

# SONERAI NEWSLETTER

JULY-AUG-SEPT 1999

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(AFTER 6PM CDT)

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## **FRED NINNEMAN, JR.'S SONERAI IILTS**

*When Fred sent in his subscription renewal back in January, he sent this photo and the following letter. I think you'll agree that he has a unique Sonerai.*

I finally got my bird in the air Sept. 11, 1998. I have a total of 11 hours so far, weather is a problem. As you know, I am using a water-cooled Rotorway 100 engine, one that B.J. Schramm manufactured years ago. I also found another new one in the crate in Arizona which I latched onto, so I now have two.

So far, flying it has been a ball. More sensitive than I thought it would be; very touchy but I'll have to get used to that. I'm using a Zenith carb that I got from Steve Bennett. I'm not happy with it as it doesn't want to develop full power. I'm going to put a 37 mm Posa Super Carb on it and see if that will get me 3200 rpm. I'm flying one of Sterba's props, 58" x 60". N57FN is a IILTS. With my engine I have to use 100LL avgas. The compression ratio is 9.5:1. I missed you at Oshkosh last year, and at the Ottawa, KS fly-in, so I hope to visit with you this year.

Fred Ninneman, Jr., Kansas City, MO (816) 353-1161

*Fred, the ed.'s comments: Fred, with Oshkosh just a few weeks away, I hope you're planning to bring it up to the big show and show it off.*

## OSHKOSH 1999 PREVIEW

Like I said on the front page, the big show, Oshkosh AirVenture '99, is just a couple of weeks away. And as usual, there are several things planned for your "Soneraï" enjoyment. First, the Soneraï Builder's Forum is scheduled for 7:00 PM, Thursday, July 29 in Tent 11. Be sure you verify that in the program. The second event is the Annual Monnett Builder's Party at John and Betty's hangar at 8:00 PM Friday night, July 31. We'll be joined this year by the Sonex builders, so it should be fun. Stop by the Sonex booth in the North Exhibit area for a map.

On Saturday evening, EAA is having their annual Homebuilder's Dinner. You'll need to make reservations early at the Homebuilder's Headquarters, as they tend to sell out.

I'm planning to fly up on Monday, the 26<sup>th</sup>, and will be camping in Camp Scholler. I will be with my airplane in the auto engine area just south of the Homebuilder's Headquarters every day, so please stop by, say hello, and talk Soneraï's. We try to keep all the Soneraï's together if we can, so bring your airplane. That's why Oshkosh is so much fun. See you there.

## SONERAÏ NEWS

- **NEW FROM SONEX,LTD:** Sonex Ltd. is now offering some new items at significantly reduced prices for our Soneraï's.
  - 1) Soneraï Cherry Rivet Kit which includes 300 CCP-04-02 and 2100 CCC-04-02 rivets for \$222.00. This is the lowest price you'll find
  - 2) Soneraï II Canopy in bronze tint for \$300.00
  - 3) Nose Landing Gear Strut Spring for \$35.00S&H charges apply, and sales tax will be charged for all pick-up orders. Call Jeremy Monnett at (920)231-8297, fax at (920)426-8333, or E-mail at sonex@vbe.com
- **North Central EAA "Old Fashioned" Fly-In:** This regional fly-in is scheduled this year on September 18 & 19 at the Sterling/Rock Falls Illinois Airport. Ron Wright, a fellow subscriber and Soneraï IIL builder, will provide any Soneraï pilot breakfast FREE. Just contact him through the reservation desk when you arrive.
- **To Brazil and Back:** Steve and Linda Bennett just gave me a little news that I had to pass on. A gentleman by the name of Haim Primo has recently flown a Soneraï from New York to Brazil, and back again. Wow! He is not a

subscriber, but I sure would like to hear more of the story. If any of you know about this feat, please let me know.

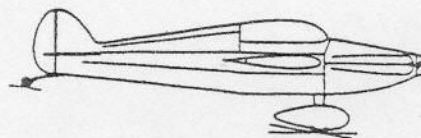
**Back Issues: Soneraï Newsletter** back issues are available in two forms. A 3-1/2" diskette which contains most of the significant newsletter articles published by Ed Sterba from 1987 through 1995 is available for a mere \$10.00. There are also hardcopy back issues for \$3.00 each. I have the last two issues from 1994, and all of the issues from 1995, 1996, 1997, and 1998. If you want any of the above, send me a note requesting the ones you want and a check for the correct amount. The postage is included.

## E-MAIL UPDATE

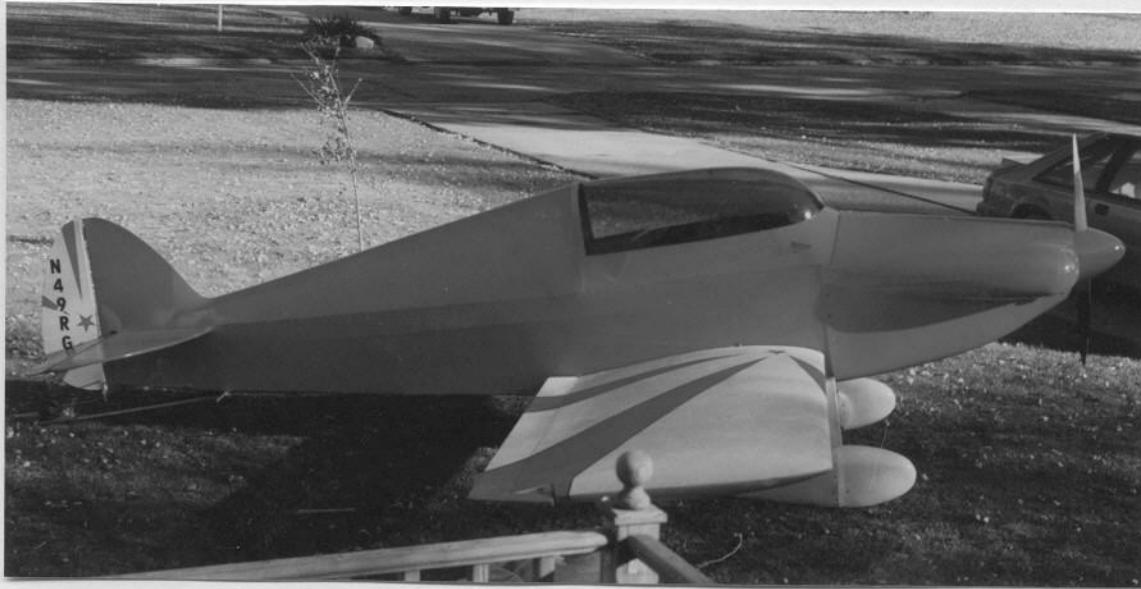
Here's a list of the e-mail addresses that I've been supplied to date:

Don Archangeli (IIL-1835) scalywag@concentric.net  
Bob Barton (IIL-1835) rabarton@mindspring.com  
Al Bertelmann (IIL) altonb@singnet.com.sg  
Dave Bilgri dbcpa@pwerweb.net  
Wes Blake (IIL-Revmaster) blakew@web-ster.com  
Daniel Blatter danblatt.swi@datacomm.ch  
Dan Bohn (IILTS) daniel.bohn@gte.net  
Jim Bohnsack (II) bohnsackja@gvl.esys.com  
Kyle Bond bondracing@aol.com  
John Borra johnborra@media-net.net  
David Bubolz (IILTS-2180) dabubolz@umich.edu  
Earl Evans (IILS-A65) avmtearl@aol.com  
Bruce Farrington bfarring@harbornet.com  
Nick Fourdraine (II) fourdraine@auracom.com  
Jim Hardy (I) jehardy@centuryinter.net  
James Hodge (IILTS) grnpaj@aol.com  
Jack Holgate (I-1600) jholgate@bellsouth.net  
Bob Jaeger (IIL) rjaeger@prairienet.com  
Tom Jones (IILS-2600) tnt@us5.com  
Edward Larsen (IILS) eclarsen@aol.com  
Jack Locamy (II) soneraipilot@juno.com  
John Lundeen johnlundeen@netscape.net  
Derrall McMillin (IIL) derrall\_mcmillin@gstworld.net  
Vince Nicely (IILTS) vincenically@intermediatn.net  
Chuck Orange (IILS) corange@thequest.net  
Scott Plischke (IIL-2180) splischke@tcac.net  
Callum Simcoe (IILS) csimcoe@ibm.net  
Kevin Smith (I) ksmith@interhop.net  
Ron Wright (IIL-1835) wright.ronald1@mcleodusa.net  
Gary Zahn (IILT-2165) gzahn@vbe.com

If your address isn't here and you'd like me to add it, call me or send it by snail-mail. (No, I don't have an address, yet.)







Roger Godfrey's Sonerai III

### **SONERAI AVIATION (AND OTHER EXAMPLES OF CONVOLUTED JUDGEMENT)** by Roger Godfrey

In the mid-seventies some time, I abandoned a few Tailwind wing ribs and some other finished pieces, and ordered a Sonerai II kit from John. I had a history with VW's, having a blown water/alcohol-injected bug in college that would wax a small-block Chevy. I had a collection of melted pistons and valve head pieces, but felt that a VW was great as long as it was operated within certain parameters. It took me a long time to build the aircraft. Airplane construction and family construction are compatible, but not real efficient. Working on bedrooms (ever try to put two teenage girls in the same room?) and kid's cars (ever put an American V8 in an MG?) take time.

John's beef-up kit arrived just in time to be placed in my wing, as did plans to drop it down and make it a low wing. The plane was finished to silver in '89. It was powered by an 1834 from a 1600 out of a '67 Squareback that had lost an intersection race with a train. It only had three thousand miles on the clock. Claude's Buggies did the case and head boring for the 92's, and later sold me some big-valve heads after UPS paid for the old ones which they somehow wrecked in shipping. I did a lot of fast taxi tests and worked on the labeling and paper work for certification by the folks on Mt. Olympus.

Then I went back to school to work on my doctorate and the whole flying thing went on hold

status. A few years ago, back in the job market, I dragged it out of storage and started a restoration/finishing process. It wouldn't do high-power and idle both, and granted me only one or the other, a condition predicted by some of the naysayers in Chapter 291 earlier. My Posa had defied them earlier, and operated well up and down the RPM scale, a condition I took much pleasure demonstrating to them along with suggestions as to my mechanical superiority. After a period, I gave up and installed a Zenith carb from Great Plains and regained a full RPM range.

The FAA finally blessed me with a certificate and a mechanic's permit after I bought some longer bolts so more threads would stick through a few fiber lock nuts. My initial flights were off a wide sod field, and I experienced few problems other than a pronounced oil leak at the prop hub. I was pleasantly surprised at the VW's acceleration and climb. I was expecting it to be pretty lame, but it moved out well. As I continue to fly the thing, I am beginning to wonder if my old geezer status is taking over, as my takeoff's are starting to look like Bob Hoover's Missouri Waltz routine, and my landings look like a kangaroo in search of some Prozac.

A few months ago, as I flew back from a friend's grass strip, I was cruising along at 2000' agl and planning some new air vents to cool off the cockpit, when the engine emitted a loud bang and started to run rough. All I had below was tall corn (Iowa, what else?) so I set up for a small gravel road. I was going downwind and as I came around in the wind, and went to half throttle, the engine

smoothed out so I continued the turn to a 360 and headed for the airport at considerably reduced speed. She ran until I turned base and then I can report that Sonerai's generate little wind noise. I bent the gear on this landing, but it the early thin one, so perhaps it was only a matter of time as the "experts" claim anyway, especially when you consider the pilot.

The engine problem turned out to be as uneven side deck of the engine case which caused one cylinder to stick out further and cock the head. Great Plains says that I could deck the case, but I think I'll just purchase one of their 2180 short blocks. This way I'll get the new Force One prop hub, crank, and seal, and perhaps I can get the thing to stop blowing oil around like an old radial. Plus, the additional power should be fun. My Sonerai seems to be very fast, but with a swap meet airspeed, it is any one's guess if we are really moving as it says. A friend has agreed to loan me a GPS to achieve truth in speech, but it might spoil my hangar flying superiority.

Roger Godfrey, Ottumwa, IA

## BUILDING THE AILERONS

*This is the fifth and final installment in the Wing Building "How-To" series of articles. We now get to build and install the ailerons.*

The ailerons on the Sonerai are about as simple a structure as you can find on an airplane. They are basically a three-sided bent-up tube with ribs at each end. There are two styles, depending on which plans set you have, and they both work equally well. The I and II plans show the balance weight attached to the tip rib, resulting in only two ribs in the aileron; one at each end. The IILTS plans have the balance weight attached to a balance arm that is mounted inboard from the tip and hides it inside the wing. This setup requires that two additional ribs be installed at the balance arm attachment point. The wing tip is also affected by the balance weight position. The tip-rib balance requires a portion of the tip to be installed on the aileron, while the LTS balance allows the tip to be one piece from leading edge to trailing edge.

### Step One: Forming the Aileron Skins

There are two ways to make the aileron skins. The first is the cheapest, but also the most difficult. The second is the easiest, and as you might expect, the most expensive.

The first method requires that you fabricate the skins yourself. The skin is 0.020" 2024-T3 alclad. You will need to develop the flat pattern, shear out the blanks, and bend them in a sheet metal brake. A brake at least 8 feet long will be required. It will probably help to have a good sheet metal guy available to help get all of the bends to come out correctly.

The second method requires only that you write out a check for two prebent skins. Between you and me, that is what I did. I figured that I'd easily spend as much money trying to get two good ailerons out of a sheet or two of aluminum. Besides I know Steve and Linda will be more than happy to make your life a little easier.

### Step Two: Making the Root End Ribs

These ribs are made from 0.032" 4130 steel sheet, and should be formed over a form block like the wing ribs. Use the full-size pattern supplied with the plans, but double check the dimensions since blueprints tend shrink and grow with changes in the humidity. The location of the hole for the welded-in drive pin will be one of the last things you do before you rivet in the rib. It will be done after the aileron has been mounted on the wing and the wing has been installed on the airplane. Use the aileron bellcrank as a guide to locate the hole. (A cutoff AN4 bolt with a point machined onto it, inserted through the bellcrank hole, will allow you to scribe the location of the hole in the rib.) Once the hole is located and drilled, cut the drive pin to length and weld to the rib. Then the rib can be cleaned, primed, and installed in the aileron. Be sure that the drive pin is long enough to stick through the aileron bellcrank by roughly 1/4" to make guarantee that it can't disengage.

### Step Three: Making the Tip Ribs

These ribs are made from 0.025" 2024-T3 alclad. They should also be formed over a form block using the full-size pattern. You'll need to make 3 RH and 3 LH ribs if you're building the II LTS, or 1 RH and 1 LH for the I or II.

### Step Four: Making the Hinges

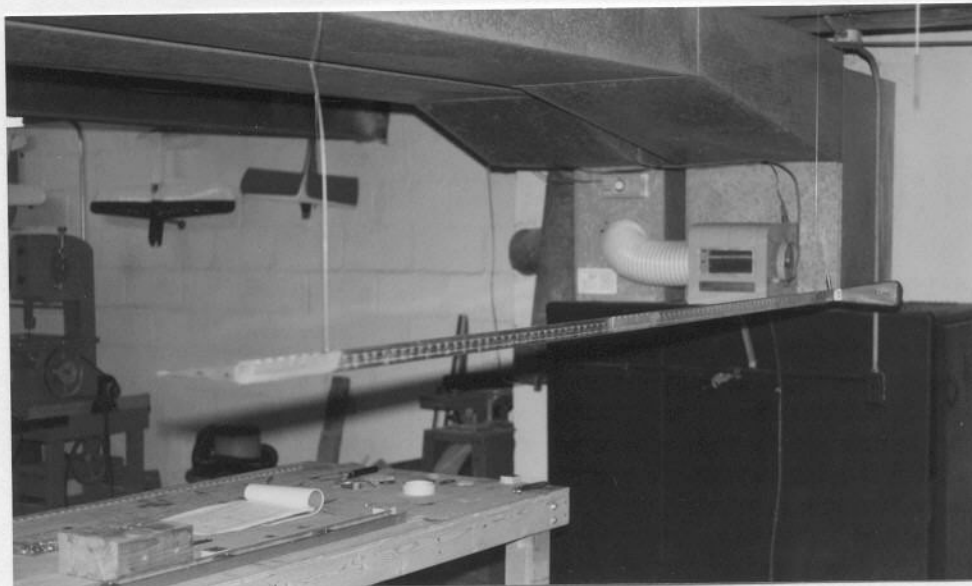
Making the hinges is simply a matter of cutting the MS20257P4 hinge stock to the appropriate length, swaging as shown on page 13 of the plans, and laying out and drilling the rivet holes in the half that mounts to the aileron. The hinge half that mounts to the rear spar gets drilled in place using the spar holes as a template. (See Step Ten.) The LTS plans show the hinges running the full length of the aileron, while the I and II plans show three 6" long hinges on each aileron. Either



arrangement works well. The three hinge system requires that care be taken to line up all three hinges.

#### Step Five: Fabricating LTS Counterweight Bracket

The counterweight bracket is shown in the upper RH corner of drawing S-21. Unfortunately, today there is no full-size template drawing available, so it will be necessary to scale-up the S-21 drawing. I found that if you use a photocopier that has enlargement capability, you can get a full size print



#### **Balancing the Aileron**

by enlarging the "section of wing at counterweight" four times using a 1.47 enlargement factor. The arm is 3/8" square x .035" wall 4130 tubing. The attachment plates will need to be scaled up too since they are not dimensioned either. The aileron attachment plate is approximately 1.75" x 5", and the counterweight attach plate is 1.50" x 2". Use 0.03" 4130 sheet, and weld everything together carefully. If you have the parts heliarced, be sure to renormalize the joints when the welding is complete. There have been a few failures of the arm at the weld joint because this wasn't done, and an unbalanced aileron will "buzz" (flutter.)

#### Step Six: Layout and Drilling of the Skin Holes

For this step, you'll need an 8' long flat table to lay the bent aileron skin onto. (A portion of the fuselage jig table works well. We'll talk about that in the future.) Lay the formed skin on the table so that the flanged face is flush with the edge of the table and install several blocks to the table along the trailing edge to support the skin while drilling.

Before the drilling starts, temporarily install the ribs to guarantee that the skin is the proper shape. On the LTS aileron, align the hinges to the aileron and use them as a template to drill the holes. Be sure to cleco as you go to help maintain alignment. If you're using the three hinge arrangement, it will be necessary to layout and drill the hole pattern between each of the hinges. It helps to run a length of masking tape down the length of the aileron flange to make it easier to mark the layout of the holes. Once the flange holes are drilled, properly locate the ribs, and layout and drill the holes for the ribs. Use the LTS counterweight bracket to locate and its attachment holes. After all of the drilling is complete, disassemble everything and deburr.

#### Step Seven: Assembling the Aileron

Now, we can rivet the aileron skin, the hinges, the internal ribs, and the balance arm together. All of the parts should be prepped and primed first, and then it's just cleco everything together and install the rivets. Remember that the root rib can't be installed until the drive hole is located and the pin is welded in.

Also, if the counterbalance is being installed in the tip rib, it and its cover can't be riveted until the aileron balance weight has been installed.

#### Step Eight: Balancing the Aileron

Balancing the aileron is easily done by hanging the aileron from the ceiling on a couple of pieces of 0.063" welding wire. Put a sharp 90° bend about 4" from the end of each and insert that leg of the "L" in the hinge. Mount the other end of each wire from the ceiling making sure the aileron is level from root to tip. Use a carpenter's level to check. At this point the aileron will hang trailing edge down.

Next, make up a lead counterweight as shown on the drawing. (This easy for the LTS guys. For the I and II, you'll need to make a weight to fit on the tip rib inside the aileron tip. You'll need to be a little creative here.) Use a chunk of plumber's lead that you get from your friendly Ace Hardware aviation department. I would suggest that you

make the weight a little oversized so that you can trim it until the aileron is 100% balanced. That is the aileron hangs level from trailing edge to leading edge. Use the bottom as your datum.

When attaching the lead weight to the counterbalance arm or the tip rib, it is absolutely necessary to insulate it to prevent dissimilar metals corrosion. I would suggest a layer of plastic electricians tape under the lead and lots of zinc chromate primer on all fo the parts. On the I and II you can now install the tip and rivet it in.

#### Step Nine: Installing the Aileron on the Wing

Align the aileron with the hinges pinned in place to the rear spar of the wing. Clamp the hinges to the spar, and use the holes in the spar as a template to locate and drill the holes in the hinges. After drilling, disassemble and deburr. Then, reassemble and rivet together. You can now finish and install the root rib.

One final thing to do is to drill a small hole through each end of each hinge to allow the installation of a small cotter pin to keep the hinge pins from working out.

Guess what? Your wings are done.

*I hope this series has been useful. If you have any comments or alternative ways to attack any of these processes please send them so that they can be passed on to other builders. Also, I'm looking for suggestions on what other "how-to's" you'd like to see.*

## **ANNUAL INSPECTIONS AND OTHER THINGS**

In May I did the twelfth annual inspection on my Sonerai IIL. It seems like every year, I find at least some little thing that needs fixing. Well, this year was an exception. I found a couple of "big" things that needed my immediate attention.

The first was a crack in the RH front exhaust pipe. It was right next to the flange weld and went almost half way around the pipe. Needless to say, the fix was simple. I removed the pipe, welded up the crack, and bolted it back on. My pipes are made from mild steel, and this is only the second exhaust pipe repair I've had to do in thirteen years. The other one was on the LH front pipe.

The second problem took a little longer to fix. Upon removing the spinner, I found a crack in the

front bulkhead about an inch long that had started in one of the nut plate rivet holes. There was also a small crack in the spinner, and it was also showing some serious wear around a couple of the front bulkhead screw holes. I have always used nylon washers under the heads of these screws to prevent damage to the paint. Apparently, the nylon prevented the screws from maintaining the proper clamping force, allowing the spinner to move a little under the screws. After a while, the aluminum started to erode away. Now, I'm using steel washers and I'm planning to check the torque on the screws more often.

I decided it was time to replace the spinner again. (The first was replaced at 317 hours, and this one was at 609 hours. Looks like an approximate life of 300 hours per spinner. I guess I'll have to start checking again at around 900 hours.) So, a new spinner and front bulkhead were ordered from Steve, and after the usual cutting, fitting, cursing, and cajoling, the airplane is whole again.

One of the things that I do about every other annual is to remove the horizontal stabilizers to check for corrosion on the spar tube. Larry West from Tum Tum, WA sent me a note on this subject awhile ago, with a suggestion to pass it on to everyone else. Good idea. Because the horizontal stabilizer slides over the spar tube with a slight clearance fit, it is possible for moisture to get inside the stabilizer tube and cause rust to form. There are a couple of things you can do to minimize this problem. First, paint the spar tube and the inside of the stabilizer tube. Second, drill an 1/8" drain hole out at the tip end of the stabilizer tube. That way if a little rain water gets in, it's got a way out, and can do little damage while it's there.

So, as you can see, the annual inspection can, and does, serve a valuable purpose. It allows you to find things, which if left alone, could make your day way too exciting.

## **SUN N FUN '99 DEBRIEF**

Sun N Fun '99 has come and gone, and it was unlike any of the other Sun n Fun's I've been to before. A truly unique experience in several respects.

This year I had the opportunity to fly down in the back seat of a brand new American Champion 7CGBC Citabria. My hangar partner, Keith Tridle, had the opportunity to take the airplane to the fly-in and asked me to come along. How could I



refuse? It was a free trip. We left from the American Champion factory (it's only 5 miles north of our home base) on Thursday morning, April 8, and flew in loose formation with ACAC's Dale Gauger in a new Super Decathlon.

To make a long story short, we made it to Perry, FL that evening, with stops in Lawrenceville, IL (to pick Dale's dad, Glenn), Murfreesboro, TN, and Taladega, AL. On Friday morning, we flew down to the Orlando-Sanford airport with an intermediate stop at Cross City, FL to wait out the morning fog. After we cleaned up the airplanes, we flew on down to Lakeland late in the afternoon.

Keith and I then spent the next 4 days taking part in the event. We looked at all the new airplanes; were really impressed by the new Pitts Model 12. We checked out the antiques and classics, looking at short-wing Pipers since we're both in the process of building Wag-Aero Wag-a-bonds. And scoped out Paradise City and all those crazy ultralight guys. Of course, we did our best to leave a large portion of the money that we brought with the various hardware and junk vendors. We even found a complete Piper PA16 Clipper control stick assembly that I bought for \$50 because the guy selling it didn't know what it was.

The Sonerai stuff went pretty well, too. We only had two Sonerai's on the grounds that I'm aware of. Fred Flynn brought his II down from Pennsylvania, and Danny Kight brought his IILT down from South Carolina, but was only there for a day or so. (I didn't even get a chance to say hello.) I was also told that Sun N Fun regular Al Bertelmann came all the way back from Singapore for the event, but didn't bring his II. The forum on Tuesday was well attended, and turned into a good question and answer session. We had between 25 and 30 folks at the Annual Dinner and Vito's Wednesday night and I don't think anyone went away hungry. It's always fun to sit down with old friends and talk airplanes. Thanks to Dean McGinnes for organizing it again. Dean, next year I'll have a "Sonerai Fight Song."

Keith and I didn't spend Wednesday in Lakeland, but came back Thursday just in time to witness the "Fire of '99". Needless to say, the dry conditions, and 30 mph south wind, and a large brush fire a couple of miles south of the field made for an exciting afternoon. It's the first I've ever been kicked out of a fly-in. Fortunately, the fire was knocked down before it got to the airport, but there were a lot of concerned folks for a while.

Since the Citabria flight was only one way, our trip home was much quicker, riding in an ATA 727 from St. Pete back to Milwaukee. We had planned to return on Thursday morning, but once we found out that it would cost over \$140 less to come back Friday evening, we figured we could suffer an extra day in Florida.

All in all, we had a great time, and are already talking about Sun N Fun 2000.

## WRAP IT TIGHT, NOT NECESSARILY A GOOD IDEA

by Steve Bennett

*Here's some good advice from the Great Plains Aircraft Supply Beetle Flyer.*

At Oshkosh this year, we noticed a number of VW-powered aircraft that had their exhaust systems wrapped with heat tape. If you have a stainless steel exhaust system, you will get away with it for a while. However, if your exhaust system is made out of mild steel, wrapping the pipe is not an accepted practice. Moisture is trapped in the wrap between the wrap and the exhaust pipe. It will eventually rust through the pipe. Instead of wrap, we would suggest a spray-on pipe coating that is sold through the Eastwood Company, and is designed to do the same thing - keep the heat in the pipe, not the cowling.

SEE

YOU AT

OSHKOSH

# WANT ADS

*These Ads are provided as a service to you, the subscriber, and are free of charge. I only ask to be informed when the Ad is no longer valid, and needs to be removed. Thanks.*

For Sale - 1600 VW engine, 0 TT. Disassembled - all new parts. Complete engine. Mexico universal AS41 case, Case inserts. Case machined for Great Plains Force One Prop Hub. Has Force One Hub Parts. Dual Port Heads. Forged counter weight balanced crankshaft. Balanced pistons and rods. Pauter performance cam. Horiz oil cooler and adapter plate. \$1900 Bob Schank, (734)697-7057 after 5pm (3/98)

For Sale: Used Bogie tailwheel and Monnett tailwheel caster with 2-5 1/2" springs (needs the chains) \$25.00, New unmachined Monnett "Electro X" casting \$100.00, Used Monnett Sonerai I fuel tank (needs cleaning) \$55.00, Used pair of axles, 3/4" shaft, 5 3/4" long \$4.00, Used fuel shutoff valve \$5.00, Used set of rudder pedals asm. with toe brakes (see Sonerai I drawing page 11 and 15c) \$20.00, Used Sonerai I torque tube asm, (see drawing page 5) \$40.00, New (4) 87.5 cylinders and pistons \$75.00. You pay the shipping. Bob Schank (734)697-7057 (2/99)

TAPER PIN REAMERS FOR RENT - Brown & Sharp #3 and #5 for AN386-3 and AN386-5 taper pins. \$1.00 per day for both reamers, \$150 deposit. David E. Wilcox, 517 E. Saratoga St., Gilbert, AZ 85296, (602)231-5824 (3/99)

Wanted: Sonerai I, Prefer flying, but call on any type. Jack Spring, 248 Jack Spring Ln., Kentwood, LA 70444, Home (504)229-8297, Work (504)344-1533. (2/99)

For Sale: Sonerai IIL w/ 75 hp Lycoming 0-145-C3, Magnum Ivo-Prop, ground adjustable, 12 gal wing tanks, S-wing, new 3/4" Grove landing gear, new canopy, improved cowling, 60 hrs TT. Flies great at 3.5 to 4 gph! \$9500 OBO. Call Craig Merrill, (803)521-4577 (2/98)

QUALITY RIBS L.L.C. SELLS COMPLETED RIBS FOR SONERAI AIRCRAFT. Contact Great Plains Aircraft or Quality Ribs L.L.C. direct at (602) 892-7189 for a brochure on the company. (3/99)

SPECIALTY WELDING CAN SUPPLY YOUR COMPLETELY WELDED SONERAI FUSELAGE AND OTHER WELDED COMPONENTS. Contact Greg Klemp at Specialty Welding, W6461 County YY, Neshkoro, WI 54960, (920)293-8089 or (920)293-8007 (Fax) (3/99)

For Sale-Two Sonerai Projects, 1850 cc VW, four 150 hp inverted Tiger inlines, new Sterba Sonerai prop, stock Subaru EA-81, Sonerai cowlings, canopies, etc., Hatz

biplane wings, center section, and fuel tank, Christen Eagle ailerons. Will happily trade or negotiate within sane boundaries. Also have 2 1/2 runway acres on Arizona Airpark, M. Lee Wachs (707)463-0467 (3/98)

For Sale: Sonerai I - Very nice single place, five minute wing fold design, \$3000, one hour south of Oshkosh, (414)626-8726 or (920)533-4379 (4/98)

Wanted: Any Sonerai IIL (S or T) Call (352)628-1027 (2/99)

For Sale: Sonerai IIL, 80% complete, fuselage, control surfaces, and canopy bow welded, flush-riveted S-wings w/ wing walk, cowling fitted, all VFR instruments, zero-time 1915 cc Great Plains VW engine w/ oil cooler and Elison carb, 5/8" gear w/ hyd. brakes & wheel pants, seats & cushions, I-Coum intercom, ELT, fuel tank, BRS chute ordered, flight manual and construction manual, excellent workmanship, Must sell, \$10,000 OBO, call Jerry Kennedy, (405) 733-4932 (4/98)

For Sale: Sonerai IILT, 95% done, needs covering, all parts to finish, 1835 cc reman. VW, prop, instruments and flight controls installed. \$5000 (541)564-8153 (4/98)

Wanted to Buy: Set of wings for Sonerai II, and Sonerai II mid-wing fuselage. Call Tom Hall, 658 S. Abbey Ave., Springfield, MO 65803, (417)862-3837 (4/98)

For Sale: Sonerai IILT, flying condition. Nose gear mount, heavier landing gear, Loran, dual ignition. Needs annual. (919)787-9497 (2/99)

Wanted: Sonerai. Prefer single place Sonerai I. Must be well-crafted, well-cared for, hangared, and in good condition. John Borra, 3327 Willow St., Hays, KS 67601. johnborra@media-net.net, (785)628-0658 (2/99)

For Sale: #5 Brown & Sharpe reamer, used one time. \$25.00. Also, RTN100 tubing notcher, used on one project. \$100. Call Gene at (501)394-3412. (2/99)

For Sale: New HAPI tapered prop hub, \$100; Factory rebuilt German late 1600 case, line-bored .010 under, in the box, \$150; Steel billet counterbalanced crank, standard, like new, in the box, \$200; 1600 VW engine-late block, counterbalanced crank, special cam, valve train, balanced, Force One hub, includes rare straight-cheeked Sonerai I cowl, firewall, engine mount, & S-I plans, \$2800; Tennessee Props 50x33, new, \$100; call Elliot

Willoughby, (502)477-2466 (no collects) or write, 2323 Hochstrasser Rd., Fisherville, KY 40023. (2/99)

For Sale: VW engine case, new, cut for 94 mm cylinders, clearanced for stroker crank, and bored for Force One prop bearing. \$250.00. Call Kevin Hosp (317)899-8456 (3/99)

Wanted: Sonerai IIL or IILS with 2180. I would consider an 80% built airplane without engine. Lee Holloman (435)527-3105 (3/99)

Wanted: Starter and flywheel to fit Mosler/Hapi accessory case. Kevin Hosp (317)899-8456 (3/99)

For Sale: Sonerai IIL, 1834 VW, 201TT AF & Engine, 83 STOH included new heads (dual Ignition), cylinders, pistons, rings, valves, valve springs; elec. start, no alt, wheel pants, EBC ELT, Sterba 54x42 prop. This is a good solid aircraft with low time. \$9800; Also have custom-built a/c trailer for Sonerai, with drop down ramp for loading. \$300. Ken Christian (660)263-7937 (3/99)

For Sale: Parts for Sonerai II (Midwing) - VW engine, 60 hp, HAPI 1835 w/ dual ign. and electric start, 220 TT, prop strike, HAPI accessory case, Slick Mag, POSA card, starter; Sonerai II cowls - 1 brand new, still in box (bought 2/99), 1 used w/ lower half damaged; mid-wing fuselage, 220 TT, gear attach damage, horiz. Stab trim, good fabric, tailwheel ass'y, controls, seat pads, canopy frame, panel, elec. Switch box, battery box, firewall, etc.; 10 gal. Fuel tank; towing package (rear hitch attaches to tailwheel, and fuselage and wing support fixtures); landing gear - 5/8" w/ brakes, wheels and tires, wheel pants (damaged); some instruments. I need to cleanup my hangar, make me an offer. Tim Abke, (937)355-7471 or tabke@logan.net (3/99)

For Sale: Complete Sonerai IILTS kit w/o engine and instruments. \$2200 (worth \$4500). Charlie Quit, (516)423-8673 (3/99)