

# Corvair Powered Dragonfly's

by Jeffrey A. LeTempt

Using a Chevrolet Corvair engine in an airplane is nothing new. It was only natural for experimental aviation enthusiasts to modify this 6 cylinder air cooled horizontally opposed engine for use in an airplane when the Corvair was first introduced back in the 1960's. Just about any airplane that will fly with a Continental O-200 is a candidate for a Corvair.

Mr. William Wynne from Port Orange, FL has been developing the Corvair engine for airplane use for many years. He is known as the Corvair Authority. William offers just about everything you need to convert a Corvair engine for use in an airplane, from conversion manuals, to detailed videos, to engine parts, to complete firewall forward engine packages. The Corvair weighs about the same as a Continental O-200 and according to William's very detailed dynamometer tests, a bone stock 2,700 cc Corvair has more power than the O-200. William has a very detailed web site at [www.flycorvair.com](http://www.flycorvair.com)

It was just a matter of time before a Corvair powered Dragonfly took to the sky. There have been several in the works and now there are two Dragonfly's flying behind a Corvair engine. The first Dragonfly to fly with the Corvair was Chuck Ufkes from Ocala, FL. As I understand it, Chuck did have a problem on his first flight with the new Corvair installation, but it really had nothing to do with the engine. It was most likely a case of vapor lock due to the gascolator being too close to the exhaust. Chuck flew his plane to Sun 'N Fun 2005.

The Corvair installation on Chuck's plane is quite impressive, his attention to detail is obvious. Here is what William had to say about Chuck's airplane.

*Here it is, the first Corvair powered Dragonfly. Built by Chuck Ufkes, Ocala, Florida. The aircraft was formerly powered by a VW engine. The engine is super clean, a very nice looking installation. In the photo above, you can see a number of modifications that Chuck went into great detail developing. Most of this was driven by Chuck's desire to retain as much as possible of the VW*

(Continued on page 2)

Inside this issue:

Corvair Powered Dragonfly's	1
Fly-In Update	6
Peter Flueckiger's Swiss Dragonfly	9
Editor Ramblings	11
Classifieds	12

(Continued from page 1)

*cowling. Chuck really liked the original cowling shape, wanted to stay with it and was willing to take the time to modify the engine to fit it. The propeller is by Ed Sterba, the carburetor is an Ellison EFS-3A. It has cast iron logs for exhaust. In my estimation, the installation was a good candidate for the Best Auto Conversion Trophy. However, Chuck, being a true sportsman, declined to have his plane judged because he is co-chairman of the Flight Ops at Sun 'N Fun, and felt that throwing his hat in the ring would be inappropriate. William Wynne*



(Continued on page 3)

(Continued from page 2)

The second Dragonfly to fly with Corvair power was Les Laidlaw's. Les had a very nice MK-II (actually a MK-I with inboard landing gear) with a 1835 VW, but he wanted more power (insert grunting sounds here). Les used William Wynne's conversion manual and is very happy with his new engine. The first flight with Corvair power resulted in an off-field landing, but once again it really had nothing to do with the engine. Les had an automotive electrical master solenoid failure. The ignition system on Les's Corvair requires electrical power, so this solenoid failure turned Les's Dragonfly into a glider.

During the Corvair conversion, Les had not flown his Dragonfly in 15 months and his first landing was going to be dead stick on a road. Les stuck the landing and quickly had the plane flying again after he replaced the solenoid. Les reported while he was replacing the solenoid a policeman came up to see what was going on. Les explained the situation and the policeman called for another unit to block traffic when he took-off.



Les chose to go with a modified displacement Corvair called the Big Boy. The engine utilizes different cylinders that result in a 3,100 cc displacement that should produce about 120 HP at 3,200 RPM. Les now has several hours on his Dragonfly with the Corvair installed and is reporting 158 knot IAS cruise speed. Les wanted to put a bigger propeller on his Dragonfly so he built some new steel MK-II gear legs that would allow him to use a 60" propeller. Les has 12" of propeller clearance when in take-off attitude.



Next up is my good friend Dave Morris. A couple of years ago I ran across a stock pile of old Corvair engines. Before I went over to look at the engines I contacted Dave and asked him if he wanted me to pick up an extra engine for him. I was heading down

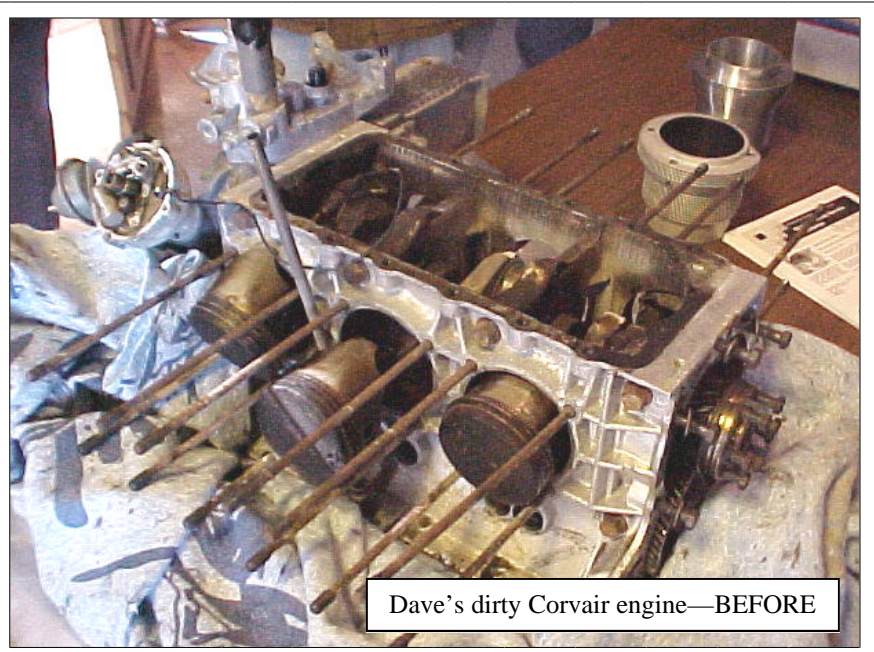
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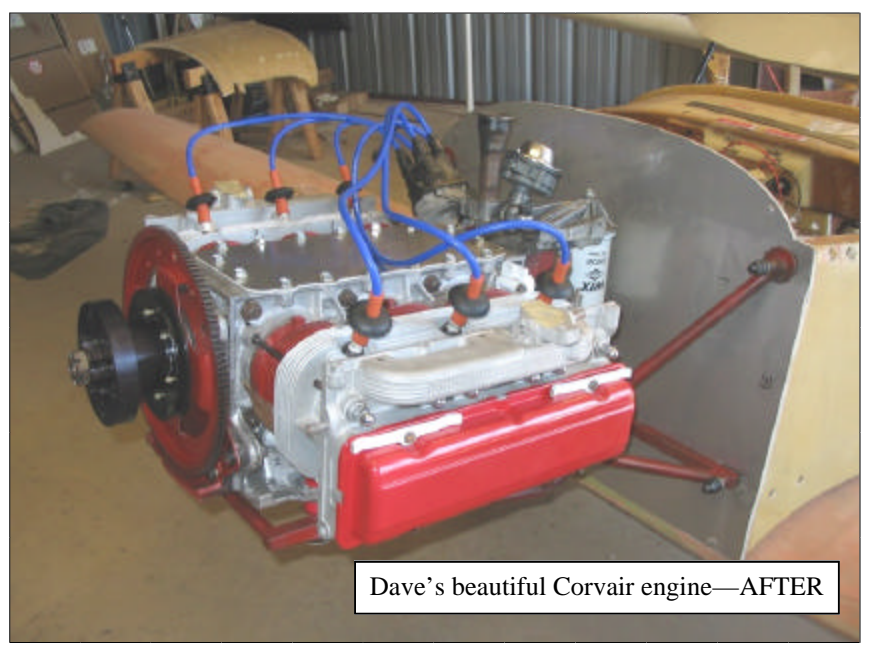
to Texas for a business trip and could deliver the engine right to his house. I ended up buying three engines....all three were seized. I did not have a lot of time to mess with the engines before I left for TX, but I did tear one engine down to see if I could see what was wrong. As soon as I got one head off it was obvious what was causing the problem. There was a bent rod, the piston was in pieces, and the cylinder was cracked. Of course the cylinder head was also damaged (could have been repaired).

I quickly tore down as much as I could on the second engine just so I could get Dave a cylinder, connecting rod, cylinder head, and piston. The following week I delivered Dave his really dirty greasy, but complete late model 110 Corvair. Little did I know that the engine I took to Dave was by far the best of the three engines. I ended up going out and buying another engine to build for myself (still sitting in the shed).

With the assistance of William, Dave now has a running Corvair engine for his MK-III. William conducts what he calls Corvair Colleges. Usually a good full weekend of Corvair engine building where builders can bring their engine and have the Corvair Authority staff check things out. Very often a builder shows up with a



Dave's dirty Corvair engine—BEFORE



Dave's beautiful Corvair engine—AFTER



box full of parts and before the weekend activities are completed they have a running engine. Dave participated in a Corvair College held at San Antonio, TX back in 2003.

In the photo on the left you can see Dave's engine running on William's test stand. This is a huge milestone in the building process. Dave is going to have a really nice Dragonfly with a lot of very innovative designs. You can follow Dave's progress on his web site located at [www.davemorris.com](http://www.davemorris.com)

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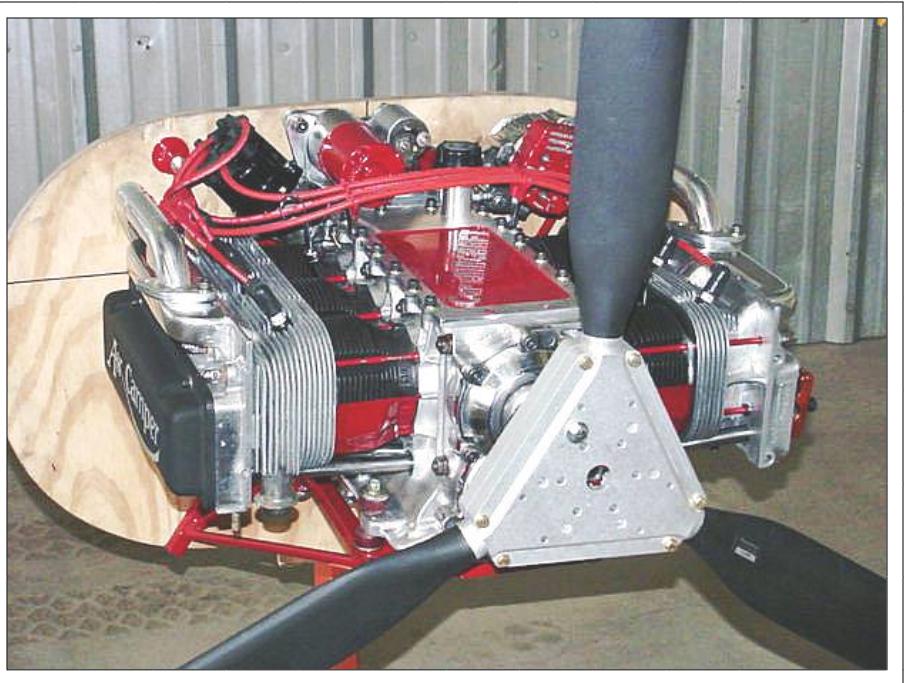
Dave is writing an article detailing his experiences with William, hopefully it will be published in the next DBFN.

Charlie Johnson, aka One Sky Dog, is building a very special Corvair for his Dragonfly. Charlie did not want to have his Dragonfly out of service while he was converting over the Corvair power, so he went out and bought a second Dragonfly. Charlie is from Ogden, UT, and although he has a very strong 1835 VW, his high field elevation performance is very limited with the little VW. Charlie is making great progress and I am sure he will have a very nice airplane when he is done. What I have found is that



some modifications seem like a good idea on paper, but after you have a chance to fly your Dragonfly for a few hours, maybe they are not as good as you had hoped they would have been. Charlie is a very experienced Dragonfly owner and I am sure he will incorporate all the right things into his new Corvair powered baby.

Of course no discussion of the Corvair in a Dragonfly would be complete without mentioning Pat Panzera. Pat is the editor of Contact Magazine and a former editor of the DBFN. Pat has built an incredibly detailed Corvair engine for his Dragonfly MK-II. Hopefully Pat will be flying behind his Corvair powered Dragonfly soon. You can follow Pat's progress on his web site at [www.experimental-aviation.com](http://www.experimental-aviation.com)



There are several Corvair engines being built for Dragonfly's and I am sure the Corvair will prove to be a great engine for the Dragonfly. This is just a very brief overview of the Corvair powered Dragonfly. More detailed information about the Corvair airplane engine conversion can be found on the internet at any of the links provided in this article. If you do not have internet access you can contact William Wynne at :

"The Corvair Authority"  
P.O. Box 290802  
Port Orange, FL 32129-0802

**I hope that we will see a couple of Corvair Powered Dragonfly's at the Field of Dreams Tandem Wing Fly-In this September at Sullivan!!!**

*Jeff*

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# Tandem Wing Fly-In Update

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*by Jeffrey A. LeTempt*

The Mountain States Canard Wing Fly-In took place at Bullhead City/Laughlin International Airport from April 29th through May 1st. I do know that there were five Dragonfly's at the event, but once again I could not get anyone to write an article about the fly-in. The Dragonfly's out numbered the Q's again this year!!! In attendance were Brad Hale in his MK-II from Fullerton, CA, Tim Iverson in his MK-II from Torrence, CA, Charlie Johnson in his MK-II from Ogden, UT, Richard Terry in his MK-I from Chino, CA and Julian Reed in his MK-II from St. George, UT.

The pictures of the Dragonfly's were all taken by Bob Farnam, Q200 builder and pilot from California. Bob is the co-organizer of the Livermore Tandem Wing Fly-In. Bob has a web site with fly-in details located at:

<http://www.farnamengineering.com/LivermoreTandemWingFlyin.html>

The Livermore fly-in is scheduled to take place August 19-21, 2005.



*(Continued on page 7)*

(Continued from page 6)

As I understand it, the hangar that was normally used for the Mountain States TW Fly-In at Laughlin was not available so they had to improvise. Pat Panzera rented this really cool tent to house the forums. I think they are looking for a new airport to possibly host the fly-in next year.

### Sun 'N Fun 2005

As I said in the Corvair powered Dragonfly article, Chuck Ufkes flew his MK-IIH to the event. I believe David Bourque also flew his Dragonfly MK-II over to Florida.

### 2005 Tandem Wing Spring Fling

Sam and Sandy Hoskins hosted the TW Spring Fling again this year at Southern Illinois Airport (SIA) located between Murphysboro and Carbondale, IL from 20-22 May. I flew my Dragonfly MK-IIH over to the event on Saturday. The weather was pretty crappy the whole way there, I do not think I got more than about 1,500' AGL during the 1 hour flight from Cuba, MO to SIA. The event was held in the Southern Illinois University (SIU) hangar. That is such an interesting hangar with all the aircraft displays used for training.

Sam and Sandy did an excellent job organizing the event and a great time was had by all. Q-Talk newsletter editor Doug Humble was the chef for the cookout and I will have to say he did a great job. Dr. Charley Rodriguez, SIU professor, conducted two excellent hands-on forums. One was on magnetos and one was on carburetors. I think everyone who attended these forums walked away with a great understanding of how these components work and how to repair or overhaul them when necessary.



We had a really nice turn out of tandem wing airplanes. In attendance were two Dragonfly's, two Quickies, one Q2, one Tri-Q2, one Tri-Q200, one Q200, and one Q2 project on a trailer. In addition to my MK-IIH, Steve Laribee from Charleston, IL flew his MK-II to the event. Both of our Dragonfly's are powered by the Limbach L2000 engines. Steve's plane is a little faster (and lighter) than my airplane, but I think mine climbs a little better. My cruise speed could be faster if I had a little more pitch in my propeller, but I am very happy cruising at 140 MPH IAS while burning only 3 gallons per hour of 100LL. I am going to be making some changes to

(Continued on page 8)

(Continued from page 7)

my air intake system and hope to increase my efficiency even more.

### 15th Annual Field of Dreams TW Fly-In

Everything is on track for the 15th Annual Tandem Wing Field of Dreams Fly-In. As planned it will be held at Sullivan, MO (KUUU) from September 23-25, 2005. We will have a schedule this year that is similar to what we did last year. I am not sure if we will be doing a hands-on composite construction class on Friday, it will really depend on the demand. We have done this the last two years, maybe we will try something a little different this year. I have updated the event web site with some basic information:

<http://www.fidnet.com/~letempt/>

I hope to see you at the event. I think it is quite possible that we could see 20 tandem wing planes at the event. I have heard that we can expect to see at least one really fast award winning Q-200 from California. Start making your plans to attend!!! I will include more detailed information and a registration form in the next issue.

*Jeff*



Steve Laribee's Dragonfly MK-II



Jeff LeTempt's Dragonfly MK-III





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# Swiss Dragonfly Project

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by Jeffrey A. LeTempt

Peter Flueckiger from Hohenrain, Switzerland sent me some pictures of his Dragonfly project. Peter has incorporated many of the same design elements that Helmut Anderegg used in his Dragonfly.....far from a stock plans built Dragonfly—very innovative.

Here is a recent email that I received from Peter.

Dear Jeff,

My Dragonfly is built very similar to Helmut Anderegg's aircraft. You can find some information on his aircraft at:

<http://homepage.sunrise.ch/mysunrise/handeregg/Dragonfly-HB-YEG.htm>

Helmut finished his airplane a couple of years ago and flew it for a some hours with a Hapi Engine. However, he was rather unhappy with the Hapi and switched to the Rotax 912. This is the number one engine used on many airplanes and motorgliders in Europe. The engine/propeller combination used on my Dragonfly should be very quiet and meet the noise limitations in Switzerland.

I am rather tall with 6' and I adjusted the seat according to my needs. The panel is strictly VFR and I kept everything as simple as possible. The aileron and the canard are mass balanced because I would like to have more range to the Vne limitation (increased safety). In order to make the cowling, I protected the engine first with plastic and tape. Then I used foam blocks and wooden sticks to build up a kind of foam body around the engine. Later on, I shaped everything to make the lines nice and sharp looking. After being satisfied with the contour, I applied two layers of carbon fiber and one thin layer of glass. The disadvantage of this method is the fact that the form will be



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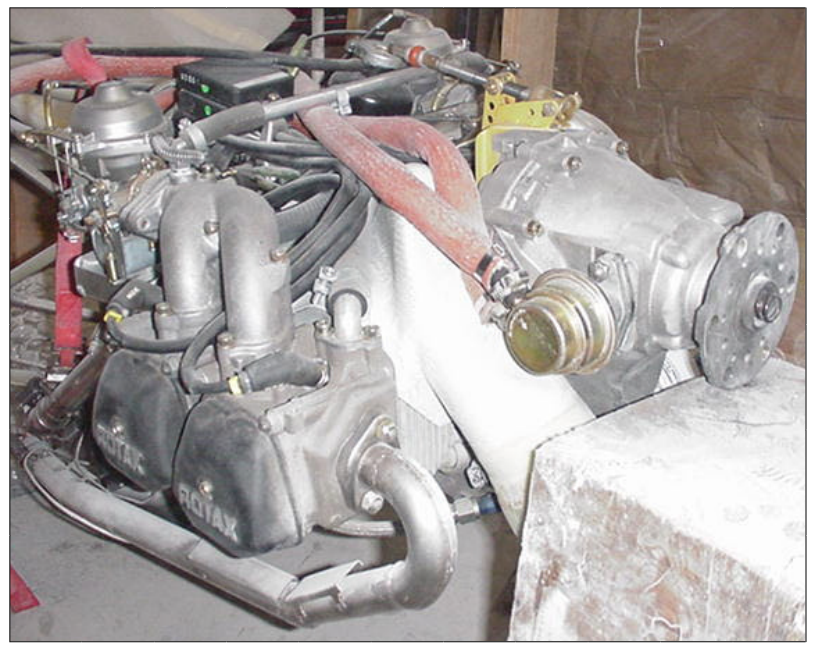
destroyed. However, I enjoyed every minute working on this part of my airplane.

I am going to use this airplane on the same airfield where my DR 107 One Design is located. With 1500 feet, a rather short runway, and I am looking forward to see how everything will work. Regarding the registration, there is even a chance that I will bring my Dragonfly first to the US in order to get a US registration.



There are two reasons for that. The requirements to register an airplane in Switzerland are really tough and a lot of analysis is required to cover some of the modifications (\$\$). Secondly, I have an FAA A & P license allowing me to maintain the aircraft by myself. Furthermore, having the airplane in the US would be a great advantage to have big runways and little traffic for the first flights.

I flew the first 80 hours in the US on the DR 107 and I was glad about this because I had all hands full to bring it back to the ground in the same configuration as it was on the lift off...I will keep you informed on the further progress of my Dragonfly. Attached another picture taken with my DR107 this time with a straight vertical line. This airplane is fun and demanding at the very same time. The roll rate is faster than one revolution a second and there is no control stability at all. This helps a lot to perform during the aerobatic sequence. With only 180 HP and a fix pitch propeller, the amount of power is rather on the lower side. I had a chance to fly in a Sukhoi 29 last week....WOW what a blast!!! Unfortunately the Russian MP-14 engine takes a lot of fuel and fuel here in Europe is about \$6.50 US per gallon. I think that the DF will become a very economical cross country airplane and with the Rotax, I can even use car gas. If you have more questions don't hesitate and ask.



Best regards,

*Peter*

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# Editor Ramblings

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*by Jeffrey A. LeTemp*

Once again I am sorry this issue is a little late. The last few months have just been crazy for me. I signed out of the Army on terminal leave at about 1000 on February 25, 2005 and did not have a job lined up yet. I decided to go fly my Dragonfly and had a nice flight. On the way home from the airport at about 1500 I got a call on my cell phone from the Civilian Personnel Office offering me a civil service job. I joked with my wife that I could not even be unemployed for one day. I started my civil service job on April 4th.

My Dragonfly has been working great. I completed a 50 hour engine service on June 3rd and everything looked good. My Limbach engine does not use any oil and the compression is good. The valves were just a little tight, I had to increase the gap slightly on all 8 valves. Limbach specifies .2 mm (.0079") on the intake and exhaust valves.

I have been helping Tad Simpson get his one-off tandem wing airplane in the air again. Last year Tad bought the highly modified Dragonfly that was called the Pheonix or FasGlass. It is quite clear that this plane was built using the Dragonfly plans, but it is obvious that this is not a Dragonfly MK-III. The plane uses a LS-1 airfoil on the canard and what appears to be a



standard Dragonfly airfoil for the wing. Both airfoils have a span of 26' and neither use the standard solid polystyrene foam cores. They are hollow wings that are built with urethane foam. Both the wing and canard have provisions to carry fuel, but currently only the canard carries fuel (10 gallons on each side).

I drove to Tad's Kentucky weekend home to look at the plane and gave him a list of things that needed to be taken care of. He then moved the airplane to Decatur, Illinois so he could work on it during the week. Over about a 3 month period I drove to Decatur once (spent the weekend) and flew my Dragonfly there twice (day trip only). On my first trip to Decatur it snowed a few inches. We worked on the plane for about 8-9 hours on Saturday and on Sunday we worked for a few hours. I tried to fly the airplane on Sunday, but a radio problem kept me on the ground.

During my second visit to Decatur I flew the Phoenix about 30 minutes and identified a few problems for Tad to work on before my next visit. On June 4th (my 3rd visit to Decatur) I flew the Phoenix for about 40 minutes, we went out for lunch, and then Tad went up with me for a brief 15 minute flight. We identified a few additional problems during the 2 flights so Tad does have a little work left to do, but the Phoenix is once again flying.



*Jeff*

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# Classifieds

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**For Sale:** 1836cc engine complete from prop spinner to firewall for a Dragonfly. All new engine with four hours run time. Dual ignition (one slick magneto and one electronic). Exhaust system complete with heat muff and carburetor heat box, Hapi ultra carburetor, Spin on oil filter, hydraulic lifters. The engine cowling also goes with this, so you will have a complete firewall forward for a Dragonfly. A&P built. \$3000.00 OBO. Call Joe Anthony at (636) 398-6211 or email [hjoe@acer-access.com](mailto:hjoe@acer-access.com) for pictures or additional information.

**For Sale:** Continental PE-90 engine (a rebuilt GPU engine) 0-315. This engine has been started to be converted to aircraft use, dual plugs, oil tank and intake started but not finished welding. One magneto, all continental accessories will fit this engine. \$1500.00 Call Joe Anthony at (636) 398-6211 or email [hjoe@acer-access.com](mailto:hjoe@acer-access.com) for pictures or additional information.

**For Sale:** NACA Flush Inlets designed for 1/2" sandwich structures. These make a good looking functional inlet to replace the hand carved per plans ones. Inlets are \$40 per pair, plus \$4.00 shipping. Note: Spinners no longer available. Contact Charlie Johnson, 2228 East 7875 South, Ogden UT 84405 (801)-479-7446 or e-mail: [OneSkyDog@aol.com](mailto:OneSkyDog@aol.com)

**For Sale:** Dragonfly Type 1 converted to hoop gear. Porsche 1800 engine (big VW) converted to 2400 with parts from Great Plains. Airframe complete & wings & control surface mounts are finished. Cleveland wheels & brakes. Ed Sterba prop. Very nearly complete. Asking \$10,000. Call 815-397-1533 or email [stiegrinding@aol.com](mailto:stiegrinding@aol.com)



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Dragonfly Builders & Flyers Newsletter (DBFN) is currently published Bi-monthly at a rate of \$3.50 per issue / \$21.00 per year in the US, \$3.75 per issue / \$22.50 per year in Canada, Alaska and Mexico, and \$4.60 per issue / \$27.50 per year (US funds) per year for foreign subscribers. Send remittance to and make payment payable to:

Jeffrey A. LeTempt  
1107 Murry Lane  
Rolla, MO 65401  
(573) 364-2545  
[letempt@fidnet.com](mailto:letempt@fidnet.com)

For hard copy back issues send \$4.00 for each issue to Jeffrey A. LeTempt at the above address.

Issues #89 through #106 are available electronically from Pat Panzera for \$4.00 each.

Patrick Panzera  
PO Box 1382  
Hanford CA 93232-1382  
(559) 584-3306  
[panzera@experimental-aviation.com](mailto:panzera@experimental-aviation.com)

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