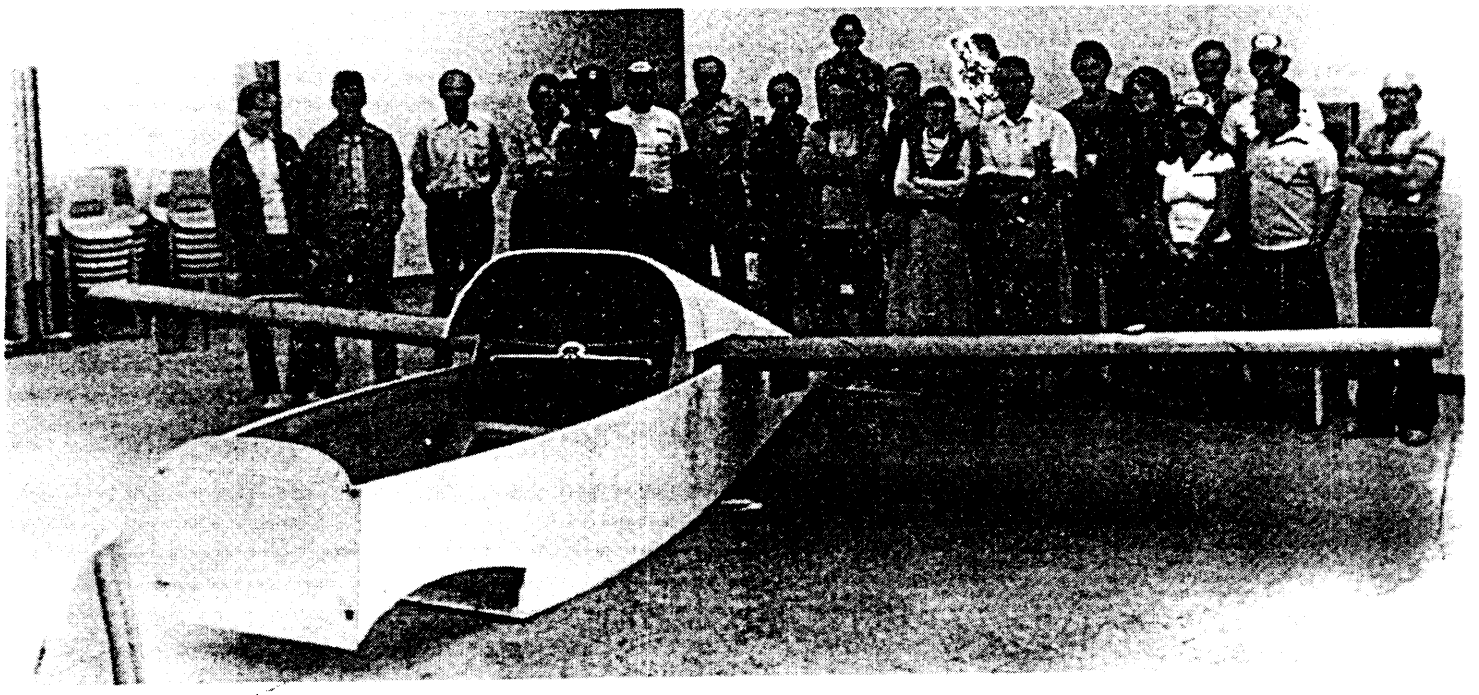

DRAGONFLY NEWSLETTER
#5 WINTER 1981

SAN DIEGO BUILDERS GROUP

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The DRAGONFLYER is the only method for disseminating information concerning plans changes for the Dragonfly. All builders must subscribe. A one years subscription is included in the price of the construction manual. The DRAFONFLY is based at Foley, Alabama. Flight demonstrations are scheduled from time to time; however, the staff of Viking Aircraft is generally very busy processing paperwork and is not at the airport most of the time, so be sure to call ahead of time rather than just drop by the airport.

ERRATA SHEET: Before each newsletter is published, the errata sheet is up-dated to include all the significant plans changes. This means that it is not necessary for new builders to have all the back issues of the DRAGONFLYER in order to obtain the current plans changes. This is not to say that the updated errata sheets contain each and every building hint, but they are an up to date source of plans changes and alterations. For the information of you non-plansholders, these changes are all of a minor nature such as dimension errors, typos, minor omissions, etc. They do not include major alterations to the airframe, nor do we anticipate any such changes.

For you early plans purchasers, it is not necessary for you to have the updated errata sheet since all the plans changes are published in the DRAGONFLYER. Just be sure to keep your subscription current.

NEWSLETTER EXPIRATION: In newsletter number 4, I tried to explain the expiration code which was combined with the address label. The code was the message "LAST ISSUE" printed in extra dark type along with the address label. A number of people were able to break this code without assistance; however, many of them stated that they had some difficulty with the code and since not everyone renewed their subscription I can only assume that some folks were completely baffled. Viking Aircraft, of course, wants everyone to keep up with any plans changes or builder hints, so we have eliminated the tricky code to warn you that your subscription is running out. We are now using a separate warning sticker that spells out in plain English that the issue you are holding in your hand is the last one you will receive unless you renew your subscription. As usual, we are standing by to assist anyone who has trouble understanding this message. If you are confused, please send a photocopy of your address sticker and a check for $25 so that we may give you further assistance. If you do not see a sticker notifying you that this is your last issue, you may assume that this is not your last issue.

BUILDERS LIST: Many of our builders have responded to our request to return the licensing agreement so that we could release their names to other DRAGONFLY enthusiasts. A few people said they didn't want to return their agreement because they haven't decided whether or not to build a DRAGONFLY. The agreement doesn't require you to actually start building before you send it in. If you decide to sell your partially completed project to another builder, be sure to notify us of the change so that we can keep our records straight.

HAVE YOU MOVED? If you move, please send us your new address. Our U.S. Post Office system is not only getting more expensive, but less efficient. We have several builders who have moved, but the Post Office is not able to forward their DRAGONFLYER for one reason or another. If we ever have a mandatory plans change or some other important bit of information to pass on to our builders, I'm afraid that we won't be able to reach everyone unless we work toghther to keep each address' correct.

SHOW AND TELL DAY: On December 5th we had a "show-and-tell" day at the Foley Airport. Chapter 485, the Pensacola EAA group, held their monthly meeting that day and invited all the nearby chapters to join them. It turned into a sort of mini fly in. We had over 150 people attend and a lot of folks arrived in some very interesting aircraft. There were a number of beautiful antiques and classics as well as Clair Meyers' outstanding scale P-51 and a real nice all metal KR-2. People came from as far away as Australia and everyone had a good time. I put on a flight demonstration including a slow flight fly-by followed by a high speed pass that really pleased the crowd. The contrast between the two is quite a sight to behold. Although the wind was rather gusty, the DRAGONFLY exhibited its nice handling qualities.

METAL PARTS PATTERNS: Although most of the metal and phenolic parts for the DRAGONFLY are printed full size in the plans, each component is only printed once. Many parts require two or four identical components to be fabricated. For those of you who don't look forward to laying out the parts several times, Dick Calvert has developed a set of blueprints that include full size patterns for all the metal and phenolic parts. The lift tabs are reproduced 4 times, for example. To use the prints, simply cut out the patterns and stick them to the metal part using a wax based adhesive (available at most art stores) and then cut out the parts. This should save quite a bit of lay out time as well as allowing you to get the most efficient use out of a piece of metal stock. Dick will send you a set of prints for $6.00 which includes postage and handling. Contact Dick Calvert, 4036 Justine Drive, Annandale, VA 22003 (703) 941-2060.

DRAGONFLY T-SHIRTS: Rick Gentz, a builder from Minnesota, is offering T-shirts for sale. Some of you may have spotted Rick or his wife wearing their shirts at Oshkosh last summer. The shirts have a black outline of the airplane on blue, red, green, or yellow shirts. They cost $10, including shipping. Contact Rick Gentz 9523 Yorkshire Ln. Eden Praire, MN 55344. Marge and Stan Kalishman, 12 Apple Orchard Rd. Rochester, NH 03867 also have a T-shirt design available. It is a three quarter front view of the aircraft with a dragonfly bug in the cockpit. The dragonfly has a Viking face and although my description may sound funny, it's really a cute cartoon. Contact Marge or Stan for price details and color options.

MATERIALS SUPPLIERS: Several additional suppliers are now making materials available to homebuilders. These suppliers are listed on our latest materials procurement list, but some of you early plans purchasers may not be aware of their addresses. The address and phone number for Larry Pope, the Florida Clark Foam distributor was printed incorrectly. It is: Larry Pope 491 South River Oaks Drive, Indialantic, FL 32903 (305) 724-6007 Larry has announced a slight price increase to $200.64 for the urethane kit, but he expects it to remain at that price for some time to come. Larry will be moving to a larger warehouse in about a month and will then be able to offer shipping within a day or so of receiving your order. His address and phone will remain the same.

M&M COMPOSITE KITS 1544 Callens Rd, Box 3196, Ventura, CA 93006 (805) 642-3131. Write or call for prices.

ALPHA PLASTICS Rt.#1 Box 231, West, Texas 76691 (817) 826-3639. Alpha Plastics sells many composite materials including carbon fiber. They accept Master Card and Visa. Call or write for a catalog.

UNITECH MANUFACTURING INC. 1055 Parkinson Rd. Box 936, Woodstock, Ontario, N4S-8A4 Canada (519) 539 6321. Unitech handles most of the materials for the DRAGONFLY in Canada. Write or call for prices.

BANNERMANS 6195 Garden Cove, Memphis, Tenn. 38134 (901) 372-0755. Bannermans handles styrene foam, fiberglass cloth, and other materials. Write or call for prices.

Please note that these suppliers and the suppliers listed in the materials procurement list are <u>not</u> connected with Viking Aircraft in any way. There is no such thing as "designer approved" or "designer authorized" parts. We are unable to guarantee the quality or service of any of these companies. If you purchase a part that is not exactly like the part called out in the plans you should consider it unacceptable. Don't let any of the suppliers talk you into buying parts or materials that are different from the ones we have tested on the prototype. Some people are advertising complete structures such as wings, canards, etc. for sale. Viking Aircraft has absolutely no connection with these companies and we caution you to be very careful when it comes to purchasing pre-manufactured major components. It is possible to violate the FAR 51% rule and if enough of this sort of "homebuilding for hire" goes on for long enough we may see our sport suffering under more restrictive regulations in the future.

RUBBER FUEL CAP The rubber expanding fuel cap is available from Monnett.

GIANT WINGTIPS: OK you guys.....enough is enough. When I pointed out in the plans that you could use the same wingtip shape as on the prototype or curve the tip down or round the tip off, I didn't mean that you were supposed to take that comment as a license to run wild. The higher the aspect ratio, the less important the wingtip shape. The folks who pay the most attention to the wingtip shape are the open class glider racers. Some of them look like the tips on the prototype, some curve down a little bit, and some are rounded off. That is a

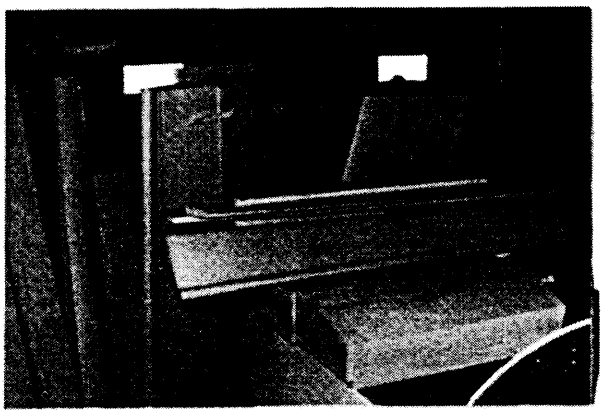
pretty sure indication that one shape hasn't proven greatly superior to another. By the way, these gliders operate with roughly the same requirement as the DRAGONFLY as far as overall performance is concerned. Some very low aspect ratio, slow speed STOL aircraft are equipped with huge drooped wing tips. The idea is that these tips will allow you to land slower. There is no doubt some aerodynamic improvement and some psychological improvement in landing speeds can be achieved with these huge tips. I won't argue the relative percentage of each, but keep in mind that the goal is to shorten the landing and take off distance of these STOL aircraft as much as possible. Top speed is of little importance relative to the slow speed characteristics. The DRAGONFLY, on the other hand, is not in need of a shorter landing roll since at present it requires only a fraction of the average paved runway. The wing is lightly loaded relative to the canard and since the wing never gets close to its maximum lift coefficient, giant wingtips designed for STOL aircraft are of no use on the DRAGONFLY. They will do nothing except make your aircraft ugly and slow. If you have extended your wing or put on giant tips, cut them off and go with something that looks like the tip on the prototype or something like the prototype tip inverted. If you think one type is much better than the other but you can't decide which, don't make removable tips! Flip a coin and use either the curved up or curved down tip. After you gather accurate data on the first type, then cut them off and put on the other type. Believe me, the effort to do this is much less than making several tip designs and the mechanism to make them easily interchangeable. If you want to fool around with some meaningful aerodynamic experimentation, put your efforts into prop research. There are some real gains to be made in the area of prop shapes. Messing around with wingtip shapes is a waste of time and money on an aircraft like the DRAGONFLY. In other words, don't get "wrapped around the axle" on meaningless details.

PHOTO CREDIT: Last issue I forgot to credit Charles Bokros of Gahanna Ohio with the nice Oshkosh photographs. Ching and I were too busy to do a lot of photography at Oshkosh, but Charles was kind enough to let us use some of his. Thanks Charles. Speaking of photographs, please continue to send snapshots of your project under construction. We'll be glad to return them if you wish.

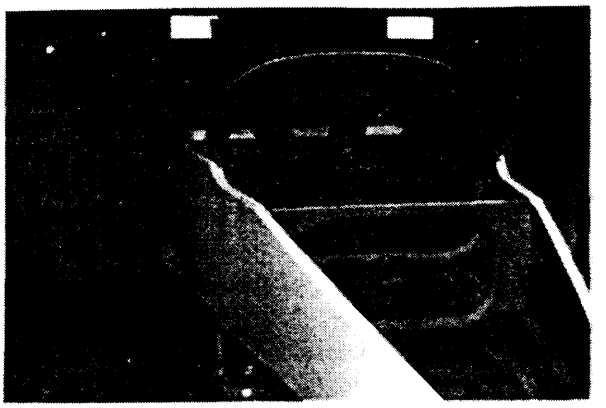
DRAGONFLY JEWELRY: Wicks Aircraft has contacted a jewelry maker who is able to make various gold filled dragonflys at a reasonable price. There is a choice of a large or small dragonfly (the bug not the plane) to choose from. A number of small dragonflys on a chain might make a nice bracelet or necklace, while the large dragonfly alone would make a nice necklace or pin. They will be able to supply various items depending on demand. Prices should be quite reasonable. Contact Dick or Bud at Wicks if you're interested in ordering jewelry.

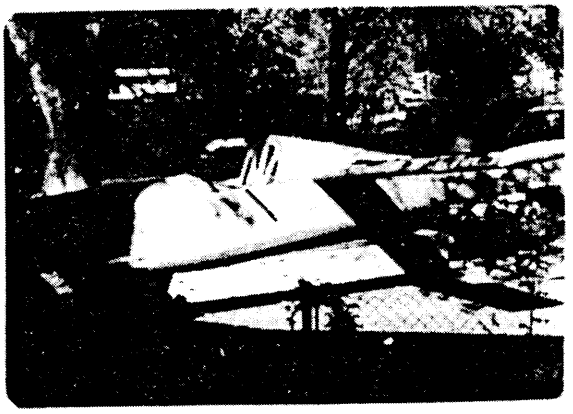
MOLDED FUSELAGE PARTS: A few people have asked if we plan to market molded fuselage parts. The answer is an emphatic "no". The cost involved in molded fuselage components is quite high and would drive the cost of the aircraft up. Burt Rutan has more experience in promoting homebuilt composite aircraft than anyone else in the business. His recent study of molded fuselage components points out that a maximum of 3% savings in time can be expected by purchasing fuselage components. Keep in mind that fitting interior bulkheads, fuel tanks, cowlings, canopies, etc. and finishing the exterior joints takes a lot longer with molded fuselage shells than with a built up fuselage. On the other hand, the difference between a good set of plans and a mediocre set can alter the building time by as much as 25% or more. That's a rather dramatic savings in time without any increase in price.

COMPOSITE FINISHING: We have just completed an article on finishing composite aircraft. It is scheduled to come out in the February issue of *SPORT AVIATION*. It is similar to the information contained in the DRAGONFLY construction manual, but has more detail. If you are going to get to the finishing stages before the article comes out, we will be glad to send you a copy of the information if you will send us a buck for the cost of the photocopies and postage. This offer is open to anyone who sends us a picture of their aircraft capable of rolling around on the landing gear.

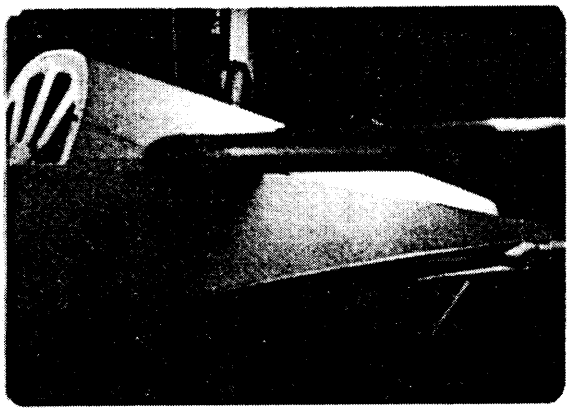


GARY KONRAD'S PROJECT





SHELIA AND GENE SMITH'S PROJECT



CABIN HEAT: Because of the green house effect of our large canopy and the good insulation provided by the fuselage foam, the DRAGONFLY prototype has never been cold enough for me to want any cabin heat. We've flown in temperatures well below freezing with no problems. I recommend that builders wait to install cabin heat until after they have flown their aircraft and found a real need for it. It is possible to make a heat muff like the one used for carb heat, but there is a possibility of carbon monoxide getting into the cockpit in the event of an exhaust leak. A safer method would be to use oil cooler exhaust air. It has the advantage of being relatively high pressure and clean. Simply fabricate a diverter valve to send the oil cooler exhaust into the cabin. Make sure any hole you put in the firewall can be securely closed off in the event of an engine compartment fire. An inexpensive carbon monoxide detector is also recommended. A "litmus paper" type detector that changes color is cheap insurance.

SEAT BELTS: The same company that made the seatbelts for the prototype has agreed to make seatbelts for other homebuilders. Survival Systems Company Box 60534, San Diego, California 92138 (714) 565-8128 is primarily in the business of supplying TSO'd survival equipment for the airlines, but Bill Thornton is interested in helping the homebuilt market with safe custom made belts at a reasonable price. Bill has all the specifications on file for the DRAGONFLY seat belt and shoulder harness set. Contact him for prices and colors. The last time I purchased a set of belts from Bill, his prices were low, his quality was very high, and his service was outstanding. That's a hard combination to find these days.

CARBURETORS Although the POSA carb is a rather crude device, it seemed to give us good performance on our 1600cc engine once we got it adjusted properly. Unfortunately it is a bit tricky to get adjusted at first, but once we got it "dialed in" we got pretty good service from it. We had an attachment that allowed us to lean the POSA all the way to "cut off". We are presently using the Bendix carb that came with our 1835 when we purchased the engine. Although it is supposed to be leanable, it only gives us about a 10 degree EGT change. If any of you builders have previous experience with a low cost, effective carburetor for the VW that allows leaning to "idle cut off", please contact us. We would like to hear about your experiences.

COPYING PLANS: A few prospective builders have inquired about the possibility of building several aircraft from one set of plans. This question requires a rather lengthy discussion to fully explain our position on this matter. First of all, it is important to distinguish between the end result of the design efforts of a homebuilt designer and the efforts of those who design other vehicles.

The design of the DRAGONFLY required quite a bit of effort and involved considerable financial and physical risk. Fortunately the design is a successful one and we have not suffered injury or financial loss as a result of our efforts. This result is far from guaranteed when a designer begins the initial design phase. A good deal of effort might be expended before the design is found to be unsuitable, for instance. Even if a prototype is successfully constructed, the likelyhood of losing money on a homebuilt design is much greater than making a profit. Unfortunately, a rather high percentage of designers lose their life testing their designs, the most recent example being George Mead. George was liked by all who met him and we certainly regret his passing. Only a few weeks prior to the death of George Mead, John Chotia was killed while testing a new prototype. Statistically, designing and testing prototype homebuilts isn't very safe.

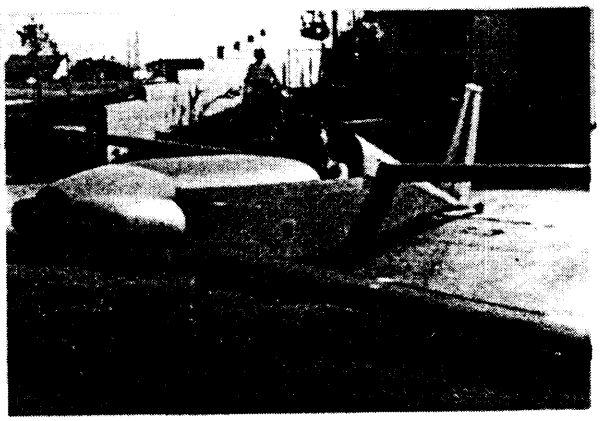
We have published the information necessary to construct the DRAGONFLY and it is currently available to the public. If we were selling production aircraft, the design cost would be paid for each time a customer bought an aircraft because he would not be able to separate the cost of design from the cost of the aircraft itself. However; by publishing our design information, there exists the possibility that one person would purchase a set of plans and make the information available to everyone who was interested. The DRAGONFLY construction manual is protected by the copyright laws, so an individual or company can't reproduce and sell the plans, but these laws do not prevent several builders from constructing a number of aircraft from one set of plans. There is some legal precedence in the boat building industry to prevent more than one project from being built from a set of plans; however, from a realistic point of

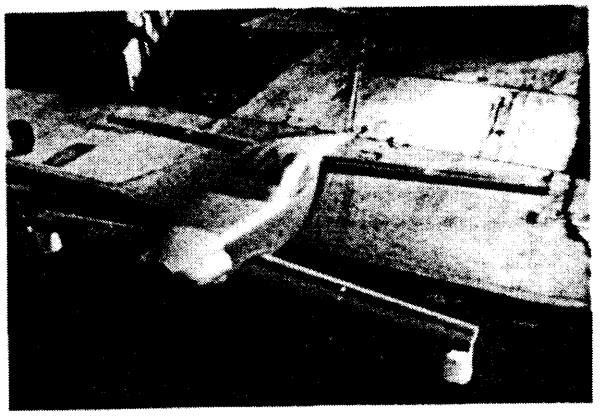
view, a company like ours is not going to fight a legal battle to protect ourselves from unscrupulous builders. It's simply too expensive to be worth while. Nevertheless, it's obvious that if a company only sells information, and if that information is made available, for free, to anyone who wants it, then that company isn't going to be in business for very long.

What then can a company like ours do to protect our interests? Quite simply we rely on the integrity of our customers. I think most people realize that if a designer doesn't at least have a chance to recover his investment, then he is not likely to go to the trouble to publish his design. Few of the people who build homebuilts are qualified to design and test them, so they rely on qualified individuals to do the design work for them. Part of the cost of a set of plans goes towards paying for printing, postage, etc., while part of the cost is to cover builder support, plans changes, and things like that. What the builder is really paying for though, is the privilege of building a tested aircraft from a good set of plans. Now, if an individual builder is satisfied with the plans and the performance of his aircraft then he will normally feel that he got more than his moneys worth. To convince yourself of this, simply try to build an aircraft without a set of plans! You will quickly be convinced that $175 for a good set of plans is the best bargain you could hope to get. If, on the other hand, a builder thinks the plans he purchased are not well presented and the aircraft is not all the designer claimed it to be, then he is likely to feel that he didn't get his moneys worth. These are the folks who are likely to photocopy plans and pass copies out to interested parties. We are very proud of the DRAGONFLY construction manual. It has more information than any other set of plans available for composite aircraft and our customers agree that the customer support that we provide is very good. In addition to providing what we think is a outstanding value on the plans, we have gone out of our way to reduce the cost of the completed aircraft. Unlike other designers, I have refused to accept the customary kickback on materials. This alone reduces the overall cost to our customers by $300 to $500. In addition, by not accepting a kickback, I am free to tell you where you can purchase materials locally at a great savings. Some of our customers have saved almost $400 on the styrene foam alone by following our suggestions.

Since selling plans is our only business, we must ask that our builders construct only one aircraft per set of plans. So far, our builders seem to be satisfied with what they get for their $175. By continuing to provide a good product and good builder support, we hope our builders will continue to feel satisfied.

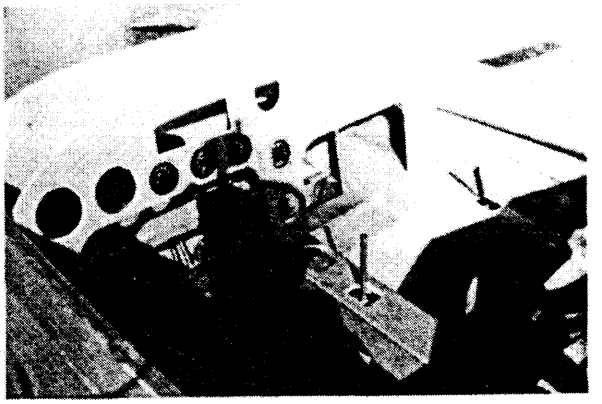
Think, for a moment, about what one of our builders said to us at one of our evening bull sessions at Oshkosh this year. He said that by recognizing a company with integrity and supporting it, builders will profit in the long run because then companies will be willing to support builders who also have the same integrity. Unscruplous promoters will be driven out of our sport and better designs will be emerge as a result. At the same time, overall cost to the builders will be reduced. If our sport remains honest and healthy, then everyone benefits.





TERRY AND JOAN NICHOLS'

PROJECT



DRAGONFLY HOSPITALITY CLUB: Nick and Carolyn Dunbar would like all you DRAGONFLY enthusiasts to respond to a survey they are making. They are interested in forming a hospitality group similar to the Vari-Eze group. For those of you who have not had contact with the Vari-Eze club, the idea is to form a network of builders and other interested people who are willing to offer support to each other. Each member is supplied with a list of all the other members and when on a cross country, he is able to pre-arrange housing, transportation, etc. The idea is to provide assistance as necessary for other members visiting your area. You can join this group on just about any level you want. If you live in the back of your van and are unable to provide much support to other members, simply make the facts known on the roster. Perhaps your interests are tennis, golf, or even sport drinking. Even if you can't provide housing and hanger space, it is sometimes nice to be able to have a tennis game or glass of beer with another builder when visiting a new town. On the other hand, perhaps you're one of those wonderful folks who can never get enough hangar flying and you have an empty hangar, an extra car, and an empty guest room. Think how much a fellow DRAGONFLY owner would appreciate your hospitality when he is on a cross country. Maybe you don't think an organization like this is for someone like you because you're sort of "anti club". How about when you're on a cross country and you experience some maintenance problem. The average FBO may not be able willing to loan you the tools and support you would like to have in such an emergency; however, someone from the hospitality group is likely to provide assistance that can't be bought at any price. Think about it. Nothing is worse than having trouble far away from home and not knowing anyone to call for help. Membership in the DRAGONFLY HOSPITALITY CLUB could prove to be pretty cheap insurance against such an event.

Nick and Carolyn are willing to set up the group, publish a quarterly newsletter, supply a membership card, etc. for $7 per year. If you're interested, please contact them at: Nick and Carolyn Dunbar 501 Lincoln St. Lee's Summit, MO 64063. Fill out a 3"x5" index card with the following information: "N" number, home airport, number of persons you can accomodate, whether or not you have transient hangar space available, what sort of transportation you have available, building hours or percent complete, runway length and condition, personal information and special interests. Remember that you do not have to have your aircraft completed to join the club.

SPECIAL REQUEST John Filipi Jr. 5411 W. 103rd Ave. Broomfield, CO 80020 has asked us to publish his phone number so here it is: (303) 469-4070

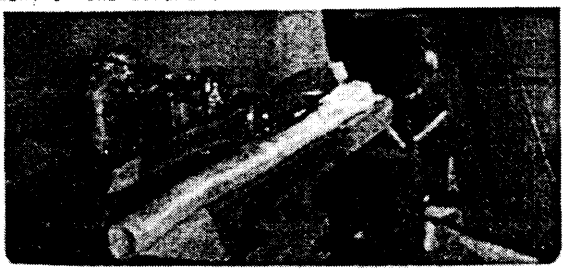
AIRCRAFT MODIFICATIONS We've discussed aircraft modifications before, but it looks like a few of our builders have missed the point. If there is any reason to make plans changes, believe me, Viking Aircraft will take the appropriate action. For example, the UNI cloth presently used may be in short supply in the future. Don't worry, there is at least a 6 months supply in stock; however, we are presently making careful tests on some very similar fabrics and will publish our results in the next newsletter. These tests results are being correlated with other composite designers in the field to make sure that builders are supplied with the most accurate information possible.

For some reason, there are one or two folks out there that feel compelled to make untested alterations to their aircraft. On the one hand, homebuilding is a sport where experimentation is encouraged and desirable. On the other hand, high performance aircraft, such as the DRAGONFLY can easily be adversly affected by poorly planned modifications. Free advice is generally worth what you pay for it. In some cases it can be downright dangerous. Unfortunately some of these self appointed "experts" may give you what sounds like a pretty good story. Don't be taken in by someone like this, no matter how well meaning he may be. The DRAGONFLY is a carefully designed aircraft that has a proven record of good performance and safety. If you want to have an aircraft like that, then follow your plans carefully. Avoid the urge to "beef up" first one part and then another. These "beef up" advocates usually produce an aircraft that is heavy and therefore actually weaker than the design calls for.

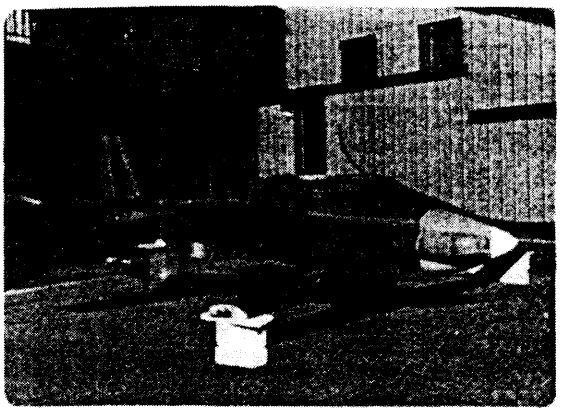
The same general caution applies to those people who want to sell you some substitute material that they claim is "just as good". Do not use any untested or unproven materials in your aircraft. Don't ruin the enjoyment of a project in which you have invested a lot of time and money by trying to take shortcuts in building techniques, by using inferior materials, or by following bad advice.

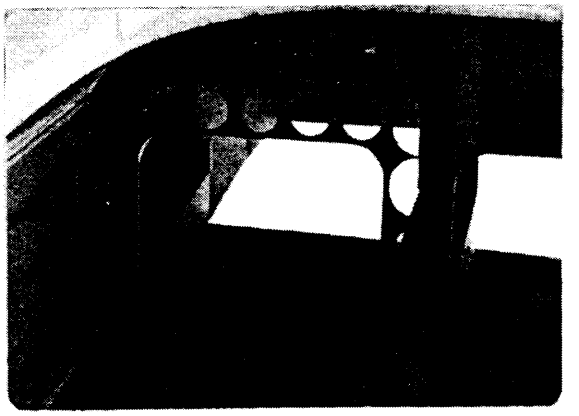
TOM LYNCH AND
HIS DAUGHTER JENNIFER

PILOT REPORT: Peter Lert, the senior editor of *AIR PROGRESS MAGAZINE*, flew into Pensacola the other day to do a pilot report on the DRAGONFLY. We went to Foley Airport on the morning of December 15th. The weather was rather windy and gusty, but it didn't prove to be a problem for the DRAGONFLY. Peter and I went up for a short hop to get a feel for the aircraft near gross weight. I showed Peter one touch and go and then he made the full stop landing. I got out and turned him loose for a solo hop. Peter expressed surprise at how fast the aircraft left the ground on the takeoff. He evaluated the aircraft slowflight and minimum speed response, stability characteristics at high and low speeds, and the landing characteristics. Peter used a bit of extra speed on final because of the very rough air and got the aircraft in ground effect with excess speed, so his first landing was somewhat of a floater. None the less, he made the turnoff at about 1800 feet with no problems and said that with a few landings under his belt he could considerably shorten the landing. Peter was especially impressed with the nice handling characteristics of the DRAGONFLY. Peter Lert is one of only two "non factory" pilots who has flown the Q2, and the only pilot in the world to have flown both our aircraft and the Q2. Keep an eye out for Peter's article in the March issue which should be out sometime in February. It will be interesting to compare his article on the DRAGONFLY with his impression of the Q2 in the April 1981 *AIR PROGRESS* and the article by Peter Garrison in the October issue *FLYING MAGAZINE*. I asked Peter if he had any advice for our builders. He said that the aircraft isn't a beginners aircraft in the sense that it is so very very clean aerodynamically that if one points the nose down, the plane accelerates quite rapidly. This, of course, is one reason that we strongly advise against trying aerobatics. The key to staying out of trouble with a very clean aircraft is to simply have the judgement not to allow the speed to build to undesirable levels. This is more a matter of self dicipline rather than flying experience. Aerodynamic cleanliness often goes hand in hand with an aircraft that is tricky to handle; however, in the case of the DRAGONFLY the handling characteristics are very nice and the aircraft is actually quite docile. Peter did suggest that builders get a few landings in something like an early Grumman (if you're not used to flying clean ships on the glide slope), as well as some landings in a tail dragger before you make your first flight. He was especially impressed with the ground handling and control harmony of the aircraft.

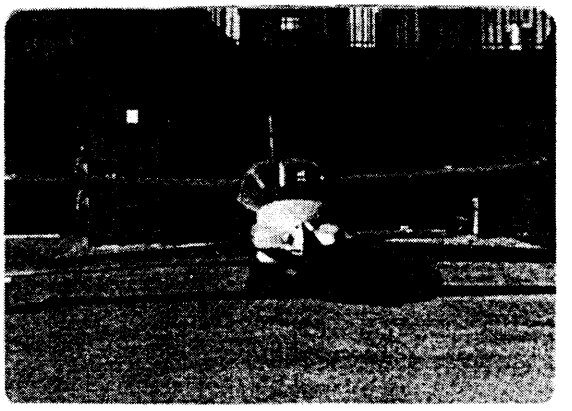


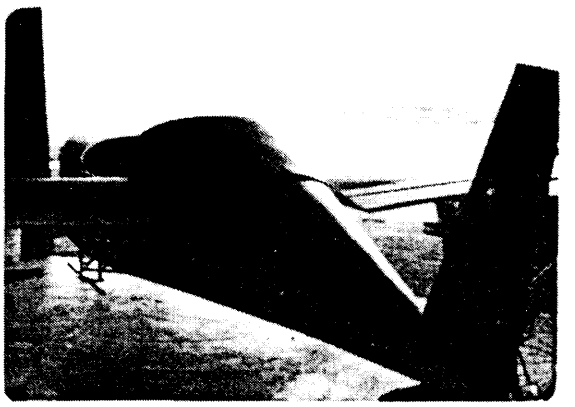
BRAD CHAMBERLAIN IS BUILDING HIS OWN ENGINE AND PROP!





BRAD CHAMBERLAIN'S PROJECT





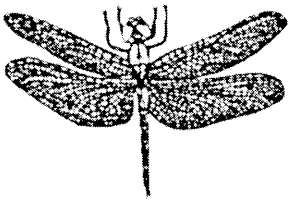
MISSING PAGES: Please don't contact us and tell us that Chapter 1, pages 3 and 4 are missing. We know they're missing because those are the pages that contain the license agreement. When you cut it out and send it to us, then it becomes "missing". Don't worry about it. If you want to find out what it says, simply go to your files where you store your license agreement and read it twice (once for your copy and once for the copy we have on file at Viking Aircraft).

DEFECTIVE NUTS There have been recent reports of some MS21042 nuts failing because of improper plating and heat treating. These nuts usually develop cracks within 24 hours of being installed. Carefully check any MS21042-3 or -4 nuts on your project a couple of days after you install them. Please report any cracks to us. By the way, we have not had any reports from DRAGONFLY builders, but I do know that the local U.S. Navy folks have found some defective parts.

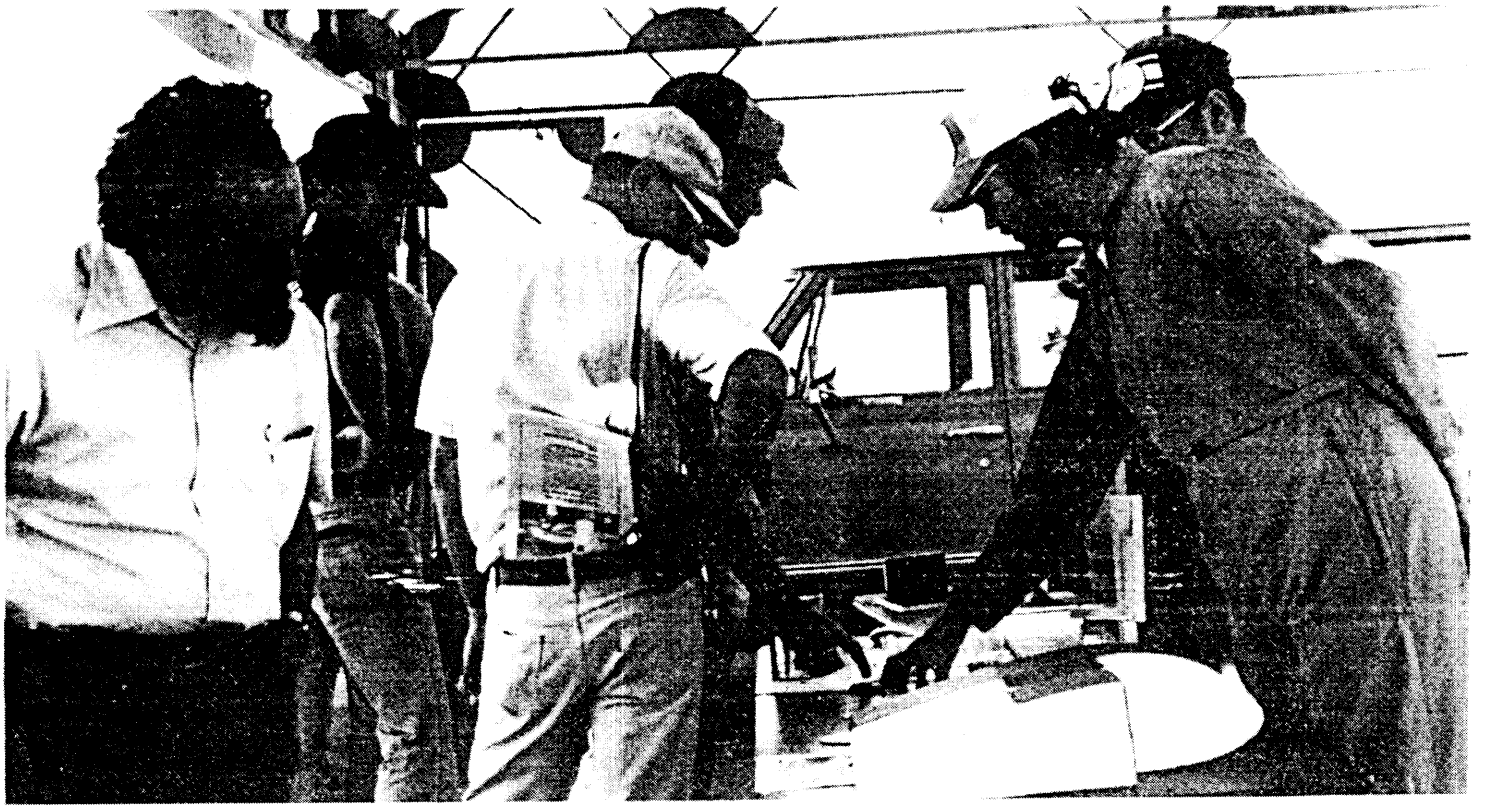
RAMONA AIRSHOW We couldn't attend the Ramona Airshow this year, but the DRAGONFLY builders group from San Diego set up a terrific booth and really did a great job promoting the DRAGONFLY. Tom Lynch (#81) made a series of sample parts and mock-ups that showed just how the aircraft is constructed. The San Diego folks are really going great guns on both their projects and their club. Keep up the good work. Why don't you get together with some of the people in your area and form a composite builders group? In addition to the social aspects, there are advantages in borrowing tools and equipment, helping each other during large lay-ups, and purchasing materials at quantity discounts.

JIM NALLY

(HOLY TOLEDO)



SAN DIEGO BUILDERS AT THE RAMONA AIRSHOW



PLANS CHANGES: Viking Aircraft is not in a position to enforce plans changes; however, we very strongly recommend that you incorporate the following changes in your construction manual and/or aircraft.

Chapter seven, page seven, Add: The overall length of the aluminium brake actuating arm should be 11.2" before bending. The width should be 1".

Page L 10, Change: The numbers on the rudder (not fin) templates used for hot wire cutting are incorrectly printed. Alter the smaller template so that it is basically a scale model of the larger template. In other words, the number 8 on the smaller template should be where the number 7 is printed, and so on.

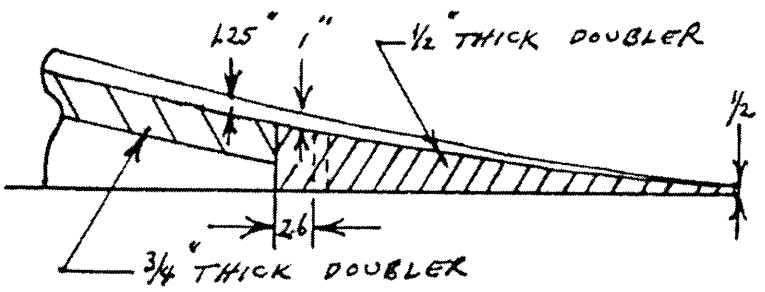
Chapter 6, page 11, add: The the two arms of the aileron motion changer bellcrank (CS-1) are at 45 degrees to one another. The drawing is correct and to scale. Fabricate two bellcranks.

Chapter 7, page 2, paragraph 4, add: It will be necessary to cut a slot in the center of each plywood insert of the wing lift bulkhead in order to install the CS-1 bellcranks. Refer to the drawing Chapter 7, page 4.

Chapter 4, page 3, column 2, change: The dimensions on the drawing of the canard center section foam block are incorrect. The top aft edge should be 30.5" (not 29.5") and the bottom aft edge should be 30" (not 29"). The forward edges are correct. Make the appropriate changes to the verbage on page 3, column 1, paragraph 5.

Chapter 5, page 5, column 1, paragraph 3, add: The sheet of foam used for the aft cover will be easier to bend into position if it is trimmed so that it does not extend aft of the smallest former station by more than one inch. If you have trouble with the foam breaking, try warming it with a hair dryer or add several additional score marks using a saw. Some builders have attached the foam to the stringers by "sewing" it in place using strong thread rather than gluing it in place using Bondo. It is acceptable to glass right over the threads. Cut them off flush with the exterior of the foam to remove the part from the mold.

Chapter 2, page 3, change: The top view drawing of the fuselage bottom shows the .5" thick foam doubler near the tail incorrectly. The corrected drawing is shown below. The .5" doubler should be a total of 1" wide at the aft edge so that the high density foam insert shown in chapter 5, page 13 will fit correctly. This change was included in newsletter #2; however, it was omitted from the errata sheet so we are reprinting it.



Chapter 5, page 13, column 1, paragraph 2, change: Do not trim the cowling to the trim line immediately (as instructed). Because of various tolerences, your cowling may need to be slightly longer than the trim line indicates. It is wise to carefully cut and fit at this point. Note also that the top and bottom cowling halves can be confused. The top is the half with the jogoled lip and the bottom is the half with the plain edge.

Chapter 10, page 1, column 2, paragraph 1, add: If you are using a "universal" engine case rather than a type I case, it will be necessary to grind or saw off the small mounting boss just below the oil pump in order to obtain sufficient clearance between the engine and cowling.

Chapter 3, page 4, column 1, paragraph 1, typo: The correct dimension should be 7"X28"X64" (not 7"X14"X64").

Chapter 5, page 14, column 1, paragraph 2, typo: Measure down from the top of the firewall 10.9" (not 10.7"). Add: When measuring up the seat back, make allowance for the the thickness of the seat belt attach pads if you have them installed. The important idea is to establish the crankshaft centerline as accurately as possible.

Chapter 1, page 1, column 1, paragraph 5, add: So as to insure that your construction manual is complete be sure that the last page of each chapter is numbered as follows: Chap.1, page 21; Chap 2, page 10; Chap.3, page 13; Chap.4, page 6; Chap.5, page 17; Chap 6, page 13; Chap 7, page 15; Chap.8, page 7; Chap.9, page 8; Chap.10, page 3; Chap.11, page 3; Chap.12, page 2; Chap.13, page 9; Chap.14, page 5; Chap.15, page 4.

Chapter 2, page 7, change: The width of the lower seat back bulkhead should be 43.2" on the bottom edge (not 43") and 41.4" on the top edge (not 42.2"). The lower edge of the upper seat back bulkhead should be 41.4" wide (not 41.2").

Full size sheet L1 change: Change the position of the wing drag bulkhead layout on the fuselage bottom to 77.2" (not 77.8").

Chapter 6, page 3, column 2, paragraph 2, add: In order to provide a more fair lead for the brake cables as they exit the canard and connect to the pulleys attached to the canard drag spar, the brake cable conduit should gradually angle downwards inboard of BL 34 so as to exit the elevator hinge fairing low on the drag spar (not high on the drag spar as instructed). Outboard of BL 34 the conduit should be attached high on the drag spar as shown on the drawing Chapter 6, page 3. Refer to Chapter 8, page 6 and full size drawings L-9 and L-11.

Chapter 3 page 13, column 1, paragraph 1 Add: "After one side of the wing is glassed, use Bondo to glue a lightweight straight board to the trailing edge of the wing outboard panels on the fiberglassed side to help keep the trailing edges warp free."

Chapter 6, page 6, add: The aluminium hinge thimbles should be tapped 10-32 to accept the AN-3 hinge pin.

SUN 'N FUN 1982 Viking Aircraft is planning to attend the SUN 'N FUN fly-in in Lakeland, Florida. The 8th annual convention dates are March 14th through the 20th. This fly-in always draws a large crowd and sometimes provides the first view of some interesting winter projects that have been recently completed. If you haven't seen the DRAGONFLY at Oshkosh the past couple of years, this might be a good time to drive or fly down and have a look. Naturally we will not be available in our office during the fly-in, so don't expect anyone to answer the phone the 3rd week in March. We hope to see you there!

OUR VACATION In the fall newsletter, I mentioned that Ching and I were going to try to take a week or two off around Christmas time. Well.....Christmas time is here and we haven't found the time to get away. We're keeping our heads above water and Floyd (the computer) is working full speed, but we would still like to take a break for a few days soon.

TELEPHONE CALLS Since our office is in our home, we're available by phone a lot of the time including evenings and weekends. If you can't get an answer during the day, it usually means that we're at the post office or printers. Keep trying. Please don't call in the middle of the night or during San Diego Chargers football games!

HAPPY HOLIDAYS We would like to take this opportunity to wish all our builders and newsletter subscribers a happy holiday season. Best wishes in the coming year.

DO NOT TOLERATE AN INACCURATE SCALE
THEY CAN BE DANGEROUS !!!!

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PLANS- $175 ($185 overseas) includes 1 yr. subscription to the quarterly newsletter. **INFORMATION PACKAGE-** $7.50 ($8.50 overseas) includes color lithograph. **QUARTERLY NEWSLETTER-** $6.00/yr ($7.00 overseas) ALL PRICES INCLUDE AIRMAIL POSTAGE. FLORDIA RESIDENTS PLEASE ADD 4% STATE SALES TAX. OVERSEAS CUSTOMERS PLEASE SUBMIT U.S. FUNDS ONLY.

contact:
VIKING AIRCRAFT
16551 PERDIDO KEY DRIVE
PENSACOLA, FLORIDA 32507
PHONE (904) 492-2727

PERFORMANCE SPECIFICATIONS

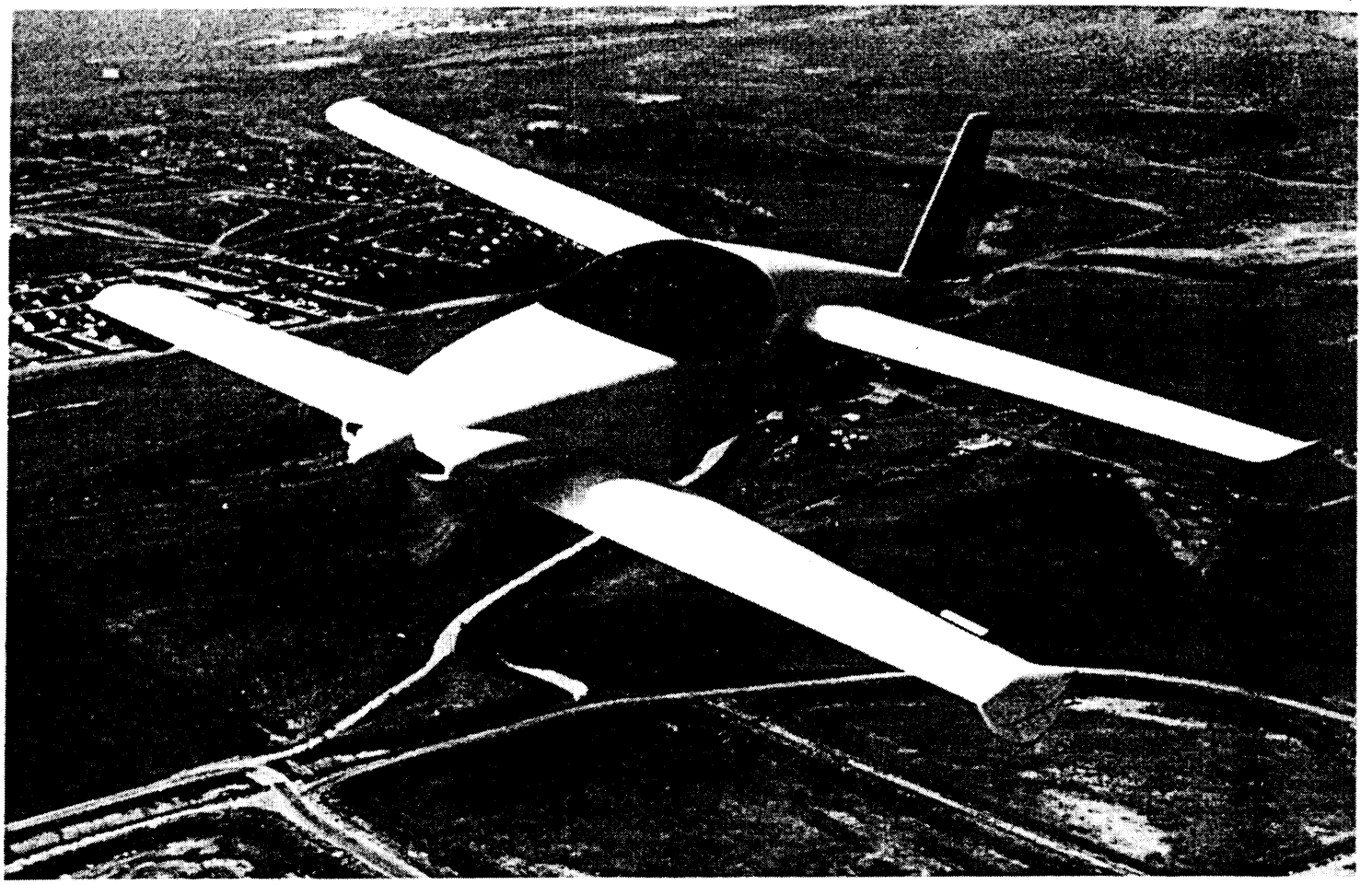
CONFIGURATION	Canard
SEATS	2 side-by-side
CONTROLS	Dual side sticks
COCKPIT WIDTH	43 inches
CONSTRUCTION	Foam/Fiberglass
CANOPY	one piece molded
GROSS WEIGHT	1075 pounds
MINIMUM SPEED	45 mph indicated
RANGE	500 Miles
FUEL CAPACITY	15 gallons
WING SPAN	22 feet
TOTAL AREA	97 sq.ft.
WING LOADING	8 lbs/sq.ft. solo 11 lbs.sq.ft. dual
LIMIT LOAD	+4.4, -2.0
GLIDE RATIO	14.5 to 1
FUEL CONSUMPTION	3 1/4 gph at 155 mph
COST	As low as $5000

1600 cc ENGINE

POWER	45 hp
EMPTY WT.	590 lbs.
TAKE OFF	500 ft.
CLIMB	800 fpm solo 600 fpm dual
CRUISE AT 75%	155 mph
CEILING	17,000 ft.
MAXIMUM LEVEL SPEED	158 mph

1835 WITH STARTER

POWER	56 hp
EMPTY WEIGHT	605 lbs
TAKE OFF	450 ft.
CLIMB	1050 fpm solo 850 dual
CRUISE AT 75%	165 mph
CEILING	18,500 ft.
MAXIMUM LEVEL SPEED	168 mph



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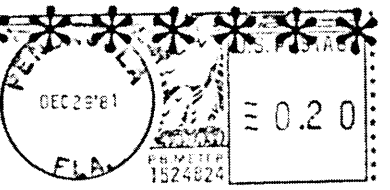

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