

SONERAI NEWSLETTER

JAN-FEB-MARCH 1998

FRED KEIP, *EDITOR/PUBLISHER*
11428 SIX MILE RD.
FRANKSVILLE, WI 53126

PHONE: 414-835-7714
(AFTER 6 PM CST)



DAVE WILCOX AND HIS SONERAI IILTS

*Dave flew his airplane for the first time on May 2, 1997 and now has over 150 hours on it.
It has a Continental A-80 and swivel-type nose gear.*

HAPPY NEW YEAR!

It is my sincere hope that each of you has had a happy holiday season. That means, of course, that for those of who are building, you got all the parts you needed to finish your Sonerai, and also all kinds of free time to get it built. For those who are flying, it means you have gotten decent flying weather. And up here in the north country, that's pretty hard to get this time of year. I'm looking forward to another exciting year of producing the **Sonerai Newsletter**, and I hope it continues to be of value to you.

WARNING! WARNING!

IT'S SUBSCRIPTION RENEWAL TIME! As you all know by now, the **Sonerai Newsletter** subscription runs from January to January. So guess what that means? It's time to re-up. Please take the time to look at the mailing label on the envelope that this fine rag came in and check the "PD" date. If it says "PD 97" and you wish to continue receiving the newsletter, please send me a check for \$12.00 (in US funds, money orders and cash are OK, too.) If it says "PD98" or "PD99", you are set for another year or two. I do ask that you please make the check out

to me (Fred Keip) and not to the "Sonera Newsletter". I'd appreciate it too, if you could attach a little note telling me which Sonera you're building and which engine you're using.

BUILDER'S SUPPORT REVISITED, AGAIN

Here is an updated list of Sonera builder/pilots who have volunteered to help answer your questions:

1. Al Bertelmann, Harvey, LA., Phone: 504-347-0412. He has a Sonera II.
2. Jim Quinn, Endicott, NY, Phone: 607-786-0995 or 315-735-3846. Jim has a Sonera II with an A-65 Continental. It has over 1200 hours on it now.
3. Fred Flynn, West Chester, PA, Phone: 610-873-9122. Fred has a Sonera II.

Please call these guys at reasonable hours, and please don't call collect. You can still call me, too. I love talking Sonera's.

HELP!

One of the things that helps make this newsletter interesting, for me, is the varied input I receive from you guys. This input comes in many forms. The first is in the many phone calls I get with many of you looking for answers to questions and problems. These questions often lead to ideas for articles. The second is in the letters I get with even more questions. The responses to the letters often show up on these pages. And the third is in the form of articles written by you guys that I can just put in. With all that in mind, I'd like to ask you to send in more questions, and preferably more articles for me to publish. Your article doesn't need to be really long or complicated, just write the facts and I can fill in the rest. (That's why I'm the editor.) Anything on building, testing, and flying our Soneras will be appreciated. (If you like, you can send the article on a diskette in either Word or WordPerfect, and really make it easy.) As a small incentive, if I publish your article, I will give you next year's subscription for free.

Also, please send in photos of your airplane so that I have more to choose from for the front cover. I'm getting close to putting my airplane on the front every issue, and I don't think we want to do that.

SONERA NEWS

→The dates for Sun'N'Fun 1998 are April 19 to 25, 1998. It's never too soon to start planning. I'm planning to be there, one way or another. We will hopefully have a forum and dinner. There will be more detailed information in the next issue.

→Oshkosh 1998 will be from July 29 to August 4. Be there or be square.

→Bill "Spud" Spornitz is organizing "The Field of Dreams Invitational Fly-In" in Ottawa, Kansas in September (the date wasn't fixed as this was being written). It is invitational in that it will be restricted to homebuilts that have a design gross weight of less than 1350 lbs. Spud currently writes the **Dragonfly Newsletter** and the **VW Aviation News**.

→Last year there was a question raised about whether or not the wings could be folded on a Sonera IILT. A while ago, I got a photo from Gary Zahn of Pickett, WI showing the wing folded on his IILT. It can be done. Thanks, Gary.

→There is now available a vacuum pump drive for the VW engine. MPA Company, P.O. Box 622, Toccoa GA 30577 markets it. It basically mounts the pump on a Diehl case where the magneto would normally mount, requiring the use of some other type of ignition system. I question the need for a vacuum pump on our simple airplanes, but here's one that could work.

→There are back issues of the **Sonera Newsletter** available for \$3.00 each. They include the last two issues of 1994, all four of 1995, all four of 1996, and all four of 1997. If you would like any or all of these send me a note listing the issues required and a check for the correct amount. Postage is included.

FULL DEPTH FUEL GAUGE

Back in November, I got a note from Jerry Gore of Hendersonville, NC asking about the fuel gauge set-up in my Sonera IIL. Here's my response:

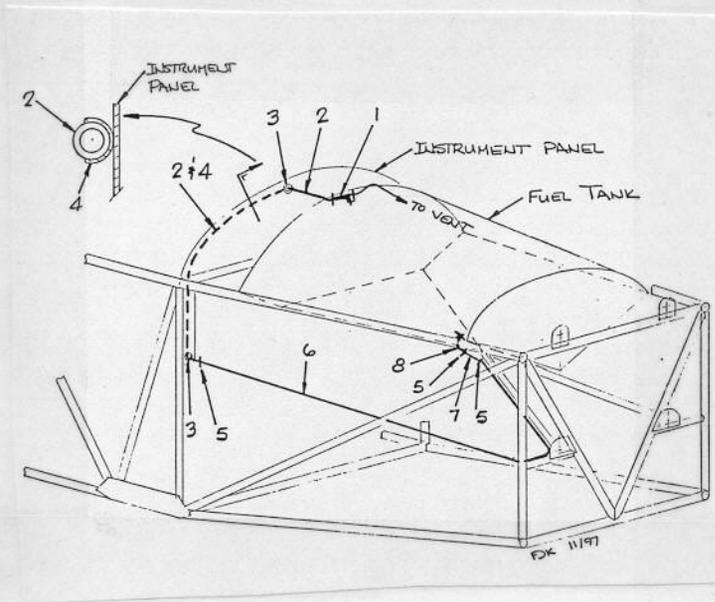
Here's a sketch showing the layout of the "Full Depth" fuel gage that I have in my Sonera IIL. The basic idea behind the design is to be able to read the fuel level all the way down to "empty". The design in the plans, which goes down the center of the panel, makes it almost impossible to accurately read the fuel level below about four gallons.

The item numbers on the sketch are as follows:

- Item 1 - 1/4T x 1/4T x 1/8P nylon tee (Aircraft Spruce p/n 0716-153)

- Item 2 - 3/8" OD x 1/4" ID Tygon tubing (Aircraft Spruce p/n B-44-3). This stuff works really well with 100LL avgas.
- Item 3 - 3/8" ID rubber grommet in the instrument panel (AN931-6-10)
- Item 4 - 1/2" OD x .035" wall aluminum tubing. This tube acts as a support for the Tygon. Cut away the face of the tubing, paint the inside with white enamel for better fuel visibility, and rivet to the panel with 3/32" flush pop rivets.
- Item 5 - Small stainless hose clamp
- Item 6 - 1/4" OD soft aluminum tubing. Tie wrap to lower right motor mount diagonal tube, and the RH fuselage diagonal tube.
- Item 7 - 1/4" ID automotive fuel hose, 2" to 3" long.
- Item 8 - AN842-4D 90° elbow

The reason for this layout is the need to avoid a "P trap", so that the gauge reads accurately to the bottom of the tank.



A LETTER FROM ERIC KLEVSTAD

I started building the midwing Sonerai II about a year ago. Using the Great Plains wing kits, I have built the spars and have all the wing rib blanks cut out and the form blocks made. While this was going on, Greg

Klemp from Specialty Welding in Neshkoro WI welded up my fuselage. Grove Aircraft in California made the landing gear, and by making it 3/4" thick, using heat-treated aluminum blanks that have been gun drilled for the brake lines, they made it lighter and stronger because it is not as wide. The gear was aerodynamically shaped and Matco brakes and wheels are being installed using aluminum axles for 5.00 x 5 tires. For brake control, I have two brake levers on the left side just below and behind the throttle. It took some fiddling to get it just right, but now I get differential braking by twisting my wrist and the brakes are applied by pushing the levers rather than pulling. The action seems natural and the controls fall right in the hand without bending; just by dropping your hand from the throttle.

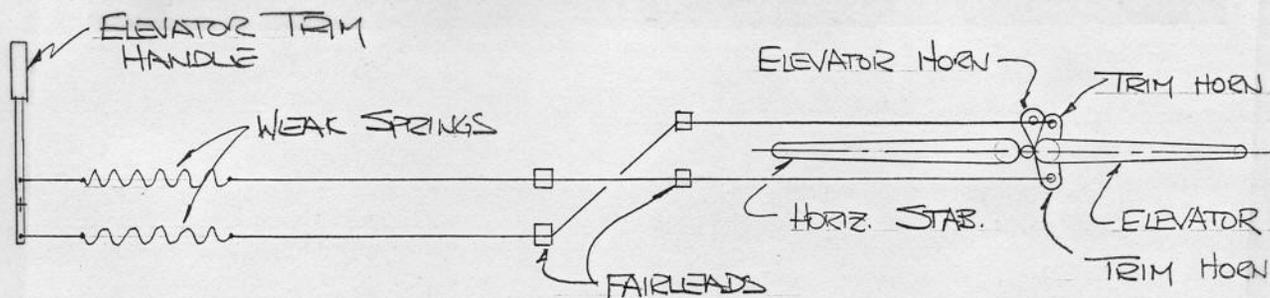
I am now working on the fuselage, getting all the controls and fittings installed. When done, it will be powder coated, hopefully this summer, then I will finish off the wings.

TRIM

I also added elevator trim. Fred, I really like your system, and I suspect that trimming the stabilizer is more efficient than using the elevators, but I decided to go with elevator trim because it was easier for me to make. The system I came up with adds two control horns to the elevator, one on top next to the elevator push rod and one under it. To these control horns I will run a cable going to a weak spring and then to a "Trim Control Handle" with a friction lock. (See the attached sketch showing the general layout.) During normal operation, the normal stick inputs override the springs giving a bit of artificial feel, but during cruise the trim is adjusted and moves the elevator neutral point. The trim control is mounted on the left, just forward and above the brake levers. I used a "SLIM LINE QUADRANT" from AIRCRAFT SPRUCE for control. It's a bit pricey and heavy, but fits and works well for this application.

FUEL TANK

I have a fuel tank, also! It sits and mounts as per the plans, however, it has an internal "aerobatic compartment" that holds about 1-1/2 gallons of gas for inverted flight and acts as a baffle to its 14-1/2 gallon capacity. It's a thing of beauty that was mutually designed by Greg Klemp and myself. Greg made the tank for me and got it to fit after moving a few tubes around. John Monnett was consulted on this. With this change, I lost a bit of forward knee room and the control stick will have to be a bit shorter, but my 185 lb body of 5'-9-1/2" still fits in there OK, and my 5' wife will be comfortable. The



only thing to watch will be the CG and gross weight. To draw the fuel, I have two electric fuel pumps plus one mechanical pump to install.

THE ENGINE

I have thought about an engine a lot, and I just don't think that this project will fly without one! Although I am about a year from getting one I have come to a few conclusions after studying several alternatives. Like most folks, I have limits on money and spare time that I can put out, and I want a power package that is reliable and optimizes the performance of the Sonerai. So, whatever I use has to be proven, has to fit, cannot be a lot of extra work, and the only engine that seems to fit my criteria is what the airplane was designed around - the VW.

Since most of my flying will be over water, mountains, or cities, I am planning to use the 1835 cc VW with dual battery ignition. This engine seems to be the most reliable, is easy on fuel burn, and is very affordable. I will have two independent small batteries, one for each ignition, plus an alternator, but no starter. I am still designing the electrical / instrument / fuel / etc. systems. Since I am a bit of an efficiency nut, I hope to get my performance through light weight and streamlining rather than horsepower, so a lot of my original ideas have been tossed because they were too heavy, cost too much, added too much work, or were just not worth it. Besides, I spent my weight on that 14-1/2 gallon fuel tank.

WING SPARS

Building the spars was fun and easy - once I figured out the plans. All the information is there. It's just kind of scattered, and really did not make sense until I was half done! I just took one step at a time. Start with the main spar channels and cut all the lightening

holes, then cut the cap strips one at a time as per the plans and start stacking them. The more it goes together, the more sense it makes. Just be sure to measure twice, and cut once!!!! And plan your cuts so you do not end up with two short pieces when you need one long one. I made all the spars at the same time, and it worked real well since I was really careful to mark EVERY piece with a center punch so each piece had dots on the outboard end. (e.g. - all the left spar top cap strips had two dots.)

I made one change - I made the 1-1/4" angle from the stronger 2024-T3 instead of 6061-T6 and made it one piece instead of splicing it. This meant a change in the spacers, also. Finally, I flipped the angle over so that I have about 1-1/4" clearance between the spar web and the angle flange to make it easier to rivet.

I have heard that many have just dropped the angle down about 1/2" or so instead. My change is NOT designer approved, and I may very well have lost some strength here, but since I think the original wing was strong enough, I feel I am OK on this. *(Freditorial Comment: Making the angle one piece is a good idea. To provide enough clearance for the skin-to-top spar flange rivets, just move the angle down 1/8". And if you plan on doing aerobatics, remember the S-wing spar configuration is required, and the maximum aerobatic gross weight is 750 lbs.)* One thing to watch when you do your assembly is that if you got your cap strips too close to the radius of the channel flange is that the flange angle will change when you clamp down for riveting the cap strips to the channel. Mine did, and all the holes were drilled. The fix is easy. Just file a greater radius on the bottom capstrip corner until it fits right. This is important since it will throw off the 92/93° angle and much worse, keep you from getting tight

stacking and that could cause the rivets to work loose - UGH!

Drilling all those capstrip holes took some time. I used one of the longest (96") capstrips and marked/drilled small pilot holes and then used this long piece as a template for all the other pilot holes in the other capstrips. After I stacked them using alignment pins (drill bits) and lots of clamps, I drilled out the holes for the rivets doing one set at a time. (ie - left spar upper, then left spar lower, etc.) Be sure to unclamp every so often to clean out the shavings, because if you don't, it can throw the hole alignment off. When you are all done, and all the holes have been deburred, I found that the four sets of capstrip pieces are not interchangeable, even when drilled from the same original 96" master. All the holes move around a little. That is why you should mark all sets with a center punch BEFORE you drill. Since my Sonerai may be parked outside a lot of the time, all the pieces were etched/alodined/primed before the rivets were shot. If you decide to do the same, be careful. That stuff is not healthy. I used gloves, goggles, and a forced-air respirator, and did it all outside.

I enjoy riveting, it's when it all comes together! There are a few little tricks that help me a lot. First, I clamp/support the work so it can not shift, then I measure the rivet when installed in the well-clamped capstrip stack to be sure I have the 1-1/2D to 2D extension to buck. Then, before starting, I install a rivet in every fifth hole to be sure of proper alignment. Finally, I do a couple of practice rivets on scraps to be sure the rivet gun and compressor are set up right. A 3X gun with a 2 HP compressor works for me. Finally, I put a piece or two of masking tape in the rivet end of the rivet set, and this keeps me from marking the work. To quickly check my work, I use a homemade go/no go gage with the right diameter hole and depth drilled and filed into it, then I start riveting in the middle and work my way to the ends. My plans said to use a #22 drill for the 5/32" rivets. I think the more normal #21 size drill bit is a better idea. This way the rivet slips in and swells to fit rather than having to pound the rivet into the hole. Not every rivet you buck will be perfect, but just remember that rivets are designed for shear loads, not tension, so if the head is sound, but just a bit "ugly" - leave it alone. You can do more damage trying to remove a rivet. I had to remove a couple because they cracked - no choice there. In theory it's simple, center punch the head, drill straight down with the drill bit just through the head, then stick a pin punch in the hole and knock it out with one hammer blow. Ha! I had one rivet that was so tight it would

not punch out. I had to drill it out, and that ruined the hole. My solution: drill it oversize for a 10-32 NAS countersunk bolt and install with a locknut. There are also oversize rivets one can use, but the right size may be hard to come by. *(Another comment: There is a neat little rivet removal punch that comes with a standard .401" shank that allows you to use the rivet gun to drive out those tight rivets. It works really well. Check any of the aircraft tool supply catalogs. Also, if you do goof up the 5/32" rivet hole, just drill it for and use a 3/16" rivet.)*

I thought bucking the double countersunk rivets on the inboard end would be hard; not so. Just don't forget the .040" spacer between the .125" thick end plate and the capstrip, as it is not real obvious. I used one piece of .040" x 6" x 12" rather than two each .040" x 1-1/4" x 12". One thing, it's a good idea to put tape over the rivet holes that will support the ribs and brackets so you do not shoot them early. I just marked mine, and guess what? Two of them!!

RIBS

When I went to make the ribs, I found that the full size pattern was a bit too long. The size did not match the dimensions on the drawings. The rib was about 3/4" too long. This is no fault of the plans. It's just a fact of life that paper changes size with humidity, time, folding, etc. Friend and fellow Sonerai builder Darwin McKinney found it when he was checking my work for me. To cut out the rib blanks, I made an aluminum template of the full-size rib without the flanges, but with all holes drilled. Then I aligned the alignment holes and with a grease pencil I first drew the inside dimension on the rib stock material, followed by the flange line. To draw the flange, use a fender washer with a 5/8" radius from the edge to the center hole. Then get your grease pencil and stick it in the center hole and roll it around the full-size template and you have your flange drawn for you. Just remember to put the alignment pins in so the template does not walk on you. To cut out your blank, start by drilling a 1/4" hole on all the inside corners and deburr. You can cut out the rib with a wood cutting bandsaw, but I found it quicker to cut by hand with a pair of Robin Tin Snips since it requires a lot less sanding. For sanding, I have a portable belt sander that I clamp upside-down. I works well. I used the same full-size template to make the form blocks. I rough cut some 3/4" thick oak with a saber saw after drilling those key alignment holes, then I got my old wood router and a new carbide bit and traced around that good old .040" template for a perfect match. Next I got another router bit with an inside 1/8" radius and formed the corners. If you like, you can file the flutes

into the form blocks, just be sure to plan for the wing skin rivet pattern first! Or you can use a fluting pliers. It is also good to plan for spring back by making the form block's flange angle 100° instead of 90°. You can either tilt your router with shims or use a belt sander for the final angle. I have not bent my flanges yet, since it is easier to store the blanks rather than the bent ribs, however when I do, I will make left and right ribs, and for final forming I will smack the flanges with a lead strap that I have to help guarantee perfect form, I hope.

Well, that is it for now. I hope some of this gibberish is of value. I just got my control sticks in and I have to go and play fighter pilot.

Eric Klevstad
Tacoma, WA

FROM THE ARCHIVES

*From the March/April 1982 issue of the **Monink**, written by Randy Novak, this is an excellent explanation of the process of the "Canopy Installation."*

"In the following paragraphs, I will attempt to explain a part of the aircraft's construction that most builders approach with a certain degree of confusion and apprehension. There are many different ways that the canopy and frame can be constructed, and here is one method. Whichever method you use, a generous amount of patience and self-control will help give you good results and avoid unnecessary expense.

The canopy frame itself should be built according to the plans. By following all of the dimensions carefully, you should end up with the front and rear bows fitting up fairly well to the rest of the fuselage. The canopy frame is built right on the fuselage, even to the point of lightly tack welding the frame longerons to the upper fuselage longerons to hold them in position while attaching the front and rear bows. Please note in the drawing how the rear bow is spaced far enough ahead of the turtle deck bow to allow sufficient edge distance (3/8 inch) for attaching machine screws. If your rear bow is too close to the edge to allow bolting directly to it, you could weld eight small tabs onto the frame, pointing them forward. By using the tabs for mounting, you gain that much more edge distance. If when fitting your canopy to the rear frame, you find the frame a little short and not allowing the canopy top to line up, you

can easily raise it by installing small rubber grommets or pads between the frame and the plexiglass. These rubber pads give the added benefit of serving as vibration mounts. Keep in mind when attaching the canopy skirt to the front frame, if need be, it can be spaced out with rubber pads or washers. Remember that now is the time to make and install your canopy latch (Don't Forget the Return Spring!), since once the skirt is attached it is difficult to get the latch assembly into the frame.

"When working with your canopy, take care not to scratch it. Keep your hands clean and the metal chips swept up. The first thing you must do to your canopy is trim the excess material away from the outside. One of the safest methods we have found for cutting our canopies is to use a Dremel tool or a high-speed die grinder with either a small buzz saw blade or a thin abrasive cut-off disc. Once the excess material has been cut off, it is time to lay the canopy over the frame (off the fuselage) and mark your cut-off lines (masking tape works well) for the rear bow. The front of the canopy should rest against the rear side of the front canopy bow. Cut it off about one inch longer than necessary since you can always trim more off later.

At this time, you can now put the canopy frame back on the fuselage and lay the canopy in place. Use blocks and small clamps to hold the canopy in position. You will notice that when you clamp the canopy down to the rear bow that it must be flattened considerably to make it conform to the shape of the rear bow. Use plenty of clamps to spread the force out along the a greater area, so as not to create a high stress area. During the clamping procedure the canopy will usually shift slightly because of its modified shape. Any holes that you may have drilled earlier will probably not line up. It is better to wait until it is clamped securely in position before drilling any holes. When blocking the front of the canopy in position, try to get it as low as possible without restricting the front seat headroom too much as this will help improve your visibility. Usually the canopy front is fastened only to the canopy skirt, although a couple of tabs could be added to the front bow allowing the canopy to be fastened directly to the bow frame.

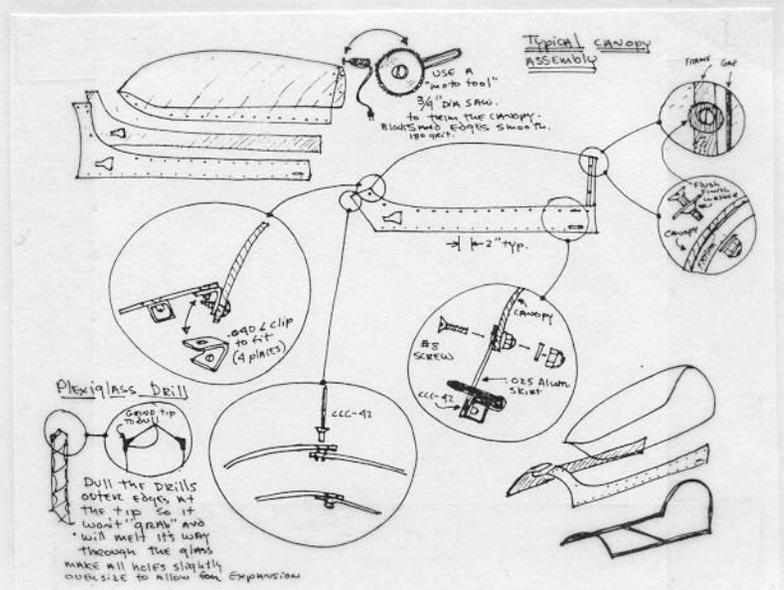
Now that the front and rear of the canopy are in position, you can attempt the canopy skirt. It is important to remember that when drilling plexiglass it is advisable to use a dull drill bit, drill at high speed, and use very little pressure since it easy to chip or crack the plastic. Drill all holes 3/32" or 1/8" and use clecos to hold it all in position until you are done. For

installing the skirt, the cowling must also be in place. The skirt is made from two pieces of .025" aluminum, with the pieces joining in a lap seam at the top, front area of the skirt. The skirting is installed by attaching the sides (top and bottom) first and then making the wrap around the front. It does help to start out by making a template of the skirt out of poster board or light cardboard. When transferring the pattern on to the aluminum, leave a fair amount of excess in the front. The aluminum does not form to the curve like the cardboard did and you will probably have to make alterations as you form it. Attach the skirting at the rear first, drilling and clecoing your way forward using two inch spacing. The lower edge of the skirt is attached directly to the frame longeron by just drilling through the skirt into the frame. The top edge is fastened to the plastic, drilling through the skirt into the plastic, allowing 3/8" edge distance in the plastic and 1/4" for the aluminum. After both sides are attached, you can start forming the aluminum around the front. Work slowly, clecoing as you go. Continue attaching the skirt to the plastic with this method until coming to the area where the plastic begins to curve tightly around the front and the angular difference between the plastic and aluminum is too great to allow attaching directly between the two. From here on forward, use bent aluminum tabs as shown in the drawing. The top of the curved area should follow the line of the cowling. Do not allow the aluminum to slope up sharply in front, since this will not do much for your visibility. If you have trouble forming the front curve, go take a coffee break and convince yourself that it can be done.

Once every thing is all clecoed together, you may now take it all apart. Deburr the holes in the skirt and the frame. If you are going to use counter-sunk pop rivets for holding the skirt to the frame, you can dimple the skirt and countersink the frame to accept the dimpled skin. All holes in the plastic should be drilled oversize. If you are going to use 6-32 screws, drill the holes to 5/32" minimum. It is possible to attach the skirt to the plastic with pop rivets; however, machine screws and stop nuts would be the better method. Use a large area washer or aluminum backing strip between the plastic and stop nuts. Tighten the nut down snugly then back it off one or two turns (depending on the curve of the plastic) to relieve the pressure. The loose fasteners and oversized holes allow the canopy to expand and contract freely. Applying adhesive sealer between the plastic and the aluminum is not necessary or recommended since it would restrict its movement. If you find it necessary to seal off air or water leaks, run a bead of sealer around the outside of the canopy.

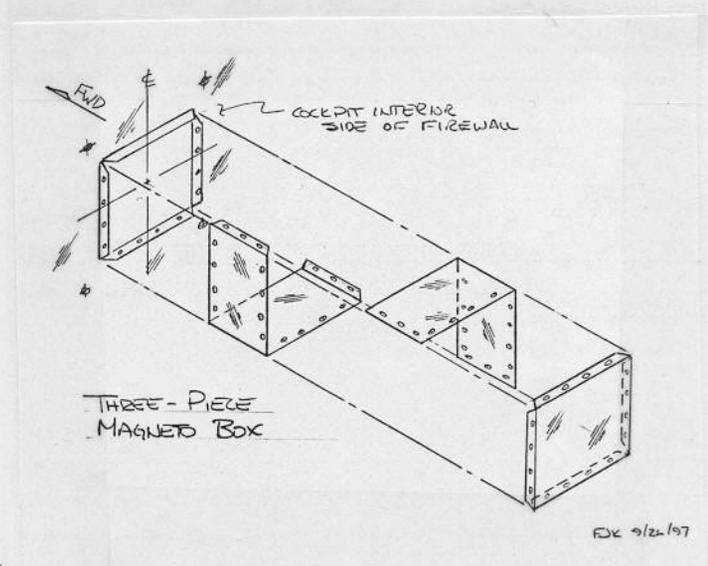
If you are going to install and air vent in the canopy skirt, install it as far forward as possible. This position provides much more air flow compared to a central or rear location. The aerovator type of vents can be installed easily by just gluing them in place with a silicone-type adhesive.

Now that you're all done, you can breathe a sigh of relief, knowing that you made it over the tallest hurdle."



MAGNETO BOX

This is a sketch of the magneto box on my ILL. It is a slight modification of what is shown in the plans. All the parts are fastened together using #8 machine screws. To access the magneto, I remove the top/RH piece and the rear piece.



EXC 9/24/97

WANT ADS

For Sale - Sonerai I, 4 Hrs T.T., less Engine. \$3,900
Jim Jaeger, Box 438, Kewaskum, WI 53040,
(414)626-2611

For Sale - Set of Engineering brakes with 5" wheels. \$175.00
Dick Foster (515)287-2554

Air Schank Going Out Of Business Sale - New and used Sonerai parts, Engine parts, Tools and hardware, New and used instruments. Call or write for 5 page list.
Bob Schank, 35 Clarence St., Belleville, MI 48111, (313)697-7057 after 5 pm.

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. Horz oil cooler and adapter plate. \$2100
Bob Schank, (313)697-7057 after 5 pm

For Sale - Limbach 1700 Engine.
Don Brinkley, (414)335-6519

For Sale - Sonerai II midwing, Supervee cowling, Sterba prop, 2100 engine w/ Revmaster prop ext. Also 4016 Slick Mag w/ 100 hrs, and misc. instruments.
Eddie Eiland, 1350 Thunderbrook, De Soto, TX, (214)230-8475

For Sale - Sonerai III, A&P built, Dual ign., hydraulic toe brakes, wing mod., much more, AeroVee 2020 w/ 60 hrs.
Russ Larson (406)857-3304

For Sale - Sonerai I fuse. and flt. controls, complete except cover. Wings complete and skinned, 1600 VW rebuilt, SuperVee casting, spinner and prop, L.G., most everything else.
John Ricchio (847)413-4962 or (708)447-0448 evenings.

Wanted - 5/8" landing gear and fuel tank for Sonerai II.
Jerry Campbell, 722 N. Main, Aberdeen, SD 57401, (605)225-8675

For Sale - Sonerai III, 275 TT, 1834 HAPI, Aerobatic tested, light damage. Must sell \$3750
(309)944-2366 weekends

Wanted - Sonerai engine, instruments, and airframe parts.
Gene Cook, 114 Imperial Ave., Friendswood, TX 77546

For Sale - Sonerai III fuselage approx. 85% complete. Sticks, rudder pedals in, tail feathers on. \$850.00
Bill Waters (770)466-2464

Wanted - Early style Monnett SuperVee motor mount (not x-mount), 32mm Posa Supercarb w/ needles, AC42 sparkplugs, broken tapered rod tailspring.
Dave Patterson, N 3280 Hwy 146, Fall River, WI 53932

For Sale - Assembled wing spars w/ mod parts, nose rib blanks w/ holes cut. \$900 invested, will sell for \$500.
Frank Dwelley (860)653-7106

Wanted - Monnett Super Vee prop hub extension assembly and magneto/engine mount unit. Please call with price and condition of available parts. Mike Smith (601)324-2801 Daytime

For Sale - 1700 VW Engine. Posa super carb, mag, shielded ignition, Sonerai motor mount, alternator. Sonerai II landing gear complete with wheels, axles, and pants. Gas tank, all flight instruments, stab. Complete. Prop, spinner and more. Wm. Ziegler, 2 Theresa Ann Court, Albany, NY 12205 (518)869-0137

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,

For Sale - 1992 Sonerai III, 300TT, dual ignition, electric start, new tires, brakes; has S-mod, basic VFR instruments. Not a show plane, but well built and flies great. \$6000.00 firm. Also have new in the box Bendix/King KX99, Garmin GPS-90, intercom. Dennis Barnette, (601)256-9767 or e-mail at dennis1@mail.tsixroads.com

For Sale - VW remanufactured block, late model, line-bored .010 under, case savers, etc. \$250.00; Rare Sonerai I Rattray cowling, straight cheek, firewall and engine mount to match. Buyer pays freight & crate. \$450.00 Elliot Willoughby, (502)477-2466

Wanted: Sonerai III completed and flying, prefer something built in the 1990's. Contact Ed Collins, (530)872-4400, or write 261 Chandler Dr., Paradise, CA 95969, or email BEIDMAN@AOL.com

Wanted: Single-port Sonerai intake manifold, Zenith or Ellison Carb, 12" spinner assembly.
Steve Prosser, (702)436-0245 after 3 PM Pacific

For Sale: Sonerai II kit. Welded airframe with tail feathers, flight controls, and gear. 1835 cc VW with Electro-X mount (10 amp alternator), 4016 Slick Magneto, Posa carb, propeller, spars finished, Super-Vee cowling, fuel tank, most instruments. \$2750.00 OBO Zeke Zechini, (703)707-1949(work), (703)830-1046(home), or mark.zechini@lmco.com

For Sale: Complete Sonerai II kit. Fuselage and tail welded, some instruments, all parts to complete except engine and paint. \$3800.00
Ed Torbett, (815)895-3888

Wanted: Any Sonerai parts to help add to Sonerai/KR-1 Museum, tax deductible. Call or write: Tom Hall, 3503 N. Marwin Ave., Springfield, MO 65803, (417)833-6513

For Sale: Sonerai III w/ 65 hp Lycoming 0-145-B3 (can be 75 hp), 12 gal wing tanks, S-wing, new 3/4" gear. Flies great! Going bigger. Call Craig Merrill, (803)521-4577

For Sale: Sonerai III, 175 hrs TT engine & airframe. 2020 Aero Vee, wing mod, 6 gal aux tank, wheel pants, position lights, Sterba prop, Jefferson loran, 135 mph cruise. Asking \$9500 or trade for good Lycoming O-320 or O-360. Photos available, will deliver within reason. Call Bob Jaeger, (815)498-3945

For Sale: Sonerai III TS (convertible to LS), Fuselage 95% complete, Wings assembled, cowling, gear, fuel tank, ailerons, and wing tips included. Mike Land (414)843-2808

Wanted: Engine/project for Sonerai II, prefer 2180 w/ dual ignition but will consider all. Jeff Newlin, 12173 E. 1700th Ave, Hutsonville, IL 62433, (618)563-4456 before 10 PM central.

QUALITY RIBS L.L.C. SELLS COMPLETED RIBS FOR SONERAI AIRCRAFT. Call our voice mail box and leave your name, address, and phone number for information. (602)212-6723.