 1 on hand. The stocks of some of them will soon run out.

This newsletter is Issue #28, so check the back issues you have in your possession and if you're just missing some of them, Lynda can supply you with just those issues you don't have, to complete your reference library.

SEASONS GREETINGS

As we close out this year and start up another one, the whole gang here at HAPI and Viking, Jack, Lynda, Leonard, Jesse, Robin, Patrick, Phyllis and myself, would like to thank you for being our friends and our customers through all the past years.

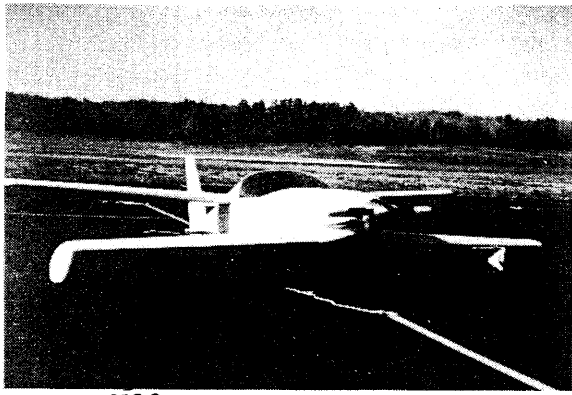
We hope that the future for you and your families will be everything that you want it to be and that your holiday season is a joyous one.

We will be running a skeleton crew in the plant during the Christmas/New Year's season. Lynda Fancher will be here on the order desk and Jack O'Neal will be in shipping. Pat and Robin are taking a much deserved vacation between Christmas and New Year's and Phyllis and I are going down to Mexico for the Holidays.

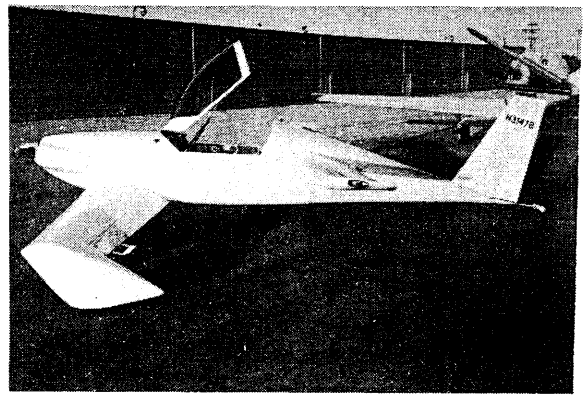
There's a new rumor going around that Phyllis and I are getting ready to move to Mexico. I wish it were true. We do hope to retire down there some day, but that's probably five to seven years in the future. So you'll have to put up with me for at least that long. Have a Merry Christmas and a great New Year.

The gang at HAPI and Viking.

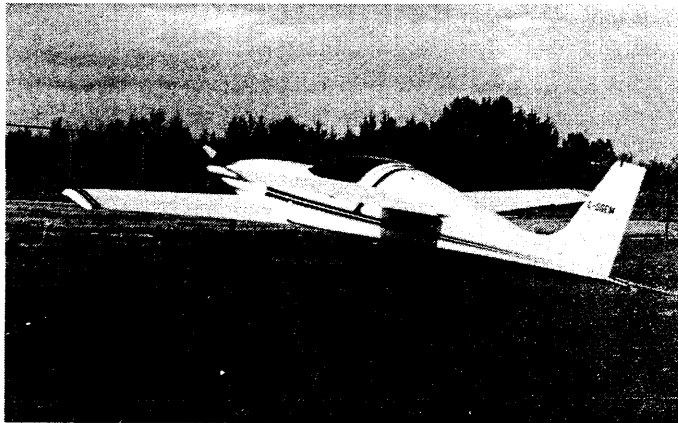
Patrick
Jack
Lynda
Leonard
Jesse
Phyllis
Robin
Pat



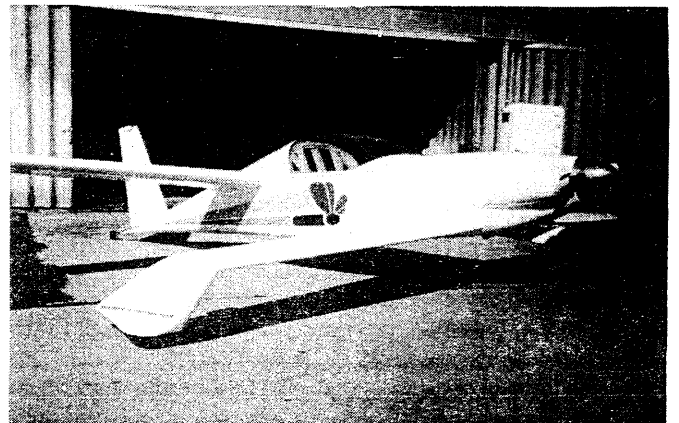
N39DF BEAUTIFUL MK I
WHOSE IS IT?



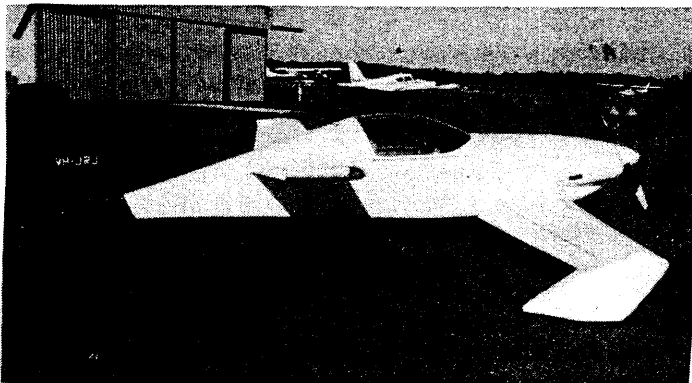
NICK MUSTARI, CHICAGO, IL



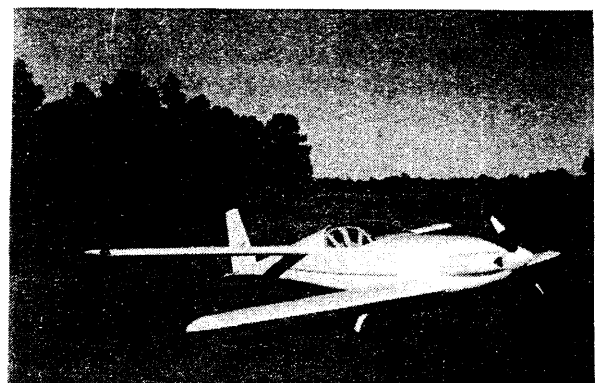
TED GIVINS
OTTAWA, CANADA



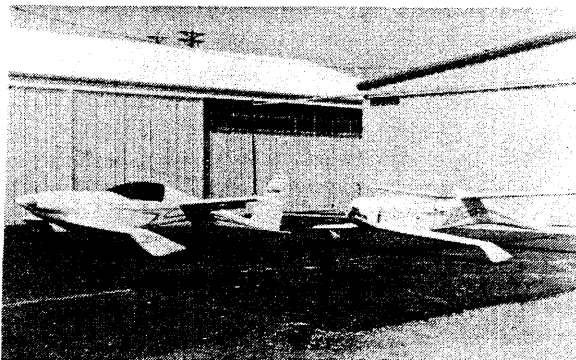
ART STANWOOD
VIRGINIA BEACH, VA



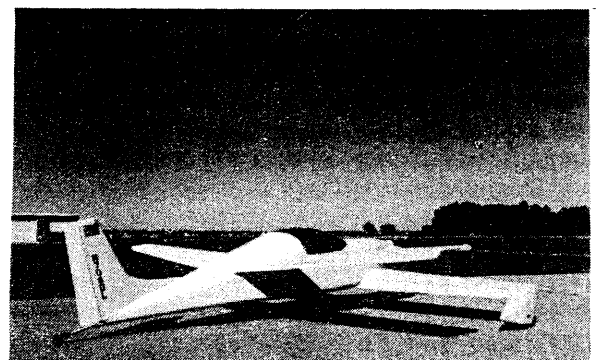
DR. R. S. JELLIFFE
AUSTRALIA



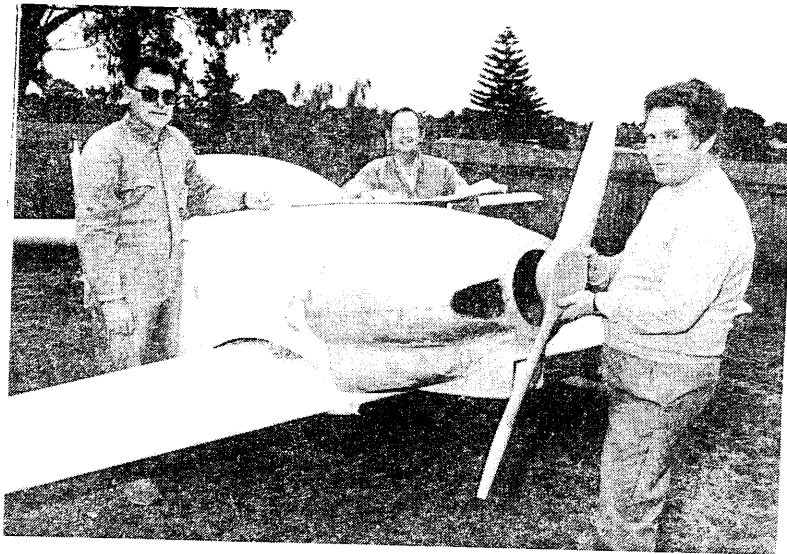
WALTER TRIPLET
CORDOVA, S.C.



MARVIN & JERRY HOMSLEY
N. LITTLE ROCK, ARK



DON LORENZEN
CAMARILLO, CA

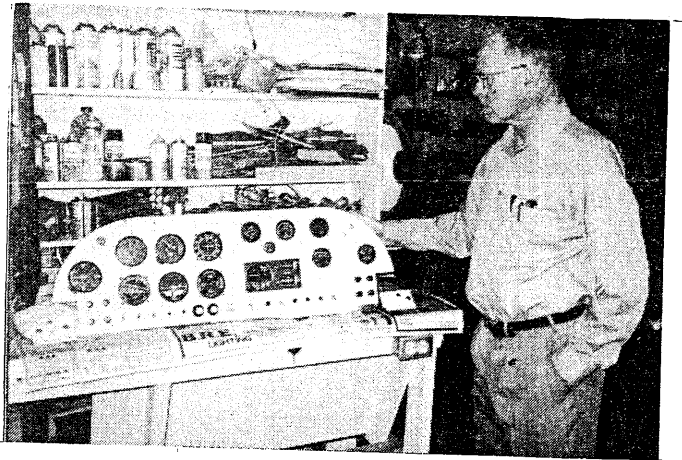


DRAGONFLY VH-XAZ
GAWLER, SOUTH AUSTRALIA
BEING BUILT BY

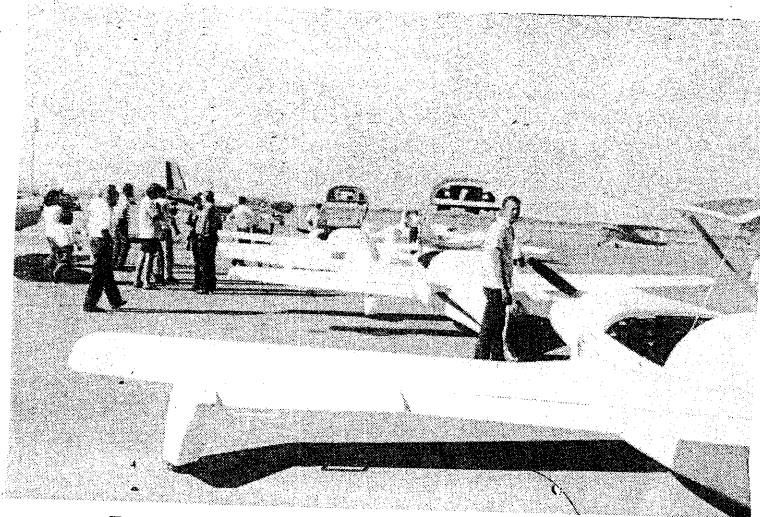
FATHERS DON COUTTS
JOHN KINSMAN
JOHN BEIERS



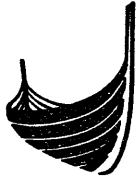
ART STANWOOD IN FLIGHT



FRANK KISS, CANADA



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