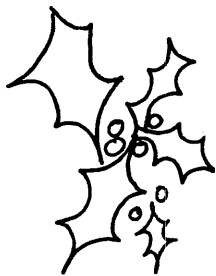
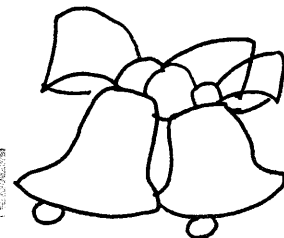
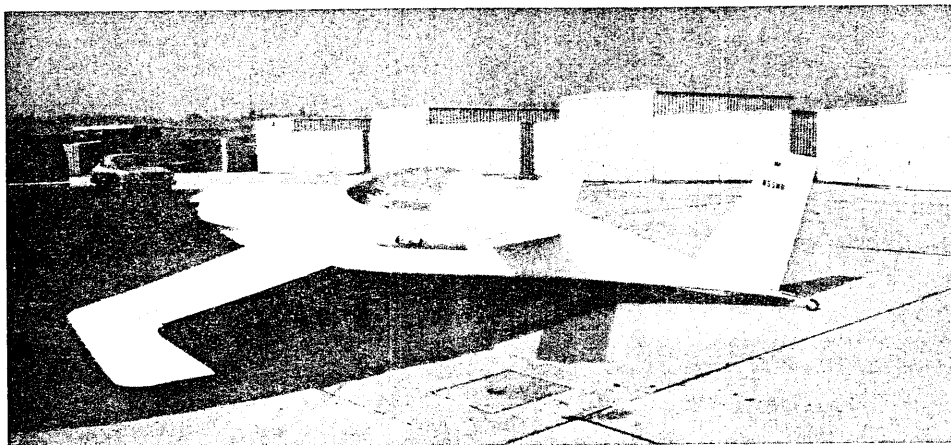


# "Dragonflyer"



MERRY  
CHRISTMAS



HAPPY  
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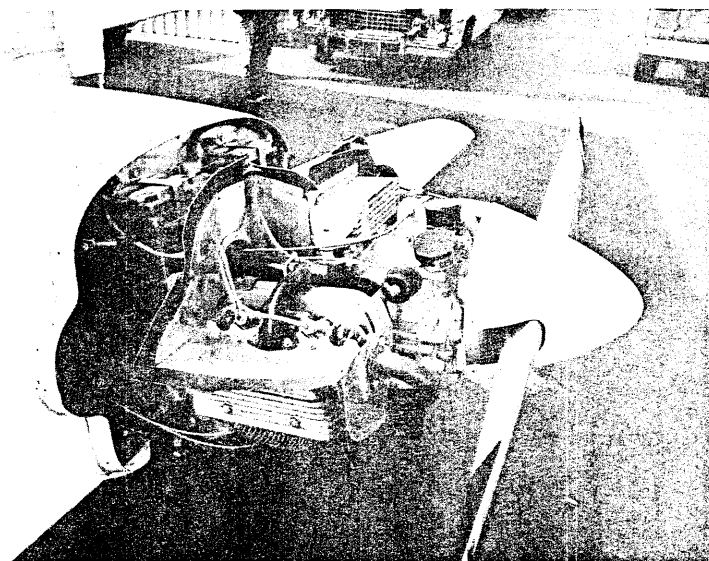
TERRY AND JOAN NICHOLS N55WN

**DRAGONFLY NEWSLETTER**  
**#9 Winter 1982**  
Published Quarterly  
by  
**VIKING AIRCRAFT LTD.**  
RT 1 BOX 1000  
ELOY, ARIZONA 85231

Lots of good news this month. Look closely at the picture above. The picture is not the prototype aircraft, N5WN, but a brand new **Dragonfly** now flying, N55WN, built by Terry and Joan Nichols of Ventura, California. They have put 20 months of work in this aircraft and are a real man and wife team. It appears that Joan put about as much work on it as Terry did. The aircraft is absolutely beautiful. In fact, it is prettier than the prototype. It is a little heavier than the prototype, but they report that it flies well. As of this writing, the aircraft has over nine hours of flight time on it. Terry is flying a very controlled, conservative flight test program wearing a parachute and exploring the flight envelope cautiously. He pushed the airplane up to the redline speed in flutter test. The only problem he reports is having the sparrow strainers fall off in flight. Another builder also reported this same problem. Joan and Terry installed the strainers after painting and said that the epoxy bond was contaminated by paint, resulting in poor adhesion. No flight problem results from the loss of the strainers except that the airplane will want to tuck its nose down and you will have to hold back pressure on the stick. Glue those strainers on real good because they do carry a considerable load on that joint in flight. The following letter is one received from Joan Nichols. We will let her tell you about their pride and joy.

**FIRST FLIGHT—N55WN** November 14, 1982  
Sunday a.m. seemed like a good day to do a few high speed taxi tests. Nothing to be nervous about as real?

flight wasn't planned. Winds were light, skies clear, perfect conditions. It thundered down the taxiway and onto the runway, it took hold and the wing was flying. The silence was deadening. It was beautiful all the way to 5000'. The nose was put to level a couple of times. It flew around at straight and level for a few minutes and then performed a stall. It just barely buffeted at 55 MPH indicated, so tried just a little harder by holding nose up and got a buffet and dropped approximately 10". Then flew around getting the feel of the controls, trim and gauges. Then decided to land, trying to remember all the right ways to do it. It flew downwind 90 MPH and came over the fence at 70 MPH and greased a perfect landing. We checked everything and we mean everything. All was okay and nerves collected, flew two more flights. Took in slow flight, turns and etc., put it in the hangar and grinned until the next weekend. It now has 9.1 hours on it and have experienced much. The first go around came on the first real sloppy landing. As the second bounce reached 6' it was time to go around. Then, to top that off, base was way too high and on final, slipped it right in to another super landing. It comes over the fence at 80 MPH now and is flown to the ground every time. Another bit of excitement came when a sparrow strainer (elevator tab) blew off at 150 MPH. It sort of makes you hold your breath until you can see that the wings are still there. It has performed a flutter test at 49 degrees-166 indicated-5000' altitude, which figures out to 180 T.A.S. Nothing happened, so we will try it again next weekend. This past Sunday did provide the best test



HAPI 60-2 in the Nichols' Dragonfly

yet. It flew into the rain, so we saw a great chance to stall it and just find out what would really happen. Sunday extra weight had been added, so normal stall had already been checked at 59 MPH indicated. At 1200' in the rain it stalled, but this time it really got what we call a stall and MPH was 69. Just 10 MPH over normal and added power and flew out at 80 MPH. We decided to bring it on home after checking EGT & CHT as the weather was moving in and had had such a good flight. We got cut out of pattern by a straight in, so went around and made another good landing.

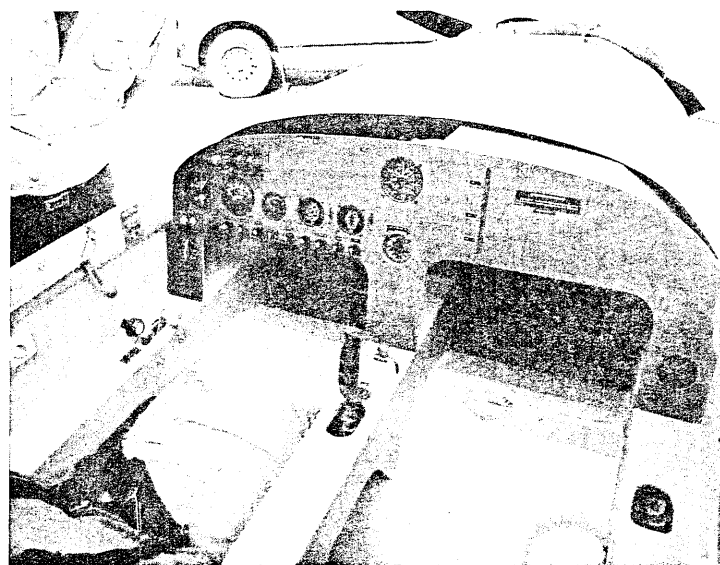
During the tests gas consumption has been 2.63 and we're not complaining. We are located at Camarillo Airport and are there every weekend. In fact, I cooked Thanksgiving dinner for 12 from the hangar. Yes, this report has been written through the eyes and talk from my partner, Captain Test Pilot, as I call him.

Joan & Terry Nichols

Two more Dragonfly's were seen at the Fly-in at Brown Field in San Diego on October 2 & 3, 1982.

With the prototype there, there were three Dragonfly's in a row, they looked real good. One of the new birds belonged to Jack Hoogervorst of Escondido, California. Jack is president of the Dragonfly Builders Association in San Diego. The second aircraft was built by Wally Brown of Delmar, California. Both of these aircraft are now at Brown Field in San Diego for taxi and flight tests.

**CHANGES:** We want to emphasize again in the strongest manner possible that the Dragonfly newsletter is the only official source of changes in the Dragonfly plans. No other source of information, newsletter, etc. is recognized by Viking Aircraft or sanctioned by Viking Aircraft or appointed by Viking Aircraft to disseminate plans changes. If you read it in some other publication, you are free to use it, but do not blame Viking Aircraft if you wind up with a screwed up mess. There are some changes coming along and probably will continue to be changes as the design progresses, that is the nature of things in aircraft,



Beautiful Panel. Wicks upholstery ordered.

but we are not going to change something just for the sake of change or because it seems like a good idea at the moment. When we do change things, the change will come about only after the change has been evaluated through engineering calculations. In most cases, it will have been built and flown on some aircraft, probably the prototype, to verify that the change is indeed a good one and will benefit the aircraft and not have a negative affect. We are not going to throw a lot of untried, untested changes at you, which brings up another point.

It would seem that our look similar competitor does have some pitch stability problems. They have recently come up with an aileron reflexer fix for this problem. Some of you builders seem to suffer from too close an association with the Quickie crowd. I have had at least a half dozen phone calls from builders wanting to put the reflexer fix on their Dragonfly to reflex the ailerons. We do not have a pitch stability problem, we do not need the reflexer on the ailerons. The Dragonfly is NOT, repeat, definitely NOT like the Q-2. We do not share the same problems. They are different airplanes and just because something may be good for one of them does not necessarily follow that it is also good for the other aircraft. If you want to apply all the Q-2 fixes to your Dragonfly, please scrap your project and go buy a Q-2 so the fixes will be appropriate. Otherwise, forget it. This leads us to another subject.

**CANARD FAILURE:** The rumor mill out there is grinding away at 100% efficiency. I get a phone call about every other day from somebody who is terribly concerned that the canard is somehow very weak and he has heard that Dragonfly's all over the country are breaking their canards. That is the fiction, let's deal with fact now. To our knowledge, there have been three canard breakages on the Dragonfly.

Incident No. 1: (Not necessarily in order). After 36 hours of uneventful flying, the builder stated that one

brake locked up and he left the runway. He went out into the rough off the runway and did break the canard at some point after leaving the runway.

Incident No. 2: This builder was reportedly flying his aircraft back and forth a foot or two off the ground from one end of the runway to the other with two persons aboard and had made this short flight several times. The builder reportedly then ran off the end of the runway out into the rough, breaking his canard in the process.

Incident No. 3: The third builder admits stalling the airplane from some height above the runway, dropping it on its nose, bending the motor mounts, the propellor hub and, of course, the prop, also breaking the canard. This builder has since rebuilt the aircraft and is now flying it and making better landings.

Now, let's look at the facts. None of these breakages could in any way be construed as a normal flight breakage, the landing being considered part of the flight. In all three cases, the aircraft was subjected to stresses and strains obviously far beyond what would be considered within the normal flight envelope loading. Viking Aircraft requested of both the builders who had been involved in incidents 1 and 2 that they send us portions of the canard on both sides of the damaged area so that we might determine exactly why the break occurred where it did. Neither builder responded.

There are many factors entirely beyond the control of Viking Aircraft that could compromise the strength of the canard. Bad lay-ups could be involved, materials substitution could be involved, misinterpretation of the plans could be involved, poor workmanship could be involved and several other reasons. Of course, there is always the last reason, everything was exactly as the plans called for and pilot error subjected the airplane to more stress than the structure was designed to take.

If there is any deficiency designed into the structure on **Dragonfly**, we want to be the first to know and be assured that it will be corrected. It is impossible to evaluate the cause of structural failure without examining the structure and relating it to the speeds, loading, direction of forces, impact, etc. So far, we have seen absolutely no evidence to indicate in any way that there is any design deficiency in the canard to cause these breakages. I strongly suspect that the major cause of breakages is merely pilot error. There is no shame in that. In learning to fly **Dragonfly**, I got lucky and only broke a prop in a hard landing, but it was definitely pilot error. Had I hit the ground a little harder, I might well have broken the canard on the prototype too. I had been instructed in the proper landing technique by Bob but I momentarily got behind the airplane, did the wrong thing at the wrong time, consequently, I broke a prop. The important point is that the **Dragonfly** is predictable in that situation. By poor piloting we can get into a bad bounce situation, but by recognizing what is happening, we can fly right out of it, get reorganized and land the airplane properly.

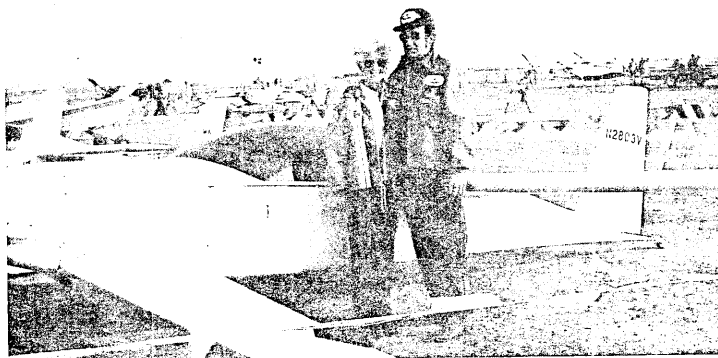
Immediately following my broken prop incident, I

wrote an article for Sport Aviation magazine describing my humiliating incident so that you guys who have yet to fly could learn from my experience rather than learn the hard way. This article was published in the November, 1982 issue.

I also wrote a lengthy sermon on how to fly the airplane in the special newsletter you received about a month ago. I have also talked to several builders on the phone who were about ready to fly, counselling them with what to expect. Possibly, as a result of all this, the canard breakages have stopped, people are getting into their **Dragonfly's** and not having any trouble on those critical first few flights. Terry Nichols blew a landing and bounced it, but remembered my coaching, applied the power and flew out of it and landed a little further down the runway, no problem. I may be patting myself on the back too much, but I think that Terry's reaction on the landing was the result of our coaching. Time in restriction on experimental aircraft, I think, is as much to allow the pilot to gain experience in the aircraft as to test the aircraft. With some 60 hours of **Dragonfly** time behind me now, I do not have any problems at all with the airplane and feel very much at ease and at home in the airplane. If your airplane is built to the plans and you do program yourself to stay out of trouble, (that means not sticking your neck out) you have your airplane properly prepared for each flight, yourself properly prepared for each flight until you do have the time and skill behind you, there is no reason at all that anyone should ever break the canard.

Bob Walters and I discussed the canard breakages at great length and tried to come up with some kind of reasonable solution to this canard problem. The big question is, "is it possible to structurally modify any aircraft to make it strong enough that somebody somewhere cannot tear it up. I don't think that any airplane has ever been designed that was indestructible, certainly I am not aware of any. Bob and I discussed adding some strength to the canard and Bob did a lot of calculations and has come up with a mod that will greatly increase the strength of the canard. If you feel that you are a candidate for bashing it into the ground, you might want to add this to your **Dragonfly**. It is an optional modification with the builder, NOT a mandatory plans change. It is not intended to be retrofitted on the prototype or any **Dragonfly's** currently beyond this point in the construction. It is NOT a modification necessary for safety. It will make the canard stronger and stiffer, much more resistant to flexure and, of course, will reduce the possibility of a prop strike on a hard landing. It will greatly reduce the possibility of the canard being broken in the torsional mode. This appears to be the type of damage which occurred in incidents 1 and 2. Bob calculates the mod will add between 5 and 6 pounds to the canard weight and about \$100 to the cost of building the airplane. The modification is as follows:

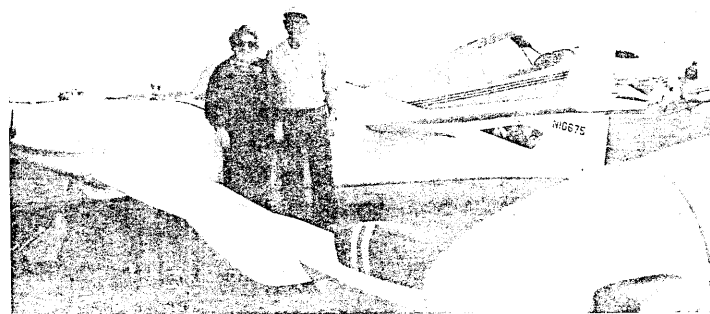
On the bottom side of the canard add one layer of carbon fiber full length, tip to tip to the spar cap.



### JACK AND SHIRLEY HOOGERVORST

Add one layer, 6 ounce bi-directional glass cloth oriented 45 degrees to the spar cap, not overlapping at the edges, to the lower canard skin. On the top surface of the canard, add two layers of carbon fiber full length, tip to tip to the spar cap and add two layers, 6 ounce bi-directional glass cloth oriented at 45 degrees to the top spar cap, edges not overlapping, to the canard top skin. The resultant structure will be virtually bullet proof. If you take it off the runway into the rough and hang a wheel on something, most probably the canard will not fail, but there is a good chance you will tear the whole canard out of the fuselage. If that happens, what do we do then, design a fuselage out of half-inch armorplate? If we pursue this thing of building an indestructible airplane to compensate for pilot error, we will soon have an airplane that is so heavy that no one will ever get hurt in a flight accident because it will never get off the ground. We have a very good, very well tested aircraft in **Dragonfly** that has never been misrepresented in any way. The prototype has never required any modification to correct problems.

**PROP CLEARANCE:** It, perhaps, would clarify some things to note differences in the prototype and the plans built airplane. (1) The plans built airplane has approximately two inches more prop clearance than the prototype has. This is due to increased anhedral angle on the canard, so what you see on the prototype is not what you get from the plans built aircraft. The difference was quite apparent at Brown Field with the prototype and two plans built aircraft in a row. (2) The plans built airplane also has the seat back moved to the rear two inches from the position in the prototype, measured where the seat back meets the fuselage bottom. This was changed to allow comfortable seating for you guys who are over 6 feet or have very long legs. (3) The instrument panel in the plans built airplane is tilted forward slightly to increase the cockpit room, where it is vertical on the prototype. This change was made to allow more knee room under the bottom edge of the instrument panel, and makes getting in and out much easier. There is also much more room to move your legs about or rest your heels on the drag spar in flight. These changes were made by Bob to make your airplane a better airplane than the prototype. Although the prototype is very well made, Bob recognized



### WALLY AND ANNE BROWN

that these changes were desirable and would improve the aircraft. Each one of you will probably be able to look back at the completion of your **Dragonfly** and say, "If I had it to do over again I'd change this....". The canard mod will produce a stiffer canard, not quite as springy a ride, a little more resistant to bouncing, and that may be on the plus side.

While we are in this session of debunking some of the myths, Homebuilt Aircraft magazine has an article on **Dragonfly** in the January issue now on the newstands. We turned Bill Cox loose on the prototype, told him to "go out and fly it and tell it like it is". His article will be very interesting reading to all of you. In the past three months, **Dragonfly** has also been flown by Jack Cox of Sport Aviation magazine, Mike Melville of Rutan Aircraft, Jeana Yeager and Dick Rutan. Dick did a limited test evaluation and sent us a letter detailing his impressions of the airplane, which is on file here and available to you. We hope to get Dick in his capacity as a professional test pilot, to do a full series of flight tests and participate with us in gathering the data for the upcoming flight manual mentioned in the last newsletter. We are always eager to get a qualified, nationally recognized pilot in the aircraft to fly it because we do not have anything to hide.

**BEFORE FLYING:** As was mentioned in the last newsletter, if any of you are getting close to flying your **Dragonfly**, and can make arrangements to come by Eloy, Arizona, we would be pleased to get you some familiarization time in the prototype. We would hope that by doing this for you, that you, in turn, might pass along your experience to the next new **Dragonflyer** after you have gotten your aircraft out of restriction.

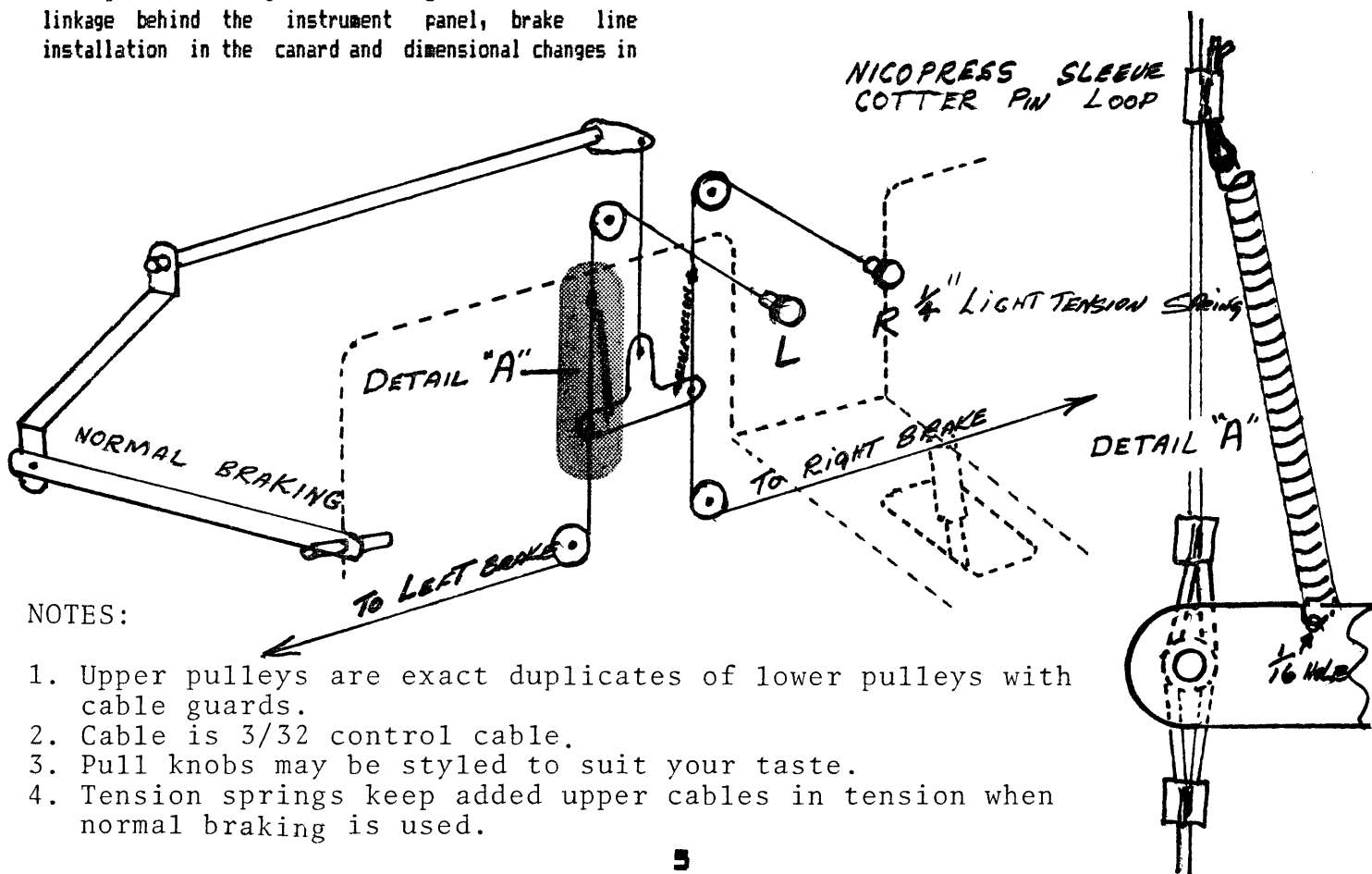
Each new homebuilt aircraft, whether they be **Dragonfly's** or whatever, needs to undergo a thorough flight testing and evaluation period. Since these aircraft are not built in jigs or other permanent tooling, and each builder introduces little modifications, may make mistakes in measuring, cutting, gluing and etc., each aircraft will be unique unto itself and not exactly like any other aircraft. This is the reason you are listed as the manufacturer on the aircraft's data plate. It is an aircraft that you manufactured, if it is exactly like the prototype, it

should fly like the prototype. If all your decisions to change things here and there have been good decisions, you won't have done anything to negatively effect the aircraft's performance or flight characteristics. Each and every one of the aircraft's systems, instrumentation, flight controls, brakes, engine, fuel system, carburetor heat, electrical system, will be tested, evaluated and proven airworthy by your testing. You are then the manufacturer, test pilot, and the ultimate decision-maker determining whether or not your aircraft is safe for yourself and all the other people who may fly in it. Take your time and do your testing thoroughly. If you find that something doesn't test out right, find the reason and change it until it does work well. Every aircraft factory has production test pilots to fly, check and recommend adjustment on every new aircraft until everything does work as it is supposed to. In your **Dragonfly**, you are going to have to spend many hours doing the same type of flight evaluation.

**HYDRAULIC BRAKES:** By the time you read this, the first of the hydraulic brakes will have already been shipped to some of the customers by Hapi. The brake modification has proven to be an easy one. If you are currently under construction on your **Dragonfly** and choose to use the hydraulic brakes, write Hapi for the drawings necessary to change from mechanical to hydraulic brakes. There are no structural changes, except re-locating the axle hole in the wheel pant downward from its present location. The drawings show mounting the master cylinder to the brake linkage behind the instrument panel, brake line installation in the canard and dimensional changes in

the axle location. These drawings are available separately from Hapi for your convenience in deciding whether to use the brakes or to allow you to plan on using the hydraulics. Please send \$1.00 for the drawings to offset the cost of postage, handling and printing. Drawings are included with the brake kit. The complete kit sells for \$279.00, includes spun aluminum wheels, machined drums, brakes, wheel bearings and axles, master cylinder, brake lines, all fittings, hydraulic fluid, and assembly instructions. Tires and tubes are available separately from Wicks Aircraft Supply.

(BRAKES: While we are on the subject of brakes, let's talk a little more about the mechanicals. In seeing several aircraft under construction and some that are finished, some of you builders have insisted on putting individual brakes in your **Dragonfly**. I feel it necessary to warn you again that individual brakes are bad news. The odds are well in favor of your breaking your airplane by losing control of it when you apply the brakes. The prototype has the brakes tied together for a very good reason. It keeps the airplane controllable on the ground. I do not believe that there are any of you so nimble-footed, and with such instantaneous reflexes that you can respond to the abrupt changes in direction that you are going to get unless you can apply absolutely even braking on the airplane at high speeds every time. To put it quite simply, you are going to ground loop it and there is a good chance you are going to wind up off the runway out in the rough somewhere with a bent or broken bird. When this discussion comes



NOTES:

1. Upper pulleys are exact duplicates of lower pulleys with cable guards.
2. Cable is 3/32 control cable.
3. Pull knobs may be styled to suit your taste.
4. Tension springs keep added upper cables in tension when normal braking is used.

up, the first thing somebody asks is, "how can you control it on the ground without differential braking, how can you taxi in tight places?" In fact, it does turn reasonably tight on the ground at low speeds. I have never felt the need for differential braking for maneuvering into tight spaces. I have never had a maneuvering problem when taxiing on a taxiway or through a parking area. I found the **Dragonfly** will go anywhere with its present capability that the 'run-of-the-mill' aircraft will go, but for you builders who absolutely insist, without ever having tried it, that it can't be done, here is a way to keep Viking Aircraft happy with the center pull brakes and have the differential braking that you feel you need for low speed ground control. Below is a sketch of a simple little modification that can be added to your **Dragonfly** without changing the center pull action that will allow you to apply either brake differentially, which may be an asset in maneuvering sometimes. Personally, when I get in tight quarters, I just shut it down, get out, pick it up by the tail wheel and push it where I want it to go. If the airplane is rigged as per the sketch at low taxiing speeds (where the flight controls are useless anyway) you can use your joystick hand to operate either brake independently. This, I believe, will solve the braking dilemma. You can have the equal braking at high speed to keep you safe, and you can have the differential braking for the tight maneuvering. Try it, you'll like it! I'll sleep better at night knowing that you have got the proper brakes in the airplane. With the brakes split, it is not a question of if the airplane will get broken, but when. I guarantee it will. There is no provision for doing this on hydraulic brakes.

**VENDOR APPROVAL:** When Bob Walters designed the **Dragonfly** and started distributing the plans, he started doing it in such a way that the builder could build it at the lowest possible cost by shopping for the parts through wholesale sources and bargain hunting. All of the materials used in the aircraft have been identified by the manufacturer, product identification number and such, so that there are no parts that are listed as Viking No. XXXX, available only through Viking. The original desire to help the builder find low cost sources for the specified materials has worked well in some instances, and proven a real can of worms in others. We are inundated with requests from vendors to endorse and promote their products for **Dragonfly** in the newsletter. We have also had all too many complaints from **Dragonfly** builders complaining that they have been waiting for materials for months from some vendors and have got nothing for their money. Others have complained that they were sent the wrong material. Some products have been of poor quality and not airworthy. In short, the thing is getting out of hand. The purpose of this newsletter is to help you to build a **Dragonfly** exactly as per plans. In the future, the newsletter will only endorse and promote the products of those vendors with whom we have written

agreements and active participation in the quality control of the products that they sell to you, the **Dragonfly** builder. If you, as a builder have a problem with materials or service from one of the approved vendors that is not resolved to your satisfaction, let us know about it. We will see if we can help resolve the problem. There are many good, reputable suppliers of materials that are imminently suitable for the **Dragonfly** who may well be able to supply your needs, yet are not on the approved list. This simply means that if you want to try to save money, go ahead and do it, but let the buyer beware. If it turns to worms, there is little we can do to help you. Most of the builders who have tried it both ways and realistically figured up the gasoline bills, telephone calls, actual time spent in hunting bargains, compared to the amount of time and money saved, have come to the conclusion that they did not save enough money to offset the time that it took. There are at least two **Dragonfly** newsletters independent of Viking Aircraft that other vendors may advertise in and they may have some very good products at good value and we do encourage that. We are just trying to get out of that difficult position of having to be steering you to these people and in turn be held responsible for their business ethics and the quality of the materials you receive from them, if you receive them. The following vendors are approved vendors of **Dragonfly** parts from whom we have quality assurance agreements. We encourage you to contact these vendors, find out what they have to offer, pricing and availability. The prime supplier of **Dragonfly** materials is Wicks Aircraft Supply of Highland, Illinois. Wicks handles virtually every part of the **Dragonfly**. Foam, Saf-T-Poxey, hardware kits, Azusa wheels and brakes, they stock prefabricated canopies, cowlings, upholstery kits and much, much more.

**HAPI ENGINES:** Complete ready to fly engines, engine parts for those who prefer to build their engines, **Dragonfly** motor mounts, exhaust systems, propellers, spinners, engine controls, engine instruments, fuel system parts, carburetor heat mufflers, carburetor heat boxes and much more.

**NEW ITEM:** Chris Gentry of CG Aero has taken molds from the wing tips on the prototype and duplicated them in a ready-to-install finished fiberglass wing tip. Chris has these available to you builders in two versions, either a plain tip, no provision for lights, or a tip that includes a molded plexiglass lens, as part of the tip assembly, so that nothing will stick out in the breeze to slow your bird down, navigation lights and/or strobe lights fitting in behind the clear plastic lens. These are available directly from Chris at CG Aero. I do not have a price on them, but contact Chris and he can furnish you with prices and availability. He also has several other items for the **Dragonfly** builder, including **Dragonfly** 'T-shirts', hats, sew-on emblems, jewelry and much more. C. G. Aero, P.O. Box 783, Anza, CA 92306 Phone (714) 763-5350.

**PREFAB FUSELAGES** The completely prefabricated fiberglass fuselage should be ready for production in February 1983. We will not have a price on this assembly until all the problems are worked out and it is in production, but are certain that the price will be reasonable for the product. The goal is to be able to introduce the glass fuselage at Sun N Fun.

**COWLINGS** The cowlings are made by Fibertech, 18809 Prospect Avenue Santee, California 92071.

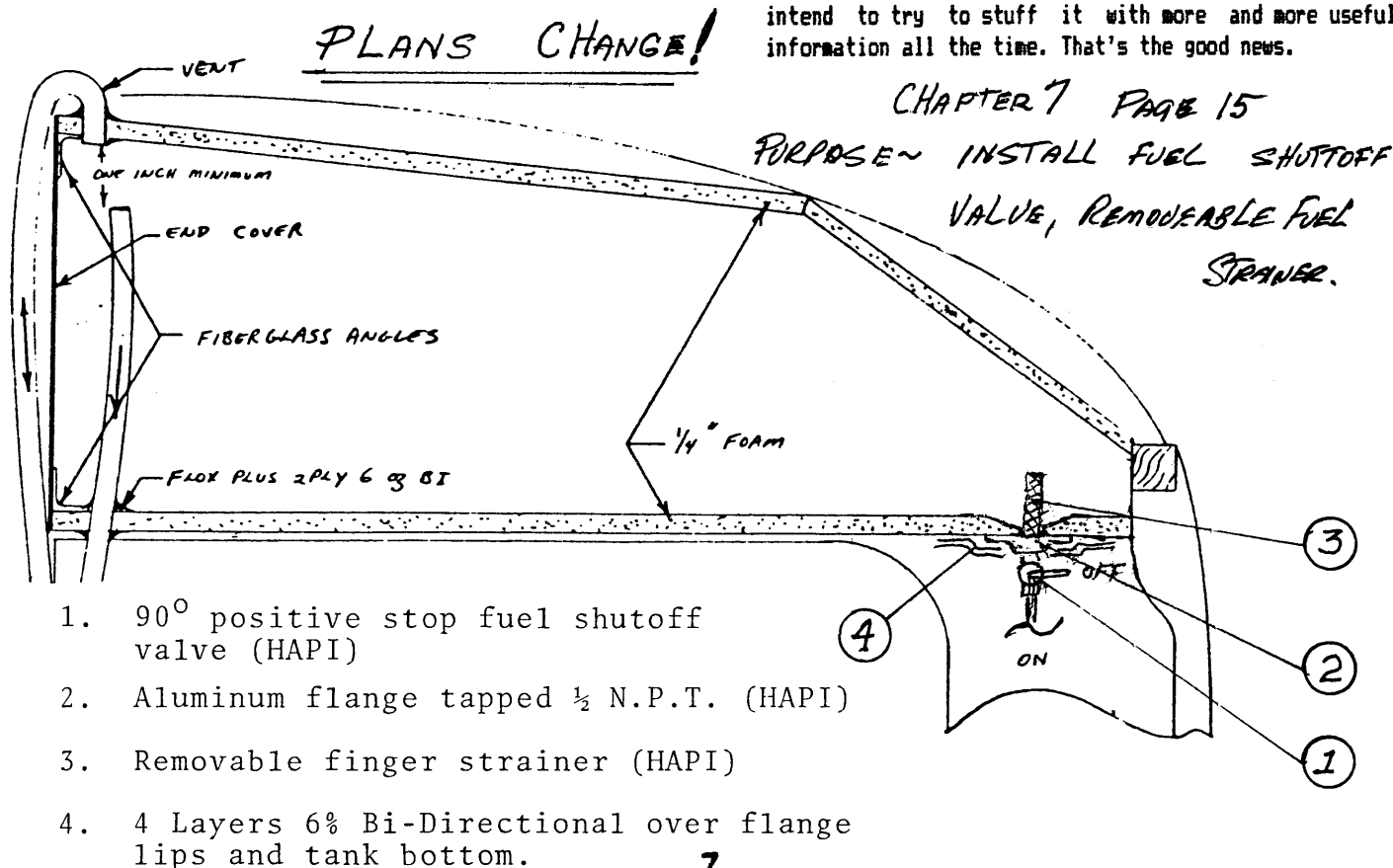
**CANOPYS** Made by Aircraft Windshields, 3842 Catalina St., Los Alamitos, California 90720. Both canopies and cowlings are bulky items which requires large cartons for shipping. If you live west of the rockies, order these items direct from the manufactures for lowest shipping charges. If east of the rockies, shipping from Wicks will be the least expensive. Order both at the same time from Wicks and they can fit the cowling inside the canopy in the same box. The best deal is to pick up these parts from manufactures or Wicks and save all shipping and crating charges. Nobody makes any profit on packing and shipping so they will be eager to let you carry it out the door.

**PLANS CHANGE:** In chapter 7, page 15, where the fuel system is described in your **Dragonfly** plans, no fuel shut-off valve is shown between the tank and the gascolator. Those of you who are equipping your **Dragonfly's** with Posa carburetors or have equipped them with Posa's, have probably installed the valve in the line because you must have it to use that carburetor. With the float bowl carburetor, the fuel shut-off valve is not necessary for engine operation, but should be installed in the system for safety's sake. In the event of an in-flight fire in the engine

compartment, you could shut off the supply of fuel from the tank. It is mandatory in certified aircraft to have a fuel shut-off valve within the pilot's reach for safety's sake. It should be installed in your **Dragonfly** and arranged so that it can be reached by the pilot in flight. Fuel valves are available from Wicks Aircraft, Hapi Engines, or just about any certified aircraft parts source. Do install it in your **Dragonfly**. Chances are a million to one that you will ever need it, but it is possible that your life might depend on your ability to shut the fuel off. The sketch below shows typical placement.

**BIGGER GAS TANKS** Some builders are working out ways to change things around in order to install more gas tank capacity. You builders are free to make any change you want, but think a lot before you change things even a little. Before flying **Dragonfly** I had several changes in my mind I thought would be real improvements, but after flying it for a while, I have scrapped 99% of them as being worthless. Before you enlarge the tank, perform this simple little test. Set the fuselage level and get your cushions and everything comfy. Then get in, close the canopy and sit there for 3 1/2 hours, that's how long you have with safe reserves on stock tank capacity. If you still feel like you want to sit even longer, enlarge the fuel tank, your bladder is indeed geared for long range.

**GOOD NEWS/BAD NEWS:** The good news is that there are getting to be more and more **Dragonfly** builders all the time. We are receiving more pictures, flight reports, etc. all the time. As you can see from this copy of the newsletter, the newsletter is getting bigger all the time. We fully intend to try to stuff it with more and more useful information all the time. That's the good news.



The bad news is that we are going to have to raise the price a little bit to cover the cost of postage, printing, labeling, folding, stapling and all the other things that go into putting the newsletter together. After January 1, 1983 the newsletter subscriptions and renewals will be \$8.00 per year in the United States and \$10.00 overseas, the first year's subscription to the newsletter will still be included in your plans price.

**DRAGONFLY BUILDERS SYMPOSIUMS:**

The prototype **Dragonfly** (NSMN) will be at Sun 'n Fun this year as usual. We have so many builders across the sun belt who have expressed a desire to see the prototype that we are going to try to arrange a schedule on the way to Sun 'n Fun that will allow us to make four stops. Our people are driving the van and we hope to be able to display the complete prefab available for **Dragonfly** at each of the following stops: March 7-El Paso, Texas; March 8-Kerrville, San Angelo area; March 9-Houston, Texas; March 10-Mobile, Alabama.

Here is the plan. If somebody at each one of these areas will take the initiative to set up a meeting in the evenings of these dates at an airport, **Dragonfly** will arrive early afternoon and our ground vehicle late afternoon with samples and the rest of our dog and pony show. Please contact us if you can help us with this scheduling and have the means to get the builders in your area together at a centrally located airport.

If you are one of those **Dragonfly** builders who are getting close to flying, we will try to get you a little stick time in the prototype if time allows on this tour. All it takes is a little stick time in the prototype to really turn a builder on with a burst of enthusiasm to get his flying. We also get a bang out of letting whoever is in the right seat fly the airplane and pointing out to them as they fly it, the cruise speed, rate of climb, stall speed that they get matches the advertised performance.

In the past four months, we have given approximately 150 people rides in the prototype. **Dragonfly** has now been flown by Air Progress resident expert, Peter Lert, Homebuilt Aircraft's Bill Cox, Dick Rutan, and several other people whose aeronautical judgment I respect very highly. You will note if you read what these people have said about **Dragonfly** that their reports tend to verify the prototype's performance figures. That is not always the case with all airplane.

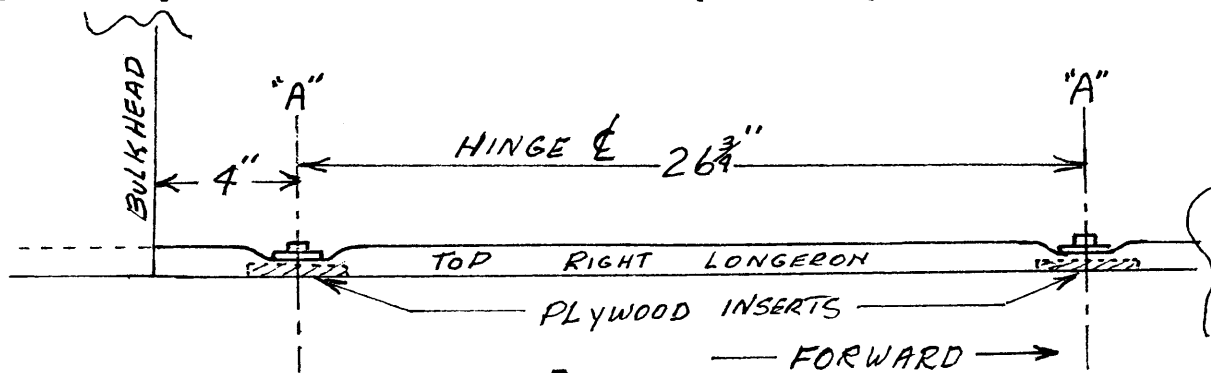
**INSTALLING CANOPY HINGES:** Some builders are experiencing difficulty in understanding the drawing and photos in Chapter 9, Page 8 describing the installation of the canopy hinges. The text concerning this (Chapter 9, Page 2, Paragraph 2) directs you to cut the longeron away to clear for the hinge. The drawing on Chap. 9, page 8 is correct. It corresponds to section at station "A" in sketch below, so it is misleading without other information. The dimension of hinge to hinge center line is also missing and is as below.

Longeron is cut away at "A" hinge location to proper depth plus thickness of six plies of 10% cloth, the plywood plate is inset below the longeron, then the glass is laid up over the site to reinforce area back to original strength before inletting hinge.

**DRAGONFLY INSURANCE:** Some builders have been having difficulty in obtaining flight insurance on their **Dragonfly's**. The prototype is insured by Aviation Insurance Unlimited, P.O. Box 19267, Greensboro, North Carolina 27419. I have had homebuilts insured through these folks for several years. Their rates are among the lowest and "Experimental" doesn't scare them to death. They are recommended by E.A.A. Call Terry Wolfe at 800-334-0061, she is a sweet southern belle who will take good care of your insurance needs.

**WE HAVE A WINNER:** Last newsletter we asked you builders to come up with an appropriate name for our computer, Floyd's twin. Several of you responded with some real cute names and we thank each and every one of you who participated in the little naming contest. Our esteemed panel of highly qualified judges (the gang at Viking and HAPI) selected the name, "ODIN", sent in by Richard W. Calvert of 4036 Justine Drive, Annadale, Virginia 22003, as the winner. Richard suggested that computer operators spend a great deal of their time blessing or cursing their computers, depending on the mood of the computer at the time. He suggested that "ODIN" being the god of the Vikings, it would be only appropriate that our computer being such an essential part of the business, might treat us better if we respectfully called it "ODIN".

**LAST MINUTE STUFF:** Just as we are winding up this newsletter, we have received a letter from one of the builders with broken canard mentioned earlier in this newsletter, advising us that he is sending us the damaged structure for evaluation. We





received another letter from Bob Verriest, of Detroit, Michigan. Bob's letter describes the hard landing on his first flight.

Rex,

My first landing with my **Dragonfly** was on 8-16-82. The landing was terrible, I broke the canard. The top surface failed at the fuselage left outboard edge. I believe the canard break was the result of the landing and not the design or construction of the canard. The canard was built right to plan specs using correct materials from Wicks.

The landing was as follows (as best as I can determine):

-At about 5' above the runway I was to slow (60-65 MPH) the nose dropped, I pulled full aft stick (big mistake).

-Both wheels hit the runway.

-Bounced back up at least 5'.

-I applied full throttle, the engine choked up and didn't rev up until I was over the top of the bounce.

-Nosed down at full power & full aft stick. ugh!

-Hit first on the left wheel - canard broke, prop destroyed.

-Skidded approx. 100' on the exhaust pipes & right wheel. Lucky the exhaust pipes were there as they saved the fuselage and eng. cowling from damage.

It took 3 mos. to repair canard, rebuild engine (I thought crankshaft was bent - it wasn't). Engine mount was bent downward approx. 1/8".

My landings are now a lot better. I'm happy with the **Dragonfly** and its performance.

The brakes pull to the right, which means no fast stops.

Bob Verriest

16832 Salem

Detroit, MI 48219

We appreciate Bob's letter helping to clarify the details of this incident. Any pilot can be subject to pilot error or lack of experience, but it takes a big man to admit it. Thank you Bob. We hope you wear the paint off that bird flying it.

**ALTERNATIVE NEWSLETTERS:** As was mentioned earlier in this newsletter, there are two newsletters independent of Viking Aircraft that you builders may be interested in. The publishers of these newsletters are **Dragonfly** builders and are very much involved with other builders in their areas. CG Aero publishes one newsletter called the Dragonflyte. It is a monthly publication that is an outgrowth of the San Diego Dragonfly Builders Association newsletter. It has grown and now has subscribers nationally and a few overseas. If you are interested in it, the address is CG Aero, P.O. Box 783, Anza, California 92306.

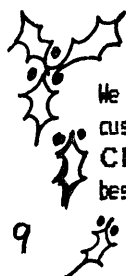
The other newsletter is published by Jerry Miklosh of 427 Church Street, Ambler, Pennsylvania 19002, and serves the Northeast Atlantic Dragonfly Builders Club. Neither of these publications have any association with Viking Aircraft. Whatever they choose to print, good or bad, is their own opinion and may or may not be shared by Viking.

**CHECK YOUR MATERIALS:** Some builders are reporting that the 1/4 inch aluminum they bought for lift fittings on the canard and wing was actually 3/16 material, totally unsuitable for the application. Regardless of who you purchase your material from, be your own inspector and check that the material is the right kind, correct dimensionally, and the proper amount has been supplied. Don't assume that the kit materials are correct from any supplier. It is possible for any supplier to make a mistake even though his intentions might be the best in the world. Remember that when you fill out that data plate, you are the manufacturer and you are solely responsible for all the materials that went into that airplane.

**WE DIDN'T GET IT DONE:** We had planned to include a modification to the header tank in this issue. The mod will allow the header tank to be laid lengthwise along the right side longeron leaving room on the left side of the tank for a radio and transponder. This will also leave enough room for two attitude reference instruments where the radio is located now. We will also gain an inch of knee room under the pilot side of the panel. Please don't call or write and ask for the dimensions, they won't be available until the next newsletter. They will be published in the next newsletter, sketch (COVER) shows what the new change will look like.

Viking's attitude regarding keeping the airplane light and keeping it a simple VFR aircraft has not changed. Some builders have pointed out, though, that they do need a simple attitude reference panel just to stay out of trouble in their local flying conditions. You may still proceed with the plans you presently have. The mod is optional should you choose to use it. The prototype will be changed to the new panel since most of my flying involves a lot of cross-country, including flight into many Terminal Control Areas.

**DRAGONFLYERS OF THE WORLD UNITE!!** With several **Dragonfly**'s now flying and many more due to hatch this spring, we will soon set the date in 1983 for the First Annual **DRAGONFLY SWARMING** at Eloy, Arizona. We plan to have a two-day get-together, compare our airplanes, steal each others ideas, brag a little bit about performance, amaze each other with fly-bys and have a heck of a good time. Viking Aircraft will furnish a real western pit barbecue Saturday evening for all the **Dragonflyers** and their families, details next newsletter.



We at Viking, thank you for being our friends and customers. We wish you and yours a **Merry Christmas** and may your **New Year** be your best yet.



**ITEMS AVAILABLE FROM VIKING**

**PLANS:** \$175 (\$185 overseas) includes 1 year subscription to quarterly newsletter

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

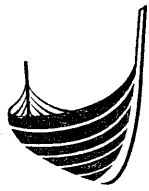
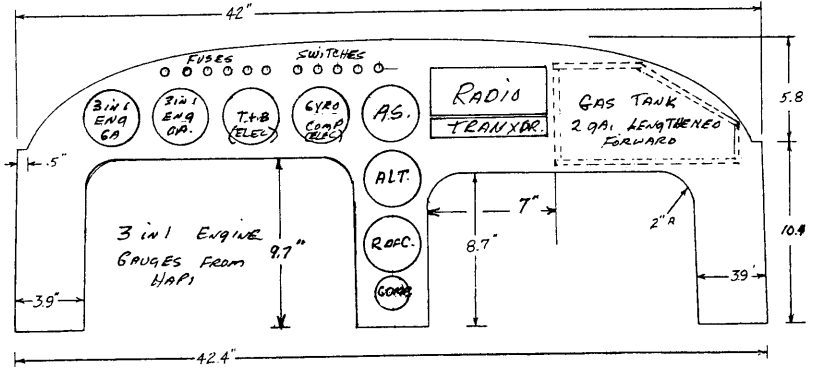
**QUARTERLY NEWSLETTER:** \$6.00/year (\$7.00 overseas)

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

**MODIFIED INSTRUMENT  
PANEL AND HEADER  
TANK ARRANGEMENT  
WILL BE DETAIL DIMENSIONED  
IN NEXT NEWSLETTER  
MARCH 1983**

**PERFORMANCE SPECIFICATIONS**

CONFIGURATION ..... Canard  
SEATS ..... 2 side by side  
CONTROLS ..... Dual side stick  
COCKPIT WIDTH ..... 43 inches  
CONSTRUCTION ..... Foam/fiberglass  
CANOPY ..... One piece molded  
GROSS WEIGHT ..... 1075 lbs.  
MINIMUM SPEED ..... 45 mph.  
RANGE ..... 500 miles  
FUEL CAPACITY ..... 15 gal.  
WING SPAN ..... 22 ft.  
AREA ..... 97 sq. ft.  
WING LOADING ..... 8 lbs./sq. ft. solo  
   11 lbs./sq. ft. dual  
LIMIT LOAD ..... Plus 4.4, -2  
GLIDE RATIO ..... 14.5 to one  
FUEL CONSUMPTION ..... 3 1/4 gph. at 155 mph.



**VIKING AIRCRAFT**

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

*Merry Christmas*

WINTER ISSUE