

DRAGONFLY NEWSLETTER
#6 SPRING 1982

Published Quarterly
by
VIKING AIRCRAFT
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Subscriptions \$6/yr. (\$7/yr. overseas)

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

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

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

GOODIES AND OTHER SERVICES:

The following people are offering various items for sale that may be of interest to **DRAGONFLY** enthusiasts. Rick Gentz 9523 Yorkshire Lane, Eden Prairie, MN 55344, 941-3016 sells T shirts with a view of the **DRAGONFLY** in flight.

Marge and Stan Kalishmaen, 12 Apple Orchard Rd., Rochester, NH 03867 sell T shirts with a cute cartoon. The San Diego Builders Group, RT.#1, Box 495 A, Ramona, CA 92065 (714) 789-3114 sells nice patches with a front view of the **DRAGONFLY**.

Wicks Aircraft Supply, 410 Pine St., Highland, IL 62249 (618) 654-7447 sells various DF jewelry.

Wayne Bridgewater, RR #2, Dawson, IL 62520 Sells patches with a Dragonfly Bug.

Nick and Carolyn Dunbar, 501 Lincoln St., Lee's Summit, MO 64063 have organized a **DRAGONFLY** Hospitality Club.

R. Calvert, 4036 Justine Dr., Annandale, VA 22003 (703) 941-2060 sells full size patterns for all the metal and phenolic parts in the aircraft.

Jerry Miklosh, 427 Church St., Ambler, PA 19002 sells a nice set of job sheets to help builders better organize their building time.

NEW ADDRESS: Many of you may have already noticed that we have moved to a new address. We moved in order to get better office facilities and a place with a work shop close to home. Only the street address has changed. The phone number, etc. remains the same.

FLOYD IS SICK: Floyd has been acting up lately. I took him to the computer hospital, but the technicians were unable to figure out what is wrong with him. Yesterday Floyd dumped about half the newsletter into the ozone without a trace or an apology. His only remark was "Division by zero in 66%", which didn't do much for my confidence in him. This newsletter is already a week late because of the Sun 'N Fun fly-in, so I hope Floyd decides to behave himself for a few more days.

SUN 'N FUN: The fly-in at Lakeland was a great success this year. Ching and I were attending for the first time and thoroughly enjoyed ourselves. Ching drove the van full of junk from Pensacola to Lakeland on Saturday the 13 while I flew the **DRAGONFLY** down. The weather was almost perfect with the exception of early morning fog which usually burned off by about nine in the morning. The days were warm and sunny with cool evenings that made camping out a real treat. You couldn't ask for warmer showers and the nice folks at Lakeland proved (to me at least) that the low key, Southern approach to running a fly-in is certainly the way to provide fun for all. They don't call it "Sun 'N Fun" for nothing. At least a thousand people asked me for a ride in the prototype at Lakeland. Naturally we could only accommodate a handful of them, but a whole bunch of people got to at least sit in the aircraft. Irene Rutan (mother of Burt Rutan, the Vari-Eze designer) went for a ride and seemed to enjoy it thoroughly. Mrs. Rutan has long been an admirer of the **DRAGONFLY** and was quite impressed with the outstanding visibility from the cockpit. I didn't notice anything particularly new and interesting on the homebuilt aircraft market; however, some of the ultralights are getting to be more and more like real airplanes. Some of these craft now have genuine 3 axis controls and are constructed to very high standards indeed. The costs are also climbing. Several kits were selling at prices that exceed the cost of a "plain vanilla" **DRAGONFLY**. It will be interesting to see in which direction they go in the near future. On Saturday the 20th, Ching drove home and I flew back to Pensacola in formation with my old friend Bruce Evans who had flown to Lakeland all the way from San Diego in his beautiful Vari-Eze. We were faced with a terrific stack of mail, which we now have under control, but it points out the difficulty with trying to take a week off. Remember that week off we were trying to take? Well.....it never happened, but we're still trying. One of these days Ching and I will get far enough ahead to get away for a week, I hope.



**IRENE RUTAN ABOUT TO GO FOR
A DEMO RIDE AT SUN 'N FUN**

PENNSYLVANIA BUILDERS GROUP: Jerry Miklosh is organizing a builders group in the Ambler, PA area. The idea is to exchange ideas, purchase materials in bulk, etc. If you live in the PA, Washington DC, or NJ areas, give Jerry a call. Even if you don't like to go to meetings, the sources of low cost materials that Jerry and his friends have discovered will prove useful. I had the pleasure of spending some time with Jerry at Lakeland and I was especially impressed with the "Job Sheets" he has developed to go along with the construction manual. Jerry is an ex-school teacher, now working as an engineer. His experience in school has taught him that most people don't really read very well. Since the **DRAGONFLY** plans require a great deal of reading and since much of it is rather complex, Jerry came up with a series of "Job Sheets" to assist builders get organized. Those of you who have good reading skills and don't seem to have any trouble organizing your time probably don't need this kind of help. On the other hand, if you are experiencing trouble organizing your work efforts and seem to be wasting a lot of time planning what to do next, these sheets may be just what you are looking for. What Jerry has done is to go very carefully through the plans and break each task down into small parts. He has then developed a verbal guide to each task that goes hand in hand with a "Arrow Diagram" or flow chart to guide the builder through each task. This data is loaded with such information as page number cross references, materials required lists, time estimates, concurrent tasks, critical paths, etc. Jerry has agreed to sell builders this information for \$35. Contact him at: 427 Church Street, Ambler, PA 19002. Jerry is also trying to work on his **DRAGONFLY** project, spend some time with his kids, and make a living; so give him a break and don't flood him with a lot of questions asking for the intimate details of his "Job Sheets". If you aren't sure whether or not you can use this type of info, send him \$2 and ask for a small sample. Then you can make up your mind if you want the entire set or not.

FLOX GUNS: Bob Bell points out that disposable syringes sold at farm supply stores make good flox guns.

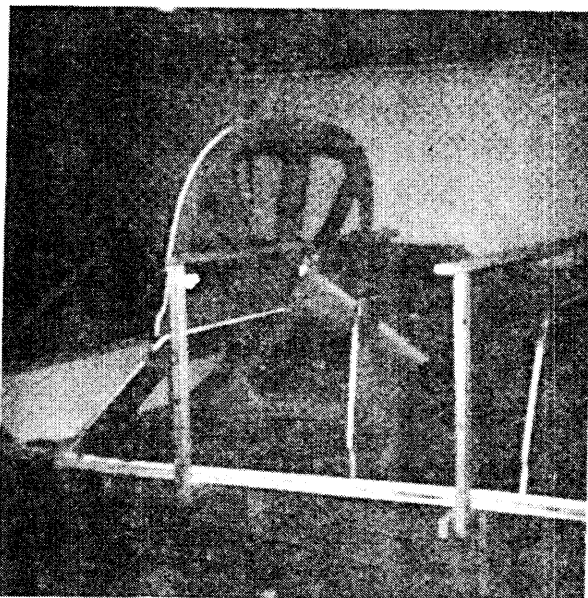
CUSTOM AIRCRAFT ENGINES: I had a chance to meet Mr. Gilbert Duty of CUSTOM AIRCRAFT ENGINES at Lakeland. Gilbert had several engines on display and is capable of producing VW conversions for the **DRAGONFLY** in sizes from 1600cc to 1835cc. He sells everything from accessories to complete engines. Contact him at: CUSTOM AIRCRAFT ENGINES, BOX 427, ROUTE 3, SANFORD, NORTH CAROLINA 27330. PHONE 919-776-0202.

COCKPIT LIGHTS: David Hoffman Products sent me a beautiful little cockpit light the other day. It is a very small and lightweight light suitable for instrument panel lighting or map reading. The beam may be aimed over a wide selection of angles. It looks like just the thing for you guys who would rather be flying after sundown rather than enjoying the finer points of various indoor sports. Contact: David Hoffman Products 1009 Old Mill Road, Auburn, Alabama 36830 (205) 821-8942.

CLOTH SUBSTITUTION: A few months ago it looked like Hexcell was going to discontinue production of the 7715 Unidirectional fiberglass cloth. I mentioned that if this were the case, we would test several substitute cloth styles. It has been decided to continue production of 7715 with only a slight increase in cost. Since none of the substitute cloths were direct replacements, and since 7715 would continue to be available, we have no plans to authorize any other cloth at this time.



ART STANWOOD'S FUSELAGE JIB



EAA AIRCRAFT REGISTRATION

CARD: The EAA is interested in keeping statistics on homebuilts in order that they may serve you better. If you haven't received a registration card from them please take a few minutes to send them the following information. Name, EAA number, address, Aircraft type (Dragonfly), Aircraft configuration (Canard), "N" number, Seating (2), Engine make and HP, Span (22'), Date started, Date completed, Occupation, Birthdate, Cost of project. Send the info. to EXPERIMENTAL AIRCRAFT ASSOCIATION P.O. BOX 229, HALES CORNERS, WISCONSIN 53130.

BUILDERS GROUPS: In addition to the PA group mentioned previously, you should know about a couple of other builders groups. The San Diego builders group is headed by Tom Lynch, Rt. #1, Box 495 A, Ramona, CA 92065 (714) 789-3114. The Arizona group is headed by Tom Roche, 1310 E. Donner, Tempe, AZ 85282 (602) 949-2350 or 838-3136. Contact these people if you live in the appropriate area or perhaps you should think about forming a group of your own. Bulk purchasing, sharing of tools and fixtures, and the sharing of talent can make your project much easier and quicker to build, not to mention the fun of getting together with other guys and gals who share a common interest.

AIRCRAFT MODS: We hear about a lot of things through the grape vine. Some of the most disturbing news concerns plans changes. We emphasize that homebuilders are considered to be the aircraft manufacturer and that the **DRAGONFLY** construction manual is simply a document detailing how we built our prototype. We have absolutely no control over the actions of other builders, and in fact the FAA is encouraged to exercise only limited control over homebuilders. Builders are free to build and fly almost anything their heart desires. If a builder wanted to construct his project out of papier mache, there is nothing in the rules that would prohibit that undertaking. These very liberal rules are refreshing in this over regulated world. However, it opens the door to a lot of potential trouble. The best advice we can give you is to build your aircraft exactly as we built ours. Our experience is that many seemingly simple changes turn out to be rather complex and often times don't produce the desired results. Offering a worthwhile opinion on an untested modification is just not possible. Regrettably we hear of some people making some pretty radical modifications to their projects, often without fully thinking the change through. Some of these changes are the the cause of the rapid greying of what little hair I have left. Leaving the spars out (to save building time), drastically reducing the airfoil thickness (because the builders previous aircraft had thin airfoils), and bolting the engine directly to the plywood firewall are a few examples of potentially disastrous modifications that some people are insisting on incorporating into their projects. Less serious, but equally as disturbing are the modifications suggested by

some of the unofficial newsletters that are springing up in conjunction with various builders groups. I want to make it clear that Viking Aircraft has absolutely no connection with these groups and we have no control over their actions. Any information you read in these publications should be considered strictly unofficial. While these newsletters contain lots of really good builder tips and material procurement information, you should always consult the **DRAGONFLY** for official plans changes and if you have any doubt as the prudence of any contemplated changes or procedures please consult us here at Viking.

AIR PROGRESS ARTICLE: We have been trying for as long as the **DRAGONFLY** has been around to get some independent pilot reports published in the various trade magazines. It seems that press coverage is directly related to one's advertising budget and since Viking Aircraft has elected to keep the costs to the builder as low as we can, we do not have a very ambitious ad budget. Nevertheless, as mentioned in newsletter #5, Peter Lert of *AIR PROGRESS MAGAZINE* did a pilot report last December and the results were published in the March issue of the magazine. It is worth reading since Peter is the only person to have flown both the Q2 and the **DRAGONFLY**. The photographs by Budd Davison are worth the purchase price.

OSHKOSH FORUM: As they say, "It's not too early to start making plans". I am scheduled for a forum on the **DRAGONFLY** in forum tent #2 from 12:00 to 1:15 on Tuesday August 3, 1982.

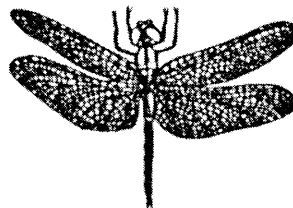
GOOF UPS: We all make mistakes and we usually hate to admit it. That's human nature, but when it comes to safety we must do what ever it takes to admit our mistakes when we make them. There have been a couple of builders who have mis-read the plans and used the wrong cloth, the wrong orientation, or the wrong lay-up schedule when making parts. The problem has been that some of these mistakes have been on major parts such as the wing or canard. If you foul up the wing skin on the second side of your wing, you have made a terrible error in terms of man hours and money. The worst thing you can do is get together with your neighbor and convince yourselves that it won't make any difference. It will! Force yourself to give us a call so that we can consider possible alternatives. Unfortunately, there is no suitable action for some errors except to reject the entire part. This isn't too difficult for a bulkhead, but it is pretty hard for me to tell a builder to throw away his entire wing or canard. But if that is what is called for, it must be done. The point is, to read and follow the plans very, very carefully and try to avoid a major blunder. If you do make one, admit it to yourself and if you have any doubts as to the proper course of action, please give us a call. You may be able to fool your FAA inspector, but you can't fool Mother Nature.

EPOXY SENSITIVITY: A few builders are experiencing sensitivity to Safe-T-Poxy. Remember that although this epoxy has very low toxicity, it is not a hand lotion. One of the reasons it is less toxic than other formulations is that it doesn't contain solvents that break down the natural oil barrier in your skin. If you use all the proper precautions but clean the epoxy off your skin with a solvent such as acetone, then you are dissolving the nasty parts of the epoxy and forcing them into your body. If you use a skin barrier cream rather than gloves during the glassing steps, at least put on a pair of throw away gloves if you clean your tools with solvent. Acetone alone isn't good for you, but when it dissolves epoxy, the mixture is something you should be really careful with. Alcohol and soap and water is the safest thing to clean up your tools with and does a pretty good job.

EXPIRED SUBSCRIPTIONS: Most people have been able to discover that the label saying "This is your last issue" means that this is your last issue and they should re-subscribe. Based on the success of this system, we will continue to notify subscribers using this simple code system. If you are a plans holder you must subscribe so as to be kept informed of any plans changes. If your newsletter does not have a label that says "This is your last issue", you may assume that this is not your last issue. Give us a call if there is any confusion.

SERIAL NUMBERS: Most of you plans holders have been pretty good about sending in your request for a serial number and releasing your names to the other builders. A few of you have not taken the time to fill out the form and send it to us. If you're in this category, please take a few minutes to fill out the form and mail it in. It helps up to keep our records straight. More importantly, if you agree to release your name, it helps build up a stronger network of builders so that you can take advantage of bulk purchase of materials, sharing fixtures and tools, etc. Even if you don't plan to start construction in the near future, send in the form anyway. You are not obligated to start construction before you get a serial number.

HAVE YOU MOVED? If you have moved, please send us your new address. It is important that we are able to keep track of each builder so that we may issue plans changes should they become necessary.



HAVE YOU SOLD YOUR PROJECT A few folks have sold their projects and most of them have notified us. If you have sold your project, or if you purchased a project from someone else please insure that we know about you and have your current address.

NEW DESIGN: Viking Aircraft has a new design in the works!! We don't like secret projects so we thought we would let you in on the details as early as possible. The project is scheduled to be launched about the same time you read this. It is 12.5' long and 4' wide and designed to carry two adults. It has room for 3 adults in a pinch or 2 adults and 2 kids. The construction is foam/fiberglass and the weight is about 60 pounds. The cost should be only a few hundred dollars without the engine. It is powered by a 4 horsepower engine, but can easily be human powered for those desiring to trade a bit of speed for lower cost. No, it isn't an aircraft. It is a light weight car top fishing boat. It's a dory/skiff type design with compound curved sides made out of 1/2" thick scored Clark foam. It might make a good starter project for those interested in composite construction, but who don't want to invest the time and money necessary to construct an aircraft. Full details of the boat, including photographs and sea trial information will be published in the summer newsletter. I expect to have kits available through one or more suppliers some time in the future, but it all depends on when I can find time to write the plans.



PLANS CHANGES: Viking Aircraft cannot enforce "mandatory" plans changes or modifications to your aircraft in the same way as the manufacturer of a certificated aircraft can. Each builder is the manufacturer of his aircraft and as such is able to heed or ignore any plans changes as he wishes (or he may heed or ignore any or all of the plans themselves for that matter). However, in the interest of safety it is strongly suggested that the changes or advice published in the **DRAGONFLYER** be carefully considered for incorporation into your construction manual and/or your aircraft.

Chapter 3, page 6, column 1, paragraph 2, Add: These lift fittings and all other metal parts that are to be bonded with epoxy must be carefully cleaned and sanded with 220 grit sandpaper. Do not paint any metal surface that is to be bonded; however, exposed metal parts should be painted with zinc chromate primer and enamel paint. Remember that all lift fittings are 1/4" thick while the wing drag fittings are 1/8" thick.

Chapter 3, page 1, column 1, paragraph 4, Add: Do not photocopy any scale drawings, especially the airfoil templates, because distortion caused by the copy process may produce unacceptable errors in the airfoil shapes.

Chapter 2, page 1, column 2, paragraph 4, Add: The layout line for the fuselage side layout is the same as water line +4.2 shown on sheet L-1. Begin the layout 2" aft of the forward edge of the foam sheet. The edge of the foam sheet is not the same as the firewall. The firewall is, in fact, at 90 degrees to the waterline. All bulkheads that appear to be at 90 degrees to WL 4.2 are indeed at 90 degrees to the waterline. Carefully follow the layout procedure on sheet L-1 so as to reproduce the fuselage side accurately.

Chapter 2, page 7, Add: Skip ahead to Chapter 9, page 8 and install the canopy restraint strap plywood inserts as instructed in chapter 9.

Chapter 1, page 13, column 2, paragraph 3, Add: Use great care to use the correct type, fiber orientation, and weight of cloth. An error in selecting the type of cloth may cause an expensive part to be rejected.

Chapter 2, page 1, column 2, paragraph 5, Add: As a general thumb rule, use medium viscosity micro as glue to join foam parts and use floc as glue to join parts that have been glassed.

Chapter 3, page 1, column 1, paragraph 4, Add: Note that the templates used to cut the trailing edges of parts such as ailerons, elevators, etc. may at first appear to produce a thicker than expected trailing edge at the "glass-to-glass" bond site; however, because of "burn down" caused by the hot wire, the upper and lower surface skins should meet at just the right angle to produce a nice glass-to-glass bond of about 1/2" (with 3/8" to 5/8" being acceptable). The exact chordwise bond dimension may vary a bit when matching the trailing edges at such places as the outboard end of the aileron. The upper and lower skins at the trailing edge should be a smooth continuation of the airfoil with no intentional reflex or other camber change at the trailing edge. A thin, straight trailing edge is the desired end result.

Chapter 2, page 3, column 2, paragraph 2, Add: The cross hatch area of the fuselage doubler layout drawing failed to print correctly in some cases. The entire forward fuselage area

forward of the canard drag spar should receive a 3/4" foam doubler. The inboard surface of the foam doubler should be flush with the inboard surface of the wooden stringers. The outboard surface of the wooden stringers should be flush with the inboard face of the basic 1/2" fuselage side. Refer to cross section A-A. Where the 3/4" doublers transition to 1/2" doublers simply sand the 3/4" doubler over a distance of several inches to produce a smooth transition that is easy to glass.

Chapter 4, page 1, column 2, paragraph 2, sentence 2, Change: The correct sentence should read "Find the BL-78.5 elevator template and position it above and ahead of the BL-117.5 canard template."

Chapter 4, page 5, column 2, paragraph 1, Add: Because the canard lift fittings will interfere with the BL-14.5 jig blocks, use the following procedure to jig the canard. Position the BL-14.5 blocks on the table at BL-14.5. Position the other jig blocks at their proper location and use a tight string, your eyeball, a straight edge, etc. to make sure that the sweep is zero, the anhedral is correct, and most importantly, that the angle of incidence at each block is correct. When everything is correct break the bondo joint and move the BL-14.5 blocks inboard toward the canard centerline so as to clear the canard lift fittings. Fasten them to the table with bondo and cut slots in your table top to accommodate the lift fittings. Then proceed with fastening the canard to the jig in preparation for glassing.

Chapter 5, page 14, column 1, paragraph 1, Add: Note that the cowling split line is not parallel to the water line and it is not on the center line of the crankshaft. The front face of the cowling may be slightly canted relative to the aft face of the spinner. The important thing is to have the crankshaft center line in the center of the cowling cutout.

Chapter A, page 1, column 1, paragraph 1, Add: Note that the material quantities on this list are the minimum necessary to do the job. Foam, carbon fiber, and metal quantities should not vary from the materials list, but first time builders can be expected to use as much as 3 gallons of extra epoxy and up to 10 yards of extra cloth. This is nothing to be concerned about as long as the extra material is waste due to lack of experience in cutting cloth and mixing the proper amount of epoxy. Do not accept a wet lay up, and resist the temptation to "beef up" any area of the aircraft. Since all materials are easily available, it best to wait until near the end of the project to see what additional materials, if any, are necessary. Overseas builders who may have shipping and customs problems might be wise to order a bit of extra epoxy and cloth just to be on the safe side.

Chapter 7, page 10, column 1, paragraph 2, Add: Two aileron pushrods connect the bellcranks on the inboard ends of the ailerons to the CS-1 motion changer bellcranks. The length of these pushrods will vary from aircraft to aircraft and should be custom fitted. Fabricate the pushrods from 1/2" X .035 2024 T3 and treat the ends as shown in Chap 7, page 4.

Chapter 7, page 7, column 1, paragraph 2, Add: Fabricate the brake actuating arm from a piece of aluminium 11 1/4" long. Make the bend as shown 1 1/4" from the rounded end.

Chapter 7, page 8, Add: The brake handle drawing should have the following dimensions. The finished overall length is 22 1/2". The narrow part is 7 1/2" long and 1" wide. The wide part is 1 1/2" wide. The notches are 1/8" wide, 7/16" deep, with 1/2" spacing.

Chapter 2, page 7, Add: the dimensions of the small plywood brake pulley inserts that go in the canard drag spar are: 1 1/2" X 1 1/2" X 1/2".

Chapter 3, page 6, column 1, paragraph 3, Add: Note that the sweep of both the wing and canard is zero relative to the shear web face. This is important.

Chapter 14, page 1, column 1, paragraph 1, Add: For further information on finishing refer to the February 1982 issue of *SPORT AVIATION MAGAZINE*.

Chapter 13, page 2, Add: The exhaust system may be either purchased from one of the engine converters or fabricated out of mild steel muffler tubing. Your local muffler shop should be able to supply you with 180 degree bends that can be cut and welded into the proper shape. The pipes should exit the lower edge of the cowling (2 on each side) at an aft facing angle. To reduce exhaust noise simply drill 3 holes, each 1/4" in diameter on the under side of each pipe. Start 1/2" from the end of the pipe and space the holes at 1/2" intervals along the length of the pipe. Insert a scratch awl in each hole and bend it aft to produce sort of a louvered effect. This simple modification will greatly reduce exhaust "bark".

Chapter 10, page 2, column 2, paragraph 3, Add: The aft edge of the cowling receives 20 evenly spaced fasteners. The inboard lip just aft of the spinner, inside the air intake, receives one fastener on each side. Five additional fasteners are used on each side evenly spaced along the horizontal split line. If desired, the Tinnerman washers may be counter sunk using a spade bit.

Chapter 7, page 13, Add: Bend the sheet metal part that incorporates the steering pushrod connection point in such a way that the pushrod end is below (rather than above) the tail spring centerline. Refer to the photographs on page 14.

PLANSOLDERS WILLING TO RELEASE THEIR NAMES #4/02/82

L. DYSON	29 LAURIE ST. NEWPORT, VIC.	3015 AUSTRALIA	PAUL V. LE BLANC	689 LOWELL ST.	01960
DAVID HOWSE	54 WARATAH AV. TULLA VICTORIA	3043 AUSTRALIA	RICHARD C. JONES	84 IRVING ST.	02054
C. SZYMANSKI	3 GAYNOR STR. BACCHUS MARSH	VIC. 3340 AUSTRALIA	LOUIS DILLENBECK	93 COPELAND ST.	02154
GEDGES J.P. BOUCHER	7727 STANLEY ST., BURNABY B.C.	V5E-1V7 CANADA	TOM DAVID	BOX 541	02554
DR. R. BRYCE	DPT. OF ED. ADM., U. OF ALBERTA	EDM., CANADA T6G-2G5	WILLIAM E. FARRELL	1660 EAGLEVILLE R.	02878
DAVID BUCKINGHAM	UPR. WOODSTK. RPT. NEW BRUNSWICK	E0J-1T0 CANADA	DANIEL A. MOORE	45 TREMONT ST.	02886
HOWARD KOHLIS	4577 DARWIN AVE. BURNABY B.C.	V5G-3E7 CANADA	R. WAYNE GORRELL	8 BIRCH ST.	03038
DON MAC KAY	375 MAIN ST. WOODSTOCK, ONT.	M4S-1T4 CANADA	ERRAL K. DOM	64 N. MAIN ST.	03079
D SEYLER #15 BEDRES RD.	R01 PRINCE GEORGE, BC	V2N-2H8 CANADA	OCTAVIUS C. SMITH	#8 MATHES COVE RD.	03824
JACK J. SMITS	250 OML DR., OTTAWA,	K1V-9J6 CANADA	STANLEY KALISHMAN	12 APPLE ORCHARD RD.	03867
UMITECH MFG. INC.	P.O. BOX 986, WOODSTOCK, ONT.	M4S-8A4 CANADA	LLOYD LAFLIN	RT. #1 BOX 321	05465
HANK VAN BAKEL	BOX 36 DUBLIN, ONTARIO	M0K-1E0 CANADA	LESTER A. HEIM	RD 2 BOX 108 E	05491
VENTURE SERVICES	54 GRANDVIEW ST. S., OSHAWA,	ONT. L1H-7C4 CANADA	WESLEY H. VOORHIS	192 MIDFIELD RD.	07067
CHARLES J. WATSON	969 ST. CLAIR PKY., MOORETOWN,	ONT., CANADA N0N-1M0	RICHARD BAUMAN	RD3 BOX 672, BEEHER CHURCH RD	07461
STEEN JONSSON	KAERHOLMEN 1, 5270 ODENSE. V	DENMARK	IRVING GITLIN	76 MARSHALL CONCOURSE	07735
KEITH FATHERS	7 ALICIA WAY, WICKFORD, ESSEX	S511 BPP ENGLAND	JOEL C. MASLAND	R.D. #1, 34 KNOLL CT.	07747
PETE E.J. STURGEON	COULSON LANE, BRANDON, SUFFOLK	LP270NT, ENGLAND	LITTLE RIVER AIRCRAFT	RD 5 BOX 600	08922
JACQUES BERNARD	AVENUE DE L'ESTOCADRE LA BARRE	DES MONTS, FRANCE	ROBERT M. GREENE	300 EAST 34TH ST.	10016
ROGER DAIKREUX	54, RUE DE CHARCHES, 92420	VAUCRESSON, FRANCE	PETER LOFGREN	BOX 140 BEACH AVE.	12130
GILLES DENEUX	8P 86, 80104 ABBEVILLE,	FRANCE	ROBERT J. BELL	R.D. 1 BOX 194	12871
J.F. EBANGE	31 RUE DESBROU LAVAU, ST. LEGER	S/CHOLET, FRANCE	RICHARD W. HOCH	1530 HENRY RD.	13140
JACKY JANERON	49150 LA LANDE CHASLES	FRANCE	GROVER BENNETT	7941 DENNIS RD.	14006
MONSIEUR H. MOISAN A.C.L.A.	36 RUE CHAIGNEAU, 56100	LORIENT, FRANCE	WILLIAM E. HANNA	62 MILL STREET	14150
JOSE PELEMAN	CHAUSSÉE DU 8015, 80100	ABBEVILLE, FRANCE	JOSEPH P. TOPOLOSKY	R.D. #1	15848
PHILIPPE SOULAS	85 RUE DU CHATEAU D'EAU, 80100	ABBEVILLE, FRANCE	RALPH W. VOIT JR.	R.D. #1	16143
JOHN TAYLOR 170 RUE DU	GAL DE GAULLE, 78740 VAUX/SUR	SEINE, FRANCE	JERRY MIKLOSH	19 N. JEROME ST.	18103
GOITHALF GROEZZINGER	HINDENBURGST. 9, D-7251	WEISSACH, W. GERMANY	JON J. JAVORNICKY	427 CHURCH ST.	19002
PETER HAURS	05470 ANDERNACH, AUF SCHNITT48	WEST GERMANY	WILLIAM M. SHOMACRE	1903 CAPT KETTLE RD.	21136
WERNER HEISEN	GARTENSTRASSE 32, D-4703	BOEMEN, W. GERMANY	RICHARD W. CALVERT	3 N. SOUTHWOOD AVENUE	21401
LOTHAR KORBER	KLEINSTR. 50 8060	MUNCHEN 70 GERMANY	ERIC C. CLAPP	4036 JUSTINE DR.	22003
KNUT MARTIENS	AUF DEM BRINK 92, 2806 OYTEM I	GERMANY	GEORGE SAUNDERS	13121 MADONNA LANE	22033
CAROLA SCHILLEN	76 FREIBURG, LICHTENBERG STR11	WEST GERMANY	CHARLES B. HAYES	RT. #2 BOX 213	23139
ALFRED SCHMEIDER D-763 LAHR/	SCHWARZWALD, TRAMPLERSTR. 45ABC	POSTFACH2127, GERMANY	A.H. STANWOOD	1005 MICHAELWOOD DR.	23452
HENRY BROUMER	KAARDER #70, 1625TL HOORN	HOLLAND	J.F. GREEN	1804 WINTER PARK CT.	23456
THOM SIJS BURCHTENLAAN 100	5235 6L 'S HERTOGENBOSCH	HOLLAND	DONALD E. HEWES	11 DONNA RD.	23606
W. V.D. WAALS	KENNEDY BLVD. 42, 1931XD, EDMOND	AAN ZEE, HOLLAND	THE HOBBY SHOP	12 MEADOW DR.	23606
GILBERT MEYER	1 CITE DE L'AEROPORT, 1523	KEHLEN, LUXEMBOURG	DR. DANIEL MC ARTHUR	714 WAUGHTON SHOP	27107
PAUL WOLFF	1827 HOBOL	NORWAY	RON HLOZANSKY	660 S.W. BROAD ST.	28387
INGVAR HOFF	74 KRUCHLINE RD. AUCHINLECK	AYRSHTRE, SCOTLAND	F. LOVELACE APT. #1003	2498-1 ATLANTA RD.	30080
A.B. CAMERON	P.O. BOX 1913, KEMPTON PARK	1620 SOUTH AFRICA	JOHNNY AND CYNTHIA TAYLOR	3640 PEACHTREE CORNERS W.	30092
J.A. MULLER	59 GLADIATOR STR. KEMPTON PK.	1620, REP. S. AFRICA	RONDA A. FERLAND	3292 CLAIRMONT N.	30329
S.P. VAN WYK	PL 3168, SKATTEGARDEN, S-52050	STENSTORP, SWEDEN	RONDA SCHUMAN	1240 CRAWFORD WAY	31332
BERTIL CARLSSON	SKATTMASTARVAGEN 11, S-12236	ENSKEDE, SWEDEN	CHARLES W. SMITH	1001 CELIA DR.	31907
STANISLAW KOZICZYNSKI	C STRITMATTER SCHOENEGGEGEG		ARTHUR E. HAYNES	RT. #3 BOX 1118	32425
C STRITMATTER SCHOENEGGEGEG			DANIEL SPURLOCK	4730 YACHT HARBOUR DRIVE	32504
			MIKE CARDINALE	1653 WILLARD MORRIS	32570
				2102 S.W. ARABIA ROAD	32905

W.C. ROFER	917 E. WHITIRE DR.	MELBOURNE, FL	32935	JEFF KRALL	BOX 328, PICKELL, PERRIS STATE	816 RAPIDS, MI	49307
GEAN C. JUNGBINGER	P.O. 1231	FORT PIERCE, FL	33450	PAUL T. HANKINS	RT. #5 BOX 4	NEWAYGO, MI	49337
W.E. FISHER	320 CLARK LANE	JUPITER, FL	33458	G.A. PSCHAK	830 N. DARLING	FREMONT, MI	49412
ERNEST L. DE GIACOMO	4852 PINETREE DR.	LAKE WORTH, FL	33463	JON A. ADDICOTT	16322 PINWOOD	SPRING LAKE, MI	49456
NORMAN F. RULE	10 VASSAR CT.	PORT RICHEY, FL	33568	RICHARD HATFIELD	2356 DALSON	TWIN LAKE, MI	49457
MICHAEL YARBROUGH	13315 BOVETTE RD.	RIVERVIEW, FL	33569	ARTHUR H. BUTCHER	82 BRANDYME LANE	BAYLORD, MI	49735
CHARLES MORGAN JR.	P.O. BOX 40866	ST. PETERSBURG, FL	33743	MID PENINSULA ELECTRIC INC.	STAR ROUTE BOX 192	FOREST LAKE, MI	49832
ROY A. SULLIVAN	202 CARVER RD.	ARAB, AL	35106	KERMIT DIRKS	1415 MAXWELL	AMES, IA	50010
BRIAN J. GORDON	RT. #2, BOX 108	MADISON, AL	35758	KENNETH RANTA	P.O. BOX 184	BERWICK, IA	50032
WILLIAM LOGUE	923 LAKE PARK CIRCLE	GALLATIN, TN	37066	DICK R. WILLIAMS	R.R. 1 BOX 284	COLFAX, IA	50054
G.A. DE PHRIEST	P.O. BOX 110312	NASHVILLE, TN	37211	JEFFERY C. LORTIMOR	RR #1, BOX 52	EARLHAM, IA	50072
PAUL W. PHILLIPS	RT. #1 BOX 158	HELENWOOD, TN	37755	LARRY L. ELMBS	RR #2 BOX 77	WINIERSSET, IA	50273
D. LIMOSAY BOVD	RT. #7 BOX 360	NEWPORT, TN	37821	RAYMOND ELLIS	2416 E. DOUGLAS	DES MOINES, IA	50317
DEMP E. BANNERMAN	6195 GARDEN COVE	MEMPHIS, TN	38134	JOHN M. STEELE	320 1/2 MAIN ST.	LEDAR FALLS, IA	50613
GERALD COX	9725 OLD 3RD ST. RD.	VALLEY STATION, KY	40272	DALE A. FRANK	907 EIGHTH ST.	CHARLES CITY, IA	50616
O.K. HOCKER	3731 SPRINGDALE	PADUCAH, KY	42001	DOYLE E. SELEY	521 NORTH 17TH ST.	ESTHERVILLE, IA	51334
M.A. MAZZON	8309 PORTER CENTRAL	SUNBURY, OH	43074	WILLIAM SEELEY	RR#1	SHELLSBURG, IA	52332
TOM RUGGLES	2758 NOE BIXBY RD.	COLUMBUS, OH	43220	DAVID FLAMAGAN	833 HIGH ST.	OCONOMOWOC, WI	53066
CHARLES BOKROS	376 CLENSON ST.	SAHANNA, OH	43230	EDGAR E. DASSOW	233 BUTTERNUT ST.	WEST BEND, WI	53095
JAMES E. MALLY	1812 GLEN ELLYN PARK	TOLEDO, OH	43614	JAMES RETZLAFF	1406 JEFFERSON ST.	WEST BEND, WI	53095
RONALD L. GEESSE	3640 MONA DR.	ZANESVILLE, OH	43701	HAROLD K. STEPHENS	3240 S. QUINCY AVE.	MILWAUKEE, WI	53207
WILLIAM TABLER	479 CLEVELAND ST.	ELYRIA, OH	44035	RON BOGAN	P.O. BOX 10165	MILWAUKEE, WI	53210
DR. JOHN SPANDE	13732 OAK BROOK DR.	NORTH ROYALTON, OH	44133	WAYNE HOMER	RT. #1	MUSCODA, WI	53573
E. DAVID LITKE	4000 S. MARIONING RD.	ALLIANCE, OH	44601	EDWIN B. SWAN	217 HOWARD ST.	WAUPUN, WI	53963
LOWELL R. WEAVER	1815 ALDEN S.W.	CANTON, OH	44706	B.K. ENTERPRISES	935 MODEL RAILROAD	RICE LAKE, WI	54868
RALPH F. BAEHR	1106 E. WARREN ST.	BUCTRUS, OH	44820	FRED F. MEYER	1814 AUGUSTA ST.	RICE LAKE, WI	54868
LEO F. SHERIDAN	660 ALAYNE AVE.	GALION, OH	44833	GREG RAPS DMV	1214 PARK ST.	ANDOKA, MN	55303
COURTNEY BRYAN	8875 D06 L06 RD.	DAYTON, OH	45414	BRUCE HEBEISEN	RT. #2 BOX 208-41	CHASKA, MN	55318
MALCOLM LOVELACE	1840 HILLSIDE AVENUE	SPRINGFIELD, OH	45503	RUICK GENTZ	9523 YORKSHIRE LANE	EDEN PRAIRIE, MN	55344
BOB VIDLET	RR 2 BOX 200 B	DELPHOS, OH	45833	BRAD CHAMBERLAIN	200 STATE HWY 5 W	WACONIA, MN	55387
FRANK W. MC ENTEE	3985 HICKORY LANE	PENDLETON, IN	46064	DOUGLAS ESHELMAN	6344 VINCENT AVE. S.	MINNEAPOLIS, MN	55423
HERBERT COLLINS	5855 E. 38TH ST.	GREENWOOD, IN	46142	LARRY MEYERS	9201 3rd ST. NE	BLAINE, MN	55434
JOSEPH H. PING	RR #7 LONE PINE RD	INDIANAPOLIS, IN	46218	MARCEL KOBBERDAHL	4181 BIRCH VALLEY RD.	DULUTH, MN	55811
GARY WILLSON	10333 HICKORY VALLEY DRIVE	COLUMBIA CITY, IN	46725	DOUGLAS HILGENDORF	RR #1	WELCOME, MN	56181
CHARLES H. SCHMIDT	3686 MOORLAND DR.	FORT WAYNE, IN	46815	GENE UNDERLAND	RT. #4 BOX 202	WILMAR, MN	56201
GARLAND A. MORRISON	3313 HARVARD	MARION, IN	46952	CHUCK PRILL	RT. #1	LONG PRAIRIE, MN	56347
GARY KONRAD	16832 SALEM	ROYAL OAK, MI	48072	WAYNE ULVESTAD	117 6th ST.	VOLGA, SD	57071
ROBERT VERRIEST	357 E. WOODLAND	DETROIT, MI	48219	WARREN J. YELEY	1509 HILLSIDE LN.	BOZEMAN, MT	59715
JIM BLASTON	8893 W. MURPHY LAKE	FERNDALE, MI	48220	F.A. LANGSTON	WEST SHORE ROUTE	POLSON, MT	59860
BRUCE SHEPPARD	1448 SYLVAN GLENN	VASSAR, MI	48768	RALPH S. SWANSON	3820 RUGEN	GLENVIEW, IL	60025
BUCK BUCHANAN	1550 EPLY	OKEMOS, MI	48864	RON PRICE	242 HIGHLAND ROAD	GRAYS LAKE, IL	60030
ALLEN R. PERKINS	2312 WINTERS DR.	WILLIAMSTON, MI	48895	RICHARD P. VEACH	7511 JOHNSON RD.	HERBORN, IL	60034
GERALD C. WEAVER	24676 PEAVINE ST.	KALAMAZOO, MI	49002	RICHARD SCHAEFER	1914 SIENA DR.	LAKE VILLA, IL	60046
WARREN WALSHLEGER	218 N. ROWLAND ST.	CASSOPOLIS, MI	49031	DR. ARNOLD L. WAGNER	2527 THE STRAND	NORTHBROOK, IL	60062
RICHARD WHITEMAN	2293 BARBER RD.	CASSOPOLIS, MI	49031	LEE COLLINS	3234 NORTHERN AVE.	WAUKEGAN, IL	60085
EDWARD L. DEPEN	RT. #4	HASTINGS, MI	49058	H.F. SWANK	11635 W. 33RD ST.	ZION, IL	60099
DALE A. HANSEN		HILLSDALE, MI	49242	ROGER A. BUCHWEITZ	334 BLACKHAWK DR.	ROSELLE, IL	60172

ROBERT L. WALKER	310 NORTH 5th ST.	ST. CHARLES, IL	60174	COL. M.E. MORRISON	RT. #1 BOX 103	THRALL, TX	76578
KENNETH N. CAMPBELL	722 WEBLEY	SCHAUMBURG, IL	60193	COL. IRA D. HALE JR.	RT. #1 BOX 231	NEST, TX	76591
SORHAB KERMANJ	727 ERIE ST. NO. 3 E	OAK PARK, IL	60302	GENE H. ARTHUR	318 CENTER	BROWNWOOD, TX	76801
DEAN M. LIEBERSTEIN	1352 SMITH RD.	LEMONT, IL	60459	AIR EQUIPMENT AND REPAIR	4618 W. SHEPHERD	HOUSTON, TX	77018
DAVID S. SNYDER	46W635 DOLLY LANE	BIG ROCK, IL	60511	JOHN H. GREER	6522 ROLLING MILL	HOUSTON, TX	77088
NORBERT J. NEUMAN	990 N. LAKE SHORE DR	EVERGREEN PARK, IL	60641	CHARLES L. WALL	9403 CHAPEL PINE CT.	SPRING, TX	77379
NICK J. MUSTARI	3730 W. 97TH STREET	CHICAGO, IL	60647	JACK W. MOON	985 DUGAS	BRIDGE CITY, TX	77611
JAMES A. KUTZA	2138 W. MC LEAN AVE.	CHICAGO, IL	61008	STEVEN J. BEIRKIRCH	1426 5TH AVE.	PORT ARTHUR, TX	77640
M. WAYNE WILLS	2551 SQUAN PRAIRIE	BELVIDERE, IL	61008	RICHARD NELSON M.D.	RT. #1 BOX 60 A	IOLA, TX	77861
JAMES A. SIEBEL	1238 NATIONAL AVE.	ROCKFORD, IL	61103	BOB LOKEY	604 WILSON ST.	EDNA, TX	77957
DONALD G. LORENZEN JR.	P.O. BOX 655	NORMAL, IL	61761	SAYLE J. HARPER	815 HIGHGATE	UNIVERSAL CITY, TX	78148
WILLIAM LAND	2 E. PARK ST.	SULLIVAN, IL	61951	PHILLIP CLINE	818 W. CAND	EDINBURG, TX	78539
CHARLES R. MYERS	P.O. BOX 186	CUTLER, IL	62238	TOM WOLFE	RT. #1 BOX 277	LOCKHART, TX	78644
WAYNE S. BRIDGMATER	RURAL ROUTE #2	DAWSON, IL	62520	JERRY R. INGRAM	8405 SLANT OAK DR.	ROUND ROCK, TX	78664
BUDD L. WILKINSON	132 11TH ST.	LINCOLN, IL	62656	BILL BROWNING	3612 QUETTE DR.	AUSTIN, TX	78754
JAMES L. MILLER	2100 HOOD ST.	SPRINGFIELD, IL	62703	DICK KINCHELOE	1206 MORROW	AUSTIN, TX	78757
DR. WILLIAM L. WALLING	610 N. COURT ST.	GRAYVILLE, IL	62844	STEPHEN K. GREINER	11201 SAGE HOLLOW DR	AUSTIN, TX	78758
JAMES B. FLEMING	907 TROUT	JOHNSTON CITY, IL	62951	BILL J. HUFF	2625 15TH AVENUE	CANYON, TX	79015
JOHN K. STRUTMAN	14848 RALLS DR.	BRIDGEFORD, MO	63044	RANDY HUMPHREYS	2102 W. 1st ST.	AMARILLO, TX	79106
ANTHONY D. PETRUSO	8602 600FELLOW BLVD	ST. LOUIS, MO	63147	MICHAEL P. BAUDHUIN	BOX 250 1ST AND MAIN	SUDAN, TX	79371
WERNER, RICHARD	44 OAK CREEK DR.	ST. CHARLES, MO	63301	ARTHUR GRANT	5531 1ST PLACE	LUBBOCK, TX	79416
JACK E. WOLF	10 816 OAK	ST. PETERS, MO	63376	L. JAMES CHERRY	708 NORTH 6TH	ABILENE, TX	79601
MICHAEL E. UDING	71 CHADWELL LANE	SIE. GENEVIEVE, MO	63670	GUY W. DAVIS	18605 EAST LOYOLA PLACE	AURORA, CO	80013
WAYNE WHITFORD	RT. #1 BOX 15530	HOLDEN, MO	64040	JOHN FILIPI JR.	4345 SOUTH EAGLE CIRCLE	AURORA, CO	80015
ROBERT SHERER	1509 HANCY LANE	LIBERTY, MO	64068	CREE FETTERMAN	5411 W. 103RD AVE.	BROOMFIELD, CO	80020
NICK DUNBAR	6204 ARLINGTON	RAYTOWN, MO	64133	RICHARD C. SAEFFE	919 W. WILLOW ST.	LOUISVILLE, CO	80027
TIM G. DUCK	9600 E. 89TH	KANSAS CITY, MO	64138	GEORGE L. HITE	3560 W. 89TH PLACE	WESTMINSTER, CO	80030
WINSTON PERKINS	P.O. BOX 2317	JOPLIN, MO	64801	J. A. MULLAN	P.O. BOX 88	DENVER, CO	80201
D.C. BRADLEY	RT. #2 BOX A-82-44	OSAGE BEACH, MO	65065	ROBERT A. RUEHLE	5595 W. COLORADO PL.	LAKEMOOD, CO	80226
DE WAYNE FLINT	2812 BURWOOD DR.	COLUMBIA, MO	65201	DAVID LUND	5594 EAST JEFFERSON	DENVER, CO	80237
GARY S. ADAMS	RT. #3 BOX 73	FULTON, MO	65251	ART WILSON	2875 LA GRANGE CIRCLE	BOULDER, CO	80303
SAM SYMONDS	RR4, HIGHWAY 54 S.	FULTON, MO	65251	V.O. AUGUSTIN	25566 PLEASANT PARK HIGHWAY	CONIFER, CO	80433
JIM WILSON	7624 MARTY	OVERLAND PARK, KS	66204	RICK MILLER	1313 W. CO. RD. 60 E	FORT COLLINS, CO	80524
R.E. RODGERS JR.	P.O. BOX *R*	LYNDON, KS	66451	BILLY D. MC CONNELL	P.O. BOX 703	GRAND JUNCTION, CO	81502
PAUL W. WHALEY	1424 FINNEY	EL DORADO, KS	67042	ELMER W. SMITH	CORE LAB. BOX 1469	RANGELY, CO	81648
JAVELIN AIRCRAFT CO., INC.	1980 EASY ST.	WICHITA, KS	67330	SUNSHINE AVIATION INC.	P.O. BOX 2594	POCATELLO, ID	83201
THOMAS E. LARSON	R.R. #1	ST. EDWARD, NE	68660	HERBERT E. ELROD	BURLEY MUNI AIRPORT	BURLEY, ID	83319
J.F. WRIGHT	909 W. PINHOOK	LAFAYETTE, LA	70503	RICHARD WARDMAKER	5860 TARGEET ST.	BOISE, ID	83709
JOHN LIPRIE	RT. #3 BOX 88	LAKE CHARLES, LA	70605	ROBERT L. JOHNSON	185 S. 500 W.	LOGAN, UT	84312
JIM WATT	122 S. PINE ST.	HARRISON, AR	72601	JERALD R. JOHNSON	1086 HUDSON ST.	OGDEN, UT	84404
MILBURN ADAMS	BOX 803	ANADARKO, OK	73005	DARREN W. NELSON	P.O. BOX 279	ESCALANTE, UT	84726
FRANK RUTH	1703 NORTHCREST	NORMAN, OK	73071	LARRY M. SHEETS	2528 N. 48TH PLACE	PHOENIX, AZ	85008
RAY SEMPLE	3328 BROOKSIDE DR.	MIDWEST CITY, OK	73110	RAY COLEMAN	2548 E. INDIANOLA	PHOENIX, AZ	85016
JOHN R. BEHM	8226 DOUGLAS AV. #311	DALLAS, TX	75225	EDWIN NILSEN	654-N 58TH ST.	MESA, AZ	85205
JAMES W. CLEM JR.	8240 GREENHOLLOW CR.	DALLAS, TX	75240	ROCHE, TOM	2030 EAST ELLIS DR.	TEMPE, AZ	85282
LEWIS D. NIXON	7746 ALTO CARD DR.	DALLAS, TX	75248	JOHN T. ROMBARD	1310 E. DONNER	TEMPE, AZ	85282
BOB BLACK JR.	105 WOODVIEW TERRACE	HURST, TX	76053		609 CALLE ADOBE	GOODFEAR, AZ	85338

CLAYTON E. ORGAM JR.	232 BERRIDGE DR. S.W.	SIERRA VISTA, AZ	85635	M.R. ELSWICK	2100 KINGSBRIDGE WAY	OXNARD, CA	93030
PAUL W. REESE	74 NELSON DR.	SIERRA VISTA, AZ	85635	JERRY D. HUSTON	2851 WAGON WHEEL RD.	OXNARD, CA	93033
PHIL BALAMONTE	1815 NEWTON PL. NE	ALBUQUERQUE, NM	87106	ROB PERRY	5010 S. "C" ST.	OXNARD, CA	93033
RICHARD P. WOODSUM	P.O. BOX 422	WILLIAMSBURG, NM	87943	M. THIELMANN	4819 LA GAMA WAY	SANTA BARBARA, CA	93111
MARK JOHNSON	4517 ALADDIN	LAS VEGAS, NV	89102	GARY CALDWELL	11971 AVENUE 274	VISALIA, CA	93277
ED JOHNSTON	P.O. BOX 1642	KINDEN, NV	89423	ROBERT L. CHENOWETH	939 COUNTRY HILL RD.	SANTA MARIA, CA	93455
TIMOTHY J. BRAIDY	BOX 124	OROVADA, NV	89425	RICHARD JOHNSON	45254 LORIMER	LANCASTER, CA	93534
CHARLES R. GREGORY	3637 WEST 139TH ST.	HANTHORNE, CA	90250	D.E. MEDINA	2255 WEST AVE. M-8	LANCASTER, CA	93534
PAUL GREEN	11852 WESTERN AVE.	STANTON, CA	90680	DAVID M. FELICIO	319 CEDAR ST.	MILLBRAE, CA	94030
IGOR GARRA	5800 SOUTH ST. #163	LAKEWOOD, CA	90713	JOHN S. BRADBURY	13866 SKYLINE BLVD.	WOODSIDE, CA	94062
MICHAEL S. SAMICKI	1817 PESCADORES AVE.	SAN PEDRO, CA	90732	WALTER MC CLARY	13096 SKYLINE BLVD.	WOODSIDE, CA	94062
ARVID HOLMBERG	159 N. SUNSET PLACE	MONROVIA, CA	91016	RANDY PRUETT	1239 VINCENTE ST. #68	SUNNYVALE, CA	94086
GERALD RUSSELL	1047 E. HUNTINGTON DR. #A	MONROVIA, CA	91016	GEORGE C. SIEBEL	422 S. HILL BLVD.	DALY CITY, CA	94104
RALPH D. VESPER	10555 HALBRET AVE.	MISSION HILLS, CA	91345	CAROL J. MATHENS	1999 BEACH PARK BLVD. #37	FOSTER CITY, CA	94404
WILLIS L. WILCKEN SR.	1979 MARLOWE	THOUSAND OAKS, CA	91360	BILLY THOMAS	729 EL RANCHO DRIVE	LIVERMORE, CA	94550
NOLAN SCOTT	4751 ABBEYVILLE	WOODLAND HILLS, CA	91364	ROBERT C. COOK	2140 OLYMPIA DR.	MARTINEZ, CA	94553
FRANK KOPECKY	13550 GILMORE ST.	VAN NUYS, CA	91401	TONY STINNETT	1211 MAYTING LANE	SUITSUN, CA	94585
MARTIN EARL ROACH	6039 AMETHYST	ALTA LOMA, CA	91701	R.H. WURKER	2761 CAMINO DEL REY	SAN JOSE, CA	95132
JULE GEIGER	1290 BRENDA CT.	UPLAND, CA	91786	R. WESTGORDLAND	24740 SOMLES RD N.	ACAMPO, CA	95220
DENNIS WESTLAKE	5432 HORSE RIDGE WAY	SONITA, CA	92002	ED VONGEHR	16466 WILLOW CREEK	OCCIDENTAL, CA	95465
ROBERT GRISCOM	5357 DON MIGUEL	CARLSBAD, CA	92008	J.B. SMITH	825 COLE RANCH RD.	AUBURN, CA	95603
BRUCE FELIX	239 OXFORD	CHULA VISTA, CA	92011	DAN PALMER	94 ISHT CIRCLE	SACRAMENTO, CA	95919
J.M. HOOGERVORST	2550 E. VALLEY PARKWAY #109	ESCONDIDO, CA	92027	HENRY BLUM	P.O. BOX 387	BROWNSVILLE, CA	95926
BOB FLINT	1131 S. MISSION #408	FALLBROOK, CA	92028	ALLEN R. KENNEDY	RT #4 BOX 525 BK	CHICO, CA	95991
MC KINLEY H. EDMUND	9500 HARRITT RD. #121	LAKESTIDE, CA	92040	DENNIS STADEL	1200 PHILLIPS RD.	YUBA CITY, CA	95991
C.E. CANTERBURY	1730 E. 11TH ST.	NATIONAL CITY, CA	92050	MICHAEL DAUGHERTY	2087 PIU KAA	KAPAA, HI	96746
R.C. GENTRY	15505 MARKAR RD.	POWAY, CA	92064	GILBERT K. TOTE	94-469 LIJANU PLACE	WAIPIAHU, HI	96797
WALTER B. NICOLL	14142 SEGUNDO CT.	POWAY, CA	92064	WILLIAM T. AMBROSE	3620 S. W. HILLSIDE	PORTLAND, OR	97221
THOMAS E. LYNCH	12573 MC FERON RD.	POWAY, CA	92064	MALCOLM H. ZIRGES	P.O. BOX 5	LOGSDEN, OR	97357
EDWARD L. JOHNSON	R.R. #1 BOX 495 A	RANDONA, CA	92065	STANLEY GREEN	2150 LAURA ST. #44	SPRINGFIELD, OR	97477
JOHN MAITZEL	9043 DAVENRICH ST.	SPRING VALLEY, CA	92077	PAUL A. TAITPALE	P.O. BOX 471	BELLEVIEW, WA	98009
R.D. RING	1509 MARTA AVE.	SPRING VALLEY, CA	92077	RON HOSKINS	17420 82ND CT. N.E.	BOTHELL, WA	98011
JAY DEMENT	3288 FAIR OAKS LANE	VISTA, CA	92077	JIM LONG	24420 43RD AVE. S.	KENT, WA	98031
DANIEL M. SOPER DMD	3369 E. VISTA WAY	SAN DIEGO, CA	92083	DOUG HARVEY	5116 WILLOW RD. N.E.	HANNSVILLE, WA	98340
RANDY JARVIS	6131 RANCHO MISSION RD. #318	SAN DIEGO, CA	92108	DAVID J. HUSWICK	194 FASOLA RD.	SEQUIM, WA	98382
R.L. CREEDON	P.O. BOX 9784	SAN DIEGO, CA	92109	REID KEARL	BOX 181 RT. #3	DEER PARK, WA	99006
WAYTEK (CUSTOMER SERVICE)	4712 MT. BIGELOW DR.	SAN DIEGO, CA	92111	RICK LAYTON	251 NORTH MAIN	COLVILLE, WA	99114
DENNIS HINTON	9045 BALBOA AVE.	SAN DIEGO, CA	92112	JOHN E. BEVEN	10410 E. UPRIVER DR.	SPOKANE, WA	99206
FRANK TONKO	17308 LIBERTAD DR.	SAN DIEGO, CA	92127	CLIFFORD C. TICE	7511 TRENTON LANE	ANCHORAGE, AK	99502
HUGO HUNZIKER	15315 ERIE RD.	APPLE VALLEY, CA	92207				
JAMES M. MOE	766 W. 19TH	COSTA MESA, CA	92627				
RODNEY CRAIN	1801 PORT CHARLES PL	NEWPORT BEACH, CA	92860				
SPIERS L. COOK	1751B WILLOWOODS DR.	ANAHEIM, CA	92807				
JACKSON S. MC PHERSON	90 REDWOOD CIRCLE	VENTURA, CA	93003				
TERRY NICHOLS	445 S. ERMA ST.	VENTURA, CA	93003				
NATHAN RAMBO	8796 HENDERSON RD.	VENTURA, CA	93004				
	1158 BAYWOOD AVE.	CAMARILLO, CA	93010				

Chapter 6, page 13, Add: The overall dimensions of the OS-3 bellcrank arms are 6 3/4" X 1".

Chapter 1, page 7, column 1, paragraph 1, Add: Safe-T-Poxy may vary quite a bit in color from batch to batch. This is nothing to worry about. Also, if the epoxy is exposed to ultra violet light during the curing cycle, it may exhibit dramatic color changes. The epoxy may change from amber to a rather dark green under some circumstances. As long as the total exposure to bright sunlight is kept to a minimum (less than a week), no damage will occur. Of course, the less exposure to UV before the parts are painted, the better.

Chapter A, page 1, Change: Make the following changes to the 4130 steel tubing quantities. 7/8 X .083 X 13"...3/4 X .120 X 5"...3/4 X .058 X 22"...5/8 X .120 X 18"...5/8 X .065 X 15"...5/8 X .049 X 12"...1/2 X .058 X 2"...1/2 X .035 X 90" (including hot wire saw parts)...3/8 X .058 X 5"...1/4 X .035 X 2". All other quantities remain the same.

Chapter 7, page 11, column 1, Change: Move the first sentence of paragraph 4 and add it to the last sentence of paragraph 2.

Chapter 1, page 6, column 2, paragraph 2, Add: Make sure that the 100% Polyester peel ply is the type of material that is shiny with a hard finish. The type with a soft or fuzzy finish will stick to the lay ups. Always test your peel ply to be sure it will come off a fully cured surface. If you have any doubts about your peel ply, purchase the proper material from one of the aircraft materials suppliers. Under no circumstances use peel ply over large areas simply to obtain a smooth surface. Peel ply should be used only on future bond sites.

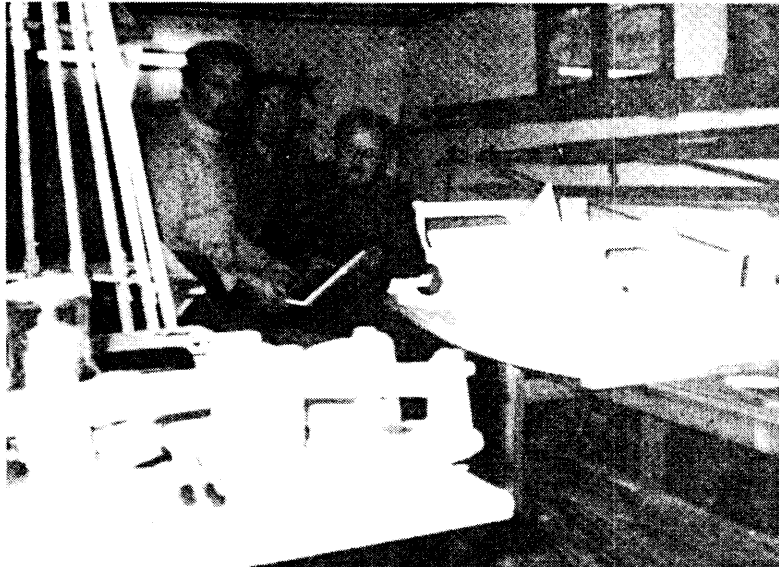
Chapter 2, page 7, Add: The width of the upper seatback bulkhead 7" above the lower edge is 40.2".

Chapter 14, page 4, column 2, paragraph 4, Add: The overall contour of the airfoils must be perfectly smooth. Bumps caused by paint trim lines are sufficient to degrade performance and are not permitted.

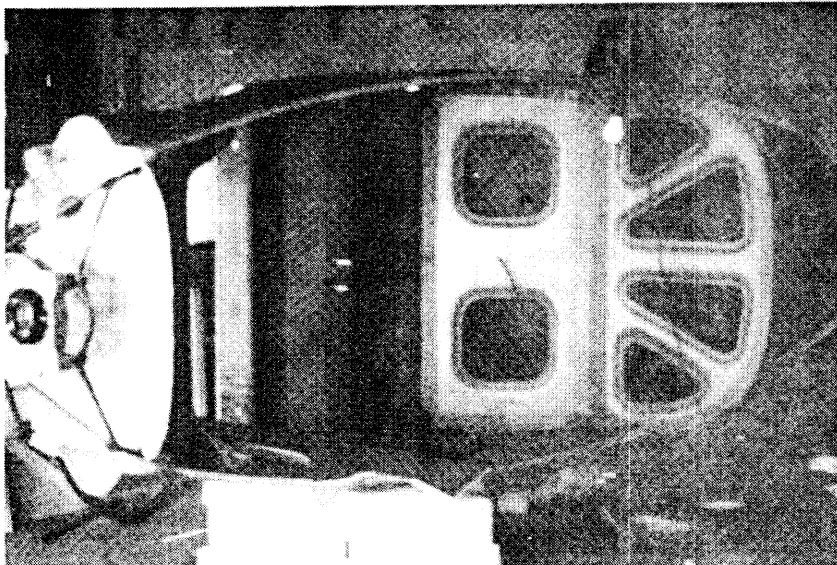
Axle Size Change: The proper main wheel assembly is an Azusa wheel and brake with ball bearings (not tapered roller bearings) that utilizes a 5/8" diameter X .120" wall 4130 steel axle. Various erroneous references in the plans may show either a 3/8" axle or a 1/2" axle. Make appropriate changes throughout the plans to reflect the proper 5/8" axle and 3/4" X .058" axle spacers. Pages that will be affected by this change are L9; L11; chapter B page 1, page 2, page 5 and pages A-1 and A-2. The proper wheel assembly is available from Wicks Aircraft Supply. The tail wheel assembly shown in Chapter 7, page 13 requires a piece of steel tubing (or bushing stock) 3/8 X .058 X 1.9" to serve as a bushing between the axle bolt and bearing if the bearing is 3/8" ID. Use a piece of 1/2 X .120 tubing if your bearing is 1/2" ID.

CANARD BUMPS: The latest issue of *SPORT AVIATION MAGAZINE* contained an article about the first plans built Q2 to fly. We have had a lot of inquiries concerning the difficulties the author had after painting a paint trim stripe on his canard. Several people have told me that they know this gent personally and he is not the type to cry wolf. In other words, he had genuine controllability problems. The question these people all asked was, "will the **DRAGONFLY** exhibit the same problems under similar circumstances?" The answer is no. I have not flown the Q2 so I cannot comment on its handling difficulties, but I can say that the **DRAGONFLY** should not be expected to exhibit handling problems under the same conditions. The **DRAGONFLY**, like other aircraft that have smooth contours, will support laminar airflow. Part of the reason the **DRAGONFLY** has such good performance is because this laminar flow means low drag, which translates into performance. This situation is quite unlike the non-laminar airflow most pilots of low performance aircraft are familiar with. Until the recent crop of composite homebuilts came on the scene, the only people who dealt regularly with laminar flow were the sailplane folks. They have been exploiting the low drag associated with laminar flow for years and are very familiar with the smooth contours necessary to support such flow. Bugs, rain, or any other type of surface roughness will ruin this laminar airflow and cause an increase in drag. Under most circumstances this simply causes a decrease in performance and perhaps a minor trim change depending on the configuration of the aircraft in question. The **DRAGONFLY** falls into this category. In other words, it doesn't fly as fast with bugs or rain on the airfoils and will exhibit a minor pitch trim change. This is fully expected and presents no problems at all. On the other hand, if an aircraft is so marginally powered that it depends on laminar flow for an acceptable climb rate, then the loss of this laminar flow and the associated drag rise can be expected to produce performance that is not acceptable and/or downright dangerous. The same comments hold true for an aircraft that may have marginally acceptable handling characteristics. Loss of laminar airflow (especially on one surface only) might alter the handling characteristics to such an extent so as to produce a dangerous situation. Whether other Q2 aircraft will be dangerous to fly with paint trim on the canard leading edge, I cannot say. Perhaps this was an isolated situation, perhaps not. However, I should point out that putting such a stripe on your **DRAGONFLY** is a very poor idea because it will decrease the performance a good deal, but it should not prove dangerous.

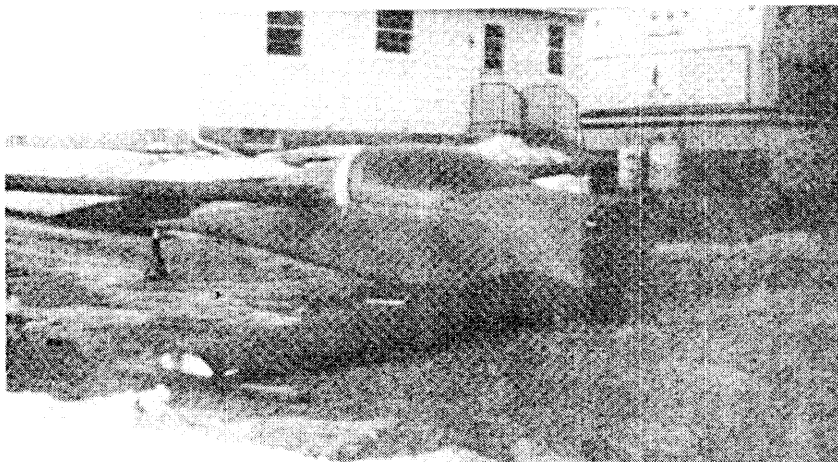
ARE YOU READY TO FLY? A number of people are expected to fly before the next newsletter is published. If you are almost ready to fly, please give us a call. We're anxiously awaiting the flight of the first plans built aircraft. If there is anything we can do to help out, let us know.



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PERFORMANCE SPECIFICATIONS

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

1600 cc ENGINE

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

1835 WITH STARTER

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