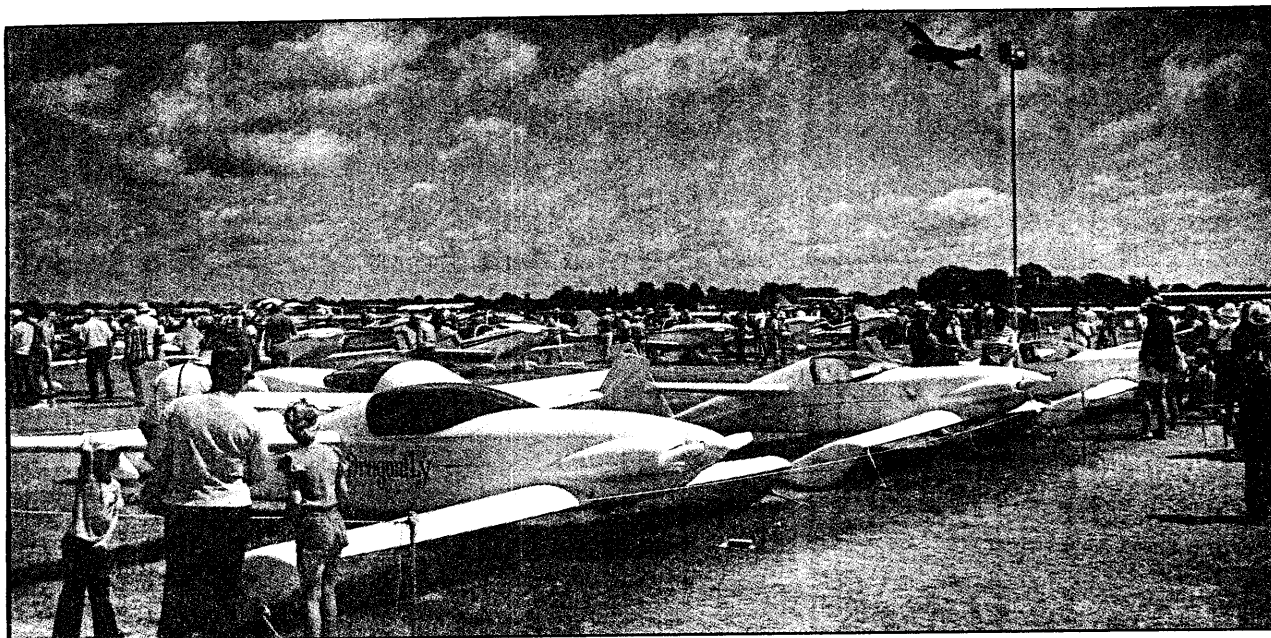


Dragonflyer



Dragonfly Newsletter No. 13

• Winter Issue 1983

Dragonfly Swarming

The first Dragonfly swarming was held October 7,8,&9 here at Eloy and approximately 200 people were in attendance. They came from all over the world by all means of transportation.

We had builders arrive in their own Bonanza's, a Turbo Centurian, Cheetah, Erco, expensive motor homes, by car, camper, and commercial airlines. We had one builder and his wife come all the way from New York by bus, said his Dragonfly budget is limited, but his enthusiasm and dedication is boundless.

We had a continuing forum in the Viking Building, Chris and Louise Gentry on composite construction, Mike Quigley of TASK Research on composite construction and pre-fab, and I got on the soap box Saturday with a long lecture on flying the Dragonfly. I talked about 2 1/2 hours and then we had a very good question and answer session that was probably very helpful to clear up points I may have missed.

Saturday evening we had a very good meal of real deep pit Bar-B-Que beef, provided compliments of Viking to the builders, then a little bit of intertainment in the form of music and the first showing of a Dragonfly movie (about 20 minutes) that is available to E.A.A. Chapters for viewing. On Sunday morning Dick Rutan arrived and gave a 3 hour talk on "Test Flying" and the methods used to properly test, establish limits and explore the parameters of your Dragonfly.

Dick's talk was certainly worth the trip for many, because all of us gained much insight into this very important area that is poorly understood by most builders, yet they must venture into it on those first flights.

Dick's easy to understand explanations and use of the blackboard for graphs and diagrams helped all of us gain a much better understanding of the objectives, as well as the dangers that can be encountered if testing is not done properly.

Several builders recorded the talk and at least one videotaped the talk. I would like very much to hear from anyone who videotaped the talk, perhaps we could make a copy available to builder groups around the country.

While all of this was going on I gave 123 people their first ride in Dragonfly, with some of them getting extra time to familiarize them with Dragonfly's flight characteristics because they were near the first flight stage.

I have no idea how many takeoffs and landings were made by Dragonfly that weekend but there were plenty. The old mechanical brakes finally gave out, this with 540 airframe hours and way beyond the average number of operations the builder would probably accumulate.

I strongly recommend the hydraulic brakes over the mechanicals, they're more expensive but stop much better and don't require the constant attention to keep them working right. Other than the eventual demise of the brakes, the old prototype performed faultlessly, never failed to start and go on the seemingly endless line of builders who patiently waited for their turn.

As of this moment I have given well over 400 people rides in Dragonfly and have checked out about 6 or 7 builders, preparatory to their making their first flights.

All of the trial rides, pilot checkouts, builders forums, guest speakers fees, Swarming Bar-B-Que dinners were paid for by Viking and nobody has been asked for a dime for these services. Our objective is to help our builders in every way possible to build fine airworthy aircraft, and to get our builders into the air without any mishaps.

Tom Wolfe was checked out right after the fly-in, he's almost ready to fly. Dave House of Australia came by for a thorough indoctrination so that he in turn may help the

builders there. Just recently Ed Dassow of Wisconsin was checked out and another builder who finished and flew his, and busted his canard is scheduled to be here for checkout next month.

I can't stress too strongly the advisability of getting checked out before flying your new Dragonfly. You will have spent several thousands of dollars and probably hundreds of man hours of work getting to the flight stages. Don't get too anxious to fly and after spending all that money on your bird, don't get too conservative to spend the bucks for a ticket to Eloy if there is nobody near you to check you out. It's the cheapest insurance you can buy.

One of the first builders to finish and fly was Bob Verriest of Detroit, Michigan who did break his canard on a very hard landing. Bob recently told aviation writer Don Downie that he recommends all Dragonfly builders "A. Follow The Plans, B. Keep It Light, and C. Get a checkout ride in a Dragonfly before your first flight, this is a must. Maybe have a Dragonfly builder pilot look over your Dragonfly before your first flight."

Bob now has over 100 hours on his bird, including several cross country flights and operates routinely from a 2050' runway with a displaced threshold. Bob has about 200 hours pilot time, about half of it in Dragonfly. He would have had a lot more hours flying time by now if he hadn't had to rebuild his canard. To my knowledge, we are the only plans seller that does offer checkout to the builders. In fact, I'm sure you will find it very difficult to get a ride in most plans sellers aircraft.

Plans Questionnaire

The recent questionnaire was filled out by many of you builders, (approximately 250 so far) and has been a great help to me in defining areas that need attention. Well over 90% of the builders are having no trouble with the plans and are proceeding nicely with their Dragonfly projects.

The remaining few percent are running into problems that don't seem to have any pattern, the thing that one builder can't find in the plans is perfectly clear to another builder, but he can't find some other detail he is missing.

Several builders who have an engineering background or perhaps have built other projects have objected to the style of the plans and would rather have a set of drawings with little or no text to accompany them. These folks say it's too much work to find the details in the verbage. I personally would find a set of well done drawings more suited to my experience and background than the format chosen by Bob when he did the plans.

Bob envisioned the average guy wanting to build Dragonfly as having little or no building experience, no composite construction background, and probably not much background in reading and interpreting blueprints as are usually used in industry.

The fact that most of you builders are first timers and yet 90% of you are getting your aircraft built without any real problems is, I think, good strong evidence that Bob wasn't too far off base in his thinking.

Many of you builders pointed out that more detailed pictures and a good cross reference system in the plans would be a great help and we agree with you.

We are trying to generate the cross reference system in such a way that when new plans are printed this can be incorporated.

Of course that won't help you builders who already have plans so we're trying to come up with possibly a bunch of footnotes that can be attached to the proper pages in the plans to reference you elsewhere in the plans for more associated information.

One obstacle to surmount is quite simply, who's gonna pay for it? When we bought the plans we got exactly the same plans you did and simply cannot go out and reprint a whole new set of plans to distribute to each builder.

We are committed to you builders to continue builder support but there is a limit to what can be spent. Most of you builders bought your plans from Rob Walters.

We are continuing to support you in the same manner as those whom we have sold plans. We do update and amend the plans through this newsletter but a complete revision is out of the question.

I am hoping that you will see changes in the newsletter that you will like in the coming issues. We have taken your answers to the questionnaire to heart and will try to tailor it to give you more information of value.

A couple of builders complained about the advertising in the newsletter. It will continue to contain some advertising. The builders who complained about advertising in the newsletter didn't seem to notice that it had grown by two extra pages or the fact that they got five newsletters last year instead of the four they paid for.

I don't suppose any one person can ever please everybody but we are trying. I was recently criticized by a newsletter editor for not flying at Oshkosh during the convention. He felt that the 6 Dragonflys there should have flown so that others could see them in action. I'm sure that he may feel somewhat differently when it's his own life and aircraft to be put on the line in that insane fly-by pattern. The other consideration is that all six aircraft were a long way from home and you tend to not ask for trouble with your primary transportation.

Dog And Pony Show

Or at least that's what we call the tour Mike Quigley and myself will be taking down through the southern states. We will be spending an evening in each city, showing off Dragonfly, both the plans built structures and the pre-fab plus showing all the various accessories available to the Dragonfly builder. These meetings, will take about 4 hours and are designed to inform the would be builders what's available in Dragonfly.

As part of the show, a pre-fab Dragonfly will be assembled on the spot to show the simplicity of the process. Jim Kern and one helper trimmed, drilled and assembled one here at the swarming in 1 hour and 20 minutes.

We will also be showing the Dragonfly movie and part of the time is set aside for a question and answer session to assist our current builders. We hope to be of service to the current builder and gain some new ones.

Our route is planned through New Mexico, all over Texas, Oklahoma, Kansas, Missouri, Tennessee, Mississippi, Louisiana, Alabama, Georgia, North and South Carolina, and will end at Sun & Fun 84.

Any of you builders who would like to have us visit your group, please contact us before January 5, 1984, when we will finalize our schedule. We will need a hangar or other space equivalent to a 4 car garage to do our thing. All are invited, whether now building or just interested.

Canard Spar Revision

Some builders have experienced compression type failure in the top spar cap at about BL-44 when the canard was subjected to very high loading due to extremely hard landings.

We are not surprised that something broke when reading the pilot's accounts of the impacts with terra firma these aircraft have suffered.

We have taken every opportunity possible to advise caution and the value of a check out ride before attempting first flights. This approach seems to be working as more and more builders are taking advantage of this free checkout and no new canard breakages have been reported.

We were concerned by the fact that the breakages seemed to be occurring in the one area, so we retained one of the best composite structures consulting engineers in the business to run a load analysis and structural analysis on the canard.

The original engineering calculations on Dragonfly's canard were based on a 9000 PSI compressive strength figure on the carbon fiber safty/poxy layups as stated by the carbon fiber manufacturer. Recent testing done on amateur built structures in Boeings testing lab shows actual values ranging from 6000 PSI to 7500 PSI to be average for wet layup structures such as you builders build.

Our engineer has used a nominal figure of 6500 PSI which is probably much closer to what you guys are getting, due to air bubbles, excess resin, poor resin adhesion or the dozen other causes that can deteriorate the strength of the layups in his calculations, so this revision is probably much closer to accurate for the actual structures our builders are turning out. Even in its original form as designed the canard is

tremendously overstressed for flight loads and the probability of a failure in the air are very remote, even if the builder really fouled up the layups.

In considering the landing loads imposed on the canard, it was determined that the canard would fail at approximately the BL 44 area if properly built because that is where the greatest stress is concentrated.

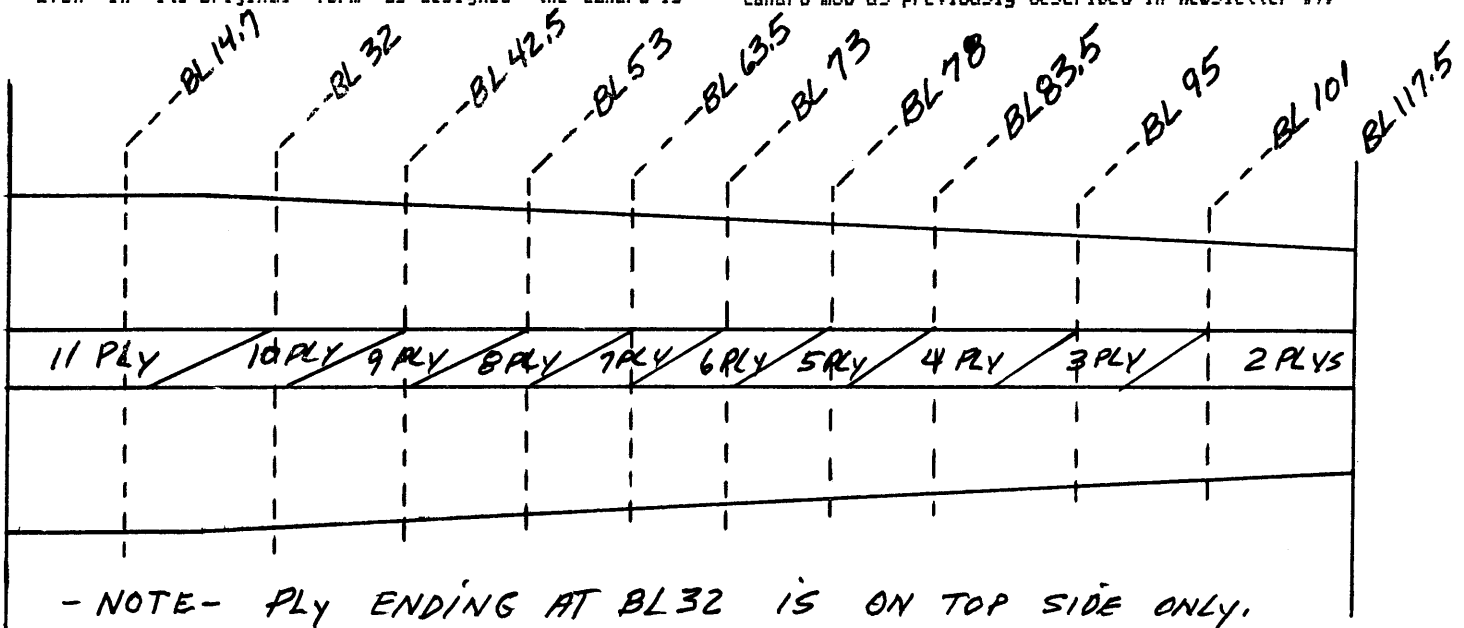
We have rearranged the material in the canard to concentrate the greatest strength in the areas of greatest stress.

This means to you, that the canard will be even stronger, but will still use about the same amount of materials. This new layup uses about the same amount of material but spreads it out so that more of it is put where the problem is.

PLANS CHANGE

Chapter 4 Page 5 Paragraph 2 Delete Lines 6 Thur 12 and change it to read as follows; Mark the locations of the ends of the carbon spar cap toes on the foam adjacent to the spar cap notch. The ends of the spar cap fall at BL 32, BL 42.5, BL 53, BL 63.5, BL 73, BL 83.5, BL 95, BL 101, and BL 117.5. The ply ending at BL 32 is to be placed on canard top side only and is not used on bottom side of canard. Refer to the drawing below which replaces sketch on Chapter 4 page 6. NOTE this change supercedes the original canard mod described in newsletter #9 designed to upgrade canards already built.

This plans change is to be used on all new structures. If your canard is already built to original specifications use the canard mod as previously described in newsletter #9.



New Dragonfly Film

We have put together a film describing Dragonfly and showing quite a bit of "in flight" shots. We have taken film over the past year of events of interest to Dragonfly builders, flyins, CAFE 400 footage, pre-fab footage and our shots of our own facility here in Eloy.

Probably the most interesting though, is the shots taken from inside the cockpit in flight. We have filmed stalls, takeoffs and landings, and unusual attitudes as seen by the pilot.

This film is now being re-recorded on V.H.S. video cassettes and is available to EAA groups for \$5.00 rental charge to cover the cost of UPS shipment both ways. We encourage you to view this film, you'll learn a lot about the aircraft you're building. We have also included on this cassette a film about HAPI Engines. We will have several cassettes available by February 1, 1984 so that scheduling will be much easier than it was with the super "8" movie film we formerly used. Call Lou Gonterman to arrange to borrow the film at (602) 466-7538. We schedule the film months in advance so keep that in mind when planning.

New Motor Mounts

The new engine mounting system is in stock and being shipped now. This mount is so much easier to position and align, so that the thrust line can be exactly where it's supposed to be. Should you build in small dimensional errors, as most builders do, they can be compensated for by adjustment. This is almost impossible to do with the original system.

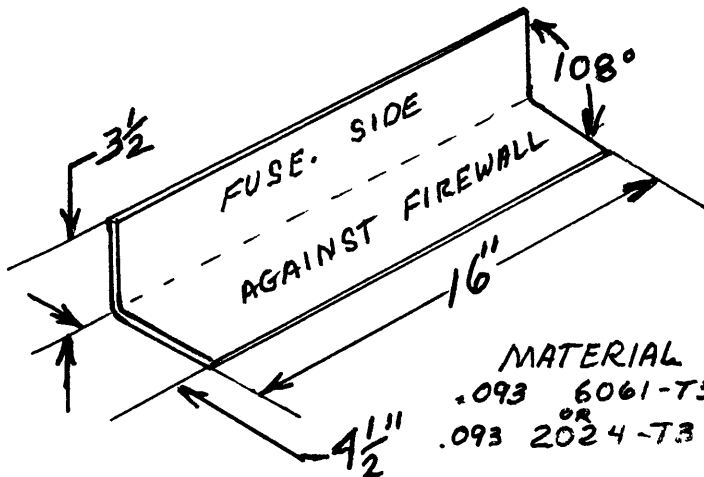
A plans change drawing will be included in the next newsletter and the new mount is to be the "standard" from now on. HAPI Engines will still continue to supply the original mount for those of you who are past that point in your fuselage construction.

If you are just at the point of working in that area, send a self addressed stamped envelope for the drawing changes and we will supply you with them now. There is no change in the price between the old mount and the new.

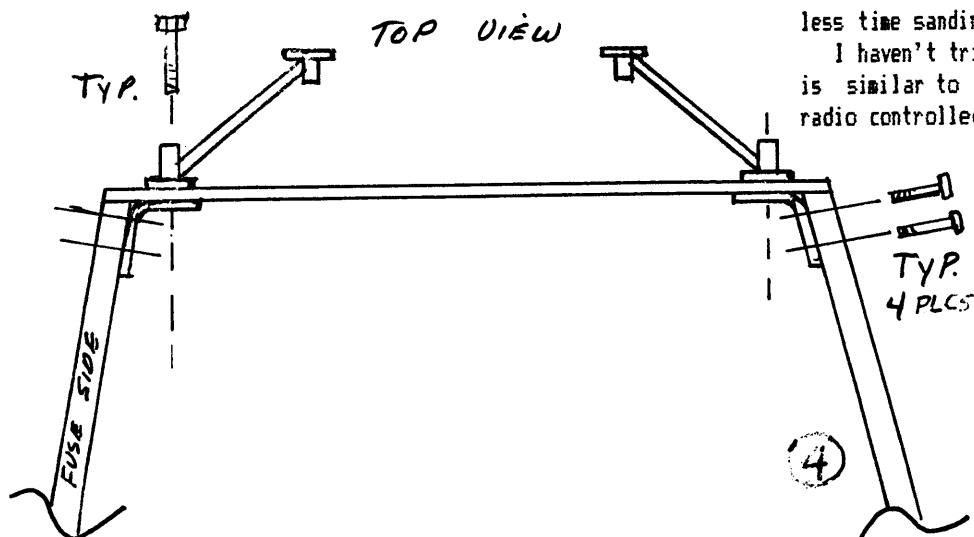
Below is a sketch, (not to scale) that gives you all the really necessary information about how the new mounts fit in and how the load path is transferred into the longerons.

To use these mounts, omit the 4 aluminum angles as described in Chapter 5, page 9, also the knee behind each top corner of the firewall as shown in the sketch, upper left corner of that page.

MAKE 2 ANGLES



- NOTE - HAPI HAS THESE ANGLES IN STOCK



The aluminum angles placed in the corners more than transfer load from the mount directly into the longerons. The 2 bolts in each longeron that formerly held the aluminum angles now retain the 108 degree angle braces installed. These are fitted into the corners, then longeron attach bolts are trial fitted before angle is permanently installed in corner. Seven plys of 10% bi-directional cut on 45 degree to weave are sandwiched between angle bracket and firewall to fuselage side corner. This installation is performed before installing cockpit floor.

Do not drill the 4 holes through the firewall now - wait until you have your engine and mount. Then bolt engine to the mount and "C" clamp mount to the firewall with 4 big "C" clamps, one at each mount leg.

By careful measuring, determine that prohub is exactly centered on thrust line and that engine has 0 degrees up down or side thrust. If adjustment is necessary to align engine shims in the form of flat washers can be used between motor mount and firewall to compensate until adjustment is perfect.

Then carefully drill through each engine mount corner, firewall and corner brace, bolting each corner permanently in place. AN-6 bolts are used with castellated nuts and cotter pins for safetying.

Material Substitution

The ball rod ends called for on page A-2 of your plans, identified as F-34-14 rod end bearings, made by Heim have become expensive. Wicks has found a substitute which can be sold at the same price that has better tensile strength and has greater range of motion than the Heim bearing.

Made by Aurora, and identified as CW-3B-14, they are Viking approved and are actually superior to the Heim rod ends originally used. The Heim rod end can handle + or - 9 1/2 degrees of misalignment. The Aurora can handle + or - 14 degrees of misalignment which should solve the stick travel problem some of you have experienced. **Change Your Plans To Read Page A-2, 14 pcs F-34-14 Rod End Bearing or 14 pcs CW-3B-14 Rod End Bearings.**

On Finishing

The recent article in November 1983 Sport Aviation on Fred Keller's Defiant described a method Fred used to get a beautiful finish on that craft with a minimum of elbow grease. I would suggest you read it and give it a try. Basically it involves spraying a small area then squeegeeing off the excess feather-fill. Fred claims less filler is required and much less time sanding and filling to achieve good results.

I haven't tried this method but it sounds very promising and is similar to a method I used many years ago on fiberglass radio controlled model fuselages. Try it, you may like it!!

Hardware Installation Hints

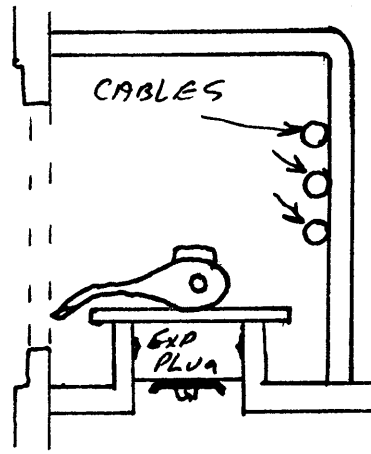
We have had several builders who have had problems installing control system hardware and others who complain that the 3 lever throttle quadrant that is almost "standard" now is difficult to install. It appears that the main problem is in getting the aircraft too near finished before installing hardware.

In the case of the throttle quadrant the easy way to mount it is before you install the left side console. This is also the easy way to install and fit the control stick hardware in the center and right side consoles. Build the consoles and fit the hardware in them before permanently installing them in your fuselage.

The throttle cables routed through the gas filler neck area have caused concern for some builders but they can be easily installed (see photo) before the console is mounted in the fuselage.

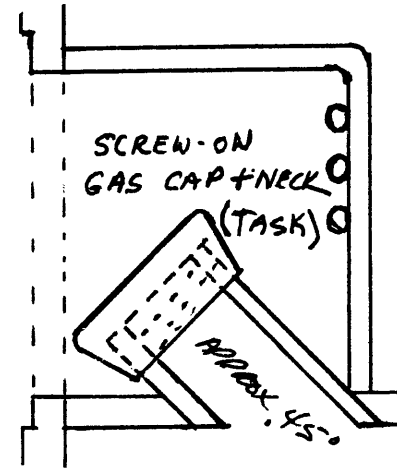
Another slight change that makes life easier is to incline the filler neck of the gas tank to about 45 degrees as per sketch, which makes a lot more room. TASK Research is using a plastic screw on gas cap that fits their neck in the pre-fab tanks. Looks like a real good idea.

AS ON PROTOTYPE



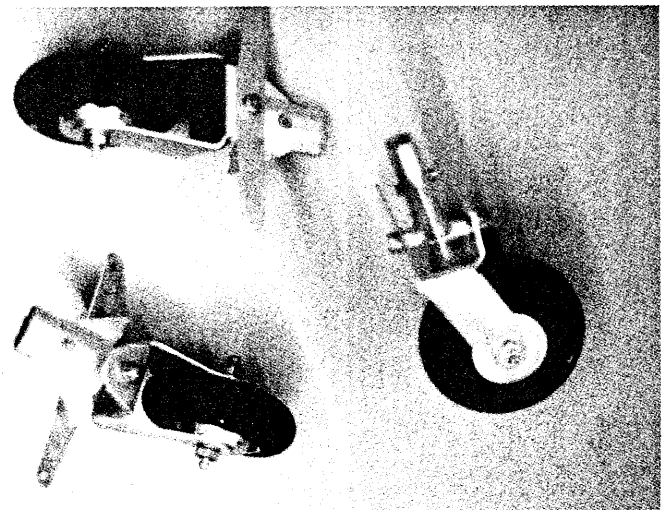
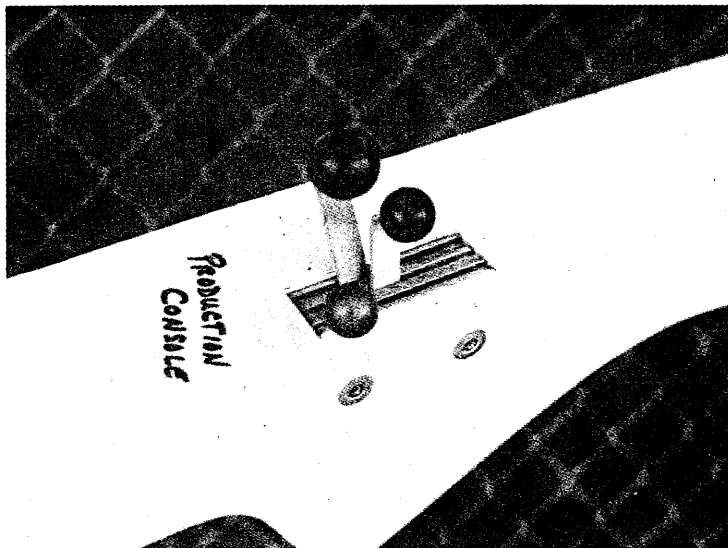
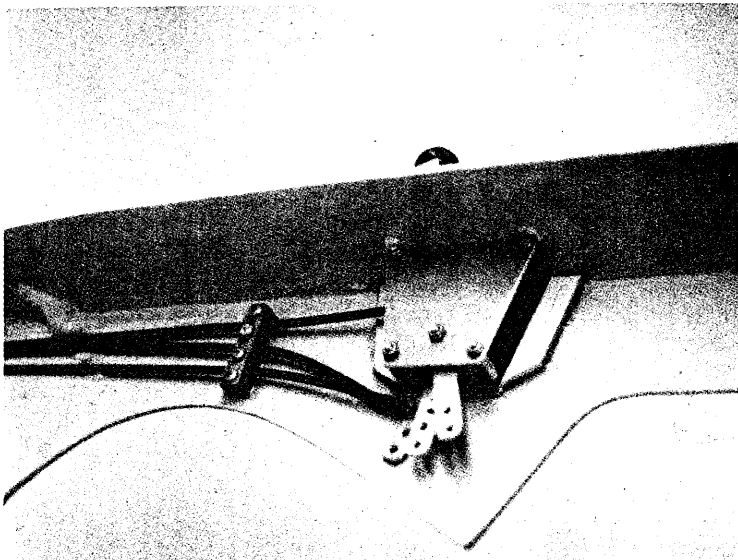
TOO LITTLE ROOM INSIDE FILLER DOOR TOO SMALL UNHANDY FILLER PLUG HARD TO GET GAS FILL HOSE IN. TOO SMALL TO ROUTE CABLES EASILY.

BETTER ARRANGEMENT
LARGER FILLER DOOR
BETTER CAP + NECK.
MORE ROOM FOR CABLES



New Tailwheel Assembly

Ken Brock has just finished and put into production the new tailwheel assembly. You will note in looking at the photos that the tiller bar portion of the yoke is on the top side rather than on the bottom as shown in the plans. This slight change is intentional and serves to raise the tailwheel push rod up a bit for better ground clearance. You may also note that both tiller arms are the same length. This is intentional. In order to keep the price down the tailwheel assembly was designed to be used on other taildraggers. When installing on a Dragonfly you cut off the end of the left tiller arm and drill one more hole in the end of the right tiller arm. All metal parts are cadmium plated, and it's equipped with a new softer rubber tailwheel that doesn't make noise like the original caster wheel. The unit features ball bearings on the wheel and a grease zerk is fitted. Pivot bolt rides in bronze bushings. It is stocked by both HAPI and Brock and sells for \$97.50 complete. The wheel only is also available from Brock and can be used in place of the caster wheel called for on the plans. I have had one of these wheels installed on the prototype for the last 40 flight hours and several hundred landings made during the fly-in.



Approved Vendors

There does not seem to be a clear understanding in the typical builders mind just exactly what we mean when we say "approved vendor". An "approved vendor" is a firm with whom we have contractual agreements guaranteeing us that the vendor will supply exactly the plans specified material to Dragonfly builders and will not substitute without first submitting the substitute for our inspection and approval.

We have selected some of the best suppliers in the business, people with a good reputation and years of dealing with the homebuilder. If you should purchase a product or service from one of these vendors that is not satisfactory and the vendor does not satisfy the problem to your liking, we will try to mediate and solve whatever the problem is.

Generally, the products these folks sell are reasonably priced, although there is almost always someone who says he can sell it cheaper. Some questions you should ask before dealing with anyone are (1) Is this exactly the same material specified in the plans, same manufacture and product code? (2) Is a full money back guarantee part of the company policy if the product is not per Dragonfly specifications?

The following list of approved vendors do meet the criteria above in all respects.

Wicks Aircraft Supply 410 Pine Street Highland, ILL 62249 (All raw materials for a plans built Dragonfly, cloths, resins, hardware, etc.)

Ken Brock Mfg. Co. 11852 Western Avenue Stanton, CA 90680 (Dragonfly control systems, welded and stamped parts, tail wheel assemblies)

Aircraft Windshield 3842 Catalina Street Los Alamitos, CA 90720 (Custom made canopies for Dragonfly)

TASK Research 848 East Santa Maria Street Santa Paula, CA 93060 (Completely pre-fabricated Dragonfly kits and components)

C.G. Aero P.O. Box 783 Anza, CA 92306 (Custom built wings and canards, hot wired foam wing cores)

HAPI Engines, Inc. R.R. 1 Box 1000V Eloy, AZ 85231 (Engines, motor mounts, exhaust systems, engine and flight instruments sets, carb heat systems, engine controls, etc. propellers, spinners, carburetors.

There are many other sources for some of the materials used in Dragonfly, and possibly you can save money by shopping around. Do beware of including anything in the primary structure of your Dragonfly other than the plans specified material. There may be other sources for some of this material but you must determine if you got the right stuff and pay the cost if you didn't.

An aircraft found to have substandard material in the basic structures, making it less than design strength is a very costly piece of junk. Don't fall into that trap.

We do mention other sources for items of interest to Dragonfly builders from time to time. These are simply vendors, and have no commitment to us to supply "plans specified" materials only.

Some of the builders come up with specialty items for Dragonfly and we mention those too, but unless a vendor is described as an "approved vendor" in this letter, we are in no way responsible for the integrity of the vendor or the suitability of the product he sells.

Plan to be at the Dragonfly Swarming in October 84, exact date newsletter.

Swedish Plans Translation

We were recently visited by one of our Swedish builders a Mr. Laszlo G. Kiss (Storgatan 22D S-753 31 UPPSALA Sweden). He has translated the text of the plans from English to Swedish and can supply that translation to other builders. Contact him directly if you are interested.

French translations are also available through Philippe Soulas (85 Rue du Chateau d'Eau 80100 Abbeville France) and I believe that he may also have a German translation available.

One important point to remember in using these translations is that the version in English as we provide to you is to be considered the authority in all circumstances. We have not checked these translations and do not in any way guarantee their accuracy. We do feel that if well done, they will be of great assistance to some of our foreign builders.

New Distributors

EUROPE, BRITISH ISLES, and SOUTH AFRICA

Gerry Bracken (AGC Enterprises, Harbour House, Wexport, Co. Mayo, Ireland), is our European distributor. For quick service on Dragonfly plans and construction materials in that part of the world, contact him. Gerry has been very busy locating and qualifying European made materials as direct substitutes for some of the American made glass and resins, etc.

He stocks considerable amounts of these materials and also handles TASK pre-fab kits as well as the complete line of HAPI Engines and accessories.

Gerry is a Dragonfly builder, and a pilot. He has been here and checked out in the prototype so that he can give knowledgeable answers and builder support to our European builders. He travels extensively in Europe and language is not a problem for him.

In Australia

Peglar Aviation (70 Hillcrest Drive Eden Hills 5050, Via Adelaide, South Australia), owned by Garth Peglar, has been appointed distributor for Viking Aircraft and HAPI Engines. They also handle the Flight Star Ultralight and other aircraft related lines. Garth and his lovely wife Dawn visited Viking and HAPI for a two week period to thoroughly familiarize themselves with both Dragonfly and HAPI Engines. Also a pilot, Garth checked out in Dragonfly, and can offer help to our Australian builders based on first hand knowledge and experience. He stocks the complete line of supplies for Dragonfly and HAPI Engines.

Bottom Cowl NASA Duct

The original engine in Dragonfly used a Fosa carb set under the engine, supplied air through the NASA duct shown on the plans. The NASA duct has been eliminated on the prototype and is replaced by a flush air intake comprised of an air filter, and a plenum chamber that necks down to 2" to connect with a piece of 2" radiator hose clamped to the carb heat box.

This gives us filtered air, and does not leak air into the lower cowl. Such leaks cause poor cooling due to lack of pressure differential between upper and lower cowlings.

The Dragonflys cooling system depends on ram air pressurizing air on the top side of the engine and the rear facing openings in the lower cowling creating suction on the bottom side of the engine. The air then flows through the

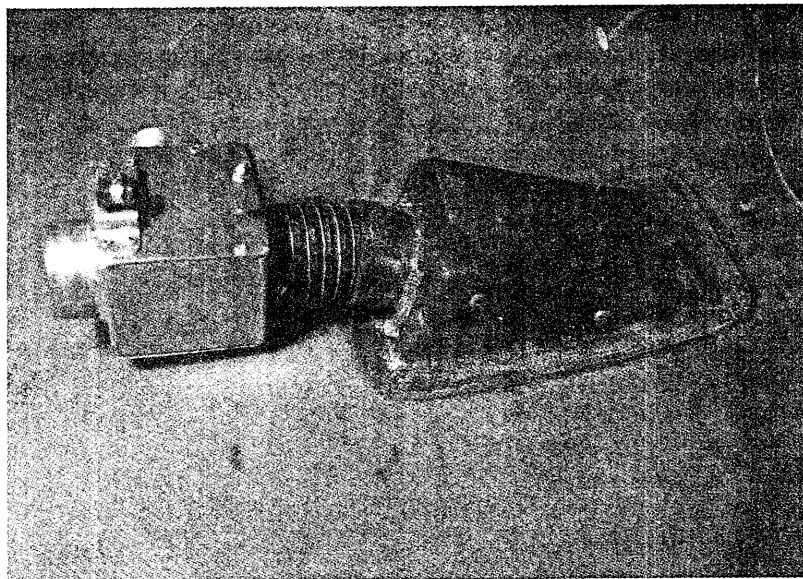
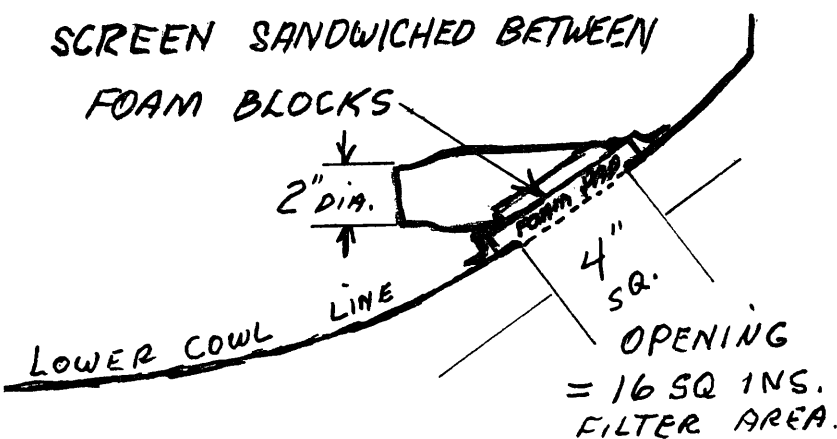
engine to the low pressure ride trying to equalize pressure. The NASA duct was creating a leak, and allowing air in, thus reducing negative pressure in the bottom. Bad news!!!

Air Cleaner Chamber

The sketch shows how to fabricate the air cleaner cavity. Its quite simple. Cut a 4" X 4" opening in your cowl for the air intake. Place a 5" X 5" X 1" piece of styrofoam over the opening on the inside overlapping it 1/2" all around. Cut a 5" X 5" piece of screen wire and place it on the back side of the styrofoam block. Cut a 4" X 4" styrofoam block, place it over the screen wire, with 1/2" exposed all around and cover the outer edges with 3 layers of 6 ounce bi-directional layup and allow to cure. Now shape a proper plenum chamber to match up with your intake system from a styrofoam block, layup over it and complete the air cleaner chamber assembly. When all layup is cured, pour in gasoline and styrofoam will dissolve leaving you a clean assembly.

A 5" X 5" X 1" open cell polyurethane pad, soaked in a mixture of 9 parts gasoline, 1 part SAE 30 motor oil, and then drained, is simply placed in front of screen for a filter and will be retained by the 1/2" lip all around. Sounds a little complicated but it's actually real easy. Photo shows Ed Swans air intake chamber, not exactly as I've described but almost the same.

SCREEN SANDWICHED BETWEEN FOAM BLOCKS



Newsletter Contributions If you have good photos of your project, a helpful hint, a better way to do something, or anything of general interest you'd like to contribute to this newsletter please send it in.

Check Your Canopy Latch

Terry Nichols recently had his canopy come open in flight. The canopy completely detached from the airplane, fortunately did not hit vertical stablizer or wing. Terry's headset was ripped off by the slipstream. The headset and right side seat belts were streaming back outside the cockpit and beating the fuselage.

The Nichols report that Terry was able to make a safe, controlled landing, but the added drag caused him to have to use almost full power to maintain safe airspeeds. The canopy latch had been loose and not firmly locking in its safe and locked position. The back up canopy safety latch apparently did not catch as the canopy opened.

This problem is not unique and has happened on a Vari-EZ, and a KR whose canopys are also side hinged. The possibility of an inadvertant canopy opening in flight has always been a concern of mine and I have been recommending that the builders consdier forward hinging for some time now.

Forward hinging solves the safety problem. Even if it does unlatch, it will not catch the slipstream and become unsafe. Forward hinging also allows easy access and entry from either side of the aircraft.

This incident happened just shortly before this newsletter so we have not as of yet had the time to redesign the hinging and latches but this revision will be in the next newsletter. Ed Dassow of Wisconsin has done a very nice forward hinging job using the same hinges as before and his will probably greatly influence our thinking.

Many of you saw Mark Mazzon's Dragonfly at Oshkosh with the forward hinging canopy. He reports easy in and out of either side of the aircraft. Another builder in San Diego forward hinged his, and had the wind brake the restraints with a big blast from the rear while his engine was running, destroying both canopy and propellor. Due to the large sail area when opened the canopy can be wind damaged easily regardless of the hinge point and builders should always keep this in mind when leaving the canopy open.

If you are already flying or have your canopy hinging already installed don't fly unless the canopy latching system and backup safety latch are functioning perfectly. Make sure that it requires considerable positive pressure to unlatch the canopy so that there is no possibility of vibration or simply hitting the latch with your arm causing an inadvertant opening.

Pre-Fab Parts TASK Research is really cranking out the pre-fab Dragonflies now. During the Swarming before an audience of about 140 Dragonfly builders, they removed one of the pre-fab fuselages from the crate, trimmed it, drilled the tooling holes where indicated by molded in dimples, cleco clamped it together, drilled through the tooling points molded on to indicate interior bulkhead position, installed all the bulkheads and had it completely ready to bond together in 1 hour 20 minutes. The fuselage can be completely built in one weeks time and requires absolutely no jigs or fixtures to assemble it due to the "matched hole" tooling concept used.

You can build a Dragonfly fuselage in less time than it takes to build the jigs and fixtures to put a brand "Q" together. Several of the prefab parts are quite usefull to the scratch builder.

The main landing gear, that's the complete wheel fairings which include the molding in hard points for axle mounts, are completely filled with foam have the wheel well cavity to fit the 11:00 X 4 X 5 LAME tire, and hydraulic brakes but can accept

the mechanical brakes and Azusa wheels also. At the price of \$325.30 they seem expensive but they save you all of that work of shaping foam and glass around the wheels. The molds for these were pulled off the prototype. The wheel fairing area seems to be one that gives the average builder fits and involves a considerable amount of time to complete, yet a high percentage of the finished Dragonflys have boxy, clumsy looking fairings when complete. I've got a set of these for the new canard, believing the savings in labor to more than offset the cost.

The pre-fab instrument panel is also an item that can save you considerable time. It's made to the revised panel layout, featuring a center stack arrangement for the radios, and the panel has the vertical face above the knee cutouts that makes for more knee room. You can pre-install all of your instruments and switches, etc. in the panel before bonding it into the fuselage. That's a time and frustration saving thing to do anyway. Panel separately sells for \$97.78.

Some of the above may be labeled commercials, but the point is to make our builders aware that there are alternatives available to many of the tasks you have to perform in building your aircraft. If making you aware of what is available and the cost is a commercial, I guess it will have to be. We are trying to offer the best level of prefabrication available in a composite homebuilt, without in any way changing the concept that the aircraft may also be built from scratch with raw materials as originally designed.

Many of the builders are finding some of the pre-fab, such as Brocks hardware kits, is very useful and well worth the extra bucks in time saving. If we don't tell you about what's available, who will?

Pre-Fab Parts on Scratch Builts

The fuselage deck, and the canopy frame, are parts that may save you a great deal of time. The aft fuselage top section is not the same on the pre-fab as a builtup Dragonfly so will not be usefull to scratch builders.

The wing tip included in the pre-fab kits may be the answer to a problem for many of you. The tips are exactly like the prototype and have flush mounted clear plexiglass lenses to cover navigation lights or strobes. Rene de Lathauer 2744 East Glenrosa Phoenix, AZ 85016 is soon to have a strobe kit that will fit right in these.

The wingtips and wheel fairings are apparently a kind of art form and difficult to visualize from plans and pictures, then duplicate. I have noticed more deviation from the prototype shape there than anywhere else.

Well gang, I have run out of space in this newsletter, adding more pages would mean doubling the postage cost. I've tried to improve this newsletter based on the input from the questionnaire. One way we can help each other is to communicate. If you run into a problem, please do call or write. We can't possibly help if we are unaware of your problem.

I would like to thank all of you builders for the attitude of cooperation you have extended to us in the first year of our marketing the Dragonfly design. While we are far from getting rich at it, we have made some friendships with some of the greatest people in the world, you Dragonfly builders, and we value those friendships very highly.

We wish you and yours a very Merry Christmas and a prosperous New Year!



from

VIKING AIRCRAFT, LTD.

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

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