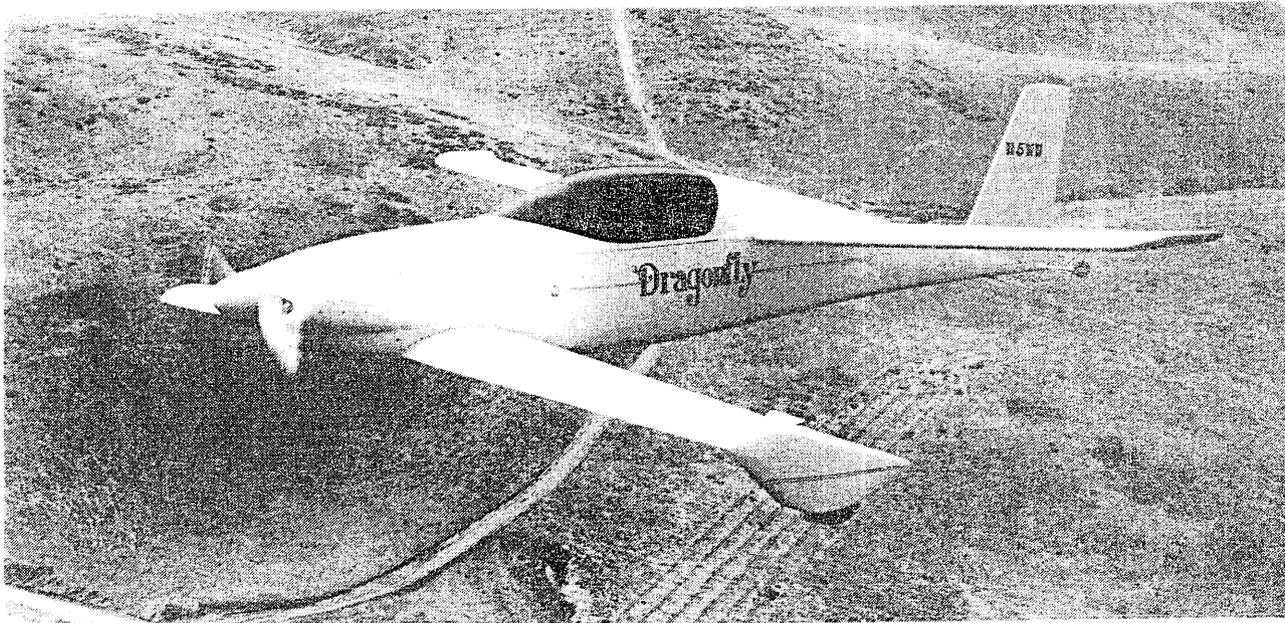


"Dragonflyer"



DRAGONFLY NEWSLETTER

#2 Spring 1981

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VIKING AIRCRAFT
P.O. Box 9000 Suite 234
Carlsbad, CA 92008
(714) 753-1727 Thursdays
Subscriptions \$6/yr. (\$7/yr. overseas)

The Dragonflyer is the only method of 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.

Viking Aircraft keeps the Dragonfly at the Oceanside Airport, in Oceanside, California, just north of San Diego, in the easternmost hangar. Flight demonstrations are given on most Saturdays at around 12:30 or 1:00 P.M. It's best to call on the Thursday prior to your visit in case we are attending an air show or fly-in.

PLANS INFO

The plans are completed! We are currently mailing the complete set of plans to our plans purchasers. Feedback from our builders has been very encouraging. Everyone seems to agree that the Dragonfly construction manual is the best they've seen. There are about 100,000 words in the plans set, plus hundreds of drawings and photographs so that even the first time builder can proceed without difficulty.

BUILDER SUPPORT

We have been feeling like the Maytag repairman as our builders problems are concerned. Most of the phone calls and letters received from builders are progress reports, canopy orders, etc. For this reason, we are now asking our builders to call us on Thursdays for builder support. As many of you know, we have been available by phone, not only on Tuesdays and Thursdays, but most other times as well! We will continue this prac-

tice of general availability, but we are now only guaranteeing phone service on Thursdays. We feel that this schedule will give us the ability to serve our customers better and will allow us more time to be at the airport. While we were writing the plans, we were unable to be at the airport during the week, but now we hope to be able to spend more time flying. It's difficult for a husband and wife team to do everything, but we're trying! If you have a question, go ahead and phone us. If we're in the office we'll be glad to answer your questions; however, if we're not available you won't waste your money on an answering service or recording device. In any case, we will be available for sure on Thursdays.

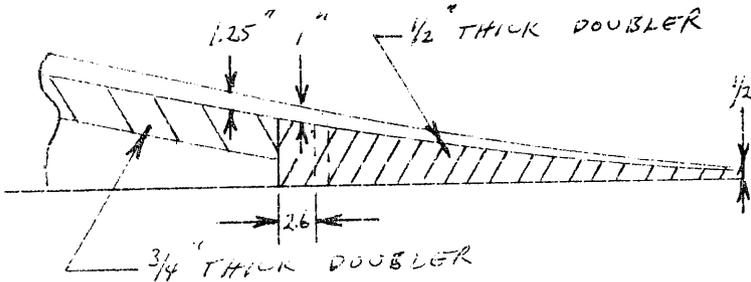
Larry Haig (American Eaglet, Mini Bat etc.) has written an interesting article in the March 1981 issue of Sport Aviation Magazine. It outlines some of the problems associated with the design of a homebuilt aircraft. We don't have as many problems as Larry because we are not supplying entire kits since most of the materials for the Dragonfly are already available from various retail outlets. Consequently we are able to provide appropriate builder support with a husband and wife team and keep the cost of our operation very low compared to some others. Nevertheless the article gives the reader some insight into what's involved in homebuilt design. By not supporting a large staff, Viking Aircraft is able to provide their customers the opportunity to build a low cost aircraft. A Dragonfly builder has the choice of when, where, and how to purchase his materials with the knowledge that the cost of his aircraft is not unnecessarily raised to support a large staff, various research projects, or a large advertising budget. The Dragonfly builder may not get to read fancy advertisements, but he doesn't have to pay for them either. On the other hand, by putting a lot of effort into a good set of plans, Viking is able to supply the builder with the thing he really wants most: the accurate, easy to understand information that he needs to produce a safe, low cost airplane.

PLANS CHANGES

A number of minor plans changes are listed in the current errata sheet included in each plans set. Plans holders do not require any back issues of the Dragonflyer to keep up to date because all appropriate plans changes are either in this newsletter or the errata sheet.

Chapter Two, page 8- The exact curve of the top of the tail bulkhead is not shown. It is not critical. Just try to duplicate the drawing by "eyeball".

Chapter Two, page 3- The top view of the fuselage bottom shows the .5" thick foam doubler near the tail installed 1 1/4" from the edge of the bottom just like the rest of the doublers. The .5" doubler should not taper to a point at the tail. It should be one inch wide at the aft end. Simply change the shape of the .5" doubler to match the drawing below.



DRAGONFLY MATERIALS

Some builders have apparently misunderstood our efforts to keep the cost of materials as low as possible. Viking is interested in each builder obtaining the correct materials at a low price. The key word is correct. Builders must not assume that any foam or any epoxy will work, because chances are that they will not. We certainly sympathize with overseas builders who may find it difficult and expensive to obtain the proper materials; however, Viking is not able to approve any untested materials and, because we are a small company, we are unable to build and test structures from each of the hundreds of similar materials available on the domestic and foreign market. Please do not continue to ask for approval of substitute materials.

DRAGONFLY HINGE PARTS

The Dragonfly uses a small machined part in 12 different places on the aircraft. The part is used for the control hinges. Although the plans give full details on the fabrication of these parts, it does require a lathe or screw machine. If you must pay a lathe operator to make these parts, the cost could be quite high. Therefore, Viking has contracted to have these parts made in quantity. They are available from Viking Aircraft for \$25/dozen plus \$5 for shipping (\$10 shipping overseas).

The canopy uses two "Lazy Tong" hinges that may not be available at your local hardware store. Viking has ordered a number of these hinges from New York and will sell them for \$5/pair plus \$5 shipping (\$10 overseas). The machined control surface hinge parts and canopy hinges may be shipped together for \$5 shipping cost (\$10 overseas).

BUILDERS LIST

The Dragonfly builders list is growing every day. This will be the last issue that will have the complete list of names of those builders willing to release their names. If, in the future, you require a current list of those builders in your area, please send us a self-addressed, stamped, business size envelope and one dollar. We will send you a computer print out of local builders.

TIPS FROM BUILDERS

Bob Perry of Oxnard, Calif. says that a Sears saber saw blade number 28702 (24 tooth) works well for cutting templates. Bob recommends cutting several small holes in the airfoil template plans and using small bits of tape to hold the paper in place when pin pricking the template material.

ITEMS OF NOTE

The fuselage sides should be slightly shorter than the bottom to allow the bottom to be tapered to meet the tail spring. The plans are correct.

The distance between the canard lift and drag bulkhead is greater than the distance between the shear web cut and drag spar cut of the canard foam core. This is intentional and correct. The apparent discrepancy will be made up by the canard lift fitting multiple pads of fiberglass, shear web layups, etc.

Dacron is a Dupont trade name for polyester. When buying peel ply, ask for 100% polyester lining material. It should look like the stuff inside your suit. Sort of slick and shiny. The fabric industry can do wonders with polyester these days. If the sales person tries to sell you a polyester material that looks like a cotton T-shirt, don't buy it. It will stick. If in doubt, make a test.

WEIGHTS OF COMPONENTS

We don't have a complete set of weight data, but your wing should weigh about 60 pounds after it is glassed both sides, but before the aileron hinge fairings are installed.

NAME THE VIKING CONTEST

We received lots of good names for the viking cartoon character (and a few real bad ones). We've decided that the winner is "CANARDLY", submitted by Martin Roach of Alta Loma, California. Martin wins a free tail spring. I'll bet he canardly believe he won!



PRICE CHANGES

Because of the hassle of charging freight costs on carbon fiber and tail springs, we have raised the price and will now ship them "pre-paid". The cost of 250 ft. of carbon fiber is now \$210 (\$225 overseas). The tail spring cost \$13 (\$16 overseas). These prices include pre-paid airmail postage.

PROPELLERS

We are continuing to test propellers. It seems that Great American Propeller Company produces very nice props and we have recently purchased a 52" diameter, 40 inch pitch prop for use as an all round prop on our 1835 engine. It gives us a good compromise between climb performance and cruise RPM. A 52" diameter 38 inch pitch prop works pretty well on the 1600 engine as an all round prop.

DRAGONFLY BUILDERS BY ZIP CODE

ISLAND WOOD PROD DAVID, TOM
 LLOYD LAFLIN
 PETER LOFGREN
 RICHARD W. HOCH
 JOSEPH P. TOPOLOSKY
 ERIC C. CLAPP
 A.H. STANWOOD
 DONALD E. HEWES
 FREDERICK S. LOVELACE, APT.#1003
 ERNEST L. DE GIACOMO.
 CLYDE K. REES
 JAMES E. NALLY
 DR. JOHN SPANDE
 LEO F. SHERIDAN
 ROBERT VERRIEST
 EDWARD L. DEPEW
 DALE A. HANSEN
 PAUL T. HANKINS
 KERMIT DIRKS
 DICK R. WILLIAMS
 RAYMOND ELLIS
 DAVID J. HAGEN
 DAVID FLANAGAN
 WAYNE HONER
 EDWIN B. SWAN
 BRUCE HEBEISEN
 RICK GENTZ
 BRAD CHAMBERLAIN
 CHUCK PRILL
 F.A. LANGSTON
 ROGER A. BUCHWEITZ
 NORBERT J. NEUMAN
 M. WAYNE WILLS
 WILLIAM LAND
 CHARLES R. MYERS
 WAYNE S. BRIDGWATER
 BUDD L. WILKINSON
 JAMES A. DOYLE
 DR. WILLIAM L. WALLING
 JOHN R. STRUTMAN
 ROBERT SHERER
 FRANK RUTH
 LEWIS D. NIXON
 STEVEN J. BEIKIRCH
 GAYLE J. HARPER
 MICHAEL P. BAUDHUI
 V.O. AUGUSTIN
 SUNSHINE AV. BARRESON, ARNOLD
 RICHARD WANDMAKER
 JERALD R. JOHNSON
 CHARLES H. MECHAM
 MARK JOHNSEN
 IGOR GAMARRA
 ARVID HOLMBERG
 RALPH D. VESPER
 MARTIN EARL ROACH
 JULE GEIGER
 ROBERT GRISCOM

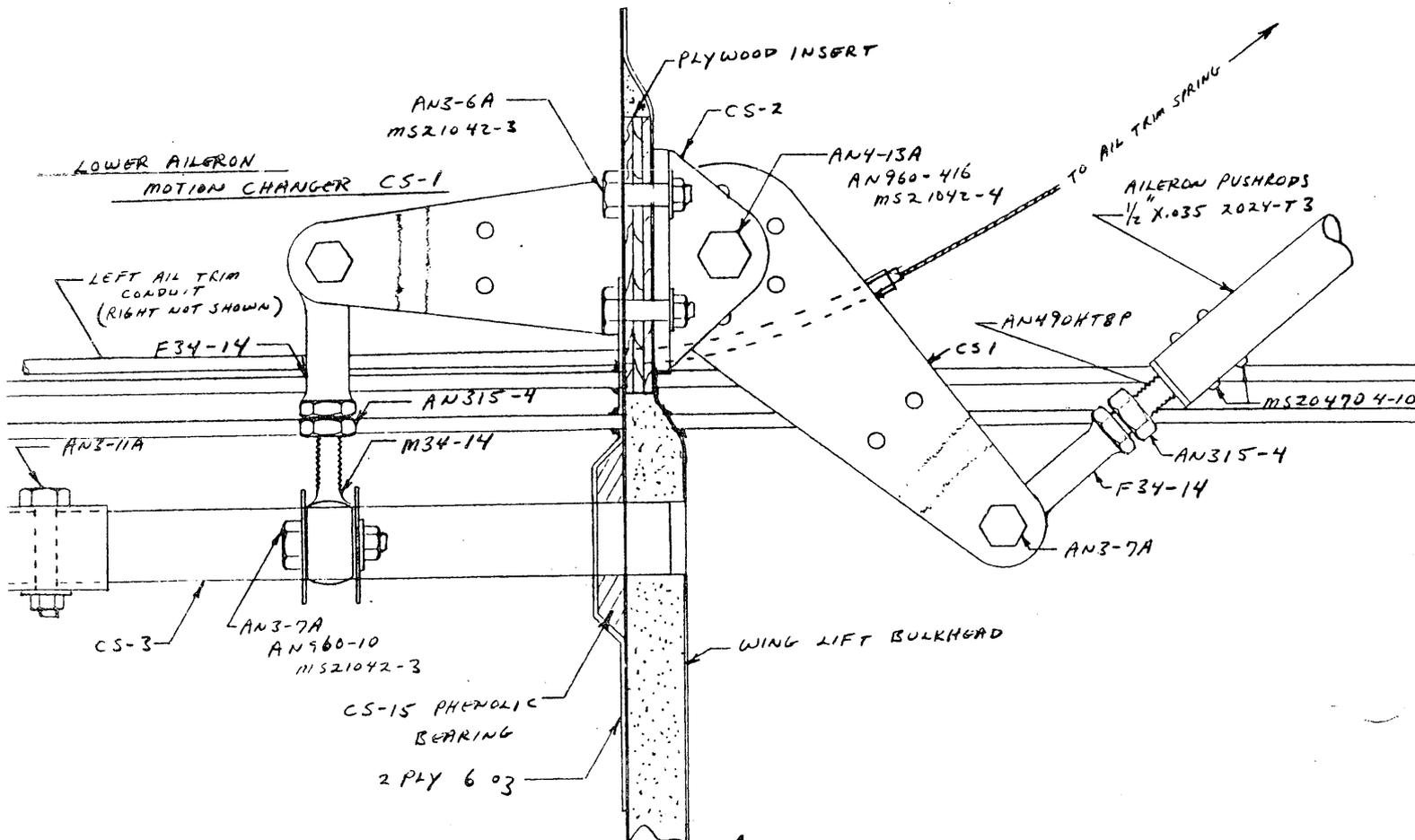
BOX 541
 RT. #1 BOX 321
 R.D. 1 BOX 195
 7941 DENNIS RD.
 R.D. "1
 13121 MADONNA LANE
 927 CATSKILL CT.
 12 MEADOW DR.
 3640 PEACHTREE COR.W
 4852 PINETREE DR.
 109 NOBLITT ST.
 1812 GLEN ELLYN PARK
 13732 OAK BROOK DR.
 660 ALAYNE AVE.
 16832 SALEM
 2293 BARBER RD.
 RT. #4
 RT. #5 BOX 4
 1415 MAXWELL
 R.R 1 BOX 284
 2416 E. DOUGLAS
 RT. #1
 833 HIGH ST.
 RT.#1
 217 HOWARD ST.
 RT. #2 BOX 208-41
 9523 YORKSHIRE LANE
 200 STATE HWY 5 W
 RT.#1
 WEST SHORE ROUTE
 334 BLACKHAWK DR.
 990 N. LAKE SHORE DR
 2551 SQUAW PRAIRIE
 2 E. PARK ST.
 P.O.BOX 186
 RURAL ROUTE #2
 132 11TH ST.
 RR 4 SKYLINE DR.
 610 N. COURT ST.
 14848 RALLS DR.
 1509 NANCY LANE
 1703 NORTHCREST
 7746 ALTO CARD DR.
 RT.#1 BOX 60 A
 818 W. CAND
 5531 1ST PLACE
 1313 W. CO. RD. 60 E
 BURLEY MUNI AIRPORT
 185 S. 500 W.
 P.O. BOX 279
 RT. #9 BOX 352 B
 4517 ALADDIN
 5800 SOUTH ST. #163
 159 N. SUNSET PLACE
 10555 HALBRENT AVE.
 6039 AMETHYST
 1290 BRENDA CT.
 5357 DON MIGUEL

NANTUCKET, MA 02554
 JERICHO, VT 05465
 SCHUYLERVILLE, NY 12871
 ANGOLA, NY 14006
 FULASKI, PA 16143
 FAIRFAX, VA 22033
 VIRGINIA BEACH, VA 23451
 NEWPORT NEWS, VA 23606
 NORCROSS, GA 30092
 LAKE WORTH, FL 33463
 SHELBYVILLE, TN 37160
 TOLEDO, OH 43614
 NORTH ROYALTON, OH 44133
 GALION, OH 44833
 DETROIT, MI 48219
 HASTINGS, MI 49058
 HILLSDALE, MI 49242
 NEWAYGO, MI 49337
 AMES, IA 50010
 COLFAX, IA 50054
 DES MOINES, IA 50317
 NEW HARTFORD, IA 50660
 OCONOMOWOC, WI 53066
 MUSCODA, WI 53573
 WAUPUN, WI 53963
 CHASKA, MN 55318
 EDEN PRAIRIE, MN 55344
 WACONIA, MN 55387
 LONG PRAIRIE, MN 56347
 POLSON, MT 59860
 ROSELLE, IL 60172
 CHICAGO, IL 60611
 BELVIDERE, IL 61008
 SULLIVAN, IL 61951
 CUTLER, IL 62238
 DAWSON, IL 62520
 LINCOLN, IL 62656
 SPRINGFIELD, IL 62707
 GRAYVILLE, IL 62844
 BRIDGETON, MO 63044
 LIBERTY, MO 64066
 NORMAN, OK 73071
 DALLAS, TX 75248
 IOLA, TX 77861
 EDINBURG, TX 78539
 LUBBOCK, TX 79416
 FORT COLLINS, CO 80524
 BURLEY, ID 83318
 LOGAN, UT 84312
 ESCALANTE, UT 84726
 SILVER CITY, NM 88061
 LAS VEGAS, NV 89102
 LAKEWOOD, CA 90713
 MONROVIA, CA 91016
 MISSION HILLS, CA 91345
 ALTA LOMA, CA 91701
 UPLAND, CA 91786
 CARLSBAD, CA 92008

C.E. CANTERBURY
 THOMAS E. LYNCH
 EDWARD L. JOHNSON
 JAY DEMENT
 RANDY JARVIS
 R.L. CREEDON
 WAVETEK ATT. HENNIES, R. CRAIG
 HUGO HUNZIKER
 JAMES M. MOE
 JACKSON S. MC PHERSON
 TERRY NICHOLS
 BRUCE P. OLANDER
 LARRY M. SHEETS
 BOB PERRY
 M. THIELMANN
 RICHARD JOHNSON
 R.C. GENTRY
 HENRY BLUM
 GILBERT K. TOTE
 C. SZYMANSKI
 DAVE STEINBACK
 HOWARD KOHLS
 PHILIPPE SOULAS 85 RUE DU
 JOSE PELEMAN
 GILLES DENEUX
 ALFRED SCHNEIDER D763LAHR
 A.B. CAMERON
 CAROLA SCHILLEN

1730 E. 11TH ST.
 R.R 1 BOX 295 A
 9043 DAVENRICH ST.
 3369 E. VISTA WAY
 P.O. BOX 9784
 4712 MT. BIGELOW DR.
 9045 BALBOA AVE.
 766 W. 19TH
 1801 PORT CHARLES PL
 445 S. EMMA ST.
 8796 HENDERSON RD.
 416 N. MERRITT AVE.
 2548 E. INDIANOLA
 5010 S. "C" ST.
 4819 LA GAMA WAY
 45254 LORIMER
 4396 HENDRIX WAY
 P.O. BOX 387
 94-469 LIANU PLACE
 3 GAYNOR STR.
 PO BOX 986 WOODSTOCK
 4577 DARWIN AVE.
 CHATEAU D'EAU
 CHAUSSEE DU BOIS
 BP 86 80104
 SCHWARZW. TRAMPLERSTR
 74 MAUCHLINE RD.
 78 FREIBURG

NATIONAL CITY, CA 92050
 RAMONA, CA 92065
 SPRING VALLEY, CA 92077
 VISTA, CA 92083
 SAN DIEGO, CA 92109
 SAN DIEGO, CA 92111
 SAN DIEGO, CA 92112
 COSTA MESA, CA 92627
 NEWPORT BEACH, CA 92660
 VENTURA, CA 93003
 VENTURA, CA 93004
 CAMARILLO, CA 93010
 PHOENIX, AZ 85016
 OXNARD, CA 93033
 SANTA BARBRA, CA 93111
 LANCASTER, CA 93534
 SAN JOSE, CA 95124
 BROWNSVILLE, CA 95919
 WAIPAHU, HI 96797
 BACCHUS MARSH, 3340 VI AUSTRALIA
 ONT. N4S 84A CANADA
 BURNABY, B.C. V5B 3E7 CANADA
 80100 ABBEVILLE FRANCE
 80100 ABBEVILLE FRANCE
 ABBEVILLE, FRANCE
 45 C POSTFACH 2127 W. GERMANY
 AUCHINLECK, Ayrshire, SCOTLAND
 LICHTENBERG, STR. 11 W. GERMANY



NEW ENGINE DATA

In March we purchased an 1835cc engine from H.A.P.I. This engine is equipped with dual ignition, electric starter, 25 amp alternator, Bendix carburetor, and carb heat. The installation included a new engine mount because the H.A.P.I. mounting ears are different than the net mount used on our 1600 cc engine. We also made baffling which looks a little nicer than the baffles we used previously.

What about performance? If you add about 10 m.p.h. to the speeds produced by the 1600 and about 200 to 250 feet per minute to the rate of climb figures, you will have a pretty good idea of the 1835 performance. The solo rate of climb is about 1050 FPM at sea level, cruise speed is 165 MPH and the fuel consumption is slightly less because of slightly better specific fuel consumption.

How about safety and convenience? Admittedly, it's more convenient and safer to just climb in and push the starter button rather than hand prop the engine. Dual ignition is nice also and gives you added "peace of mind" when flying over water or big rocks. The ignition system is interesting, by the way. The engine uses a direct drive Slick magneto firing the upper spark plugs in the same way the 1600cc Monnett engine did. Small 10 mm lower plugs were used in order to leave sufficient room between the new plug hole and valve seat to eliminate cracking. These lower plugs are fired by an electronic ignition system using two transistorized modules (rather than conventional points) and two coils. The magnetic trigger device is driven by the stock VW distributor drive system; but the unit is very small, so no cowling bump is required.

Are there any disadvantages? Frankly, yes. For one thing the new package weighs about 15 pounds more than the simple 1600cc engine. Most of this weight increase is related to the starter and larger battery. Another is cost. We paid almost three times the cost of our 1600 for the 1835, but it must be pointed out that a year and a half of inflation has transpired, and the H.A.P.I. engine is equipped with more goodies and it was completely assembled. We are continuing to work out bugs in the dual ignition system and hope to have the little problems completely solved in the near future. In general, the engine is operating satisfactorily.

The Dragonfly is now approved to operate with any turbo VW from 1600cc to 1835cc. The maximum engine weight is 160 pounds. It should be kept in mind that although the 1835 improves the Dragonfly climb rate and would be nice for owners in high altitude areas, it is not mandatory. The 1600cc Dragonfly is much like a Fast Cessna 150 in performance.

The 1600cc engine provides plenty of power, comments by biased parties notwithstanding.

FUTURE ACTIVITIES

We plan to attend the El Mirage fly-in on 25 and 26 April. Viking will present a forum at 1:00 P.M. on Saturday. We also have tentative plans to be at the Watsonville fly-in the end of May. The C.A.F.E. 250 Contest is scheduled on June 20 at Santa Rosa, CA. We will go up several days early for this event, which by the way we plan to win. Other events are likely to come up between now and newsletter number 3, so be sure to call before you plan a trip to Oceanside.

FOR LADIES ONLY:

You ladies....wife, girlfriend, mother etc. better start getting used to specializing in meals that improve with "age". Crockpot recipes are ideal for "knife-trim" nights or any night for that matter. Start looking into the "stews" section of your cookbooks and uses for leftovers (He may never even come back in the house for dinner at all!)

Will all this excitement get better with time? The answer is emphatically "NO"! Plan for the "building-frenzy" to increase with each new addition to "her" tailfeathers. Word of wisdom: DO NOT GET JEALOUS OF THE AIRPLANE, IT IS A TREAT TO HAVE SOMEONE BUILDING AN AIRPLANE FOR TWO!

You can help, you know. There are so many little things like: sandpaper runs, cold beer runs for all the guys that drop in on Saturday, little jaunts for all the little items that the builder needs from time to time.

greatest help: your patience and good will. This project is supposed to be FUN remember?

Start thinking about converting some foam pads and your choice of fabric into nifty pouches and cushions for YOUR Dragonfly.

Most of all, remember it's pretty neat to be able to watch chunks of foam and bolts of fiberglass turn into your very own "bird" in front of your very eyes. You'll never go back to soap operas again!

ITEMS AVAILABLE FROM VIKING

Plans: \$175 (\$185 overseas) includes 1 yr. subscription to quarterly newsletter

Information Package with color poster \$7.50 (\$8.50 overseas)

Quarterly Newsletter: \$6/yr (\$7/yr. overseas)

Cowling: \$150 (crating \$15, shipped freight collect)

Canopy: \$285 (crating \$15, shipped freight collect)

Specify: clear, green, light smoke or dark smoke

Fiberglass Tail Spring: \$13 (includes shipping) \$16 overseas

Carbon Fiber: \$210 (includes shipping) \$225 overseas

Control Surface Hinge Thimbles: \$25 set (plus \$5

shipping and handling) \$10 overseas shipping

Canopy Hinges: \$5/pair (plus \$5 shipping and handling) \$10 overseas shipping

California residents add 6% State Sales Tax Please!

PERFORMANCE SPECIFICATIONS:

CONFIGURATION-Canard

SEATS- 2 side by side

CONTROLS - dual side stick

COCKPIT WIDTH - 43 inches inside

CONSTRUCTION - foam/fiberglass

CANOPY - one piece molded

GROSS WEIGHT - 1075 lbs.

STALL SPEED - 45 m.p.h. indicated

RANGE - 500 miles with 30 minute reserve

FUEL CAPACITY - 15 gallons

WING SPAN - 22 ft.

CANARD SPAN - 20 ft.

AREA - 97 sq. feet total

WING LOADING - 8 lbs./sq. ft. solo

11 lbs./sq. ft. full gross

LIMIT LOAD - 4.4 positive / 2 g negative

GLIDE RATIO - 14.5 to 1

FUEL CONSUMPTION - 3 1/4 GPH @ 155 TAS

1600 cc ENGINE

POWER - 45 HP

EMPTY WEIGHT - 590 lbs.

TAKE OFF DISTANCE - 500 ft.

CLIMB - 800 ft. per minute solo

600 ft. per minute dual

CRUISE SPEED AT 75% POWER - 155 MPH TAS

CEILING - 17,000 ft.

MAXIMUM LEVEL FLIGHT SPEED - 158 MPH IAS

1835 cc ENGINE WITH STARTER

POWER - 56 HP

EMPTY WEIGHT - 605 lbs.

TAKE OFF DISTANCE - 450 ft.

CLIMB - 1050 ft. per minute solo

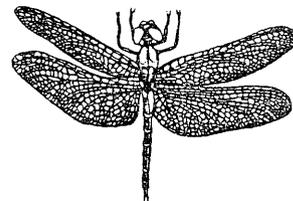
850 ft. per minute dual

CRUISE SPEED AT 75% POWER - 165 MPH TAS

CEILING - 18,500 ft.

MAXIMUM LEVEL FLIGHT SPEED - 168 MPH IAS

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Wing Aircraft

