

# SONERAI NEWSLETTER

OCT-NOV-DEC 2004

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## ***DREW WATERWORTH'S SONERAI II AT OSH '04***

*Drew's really classic looking, red and black, mid-wing Sonerai II is based on Wittman Field in Oshkosh, WI. He recently installed an AeroConversions AeroVee 2180 along with a Prince P-tip propeller and claims excellent results. See the article on this airplane along with additional photos elsewhere in the newsletter.*

### **OSHKOSH WRAP-UP**

So, how was the Oshkosh '04 experience for you?

All in all, for me it was a week's vacation well spent. I stayed in Camp Scholler again, next to a large contingent of South Africans. Great folks,

who came a long way to sleep on the ground, and be at the world's greatest fly-in.

My flights in and out were pretty much uneventful (or I'm just getting used to the pandemonium, this being my 17<sup>th</sup> year there with my Sonerai). The homebuilt parking crew parked me just north of the new Homebuilt Headquarters, and as we rolled

through the week, I was joined by Oshkosh-based Sonerai guys, Jeff Lange and his still unpainted Sonerai I that was sporting new wheel pants, and Drew Waterworth and his Sonerai II with a new AeroConversions AeroVee 2180. Erik Jonnson arrived in his Sonerai IIL from Idaho Falls, ID. Erik's airplane is set up as a single place with a Continental A-65. And finally, longtime friend Jim Phillips from Whitefish Bay, WI flew his 2180-powered Sonerai II over from his summer place in Wautoma, WI for a day. So, we had five airplanes this year. Thanks guys, for joining me. It was fun having everyone together.



Sonerai's at OSH '04

I think my Sonerai Builders Forum went well. At least the group of 30 or so attendees didn't get up and walk out en masse (or was that because it was raining at the time?). I got to use my new PowerPoint slide presentation. I hope those of you who were there found the information of some value. Thanks for coming.



Jeff Lange's SI



Erik Jonnson's SIIL



Jim Phillip's SII

The Homebuilder's Dinner was well attended, and we had some good conversation along with the good food and cold beer.

Otherwise, it was fun to see all of my old friends, and to try to see everything that the convention had to offer. I was particularly intrigued by the new Great Plains liquid-cooled heads, and their new 2300 VW engine using the new all aluminum case. Maybe someday when I scrape together the bucks, my Sonerai will get that bigger engine. I was also impressed by Ed Fischer's new biplane ultralight, the Zipster. Ed is one of the "old" original Sonerai I builders, and prolific airplane designer. He was honored with a Grand Champion "Lindy" for his new airplane. Congratulations, Ed!

And there were so many other things to see and do. When the end of the week came, and I had to go home, I knew that I had missed a lot of it, but still had a lot fun. But that's Oshkosh. See you next year.

## SONERAI NEWS

- 4130 Sheet Stock Suppliers: A note from Jon Schilder: "If any of the Sonerai builders are having trouble locating flat steel for their project, I have had luck with [onlinemetals.com](http://onlinemetals.com). I've bought .063 and .125 from them, and the service is good as well. Another place in Orlando called Janks Metals has some flat 4130 in stock as well. Phone 1-407- 855-0060."
- Great Plains News: Check out the new liquid-cooled heads for VW engines. These heads allow higher power output with a modest weight increase. See them at [www.gpasc.com](http://www.gpasc.com).
- Sonerai Wing Construction Manual: It is now available. There are 18 pages of text, 85 photographs, and 12 drawings, as well as a complete materials and a tools list. If you would like your own personal copy, sent me cash, check, or money order for \$25.00.

Postage is included. (The manual is now included with the plans, so you new plans holders already have it.)

- **Back Issues: Sonerai Newsletter** back issues are now available in three forms. The first is a 3-1/2" diskette which contains 209 of the newsletter articles (text only) published by Ed Sterba from 1987 through 1995. It costs a mere \$10.00. The second is a CD which contains complete copies of all of the newsletters published from 1996 through 2003 in a ".pdf" format. The cost is \$50.00. And finally, there are also hardcopy back issues for \$3.50 each. I have the last two issues from 1994, and all of the issues from 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, and 2003. If you want any of the above, send me a note requesting the ones you want and a check for the correct amount. Postage is included.

## **AN OSHKOSH "DISCUSSION" (AND EDITORIAL COMMENT)**

On Tuesday, the opening day of Oshkosh, I stopped by the Sonex, Ltd display to say hello to the John, Betty, Jeremy, and the gang, and check up on their latest creations. After saying my hello's to everyone, I got into a decidedly one-sided discussion with John about the recent content of the Sonerai Newsletter. John let me know in no uncertain terms that several of the airplanes shown were not Sonerai's, and if I was to continue featuring these airplanes, that I might as well discontinue writing the newsletter. As far as he was concerned, if the airplane wasn't built to the plans, and didn't have a VW engine, it should not be called a Sonerai. Needless to say, I was a little bit stunned.

In most ways, I understand and agree with John's point of view. All of the Sonerai's are his designs. Any time something happens to a Sonerai, the Monnett name is automatically attached. So, any time that we, as builder's, take it upon ourselves to make significant changes to an existing design, the airplane that we end up building is no longer that existing design. That "new" design should be called something else. Otherwise, the existing design is at risk of gaining a bad reputation due to the changes that are made. Logically, if your "Sonerai" has a different wing, or the wing is located in a different location, or it has a longer wing with a different spar, or a wider or longer fuselage, or a fuselage covered with aluminum, is it really a Sonerai? Not really. So, call it something else.

One of the joys of building amateur-built experimental aircraft is having the freedom to make these changes, and experiment with different aspects of aircraft design. But, after you make all of these changes, is it fair to the designer, whose reputation is tied to the name of the design, to continue to call it by its original name? I don't think so.

Let me give you a case in point. Several years ago, there was a "Sonerai" that crashed in Connecticut after the wings separated from the fuselage while doing aerobatics. This accident caused a fair amount of consternation among Sonerai builders, causing them to question the structural integrity of their airplanes. I spent a fair amount of time talking to builders, attempting to alleviate their concerns. One of the important points that was not mentioned in any of the preliminary reports was that this "Sonerai" had a 150 hp Lycoming O-320 installed in its nose. It also didn't mention that the empty weight was something like 935 lbs (making it considerably heavier than the design allowable 750 lb aerobatic gross weight), and that the main spar carry-thru box was not made to the plans.

Whether using a non-VW engine in a Sonerai makes it something other than a Sonerai, though, is arguable. As most of you know, when it comes to the choice of engines on the Sonerai, I'm a pretty staunch advocate of the VW conversion. That is the engine around which the design is based. And for the most part, I think you get the best overall performance with it. But I'm not totally opposed to using some alternative engines. As long as the engine weighs about the same as the VW, doesn't require significant structural changes to mount it, and fits in the Sonerai cowling, I think the airplane is still a Sonerai.

So, where does this leave us? I think we know what John's and my points of view are, and I've probably upset some you. If I have, I'm sorry. Please feel free to send your comments and opinions.

## **DREW'S SONERAI II**

When I saw photos of Drew's Sonerai II for the first time, I said to myself "I know I've seen that airplane before". That dark red base color with the dark trim, and the three Monocoupe "ducks" painted on each side of the turtledeck were stuck in my memory. A little research of past Sonerai Newsletters proved that I was right. There on the cover of the Jan-Feb-March '92 issue was the first

photo of N610BS. Inside was an article by Ben Cannon, from Social Circle, GA, where he started out by saying that the airplane was affectionately named "You Bitch", and went on to discuss several of the changes and improvements that he had made.

The second time it showed up in the Newsletter was in the Jan-Feb-March '95 issue. It was then owned by Roy Adams, from Fayetteville, GA. He reported installing a Mosler secondary ignition system. Roy also wrote a nice article in the Oct-Nov-Dec '97 issue about upgrading the engine from an 1835 to a 1915 cc VW after finding a crack in the original case. The article included a really nice electrical system schematic.

The next time I heard about the airplane, it had been purchased by Gene Forsthofel from Duluth, MN. Gene proceeded to remove the VW, install a Corvair engine, and convert the airplane from a taildragger to tricycle gear. Needless to say, it was really pretty funky looking.

And finally, Drew Waterworth purchased the airplane sans engine, and commenced to restore her back to her original VW-powered glory. Since Drew lives in Butte des Morts, WI, just a hop, skip, and jump from Oshkosh, it was logical that he consider installing the new John Monnett designed AeroConversions AeroVee 2180. And that's the engine that is now in the airplane. The main challenge was making sure that there was sufficient clearance for the starter and then enclosing it. It is located in the 9:00 position when viewed from the rear, and it was very close to the left diagonal tube in the firewall. It was necessary to "tweak" the tube slightly to get a good fit.

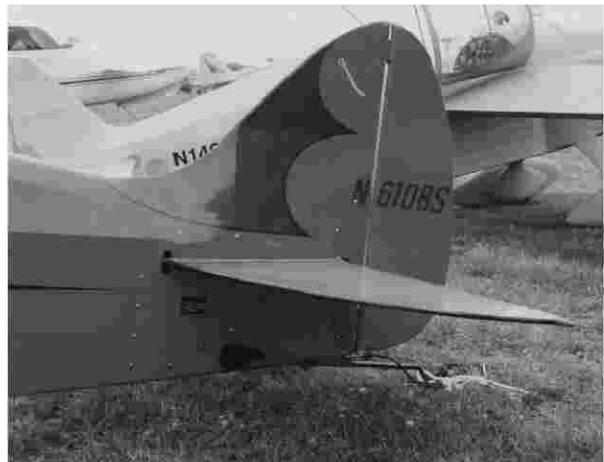
When I asked Drew for some typical operating numbers, here's what he wrote: "I came in a little heavy @ 610 lbs, but I do have electric start, radio, etc. I use 1150 lbs for a gross weight, but still haven't had any passengers in it. I cruise at 130-135 mph and max out at 155 mph. Right now I have a Prince 54x42 prop, but I think I'm gonna go with a little more pitch. (Nice having Monnett's prop collection next door!) I cruise at about 31-3200 rpm and can turn it up to about 3900 rpm straight and level. Cruise temps are EGT 1250°F, CHT 380°F, and oil temp 190°F. It burns about 4-5 gph. I only have around 12 hours on the engine now, and I love it. CHT will come down with time."

As you can see from the photos, she turned out really nice. Congratulations, Drew!

You can contact Drew at [dwaterworth@msn.com](mailto:dwaterworth@msn.com).



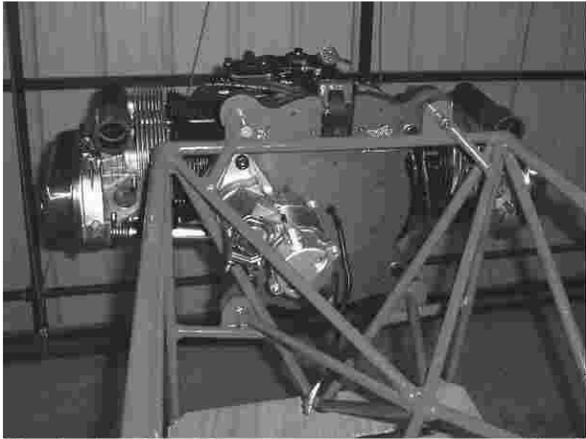
The classic mid-wing Sonerai II profile.



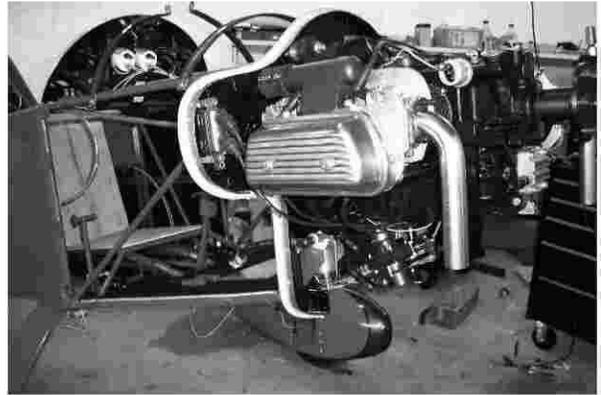
With the classic Sonerai tail shape.



The cockpit and instrument panel. The large knob on the spar carry-thru is the elevator trim.



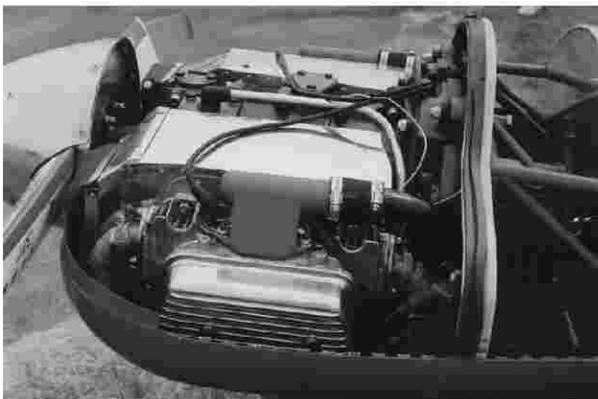
Here's the AeroVee rear accessory case with the built-in ignition system. Note the close proximity of the starter to the LH diagonal tube.



RH front view of the engine installation. See how the AeroCarb is mounted. The oil cooler is mounted on a baffle pan that is mounted on the bottom of the case.



RH view of the engine installation. Nice and neat.



LH view of the engine installation. Note how tightly the engine is mounted to the firewall.

### **SWRFI '04** by David Wilcox

South West Regional Fly-In was May 14th and 15th. The show has moved around a bit from Kerrville, to Abilene, and now it is at New Braunfels, Texas. New Braunfels (BAZ) is near San Antonio. It didn't seem quite as big as Copperstate, but was still a respectable show. There was no aerobatic show which didn't bother me any, and no PA system blasting continuously: that was wonderful.

The layout at New Braunfels was somewhat unfortunate, the main taxiway was right in the middle of things. The commercial setups were on the south side, and the experimentals were all parked on the north side. People were walking back and forth in front the taxiing aircraft.

I made the voyage to BAZ and then some. We have a very active Yahoo group with the Sonerai, over 200 members. A few of us that have Continental engines installed in the Sonerai instead of the VW, stay in close touch with each other. This trip to SWRFI was to meet two of them.

I left Chandler on Thursday morning at 5:30 MST. The fuel route was Demming NM, Pecos TX, Kerrville TX, and New Braunsfel TX. Arrived at BAZ 3:30 CDT, or 1:30 MST, eight hours total.

Somebody on the SWRFI staff deserves an award for the most complicated arrival instructions I've every seen. I spent over two hours studying them before the trip, making notes, organizing the waypoints and frequencys. The weather was not good when I arrived. Storms were approaching, but radar at Kerrville indicated that I could slip in.

Outside of the first way point I called approach... nothing. Then I called tower (temp FAA tower for the show)... nothing. I called unicom, and still nothing. Called tower two more times and finally got a response. "Report right base" was all I had to do.

I got on the ground and discovered I was almost the only plane there. I guess I need a little more humility and respect for the weather. Not so much for the marginal conditions of the approach, but for what was to follow that night.

The first night I stayed with fellow Sonerai builder Wade Jones. Most everyone I've ever heard of in experimental aviation is one of Wade's close personal friends. He had more tales of woe and daring than I ever heard of from a single person. Wade had a huge and beautiful 5th wheel trailer near the show. That's where I spent the first night. The storms hit hard that first night. Wade's trailer rocked and the streets flooded. I only gave it a 50-50 chance that those dog stakes held and my plane was still setting on it's wheels that morning. Of course since I'm writing this, all was OK. All the same I lost a full nights sleep and realized why nobody else came that first day. It's amazing what a little water in the air will do.

Friday afternoon I flew on to Sugarland TX, southwest side of Houston to finally meet Ivan Martinez. Ivan and I have spend many hours on the phone discussing Sonerai(s). Not only did Ivan use the Continental engine as I did, he changed the wing airfoil as well. He used a Riblett airfoil, and his wing is two inches thicker than mine. That combined with his 58 pitch prop to my 62 lets him climb much better than I.

Saturday we DROVE to the FLY-IN, but it was a great time just the same. I got a good deal on a parking brake valve (if it doesn't leak) and four 18mm thermalcouples for \$20 wasn't bad either.

On Sunday Ivan and I flew around Houston burning up a tank of gas. We went to see Wade again at his home in Brazoria. He lives on a 2700 ft grass strip, has a very respectable hanger, and a gorgeous home. Ivan owns a marble/granite counter installation business, and had done all the work in Wade's home. Top of the line work. Totally changes the atmosphere of a room.

Ivan and I got our butts kicked on the return landing back at Sugarland. 20 knot direct cross wind, gusting to 28. It was the roughest approach I've every made, and Ivan was right behind me. He only has 30 hours on the plane and probably as many landings. He was smart though, he did a go

around and waited it out. Winds died down a bit and 15 minutes later he got it on the ground just fine. Honest guys, there was no reason to expect we were going to get caught in that kind of wind.



WILCOX - MARTINEZ - JONES

Wade Jones had the old original wing on his Sonerai and had just finished a new set of "S" (Stronger) wings. His first flight with the new wings was Sunday, (after we left) and all went well. I can appreciate Wade's desire for solitude for such a flight. You don't need spectators when you need to pay attention to what you are doing.

I returned home on Monday. I have a bit of a new oil leak to chase down, but other than that the Sonerai took care of me. We flew 19 hours, averaging about 130 mph. Had tail winds both ways! I must be doing something right. Haven't added up the gas yet, but \$3/gal seemed be about what almost everyone was charging. Ran higher manifold pressure than I normally do, 21 inches, so fuel burn was up to about 4 gph.

There's a lot of Texas!

## **TOMMY'S BAFFLES** by Tommy Warren

I thought all of you, especially the builders, might be interested to know that I've started producing a few firewall forward parts for our Sonerais. The first is a complete set of fiberglass cylinder head cooling baffles for VW installations with the EV (EconoVee) style cowling. They are pulled from molds actually made from my original aluminum baffles then flown on my 1835 Sonerai I to make sure they matched all of those original flying qualities.

Like my originals, these baffles still surround the top portion of the cylinder heads forcing cool air around and between the heads and barrels and

are designed to be used with "Cool Tins" (not furnished). They are also more "user friendly" than my originals by allowing access to the cylinder heads, spark plugs and thermo couples by the removal of only one baffle part from each side of the engine; whereas my original set required all baffles to be removed. The full set of baffles is comprised of 7 fiberglass parts, and incorporates the optional use of the GPAS aluminum set back plate, required on most S-1's to clear their tight cowling.



Tommy's Baffles

As an added benefit, these baffles are furnished with 2 fiberglass tube extensions (to accept 1" CAT tubing) on each side for: 1) directing cool air from inside the baffles to your oil cooler baffle and 2) to direct cool blast air to each side of your magneto.

The baffle kit comes complete with 4 pages of detailed installation instructions including a "tools required" list, color pictures and full size templates (for cutting the furnished chafing material). The only fabrication necessary is the final trimming (approx. 1/16"-1/8") around the fiberglass for best fit, drilling the final holes for attachment of the furnished hardware (all hole positions are premarked) and cutting and fitting the chafing material around the air inlets. The holes for the sparkplugs are open but I do not furnish the rubbers; however all of the other hardware such as; metric bolts, brackets, screws, nylon washers, large-head, etc. is furnished.

I work out of my home shop, so please allow a couple of weeks to turn out a set of these baffles. For further info feel free to email (mtnest@hartemc.net), write to my little company: TWA Enterprises, Inc. 261 Hillandale Drive, Hartwell, GA 30643, call me 706-377-4716 but

please make it before 9pm Eastern Time or just stop by the house.

**I  
HOPE  
YOUR  
HOLIDAYS  
ARE  
HAPPY**

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For Sale: Sonerai IIL, TT 294 hrs, TSTO 170 hrs, 1834 VW 60hp @ 3400, A&P owned, always hangared, Annual due 3/31/04. \$10,900 obo. Ken Christian, (660)263-7937 (1/04)



For Sale: Sonerai IIL, 98% complete. Built as low-wing using Sonerai IIL plans as a guide. 1835 VW w/ SuperVee prop hub, oil cooler, & HAPI UltraCarb. Sterba prop. This airplane was 1-2 months from completion when the original builder was killed in a motorcycle accident. Current owner doesn't have the time to finish. \$4,500. Allen Bruggink, (262)335-6459, [albrug@hnet.net](mailto:albrug@hnet.net) (1/04)

For Sale: Sonerai IILS, N2533Z, Jabiru 2200 (80 hp/2000 TBO), 60 hrs TT engine/airframe, expertly crafted by experienced builder, custom Sensenich prop, Cleveland wheels/brakes, 15 gal. fuel, Odessey battery, folding wings(trailerable), flies perfect/hands off, bought L-16...must sell one, \$20,000 firm, Mike Frost (941)729-1050. (1/04)

For Sale: John Monnett's prototype Sonerai IIL, approx 500 hrs TT, good condition, always hangared, engine runs well but probably needs a teardown inspection before flight, needs new tires to fly. \$6,000. Bobby Webb, (662)429-4273 (1/04)

For Sale: Gyrocopter (Benson-type) with Brock seat tank, metal tail, extended mast for Rotax or your choice. Offset gimbal head with rotor blade bar. Needs rotor blade and engine. Otherwise assembled, on gear with Brock joystick control and wheels. \$1950. Fred Ninneman (816)353-1161 (2/04)

For Sale: Sonerai II, built 1981, 200 TT, Revmaster 2100S. Will deliver for expenses. \$10,000. Also, a complete HAPI 1835 with Zenith carb, \$3,000. Bob Jorgenson (435)678-3436, [bobl@sisna.com](mailto:bobl@sisna.com) (2/04)

Wanted: Project donation for Navajo Youth Flying Program, 4 corners area SE Utah. Bob Jorgenson (435)678-3436, [bobl@sisna.com](mailto:bobl@sisna.com) (2/04)

For Sale: Sonerai II project. Ready for cover. S-wings, on the gear, fiberglass turtledeck raised for taller pilot, built for Continental A65 which is included (basket case). \$5,000 invested, will take \$2,500. Kurt Schafer, (807)274-1766, [wkos@jam21.net](mailto:wkos@jam21.net) (3/04)

For Sale: AeroConversions Aero Carb ACV-CO2, 29mm for 1835 VW, new, never installed. \$300. Dick Bonney, (727)733-9273 (4/04)

