

SONERAI

NEWSLETTER

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**** Let the Games Begin!! ****

I don't know about you, but I'm ready for the flying season to begin! This winter stuff is getting old real fast. We've been averaging 5 to 10 above zero in the mornings, when I get the old wood burner going in the shop. Let spring begin, let's get the year under way. And it looks like it will be a good one, too. Sun N Fun is less than a month away at this time, so you know there is some serious Sonerai flying to be done.

I'd like to thank you all for your support by staying with the Sonerai Newsletter. Please feel free to write or call if you have some sort of problem or better yet, as you will see in this issue, a suggestion on how we may all maintain and improve our flying machines. I look forward to the mail everyday (and not just for checks). If you have a FOR SALE let me know, and if you've sold it let me know too.

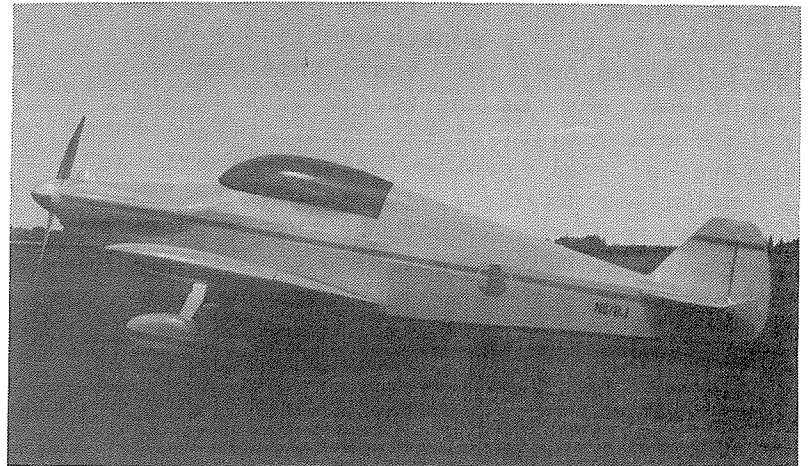
**** ** Sun N Fun 1989 ** ****
(or the Sonerai Sexpistols ride again)

For a change this year it looks like I'll be having some company for the 1100 mile trip down South. (Since that famous trip of past.) Bob Brown, Clyde Seager and Jim Wendel are hard at work getting their Sonerai's prepped for the trip and the flying year in general. We are planning to depart on Friday before the Show with an overnight somewhere in Georgia or northern Florida to arrive the next morning before the arrival circuit gets too busy. Of course that is the plan and you all know how that can change for a number of reasons. We are getting primed for this excursion at the moment (we apparently take a lot of priming but then it's been a long Winter I guess).

If you can get a chance to drop (?) on in, please do so. There is a Sonerai Forum scheduled for the early part of the week and I'll be having Part II of the Propeller Basics lecture another day. The Great Plains Aircraft Booth will be open as usual with the full array of Sonerai materials on hand. We would like to get all the Sonerai people together for a

dinner the first weekend although I haven't scheduled any specific day not knowing who will be there. Don't worry, no one has starved at a Fly-In yet that I know of. (Unless they ate some of our Pancakes at Ch.153's breakfast, but that wasn't starvation really.)

Please also note the Formula Vee activity that is to coincide with the Sun N Fun final weekend. I'm hoping to get over there time and weather permitting.



Bill Joens' Sonerai II L
Looks like a little more vertical fin area and struts under the stabilizer.

**** ** ** ** ****

In the Long Range Planning Department, we have reservations for a Sonerai Dinner at Oshkosh. It is set for Monday night, July 31st at Butch's Anchor Inn like last year. We will be having more space available this year so hopefully we'll be able to keep everyone together a little better. As before, the dinner will be off the menu with a sign-up either on the flightline or at the Great Plains Booth. Hope to see you there.

✓
-- New -- Innovative -- Products --

For those of you who are Extremely safety conscious and feel it necessary to replace your wing spars every 100 hrs. or annually, we should be having new manufacture Main and Rear Spars and Ailerons available in the very near future. Maintaining our usual policy of withholding prices til the product is in our grubby little fist, we'll have to beg off on the cost til next Newsletter. These spars are approved for more than a 100 hr. life right out of the box.

A Quick Note on the Turtle Deck

Leland Selting of 1441 N. Goebel Ave. Tucson. AZ 85715 found that a good way to fasten the aluminum turtle deck to the top longerons was to use 1/2 inch steel strapping material welded in place. The aluminum is then flush pop rivetted in place to give a smooth continuous joint. I learned over the years that improperly welded tabs for the turtle deck or any of the inspection plates that break loose are a real problem once the fabric and paint are in place. It has been necessary to make clamps around the tubing in a few places where the tabs have come loose.

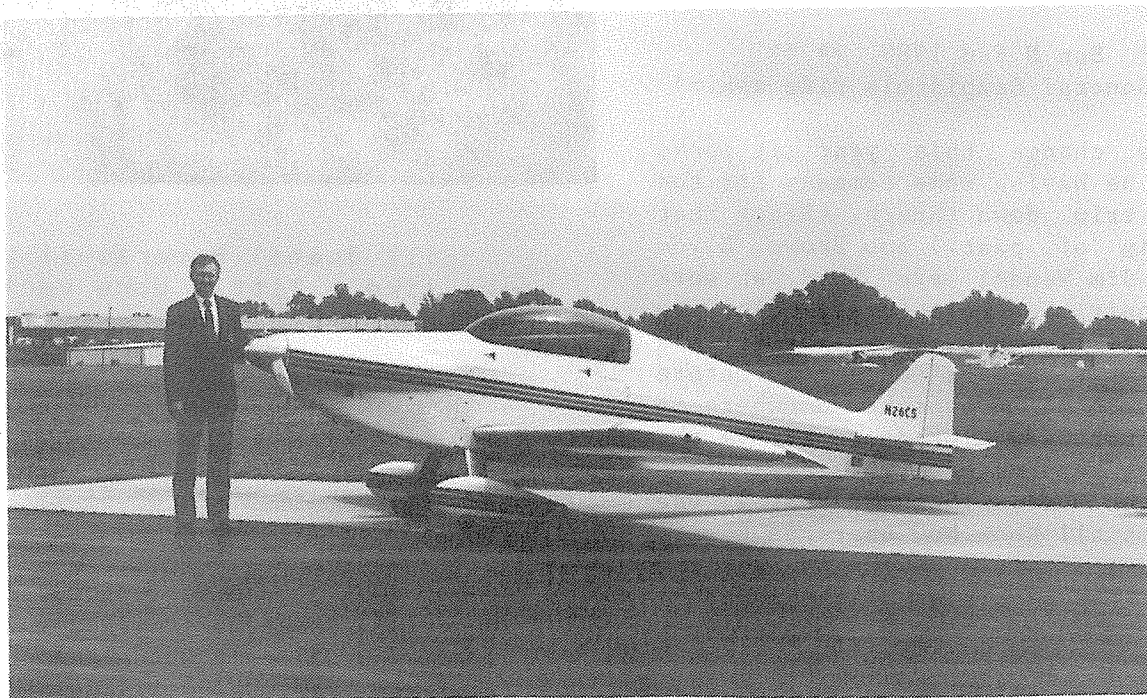
Formula Vee for 1989

I just received the V-Gram from Jim Vliet at 12 Cooper Rd. Red Bank, N^J 07701. The 1989 racing schedule is getting firmed up and is looking quite good -- more races and more aircraft than ever. Perhaps the most important race will be the kick-off race to held at Daytona Beach, Fla. following the Sun N Fun convention this next month. As you know, Sun N Fun is April 9 --15, the races at Daytona will be the last weekend which is April 15 and 16. Here is your chance to attend both. Eight Formula Vees are ready to race with another 8 scheduled to be ready later this year. Interest is high.

Other races include-----

Albuquerque, NM	June 10-11
Springfield, IL ??	June/July
Detroit, MI	July 29-30
Cleveland, OH	Sept 2--4
Hagerstown, MD ??	Sept 9-10

Other possibilities include:
Montreal, Dallas, Kissimmee FL,
Miami.



Clyde Schnars' Wright Bros. Award Winning Sonerai II L
at Dayton, OH this past July 22, 1988

A Letter from Byron Smith

Dear Ed,

First of all I would like to place my order for the Sonerai Newsletter.

Next, I would like to quiz you about the tail wheel you are using on your Sonerai. I have the Monnett casting which takes the narrower wheel. If yours is working out well, I would like to know how to get one.

Finally, I am enclosing some pictures of the newest Sonerai on the West Coast. This is the one that is converted to be able to be flown from the front seat solo. I moved the front seat back 5 inches and added an auxiliary fuel tank, which becomes the main fuel tank with the 10 gallon fuel tank as the auxiliary tank. I also added a 22 pound battery in the middle of the fuselage. Greg shonk has been flying his Sonerai like this for a few years. It has been tried and seems to work very well. I built my airplane to be flown in this manner. We are hoping to be able to fly out to the Convention this year in August.

Hope to see you then.

Sincerely,

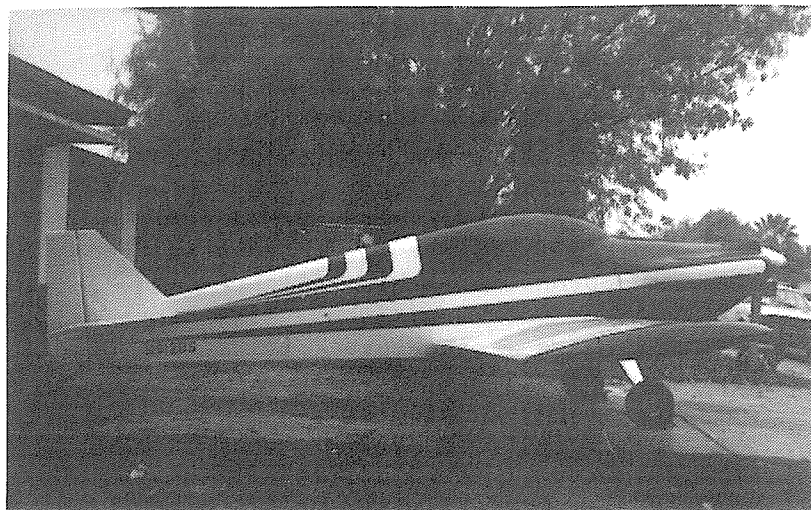
Byron Smith

800 South Moraine

Tulare, CA 93274

Comment on the tailwheel--

A lot of the guys have been converting from the aluminum casting to the weldment that is shown in the aircraft plans. In the process of doing this it is a good idea to make the arms 1 1/4 to 1 1/2 in. wide and also long enough to accommodate a 5 inch dia. wheel. The original 4 inch snowmobile bogey type is no longer readily available, however the 5 inch size is. Mine of course must be the best that is available short of the Space Center, so it is made for Harley-Davidson naturally. It is worth 4 kts. The women seem to like it too, so you never know.



Byron Smith's Beautiful Sonerai II L
(front seat solo)

Loose Throttle Cables

If you look at 10 different Sonerai's or other homebuilts out on the flight line, you will probably see 10 different methods of connecting the throttle cables up to the carburetors. There surely isn't one correct way but I can think of a few that looked a little shakey to me. The one that would worry me the most would be that installation that had the flex cable held in place with an Adel clamp lined with rubber. This is the little metal clamp that is wrapped around the cable and then held in place with one screw or small AN bolt. It's what I have to keep the cable from moving as the throttle is moved -- BUT, that Adel clamp should not be the type that has a rubber insert to cushion the cable.

The reason is oil. It is sure to get on the clamp in normal service and will make it possible for the cable to start moving as the throttle is moved. It gets real slick! A better method is to use the bare metal Adel clamp without the rubber and then also to stake the clamp with a center punch so that there is an indent that will grab the casing of the cable. Being real chicken, I also have a piece of safety wire that is looped around the cable and clamp so that even if the bolt came loose or off, the clamp should still stay in place although it might fidget around a bit. The throttle is a relatively important piece on most airplanes, be nice to yours and it might be nice to you.

J
Flying the Sonerai with
the Ellison Throttle Body

It is always interesting reading about other Sonerai builders and the experiences they have encountered. However, it seems that not all the experiences were good ones. I have been flying my Sonerai (N26CS) for three years and have approx. 120 hrs. flight time. I would have more hours but, like many of you, I have encountered my share of annoying problems.

My biggest problem was my determination to get my Super Posa running properly. It seemed that I had to constantly tinker with it, which, I understand is not uncommon with a Posa. Controlling the mixture under all operating conditions appears to be the biggest problem. If I got it to run good when idling, it would run erratic during full throttle, and conversely. The level of fuel in the tank also had an effect by changing the fuel pressure, as would the acceleration on take-off. On several occasions I encountered engine sputter on T.O. (that isn't all that sputtered).

Early on I lost confidence in my airplane and really hesitated to fly it. However, on other occasions it would run great. It was the unpredictability that bothered me. After scaring myself a few times I decided it was time to make a change in my carb system. I decided to purchase an Ellison Throttle Body Injector, a Facet fuel pump and a fuel pressure gauge. What a difference this has made in my confidence. I can honestly say that I mounted the Ellison just as it came from the factory and have never made one adjustment to it! Ellison has an 1835 VW on a test stand that is used to test and adjust the carb before shipping.

The cost to change from a Posa to the Ellison was about \$500, but well worth the investment. The ETBI was \$350, the fuel pump \$35, fuel gauge and sender \$100 and \$15 for misc. fittings and hoses. Installation was fairly simple. I removed the lower section of the intake man. and welded on a flange for bolting the ETBI. I was able to use my throttle and mixture cables, but had to fabricate a couple of attach fittings and a bell crank arrangement. The fuel pump requires an elec. switch and a 12V supply. I also added a heat box and air filter.

Ellison recommended using a fuel pump to ensure sufficient fuel breaking pressure for the ETBI's fuel regulator. With the fuel pump off and a full tank of fuel, I get about .5 PSI of fuel pressure. In test at altitude I have simulated a climb condition and have not experienced any noticeable difference with or without the pump on. At cruise I get the same results. However, with the pump on I get @ 2-3 PSI reading which is the Ellison recommendation. For the small cost of the pump and switch, I highly recommend them. I turn the pump on when starting and keep it on while the engine is running.

Even though the Posa and Ellison look alike, there is no comparison. If any of you have had similar experiences, I highly recommend the change, it has been a real confidence builder and made flying my Sonerai a pleasure. My fuel economy has also improved.

Clyde Schnars 10435 Turner Rd.
Roswell, GA 30076

Note: Jim Wendel is currently flying his Sonerai II with the Ellison but without a fuel pump. He had one of the first TBI's installed and Ben Ellison said he could try not using a pump. The results have been pretty good in about two years of flying. It does require a primer to get the engine started for the first flight of the day, but after that she starts up better than the Posa normally does.

The only other sort of problem is that when the fuel level gets down to about 3 gallons, the engine may not take full throttle. (Lower fuel pressure.) This is lower than normal flying dictates and you would of course be heading in for fuel, however, if you were low on fuel and had to make ago around it might pose a problem. The carb was bolted on just as it came from the factory and hasn't been touched since. It is a good unit for the cost.



Clyde Schnars' Sonerai with Ellison Throttle Body Injector

Taper Pin Tips

Bob Schank of 35 Clarence St. Belleville, MI 48111 sent in a note that has been brought to our attention before but is probably worth repeating for those of you who have not had to drag a Sonerai out of the bush before. (Is there anyone who hasn't met that criterion?) It has to do with the removal of the taper pins from the main and rear spar. The first problem is the removal of the nut itself since there is a tendency for the pins to turn rather than have the nuts come off. Bob recommended that flats be ground on the end of the pins to make a square head that allows a wrench to be fit while the nut is being loosened. Another suggestion is to cut a kerf in the head of the pin to let a large screwdriver hold everything in place. Either method sounds reasonably good to me with one catch that should you go down somewhere and have to get those wings off, what sort of tools do you plan to carry?

Once the nuts are loose, you are only half way home since the pins themselves can be a problem also. (Ask Fred Keip about Oshkosh last year.) You may get off lucky by having them break loose real easy but the chances are good that some sort of force will be needed. This is where the flats or slot can come in handy since getting the pins to turn will probably mean they will also just come out. Congratulations! However if that isn't the case, then my method when at the home airport is to use a 6 inch C-Clamp and a socket wrench like you would use a wheel puller. Pressure is applied and then the magic tap of the hammer knocks the pins out. This hasn't failed me yet, but there are probably as many ways to do this as there are airplanes flying. Any other great ideas?

A Letter From Chuck Stottlemeyer

Good Newsletter! I'm glad to see you're carrying on. (I've heard you carry on quite a bit.) At any rate, one of the problems newsletter guys have is finding stuff to write about, so let me add my 25 cents worth...

Timing -- At 200 hours, 59CS gave me fits with hard starting and weird running. Found the Monnett type mag coupler to be the culprit. As you know, this sucker is aluminum, and both slots had worn about 5 degrees. I cured this problem by making a new coupler out of steel with rubber inserts to drive the mag (Cessna part). I've heard of others having this problem also and believe the rubber cush drive will cure it.

Magnetos -- Two different guys have told me their Westtach started fluctuating with no apparent change in RPM shortly before their mag coils went South and shut them down. Mine also started doing this and I changed coils at 175 hrs. (No blast tube or official Sonerai magneto temperature gauge, but I'll bet mine runs hotter than Slick would like.)

Posa -- Posa's like ram air. It's worth a few RPM on takeoff. However, they will definitely ice up under the right (wrong) conditions. The moral? If you use ram air, have carb heat available.

Fuels -- My engine is 8.6/1 C.R. and prefers 100 LL. It runs O.K. on 50% premium unleaded/100LL mix. In very hot weather, better stick with Avgas. We had some trouble with the Pitts on auto gas (O-320) on a hot (real) day and about wore out the wobble pump!

The only thing that comes in my left NASA cabin vent is noise!

My stock tail spring broke at the same place Mel Lamb's did, right at the smallest diameter. I machined a new one, increasing this diameter by 1/16 inch. No further problems.

I got tied of the Sonerai oiling down the belly from the breather tube, and ran one to the tail just like the acro guys. She appreciated having a dry belly.

Sorry about being so late -- I lost this masterpiece during the Great Stinson through the Aircraft Factory Shuffle (I'm a closet Antiquer).

Breathing Lessons

It seems like there are two choices for having oil on your old Sonerai, one is the belly and the other is the windshield. I suppose if I had to chose there isn't much of a choice in it. Apparently some people are stuck with looking through oil rather than having it drip on the ramp, but it need not be that way.

If your engine has a real oil seal at the front bearing rather than just the slinger ring, your job should be easier. However, if the breather system is doing it's job and the engine is relatively healthy, then the oil seal isn't an absolute necessity. (I know.) Those people that are getting a wet windshield should investigate their breather tube to see if it is doing it's job correctly. In my opinion you should keep the number of bends to a minimum, and keep the diameter as large as possible as long as possible. And of course, try not to have the exit in an area of positive pressure that will try to force the mixture of oil and air back into the engine. One good place to have the exit is at the bottom of the cowl in the air outlet area. The rapidly exhausting airflow seems to pull the breather air with it. And a number of people have successfully ducted the breather all the way to the tail but they have probably had to be carefull about the scavenging action by using an elbow on the end to get a negative pressure working for them.

The next question to approach is whether to use an air-oil separator and then drain the oil back into the engine as is done on so many certified aircraft. If you can install a fitting in the bottom of the sump before engine assembly you've got a good method of disposing with the residue. My engine was already together so this seemed like a bad way to go. Other people have drained the oil back into one of the valve covers successfully once they figured how to keep that area from leaking. This seems like one of the easiest ways to go on an assembled engine.

Chuck Stottlemeyer
Rt 6 Box 486 C
Anderson, IN 46011

And then of course there is Bob Brown who has always used the tube-to-the-tail method but has decided to go with a real separator for this flying season. When asked what he will then do with the existing tubing, the airline pilot in him said, "Of course use it for relief tube." Just don't get your plumbing hooked up wrong Bob and end up with foamy oil. And who in the world can sit in one of these things long enough to need a relief tube?

Bubbles You Don't Need

I talked to Al Bertelmann of Harvey, LA the other day. He has a Sonerai II 2074 with a Posa that has been flying for a while now. Between the Newsletter and my business, the phone calls make for a pretty interesting day on a regular basis. Al had been using car gas (Shell SU 2000) but eventually decided that it wasn't the best idea. This conclusion was confirmed in talking to Neil Sidders in Monroe, LA when the engine didn't work as it should. So Al did a little experiment by taking some of that SU 2000 right out of his Sonerai tank and heating it up in a small container immersed in boiling water. He also stuck a thermometer in the fuel to see what would happen. This is all taking place in Louisiana this past winter.

When the fuel temperature reached 125 F the fuel began to boil! It continued to do so for a few minutes then stopped until the temperature reached 165 at which point it began to boil off again. The unscientific assessment is that some of the most volatile components vaporized out of the fuel at the initial 125 F until gone, and the main body of fuel began to go at 165 F. Of course your fuel system can't tell which is which if it gets hot enough, but Al was quite surprised at the initial reaction. I can't imagine that the temperature down by the carb is under 125 F. Especially in the weather conditions we've had this past year. This sounds like a great experiment to be performed on 100 LL. Any takers?

With the fly-in season rapidly approaching (I hope) I've had a few people ask about the long range patrol aspect of flying the Sonerai. I fully agree that it was never designed for this sort of thing and neither was I, but it can be done with a few compromises. One of the first things needed is more fuel which I accomplish with the addition of a 6 gallon aux. tank mounted on the front floor boards. Another necessity is a reasonably good tool and parts kit. Believe it or not, my kit consists of an instant camera case that is probably 2"x4"x6" with an extra zipper pouch in front. It was made for the autofocus cameras that are so popular these days.

In it are the following items:

- Multi-point screwdriver
- 1/2" and 13 mm wrenches
- Ignition wrench set (10 ea.)
- Feeler gauges and shorty screwdriver
- Posa carb tools and parts
- Magneto timer (homemade)
- Spare fuses
- Black plastic tape
- Silicone rubber
- Thinwall spark plug wrench
- Small diagonal pliers
- Duckbill pliers
- Small crescent wrench
- Ratchet offset screwdriver

Additional parts carried include:

- Spare safety wire (.032)
- Volt-Ohm meter
- Quart of oil
- Spare Spark plug
- Valve cover gaskets (2 ea.)
- Oil change gasket kit
- Windshield cleaner
- Magneto point and cam set
- Fuel Lube grease (for fuel valve)
- Rockershaft spring clips
- Spare tailwheel
- Tie-down kit
- Spare magneto drive
- One each spare Propeller
- (tied in the rear of fuselage)

This does not of course include the normal flying and camping gear you need depending on the destination (planned or unplanned). You may not be able to do a valve job or complete recover job with this stuff but it does give a bit of independence from the FOB.

Summer Magic
or
Darn That Compass
By Mel Lamb

Hello again, Sonerai drivers, this is old No. 1 speaking to you, N4ML. So you realize you haven't heard from me for quite a while, in fact you might have thought I had gone to that great fly-in in the sky, but not quite. I'll admit I'm over the hill, but that's better than being under it.

My Sonerai II is fourteen years old now. When I thought you might be what old Sonerai drivers do when they are retired and have a perfectly good flying machine.

First off, the VW engine has run like a kitten all this time. I change the oil and set the tappets every 20 hrs, also I've had to change the two intake hoses on top of the engine because they became hard and started to leak causing difficulty in starting the engine. I must confess to a few minor problems. The tires had to be replaced after 10 yrs. of wear. The front canopy hinge has broken twice. Once I forgot to latch the canopy--talk about needing three hands to fly an airplane--I felt like the pilot who had a 6000 ft wide and only 200 ft long runway. It landed crosswise to the runway and stopped in less than 150 ft. The second time was due to a manufacture defect. Think I'll talk to the builder about his workmanship. Talked to him, no phone, no warranty was the answer.

cylinder causing the problem. This can be a real fooler because it will run perfect at all times and then just cut out. It just happened again last week to the new plug installed on the same #3 cylinder. This time the spark plug was replaced first and everything is fine.

Another problem that might be of some help to others. Two different spark plugs have failed on #3 cylinder. This happens to be the hottest cylinder in the back. Two years ago the cylinder failed creating a small pucker factor in the pilot. Still able to slow flight back to the airport and landed safely. (One plug is good for about 600 RPM.) Upon cleaning, gapping and checking the plugs everything looked good. Reinstalled the plugs in the engine and fired it up, static RPM good (3100) and she ran good for about an hour then she cut out so back to square one. Would you believe a small pin hole had burnt through the inside insulator of the plug on #3

Editor's Note: I asked Mel to send this copy in about his trip around Indiana but unfortunately didn't have all the room needed, but thought you all would benefit from his vast Sonerai experience on maintenance tips. I probably wouldn't have finished my Sonerai without his inspiration. Next issue...



WANT ADS

Misc. Sonerai II LT "Stuff"
Paul Biegan 1245 W. Wellington
Chicago, IL 60657-4227

Oil Cooler Adapters to fit under
Sonerai EV cowling ..\$110.00
Dale Severs 1801 Fairfield
Lindenhurst, IL 60046

Econo Vee Engine for sale, disass.
most new parts. 90.5mm stand.
crank, 4216 mag., eng. mount,
spinner, \$900.00 takes all.
Craig Morton 200 Pitman St.
Nacodoches, TX 75961

Wanted--- Completed Sonerai II or IIL
within 400 to 500 miles of NW Tenn.
--or partially finished project.
Gene Leonard Rt 1 Box 256
Martin, TN 38237
901-587-6473

Wanted--- Monnett ABS Wheel Pants can be
new, used or slightly damaged
Bob Schank 35 Clarence St.
Belleville, MI 48111

Two Posa Supercarbs for sale--29 & 32mm
asking \$75 ea. w/ all needles & tools
Fred Keip 11428 Six Mile Rd
Franksville, WI 53126

For Sale -- Sonerai IILS 2180 Monnett
Conv., 55 hrs.TT, Exc. workmanship, needs
prop, canopy, minor tail damage. \$5500.00
Larry Hurley 2153 Foxhill Dr. Apt 11
Grand Blanc, MI 48439 313-695-0414

For Sale -- Kr-2 Cowl, Canopy, Front and
Rear decks -- Stits HS90X 3" Bias cut
tape (\$.50 / Ft.)

Wanted -- Escort 110 Front Face Plate
and service manual
Leland Selting 1441 N.Goebel Ave.
Tucson, AZ 85715

For Sale -- 1/2" Monnett Landing Gear
and Monnett Tailspring
John Symons 4933 Lowry Ct.
Union City, CA 94587
415-471-5930

For Sale -- 2 ea. MK 12A Nav-Coms
w/ Indicator Heads \$250.00 ea.
Archie Frangoudis 162 Naticook Rd.
Merrimack, NH 03054

For sale -- Revmaster Acc. Case w/starter
and intake manifolds.
Dick Morrow 418-24th Ave. Ct.
East Moline, IL 61244 309-755-1495

For Sale -- Sonerai II midwing, taildrag-
ger, Hapi 1834 dual ign., Ellison T-Body,
Sterba prop, Narco 830, Loran -- 360 TT
Asking \$6000.00 or trade on T-Craft etc.
Fred Kugel 810 Kensington
Celina, OH 45822 419-586-4956



N 78ES home in Delavan for the first
time in ten years. Yes, a tow hitch
would work better and one has been made.

Sonerai News

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SONERAI NEWSLETTER

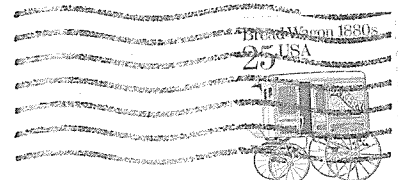
C/O Ed Sterba

412 S. 5th

Delavan, WI 53115

414-728-1367

To:



SONERAI PARTS LIST UPDATE

Great Plains Aircraft Supply has the following parts normally in stock:

1. FIBERGLASS WING TIPS	\$ 79.95
2. FIBERGLASS WHEEL PANTS	\$109.95
3. FIBERGLASS BEAUTY BUMPS	\$ 19.95
4. WING RIB KITS	\$299.95
5. TAILWHEEL SPRINGS	\$ 85.00
6. TAILWHEELS	\$ 19.95
7. COWLINGS (SONERAI II)	\$275.00
(PLUS \$15.00 CRATING FEE)	
8. 5/8" LANDING GEAR	\$325.00
9. SPINNERS 12"	\$ 40.64
10. BACKPLATES	\$ 18.95
11. FRONT PLATES	\$ 26.95
12. FUEL TANKS (SONERAI II AND LTS)	\$275.00
13. SHRINK FIT PROP HUBS	\$119.95
14. ACCESSORY CASE	\$135.00
(LYCOMING MOUNT HOLES)	

In addition to the above parts, Plains Aircraft Supply can supply demand Sonerai I cowlings. The catalog is \$ 3.00. It has a full list of VW engine parts and accessories as well as much technical data. Write to Great Plains Aircraft Supply, P.O. Box 1481 Palatine, IL 60078 or call 312-359-6558. Be sure to look up the Great Plains booth at Sun N Fun 89 in Lakeland FL to see the full line of VW Aero Vee engine and Sonerai parts in stock.