

DRAGONFLY BUILDERS AND FLYERS NEWSLETTER

THE OFFICIAL VOICE OF DRAGONFLY BUILDERS ALL OVER THE WORLD

Volume 93

September / October 2001



Justin Mace departs for home early Sunday morning.

By Don Stewart

Ottawa2001 had its highs and lows this year - mostly highs. Jerry Kennedy started off the weekend by arriving later than he expected and failed to close his flight plan on time. This prompted a phone call to the Ottawa FBO from the Fed who wanted to know if anyone had seen Jerry and was he all right. Jerry arrived at Ottawa minutes after the call

and quickly straightened them Flight Service guys out.

Ottawa was the year of cracked engine blocks. Again Jerry Kennedy found a serious leak in his VW engine late Friday. Then by happenstance, Fred Weibe did the same with his VW engine Saturday morning. Both planes sat in

the Saturday sun while their JB Weld 'fixes' were allowed to cure. Fred's repair held enough for his trip home, but Jerry's was a way more serious crack and resulted in a landing short of his destination for some engine work.

Continued on next page

Ottawa2001 began to look like a joint DF & Q event once again, with an almost equal number of Dragonflies and Q's from around the country.

'project' in order to enter the GPS Pilot's Drawing (sorry Jack).

The weather cooperated quite nicely for the event, pretty much Severe Clear for the weekend.

Forums started off early Saturday with Jimmy Masal presiding over the

Ottawa2001 was also the year of the engine Forums. Steve Bennett from Great Plains (a GREAT supporter of Ottawa, year after year) talked about his VW based engine product line and answered about a million technical questions from VW aircraft engine enthusiasts in attendance. Doug Humble talked about his installation of his Type 4 engine in his Q, under the watchful eye of Steve Bennett.



One of the two cracked engine cases is warmed by a high power light for the proper curing of the soon to be applied JB Weld.

It also was nice to have a couple of other canard wing aircraft on the tarmac this year, 2 VariEZ and 1 LongEZ. And we were again visited by several Experimental non-canard aircraft from around the Kansas City area including a Yak, several ultralights, a powered hang-glider, a Pulsar, Lancair (drool), and an Europa Coupe. Jack Houston flew in from Arizona with his 152 spam can and attempted to pass it off as his

Q-Builders forum and Spud Spornitz hosting the Dragonfly Builders Forum. There is never enough time for all the stuff that gets talked about during these two meetings.



Wayne Ulvestad's beautifully installed 2200cc 80hp Jabiru.

Wayne Ulvestad fielded questions about his Jabiru powered Dragonfly - an amazingly light and small engine for its horsepower.

Conspicuous by its absence was any Subaru engine powered aircraft. Jon Finley's Soob Q is flying but he couldn't make it to Ottawa, and Justin Mace's Soob DF is now a Continental powered Dragonfly.

Justin explained a little about his Dragonfly's evolution from an 1835 VW, through the Subaru Legacy engine burning mogas, to the O-200 in his plane now. He's been smiling ear-to-ear since he started flying the O-200 engine. (But he still won't talk to me after I awarded his plane the 'Boat Anchor' Award at Ottawa some years back for being the heaviest airframe!)

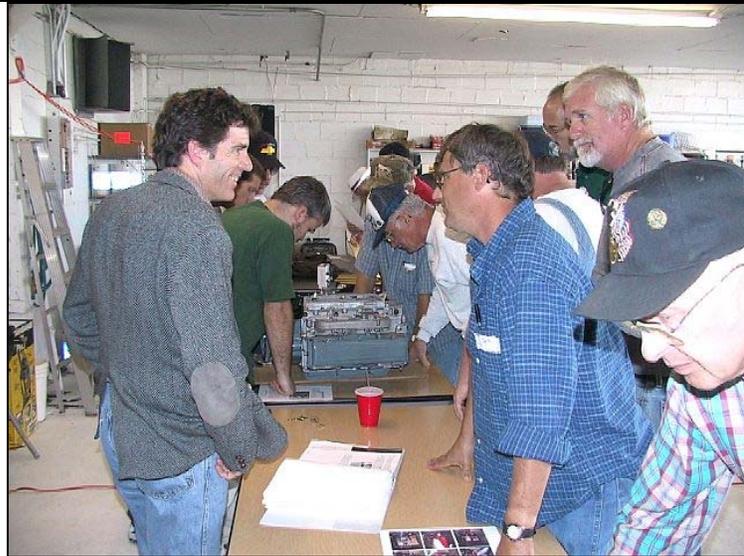
Continued on next page



Justin Mace presented an informative talk about his electronic fuel injected O-200 installation.

Standing in for William Wynne at the Corvair Confab (at the very last minute) was Mark Langford, who drove in and did an outstanding job mesmerizing the audience with his thorough knowledge of the Corvair engine and its airframe applications. Pat Panzera (who definitely knows how to spit-shine an aluminum engine case!) assisted Mark, and demonstrated his vast knowledge of the DF and Q application of the Corvair engine.

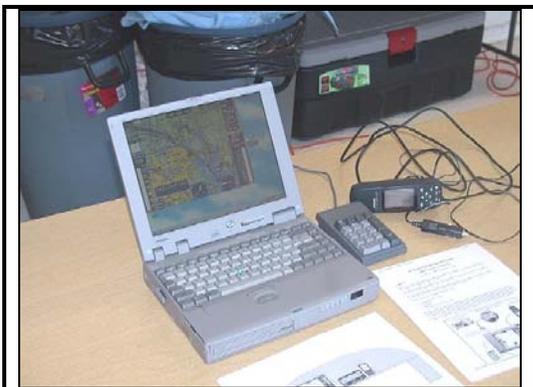
Dave Morris, from Dallas TX, talked about his Glass Cockpit concept and demonstrated that, indeed, the Windows operating system will NOT fail two years in a row.



Mark Langford, (left) KR builder extraordinaire, presented the Corvair forum in the place of William Wynne who presented the past two years. William was not able to attend due to injuries suffered in a crash which destroyed his Corvair powered Pietenpol. Cause of the crash was a stall/spin after the engine quit due to carb ice.

on his Q which minimizes skidding on crosswind landings.

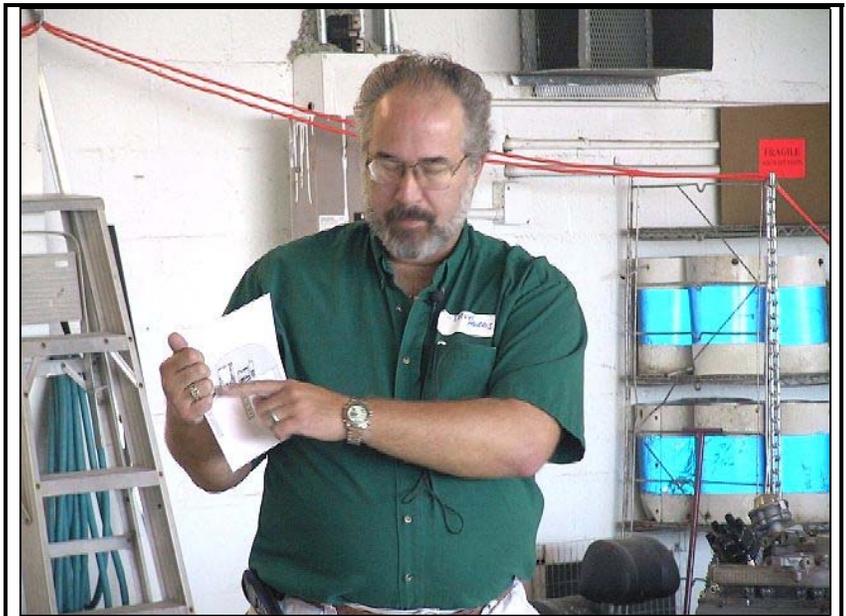
The tailwheel is equipped with a friction lock which keeps the tailwheel tracking the rudder throughout its travel. In the event of heavy crosswind forces acting on the tail during landing, the tailwheel breaks away from tracking the rudder and casters to track the fuselage instead of skidding across the runway. It also makes for a neat turning radius during parking. Bob also answered questions about his slide-back canopy sunshade, which he modified from a Van's RV third party product.



A working version of Dave Morris' "Glass Cockpit"

Dave cleverly separated a ThinkPad laptop computer's keyboard from its LCD display, and mounted the display on his instrument panel. He has written software to read GPS information (as well as sensors monitoring engine and cockpit functions) and represent this data on multifunction graphics on the LCD, including a moving map!

Dave has found a website that will provide all the updated sectional charts



Dave Morris presenting some of the details of his Glass Cockpit
For more info, see: <http://www.MyGlassCockpit.com>

he needs for his moving map for a monthly fee of under \$4.

Bob Farnum, who flew in from Livermore CA in his Q200, spoke about his full castering tailwheel installation

See the website:

<http://home.hiwaay.net/~sbuc/journal/shade.html> for more info on this shade. It might work for a Dragonfly as well as a Q.

Continued on next page

Jim Patillo, who traveled with Bob Farnum as a flight of two from Livermore CA, discussed the events that led up to the rebuilding of his canard after a routine preflight inspection revealed a crack. This one event may have exposed a serious quality control problem with the tube spars commonly found in Q canards. Hypothesis has it that the jig that the factory used to test each canard spar tube may have actually created a weak spot in otherwise good spars that could not be detected. Jim thinks that even if a spar were damaged by the factory, the problem may not ever manifest itself in a canard failure if, during construction, the spar tube was mounted with the damage (or weakness) positioned anywhere but straight up or straight down. Jim suggests that Q owners add the checking of the canard for cracks be a formal part of preflight.



A bunch of glass on the taxiway to begin the performance run.

We missed Bob Nuckolls this year. The Sept 11 attack, and the resulting upset to General Aviation, forced Bob to extend a consulting contract that otherwise should have been over in time for Ottawa2001.

Alan Thayer, Paul Fisher, Terry Crouch and Bob Farnum did a bang-up job organizing the Performance Run

While there, Pat interviewed William on video tape to be shared with everyone at Ottawa2001. It was an outstanding interview, something that Pat can be proud of. Everyone got a huge lift seeing and hearing William after his accident. William talked about the accident, its causes and what he learned from the event. The video played to a packed house (FBO's office) twice Saturday afternoon and evening. That video is being circulated now. If you are not in the chain to view a copy, contact Pat Panzera to get on the list. It is important for everyone to hear what William has to say.



Mark Snow of Carlsbad NM presenting. See the classified ads in this issue for Mark's ad, as he's selling his Dragonfly.

Mark Snow, who flew his O-200 DF from Carlsbad NM, talked about his experiences with hand propping his engine. Mark sustained a serious hand injury (he's fine now, thankfully) from hand propping his O-200 which had just recently been converted from batteryless magneto to electronic ignition. Mark wants everyone to know that 'Timing' is everything if you find yourself having to hand prop an electronic ignition engine.

("this is NOT a race"). For the first time in many years, Bob Malachek DID NOT win (but then, this is the first year that he did not enter!).

Pat Panzera visited with William Wynne on Pat's way to Ottawa2001.



Drew at the stick of "X-Plane"

Continued on next page

Andrew Aurigema (pictured on the previous page) and his wife (pictured with the "gals") drove from Sunny FL to expose all of us skeptics to his new EOS RAPTOR, a distant reflection of the Dragonfly, which he and his silent (and invisible) partner designed and built and are about to test. Drew brought a couple of video tapes which also showed to a packed house Saturday evening.



Ok, so Drew's plane wasn't quite ready to make it's debut at Ottawa 2001 But this "spy photo" should whet your appetite for it's hoped for appearance at Ottawa 2002

the DF, culminating in an engineering platform on which design changes can be flight tested safely. Quite an accomplishment, but then Drew eats math models for breakfast (did I mention that he really IS a rocket scientist?).

Debbie Stewart, once again led her wildly successful 'Significant Others' Forum, where she and like-minded spouses get together and snicker at the silly things we do and say as pilot/builders.

The first tape, just for Pat's benefit, showed Drew cranking up his Lycoming engine on the Raptor. It was deafening, just deafening, much to Drew's glee and delight.

The second video was more of a design review, detailing all the things that make the Raptor a Raptor and not a Dragonfly - solenoid-operated doodads, motor-actuated thingies, anti-servo (and uncle-servo) controls, gull-wing doors and latching equipment, food service area, bathrooms, seating for 100. Wow! My head swims. Without question, this is a labor of love for Drew. You can tell he's pretty proud of his baby.



The Debbie Stewart gang.

Throughout the day, there was a computer set up running X-plane, a painfully accurate simulator, which Drew has modified to expertly simulate Dragonfly flight characteristics. Drew says that X-Plane is really more of a 'what if' kind of program, sort of a spreadsheet disguised as a flight simulator. As more and more actual DF pilots 'fly' the simulator and report anomalies that they encountered, the X-Plane model can be fine tuned to



The banquet. Yes, Debbie (center stage) is actually standing up.

come closer and closer to exactly emulating the flight characteristics of

The women always enjoy the opportunity to get to know one another and air any concerns that they may have about flying, in general, and 'their' pilots, in particular. That's all I know about what goes on behind those closed doors, except that I hear way too much laughter.

The Awards Dinner was a bittersweet experience this year.

Continued on next page

On the one hand, there was the great camaraderie of friends breaking bread together, folks standing up and introducing themselves to friends they hadn't met yet, pilots boldly competing with one another at making engine noises and lucky winners claiming great prizes: like the two AirMap 100 GPS's, and the ICOM A-4 Transceiver.



Awards Banquet.

By the way, the **Ottawa2001 Video** is now available. The Ottawa2001 tape is around 6 hours long and includes almost everything that occurred at Ottawa this year. The cost will be the same as last year, \$26 ppd in the US, and US\$36 for foreign orders, for a VHS-EP NTSC tape. Visa/MC/Checks are accepted. Ordering information is available at my Dragonfly Website

at <http://www.si-inc.com/dragonfly>

Don Stewart



Charlie Johnson preparing to give a ride.

last Ottawa that I was organizing. I told myself that I've had a good run, that I've done a creditable job and that someone else should have the opportunity to take this event 'their' way. But the fact is from the first day after I rescued the event from becoming roadkill that first year, I had grown to feel,

much like Drew and his Raptor, that this was 'my baby', and letting go was really rough.

My only consolation in letting go of Ottawa is that I will continue to organize the Mountain States Fly-In in Laughlin NV. This event, while not yet the equivalent of Ottawa, provides an opportunity for folks, who cannot get themselves or their canard wing experimentals to Ottawa, to share in some of the value of checkrides and hangar-flying with other builders/flyers. **MountainStates2002 will be held on the weekend of April 19/20** (just after the IRS has taken its bite out of you - a time to celebrate!). The Mountain States Fly-In is at:

<http://www.si-inc.com/MSFly-In2002>



With the use of a digital "Smart Level" Dave Morris measured and recorded the incidence of as many Dragonflies as he could. He's since gathered performance data from these aircraft and will be presenting his findings in the next newsletter issue. ---- Editor



We owe a debt of gratitude to Don Stewart for stepping up and doing such a great job these past 3 years.

All through the frivolity, however, my thoughts were tempered with the knowledge that this was going to be the

The following is a list of several helpful hints for those of us still building. These have been compiled by Chris Gentry, who maliciously went through the newsletters in order to collate them in to one article.

--- Editor

HELPFUL HINTS FROM THE BUILDERS

The following Helpful Hints were originally posted in the DRAGONFLYTE Newsletters and was contributed by fellow builders and myself back in the 1980s. Oldies but goodies.

1) It is very important to read the entire chapter before you pick up any tool or material. As you read you may want to take some notes such as sequences, references, measurements etc.

2) Chapter 2 page 4 paragraph 1- To make it easier to taper the doublers down to the flat surface apply masking tape to the flat area you don't want sanded. When the taper is feathered out remove the tape-

3) Chapter 2. page 2. par. 2- Remember the measurements on the sides are perpendicular (90°) to the WL4.2 Layout Line.

4) Chapter 2 page 6 par. 1- When tapping aluminum it helps to put wax on the cutting tap.

5) Chapter 2 page 8 par. 2- "See cross section drawing for details" This may be found in chapter 4 page

6) Chapter 2 pages 7&8- Read carefully and note that the upper and lower seat back bulkheads receive one ply of 6 oz. Bi and one ply of 10 oz. Bi.

7) When you build your ratio scale be sure you make good reference marks of where the cups should be centered every time. Also double-check that your ratio scale is accurate by using identically weighted units such as B B's,

small nuts, etc. (44/100 = 11/25)

8) Remember that all metal that is cut or drilled must be de-burred. By hand use an oversize drill bit to de-burr small holes.

9) When cutting the canard shearweb, do not glue the billets together in the inner area where the hot wire will cross. Block up the sides to keep the billets together. Shelf braces clamped to the table and 1/2" X 10" particle board works well.

10) Make sure that any metal or other material that you purchase is the correct size by you personally measuring it first before you use it. Don't depend on any printing that might be on it.

11) When you want to make a contour cut to fit the inside of the fuselage area, lay a piece of foam straight edge against the area to be fitted. Then use a miter marker, which can follow the contour and mark the foam.

12) When you are preparing aluminum, do not use steel wool. Steel wool makes microscopic scratches, which in time can become cracks. Scotch-Brite makes an ideal finish for zinc-chromate.

13) Don't write on aluminum with a pencil because a graphite mark can become a crack in time.

14) Chapter 5, pages 5 & 6 (re Forward fuselage cover jig): Do not "hack saw, band saw, cut slits, steam bend or laminate the wooden stringers". Instead, go to your nearest do-it-yourself store - Grossman, Handyman, etc., and buy seven 10' lengths of 1/2" P.V.C. pipe. Get the thin wall, 125 P.S.I, irrigation type. This pipe is 3/4" O.D. Cut all seven pieces in half. You now have 14 5' pieces. Throw one away. Start by nailing the first stringer to the formers along the centerline of the jig. Use 4D 1-1/2" box nails. The slim ungalvanized nails work well. Next are the two outboard stringers. They should be placed as high up on the points of the formers as possible. For a really nice job use a rattail or better yet, a small half round file on the sharp edge of the

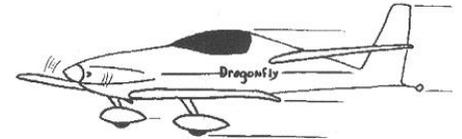
formers where the stringers will be attached. Next, evenly space and nail the remaining stringers.

15) Instead of gluing in the longeron stringers and nailing and gluing the doublers to the pre-curve, simply glue all the doublers first on a flat surface, leaving room for the stringers. Then elevate the front of the fuselage side and glue in the stringers; then clamp with spring clips. It's much easier and faster.

16) Instead of marking all the fiberglass cloth, lay a piece of aluminum strap down, measure to it, and cut an inch from the side of it.

17) Use \$50 penny bags filled with sand as weights for cutting foam cores.

18) I purchased my motor mount and I found that angle of the attach points are slightly different than the 3/4 x 3/4 ood longerons, I attached the aluminum angles to my motor mount and then clamped the angles in place over the reinforcing ply which took up the variation in the angle.



Gene Arthur

From: Mark Snow Tue Dec 4, 2001
Dragonflyer's, With sadness I must report that on Saturday 12/01/01 we lost fellow dragonfly builder and pilot Gene Arthur to a self inflicted gun shot wound. He will be missed

I received this note from gene's brother, as a reply to my request for some sort of obituary. ---Editor.

Pat, here is a summary of the obituary about Gene. I have omitted the list of survivors. Also, I am adding some stuff about him and the dfly that you probably already

Continued on next page

know. I did not know his wife had called Mark Snow. I knew he was very sick and depressed. I just could not get him to go with me to the ranch or fishing or really do anything. We avoid the "should've's, but the most glaring is "we should have made him get psychiatric care" and take his medicine.

"Graveside services for Gene Hilburn Arthur, 72, of Brownwood, were held Sunday, December 2, 2001, in the Greenleaf Cemetery with the Rev. Rick McClure officiating under the direction of the Davis Morris Funeral Home.

Mr. Arthur died Saturday, December 1, 2001. He was born January 18, 1929, in Comanche, Texas to John Hilburn and Ernestine Atwood Arthur. He married Patsy Smith in Laredo, Texas on September 13, 1954, the day he received his Air Force wings at the Laredo flight school. He served in the U.S. Air Force during the Korean Conflict. He was preceded in death by his parents and son, Rex Glenn Arthur."

Pat, Gene was the builder of his Dragonfly N29KK which he constructed in the back of his ladies ready-to-wear store in Brownwood. Many of his friends and I watched and helped with this project. I helped him cut the many pieces of foam, the lay ups, and the hours of sanding. We all watched in disbelief as he fabricated the landing gear struts in the molds he had built.

You may know of the first VW engine he put in it. Not good enough, so he managed to get a Continental 200. You know of the modifications he made, the precautionary landing he made in New Mexico flying with Mark Snow, and the subsequent sale of the plane to Mark.

What you can imagine is the pride, joy, fun, and excitement he got from flying it.

He buzzed me several times as I fished in Lake Ivie near here. He made several trips to Ottawa fly-ins, and I can't remember when or how many. I do know, at one time, he had logged the most hours of all the dflyers, over

1600. You were one of his buddies via e-mail, as were Nate Rambo, Dave Morris, Drew, and others I can't remember.

You should know that Gene was dyslexic, and had a terrible time reading and writing. He told me he never would have made it in the Air Force had it not been for "visual education". This contributed to his loss of interest in his computer and the email correspondence as his depression got worse. I started his page on the net and his inability to work with it frustrated him to no end. I helped him write some of the email about his modifications that got lots of arguments started. Finally, he realized he was in over his head and quit the computer entirely. This probably was one of the turning points in his continuing depression.

I could go on and on with this. I appreciate your thoughts and your emails. This should give you enough stuff for the newsletter and I appreciate your doing it.

Oh, I got back my email to Andrew Aurigema. He was the "Drew" in sunny Florida that invited all of you to visit. I hope he is still around to argue with.

Gene will be missed by all who knew him.

For those of who were unaware of Gene's precautionary landing, I found an NTSB report on the internet.

NTSB Identification: LAX01LA089
Accident occurred Thursday, February 01, 2001 at Marana, AZ
Aircraft: Arthur Dragonfly, registration: N29KK
Injuries: 1 Minor.

This is preliminary information, subject to change, and may contain errors. Any errors in this report will be corrected when the final report has been completed.

On February 1, 2001, at 1934 hours mountain standard time, an amateur-built experimental Arthur Dragonfly,

N29KK, lost engine power and made an emergency forced landing southeast of Marana, Arizona. During the landing, the aircraft encountered rough terrain.

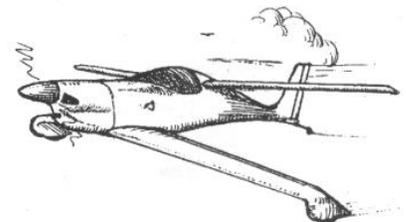
The airplane sustained substantial damage; however, the certificated private pilot, the sole occupant, received only minor injuries. The airplane was being operated by the pilot/owner as a personal flight under 14 CFR Part 91 when the accident occurred. The local flight originated from the Marana Northwest Regional Airport about 1910. Visual meteorological conditions prevailed at the time and no flight plan had been filed.

The pilot told Safety Board investigators that he had been in cruise flight at 4,000 feet msl when the engine quit. He said that he verified that the electric fuel pump switch was in the "on" position. He then moved the fuel mixture control to the "full rich" position and engaged the starter. After his unsuccessful attempts to start the engine, he made an emergency forced landing in open desert terrain. During the forced landing, the forward canard was damaged.

As long as we are on the subject of loosing our friends...

Ken Brock

Ken Brock (gyrocopter fame and metal fabricator) was killed yesterday when the tailwheel of his T-18 broke on landing, veered off the runway at El Mirage and flipped over. He suffered a broken neck. Marie had minor injuries and got out through the canopy when help arrived, which was very soon after the crash.





Getting Started

by Andrew Aurigema

Ottawa '01 has come and gone and some of us were not able to secure real dragonrides. (OK..... so they don't make a D-fly big enough for this pudgy boy). For us stuck ground bound, the digital DragonFlys were far more accommodating. The simulation was up and running for several hanger pilots to get in a little stick time. So I will stop sputtering about resolution and start talking about what it takes to fly the simulation.

There are three programs that come with the X-Plane CD (or web based updates).

The biggest program is the X-Plane.exe. It's rather large and is the simulator itself. This is what you need for flying. It assumes you have all the support files you need already built and ready for use. If you use one of the "canned" aircraft that come with the simulation, the you already have everything you need right on the CD. For the 50 or so planes Austin provides, you just go fly.

The second is Plane-Maker: It's used to create or edit simulations that are used in the main program.

The third is Part-Maker: It should be called "airfoil-properties" because it is only for making airfoils that the main program can understand.

X-Plane.exe is what you need to get flying. The others are very important,

but only if you want to mess with some physical parameter of the simulation.

To fly a simulated Dragonfly, you will need to have (3) files on "your" hard drive. They do not come with the X-Plane CD or the web based Downloads. You will have to go to the (free) download site http://groups.yahoo.com/group/x-plane_x2 and get the files you need. You will need: [Mark II F#1150 @62_4.acf](#), [eppler 1212.afl](#) & [gu25-5\(11\)8 mod.afl](#)

Put the ACF file in the X-Plane subdirectory that has all the Experimental aircraft and the AFL files in with the airfoils data. The program will call them up as needed and you can be DragonFlying in 3 minutes. That is it. Just get the files you need, put them where the program is expecting them to be and call up the Dragonfly model from inside the program.

Not as good as the real thing, but then what could be?

Drew in sunny Fl.



In this issue of the DBFN, there wasn't quite enough room for the classified section, so I had to leave it out. My sincerest apologies to those who have placed ads, and to those who look forward to reading them. There have been no additions, subtractions nor changes from the previous edition.

You may have read in this issue, in Don Stewart's report on Ottawa, that he will no longer be organizing the annual fly-in. He made the announcement during the awards banquet on Saturday evening during the fly-in.

At that time, Don asked that someone should step up and take the opportunity to host the fly-in, and to continue the tradition of our little Kansas gathering.

At this writing, our very own Spud Spornitz has offered to pick up where Don has left off, and host the next tandem wing fly-in. There has been some discussion on moving the location from the Ottawa airport, to another local airport which might be more agreeable to work with.

It seems that the costs of utilizing the facilities at Ottawa is on the rise, with no end in sight. I'll report more as the details develop, but be assured that the annual tandem wing fly-in will happen, it will be in late September, and it will be in relatively the same location.

And as of this writing, William Wynne, "The Corvair Authority", who was injured mid 2001 in a fiery accident with his Pietenpol, plans to attend the Ottawa 2002 event and make the Corvair presentation.

Again, on behalf of the Dragonfly community, I'd like to thank Don Stewart and his wonderful wife Debbie Stewart for all the time and energy they put in, to ensure that we all had a great time. Each and every year they hosted the event was a total success in our eyes.



Gene Arthur, January 18, 1929 - December 1, 2001.

DRAGONFLY
BUILDERS & FLYERS
NEWSLETTER

Po Box 1382
Hanford California 93232-1382

First Class Mail