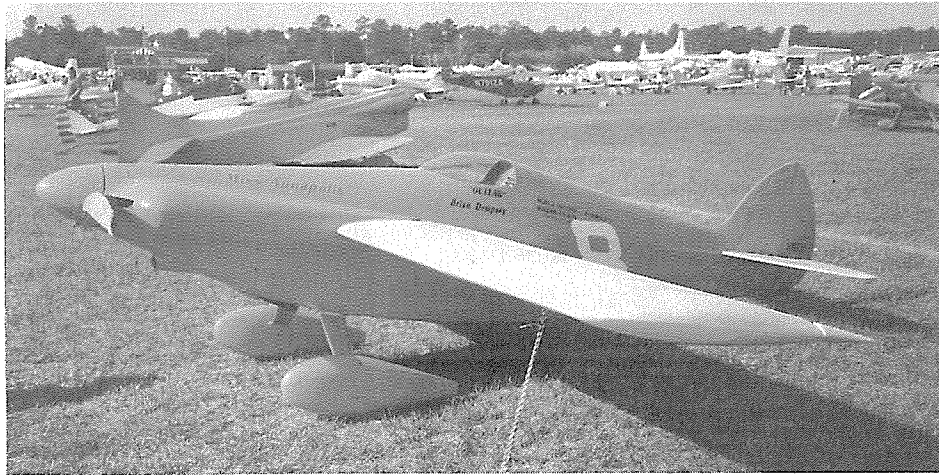


SONERAI INQUIRER

JUL-AUG-SEP 93

"I WANT TO KNOW"



Brian Dempsey secrets revealed for the first time !!!!
Exclusive photo to show how YOU fly as fast as Brian!!
Racing domination may be over, say competitors!!!!!!!
Higher Speeds — Better Milage — Safer Flying !!!!!
" If we had known how SIMPLE it was, we would have
done it a long time ago" say Racing Buddies!!!!!

Welcome to the July issue of the Sonerai Newsletter ? I think I may be spending too much time in the checkout line at the grocery store, but who knows. We have the Big Show coming up in just a short time, hope to see you all there. If you are planning to fly in, may I recommend sending in your No Radio cards just in case you have a Comm problem on the way in. And don't let them park you somewhere else until you've looked for us in the usual place on the flight line.

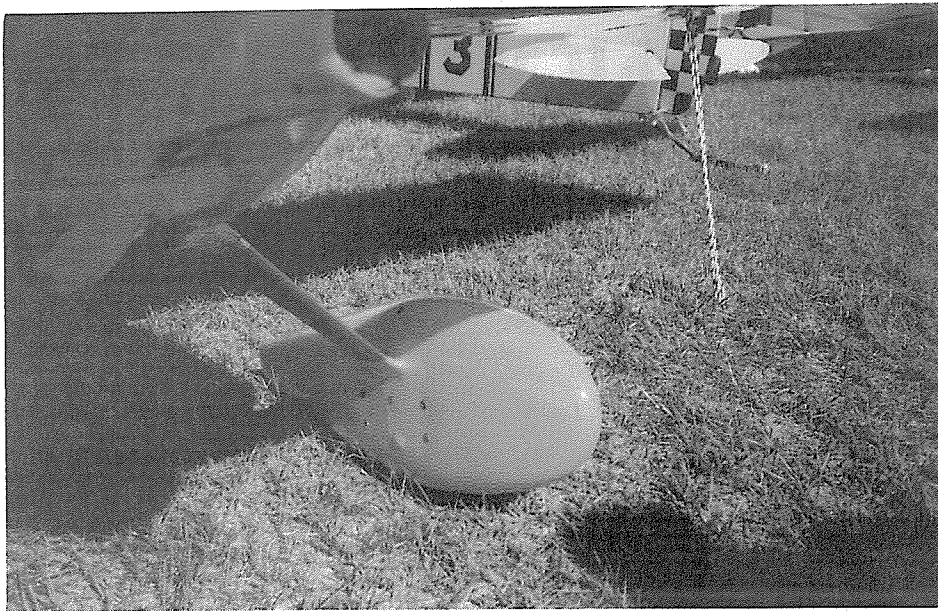
We have the back porch of the Homebuilders Corner reserved for Noon on Saturday July 31st for all you serious Sonerai People to tell us what has been happening with you and the airplane over the past year. The official Sonerai Forum is scheduled for Monday Aug 2nd at 1:00 PM in Tent 8. Hope to see all of you there.

This year's trip to Sun N Fun was a bit different than before. I seemed to have a higher ground speed (500 kts) and greater cruising altitude (33,000 ft). My first stop for a stretch was in Atlanta so the range figures must have been up, too. Overall, it wasn't as bumpy a ride although the fuel cost was significantly greater than in the past. I still like the old way better, though.

Oshkosh and the Calendar

We are having the Sonerai Dinner on August 2nd Monday at 7:00 PM at Butch's Anchor Inn just as we have in the past. There is room for 100 to 120 people which should accomodate the expected crowd (we had right at 100 in attendance last year) The meal is ordered off the menu and sign-up is at the Great Plains Booth just as before. I'm looking forward to it.

Now -- Oshkosh is changing --- it starts on a Thursday and ends on a Wednesday this year and I sure don't know when it will run next year. Monday used to be the beginning of the week for the serious Oshkosh attendee, and now it is only two days before the end of the show. So, the question is --- are most of you going to arrive on Tuesday and Wednesday before the Show begins and be ready to leave by Saturday or Sunday to get back to work ????? Is Monday too late in the week for the Sonerai Dinner ? Should we try to move it up earlier in the Show, and can we and still stay at Butch's? I think this year everyone will be a bit confused as to when they want to arrive but by next year their minds will be made up and assuming the dates don't change again, we will have a stable situation.



Well, here it is. The thing that makes Brian go so fast. It's not the little things that all add up, it only ONE thing that actually does the trick. You can waste time going over the whole airframe looking for all the draggy places, but Brian found the one SWEET SPOT that probably was worth 25 to 35 mph. Look carefully at the rather crude wheel pant installation -- probably not as good as yours', right? BUT -- he uses flush screws to hold them on !!! That's all it takes. Sorry, Brian.

Urethane Prop Edge Repair

I usually give a propeller basics forum at Sun N Fun, for a number of reasons. Actually, they don't ask you to give a forum at Sun N Fun or Oshkosh, you have to volunteer your services for either one. Personally, I'd feel better about it if they called me up in January and pleaded for my services just one more time, but that isn't how it works, you have to butt it and ask for time. I guess no one gets turned down, but they can at least stick you at the end of the week where almost no one will hear you tell lies. I know.

"Woody" Woods works for the forums committee at Sun N Fun and we always get a chance to talk either before or after the forums. He owns a modified Tailwind and also has the distinction of having made about 20,000 wood props over the years. He knows a bit about the subject, so I like to hear any new suggestions he comes up with. This year's tidbit concerns the use of the Urelite leading edge used by most of the propeller makers including myself. It's great stuff, but a bit messy to install and expensive if you take the price of a whole can (\$20 a pint).

Woody's new idea was a lot cheaper and he says easier -- use a hot glue gun! He cuts the leading edge away same as all of us, then lays the prop leading edge up, and proceeds to lay several layers of the hot glue on until it is built up far enough. The material cools quickly and can then be sanded and shaped back to the correct profile. It sounds pretty good to me although it would take some testing to see if the hot glue was as tough in the rain as the Urelite. I personally haven't gone through any testing.

Now ---- the reason you find this prop hotline subject in your Sonerai Newsletter, is that I feel we have a real good field repair method here for those of you caught off your home base with a bit of damage to your prop. I send out repair kits to those in need, but that takes a while. Getting hold of a hot glue gun is something any trip to town can accomplish, even at the most desolate part of the country.

I really should give this method a test one of these days, as soon as I catch up on my orders. Maybe some one else can give a report?

Tailwheel Lockup?

I got a call from Jim Meier of Waunakee, WI the other day. He has been flying his rebuilt Sonerai II and as most of you know that have actually built and flown a homebuilt, they are never totally finished. Which may be part of the reason we like them so much.

Jim has been experimenting with a push rod versus tiller cables on his tailwheel steering and hasn't made up his mind which way to go. The push rod was on the airplane when he got it and he has flown it that way since the rebuild, but he recently tried using tiller cables like I do. They both have good and bad points.

The tiller cables can not be put on tight when the tail wheel is on the ground to give positive steering since they then become too tight (ie. stiff rudder pedals) when the weight is off the gear in flight and the tailspring drops lower. So you either have loose cables, meaning a bit of a lag in reaction from rudder input, or you add springs like a real airplane has to take up that slack. However, some people have had trouble with the extra springs since our tailrod is round and springs side to side with rudder input. Confusing? Not once you have tried it.

Jim found a potential problem with his push rod installation that I have heard expressed by other Sonerai pilots over the years but haven't put into the Newsletter. On his installation, if the rudder is pushed hard to one side, it is possible to get the tail steering rod to go over the center pivot point of the tailspring and, in effect, lock the tailwheel and the rudder to one side. It sounds like a real bad thing to have happen either in flight or on the ground. Can this be done in the air -- probably not easily. Jim could only envision someone (not himself of course) entering a spin and using hard rudder to either start it or stop it and find things locked up. I would imagine you wouldn't let some little old steering rod ruin your beautiful Sonerai for you

though, and would use whatever rudder pressure was necessary to get the job done and unlock it right now! So maybe it is a moot point.

What are the good points about either system? Well, the tiller cables let me pull a hard brake handle and get the tailwheel at 90 degrees for a nice pivot in a tight parking spot. And, by being loose, I tend to know when my rudder is doing it's job or not. But of course most of you people like the positive feel that the push rod gives in ground steering without having to rely on the brakes so much for normal turns. So most Sonerai's have their little push rods back there. But, have you ever looked at the different types of rods people have used over the years? Lots of ideas still abound in Sport Aviation.

The Harold Rehm Show

The cable TV series First Flight is hosted by Neil Armstrong the first man to walk on the moon. If you have a chance to look through the TV guide you may see an episode on the history of propellers. Part of this was shot on location in Dousman, WI at Harold's shop. (I am assuming all of you know that Harold makes propellers for homebuilts.)

Well, Harold got to talk and be filmed with Neil and I didn't. I'm still a little upset about that. Of course, Harold deserves to be on the show because he knows one heck of a lot more about propellers and carving them than I do and he really looks like what most people think a propeller maker should look like. But, I could have at least been in the background carrying wood chips or scraping glue off the floor or something. I'd have even worn an elves' suit to look more the part.

Oh well, --- at the rate things are going I seem to be catching up with him in age. He doesn't seem to be slowing down at all, and I'm getting more grey. Of course I plan to still be doing this job for quite a while. (At least until I have eyebrows the size of white mice.) If you get a chance, try to see the show when it's on again, you will probably learn something.

P.S. -- where were you July, 1969?

A Loose Aileron

One of our contributing Sonerai II pilots had an incident the other day that has left us both confused, although he has more to be confused about than I since it happened to him. He had gone out of a Fly-In Breakfast as most of us do sometime during the summer. His Sonerai was on display along with all the other homebuilts on the line, in other words, the general public had a chance to get up close and personal. In this case it may have been too personal but we don't really know.

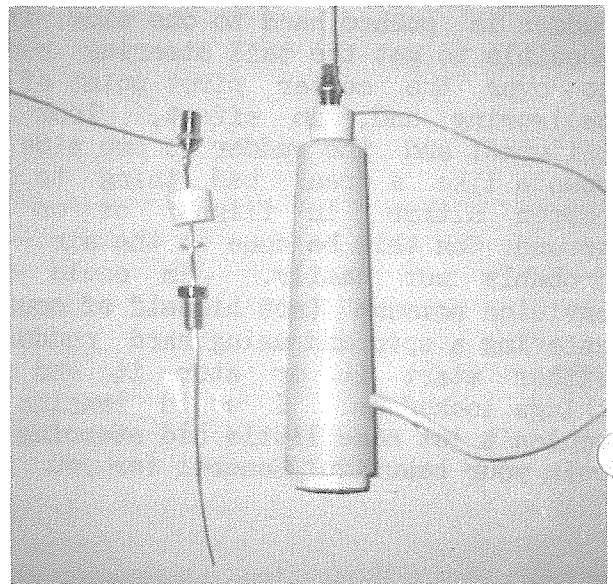
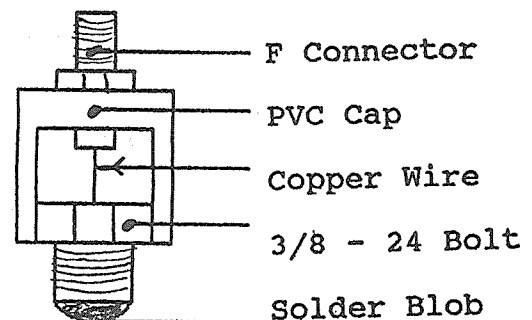
There was a pretty good crosswind blowing when it became time to depart. On the takeoff run the Sonerai drifted to one side, a correction was made to counteract this expected drift, but it continued. The pilot then attempted to lift off before moving too far off the side of the runway, but unfortunately, the aircraft struck a runway light. At this time the takeoff was aborted and the aircraft sustained damage to the wing skin, two ribs and some of the fuselage fabric. These things tend to happen rather quickly and we don't very often get a second chance to do it differently.

A walk around to examine the damage revealed something unexpected however. The aileron pin on the side that took the damage was not engaged in the actuating arm on the fuselage! The aileron was floating free. Our pilot tried to recall the events before the takeoff attempt and feels that he did not specifically inspect the aileron pin area before the last takeoff, but had inspected it before the first flight of the day. When exactly did the pin disengage? We tried to imagine how the impact with the landing light could have done such a thing -- but the force and direction of the blow and damage didn't seem to make this possible. Was the pin then out of place before the last takeoff?

If it wasn't in place then how did it come out, and who did it? We couldn't imagine someone leaning on the aileron to get a look inside the cockpit being able to put that much force on it without

leaving some sign of permanent damage. This is a pretty stiff assembly since we are dealing with a aerobatic aircraft. And of course one final question is ----- if the pin was out, then did that contribute to the aircraft not responding to control input, leading to the incident? Probably. Maybe it worked out better to hit the landing light on takeoff instead of finding out what would have happened in the air.

The picture and drawing below go with the article on the next page by Tom Ryan of 2068 Big Oak Ln Northbrook, IL 60062. Tom recently bought an Interphase Pilot Loran like mine (for less than \$200.00) and didn't like having the pre-amp getting in his way.



Remote Loran Antenna Installation by Tom Ryan

How to install a loran antenna and retain the 1930s racer look of the Sonerai? How to make a loran antenna pre-amp to antenna connection without hanging an antenna from the top of the turtle deck, while keeping the maximum distance from your com antenna.

I wanted to build an inexpensive solution so that I could have parts readily available at any Radio Shack.

I purchased a 'type F chassis mount TV coaxial connector' used for cable TV and or TV antenna hookup and a 6 ft length of TV 75-Ohm coaxial cable with pre-installed ends. The nice part about this cable is that it comes in colors and I was able to get white to match my canopy frame.

Drill the end of the 1/2 inch PVC pipe cap to accept the chassis end of the F connector. Use a drill that will give you a snug fit and you can use the connector as a tap to thread the hole in the PVC cap. Prior to installation, solder a 3 inch #14 copper wire (standard house wire) to the end of the F connector.

Drill a hole through the center of a 3/8 inch bolt to accept the copper wire you have soldered to the F connector.

With the F connector installed in the PVC cap, fill with 5 minute epoxy and push the 3/8 inch bolt into the open end of the cap. The copper wire will be cut later. Set aside to dry.

When the epoxy has set you can solder a blob on the end of the bolt and wire. Cut off any excess wire.

The antenna is a 3 ft piano wire with an F connector soldered to one end. The antenna may be taped to the top of the canopy with clear tape. You now have a military jet type antenna that is hard to see from outside the aircraft, works very well and costs \$.75.

You will be able to mount the loran antenna pre-amp some distance from the antenna without signal loss. I have a non-shielded ignition system and haven't had any problems at all with this installation.

Parts List:

Radio Shack TV Coaxial Connectors (# 278-212)	\$.99
Radio Shack 75-Ohm Coax Cable, 6 ft (# 15-1536)	2.99
1/2 inch PVC end cap	.33
3/8 x 3/4-24 threads bolt *	.35
3 ft x .016 piano wire	.25

* note: 3/8-24 threads, is a standard marine antenna thread and may differ with your unit. Bolt length will vary with different pre-amps, over all length should allow 'solder blob' to bottom out, making a good electrical connection. ** The shield of the coax cable must be grounded at one end, for proper operation. **

Dear Ed:

I want to pass along something that happened to me the other day. I opened the hanger, put some air in the tire, started the plane and taxied to the gas pumps. Going out to the end of the runway I thought to myself, 'this engine runs good'. At the run-up area I ran the engine to 2000, leaned to the best R.P.M., and brought it back to idle. Before take off I held the brake and ran to full power to make sure it will get 3000 R.P.M. At that time it started missing. One cylinder went dead. I pulled the throttle back, pushed the mixture to rich, and then to lean. The engine died and wouldn't start again. Then I had to push it back to the hanger! It was a 6000 ft. runway and the hanger was at the other end!

On the way back I could see some flashing lights at the other end coming my way. It was the gas boy in the airport car checking the airport for the night. It was a stationwagon so I rode on the tailgate pulling the plane by hand. It was dark by the time I got back.

On Saturday morning I found the problem. It was the distributor cap. I use a .009 distributor. The cap is made of plastic. As you can see by the picture, it broke and had tracks inside it.

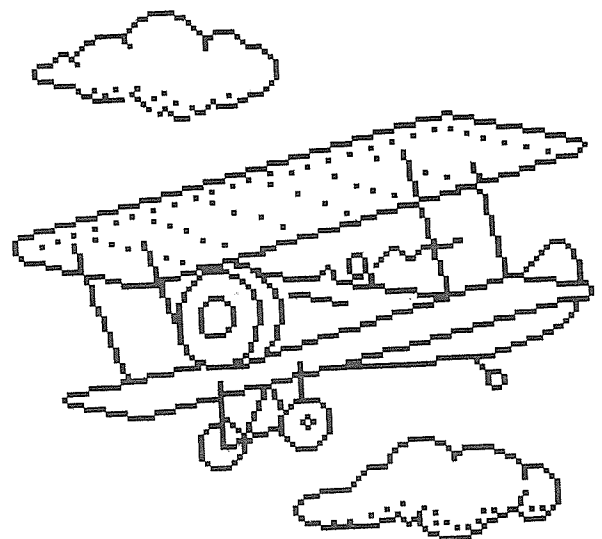
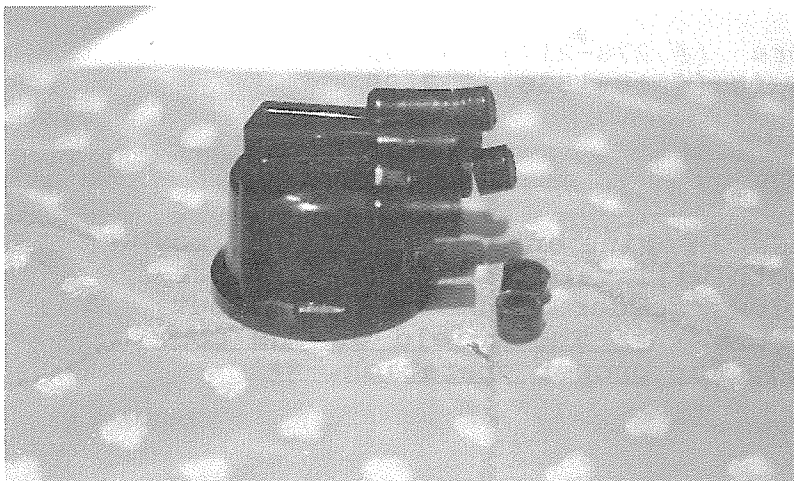
After some research, I would recommend not using this type of cap. I changed to a stock cap. I cut it down, ground off the towers to the metal inserts and used ninety degree boots. Also, I cut the male wire end to fit as tight as possible and put spark barrier jell in the boot. The cap should be the same height as the ninety degree plastic. Your parts house or Ford dealers should have them.

I think it runs better! Other than that problem, the engine and plane are great. It takes awhile to get the bugs out. This was one nasty bug! I am glad it broke down on the ground!

I'll try to report on the summer events on the west coast at a later time.

Fly Safe!

Byron Smith
N912BS



A Blind Landing

Dave Rawlings of Palatine, IL flies a Sonerai II midwing 2020 cc and has been in the Sonerai Newsletter any number of times. He's a member of my EAA Chapter and been in the Sun Fun 100 and made his trips to the Florida fly-in several times. Dave is also part owner of a Decathlon and uses it and his Sonerai pretty hard either in aerobatics or for racing. He knows the VW is getting hard use and expects it to react that way.

This is a 2020 Monnett conversion with 420 hours on it's cast crank. The heads have been rebuilt 3 times in the life of the engine and he doesn't run an oil cooler. A Super Posa gets the fuel in and a single mag makes it run. That pretty much takes care of the important particulars.

This past Fall, Dave was returning from a flight that included his normal amount of aerobatics (loops, chandelles, Cuban 8's, slow rolls, hammer heads, etc) when he noticed oil flowing onto the canopy. Since the Monnett conversion doesn't use an oil seal in the nose, it is not uncommon for this to occur since oil is getting bounced around in these flight conditions. However, this time the oil flow continued to get worse rather quickly. The oil pressure remained all right but it was getting difficult to see where he was going. On the return trip to the airport the visibility through the canopy went just about to zero and Dave claims to have made the landing by looking through his air vents although he probably just made a CAT III landing. The engine was torn down before any more flights were made and the cause of the substantial oil leak was unmasked.

The nose bearing had most of the babbit worn off and the debris had collected in the slinger area drain closing it off and forcing the oil out the nose. It wasn't pressure oil, just drain, but accumulated enough to make the mess on the airframe. The other three main bearings had the middle 1/3 worn to the babbit although there was no scoring or points sticking above the main

surface. They were worn about .003 to .004" over the high side of the wear limits. The cam bearings were within the high side limits and the rod bearing had the middle 1/3 worn to the copper. The pistons were .002 to .003" over specs while the ring end gaps were .015 to .020" over max. Dave's engine had run oils ranging from Aeroshell to Harley-Davidson and Valvoline.

Note: As to the cast crank -- Dave had it magnafluxed and found no cracks, however when the engine was rebuilt, it was replaced with a new forged crank.

I asked Dave what this all meant, and he started to tell me about the Meaning of Life, Why we were put on this Earth, etc. but I was able to stop him and explain that most of you just wanted to know about his engine and we would figure the rest out ourselves. His answer---- it was worn out. Up to the limit and a bit beyond on some parts. As to why this should happen in his case and not in some others, you have to appreciate what he wants to use the airplane for and what was really expected from it. Dave likes to go fast (he had an RV-4 complain on the way to SNF this year that it couldn't catch up because of the it's climb prop) and knew his love of aerobatics would be hard on his engine just as it proved to be. The engine never failed other than clogging up the oil passage, but probably didn't have long to go before something else let him know of it's distress.

Would an oil cooler have helped? Would the Force one type hub have saved the front bearing? Did he get his money's worth from his Sonerai? Has he rebuilt the engine a lot cheaper than a Lycoming? The answer to all the above is probably a strong "yes" to Dave.

Dave Rawlings 530 W. Helen Rd.
Palatine, IL 60067

Blue Plugs

Mark Elyea made the trip down to Sun N Fun again this year in his Sonerai IIL. Last year he proved he could do it, this year must have been to prove it was no fluke. So what will be the reason for the trip next year? Do we ever run out of excuses? It's rather difficult to make such a trip in a Non-conventionally powered Homebuilt (read VW) and not learn a few new things about the design. And sometimes we learn we don't learn the answers to these new things. Confused?

Mark's Son IIL has a magneto for ignition but uses automotive spark plugs. He also has a Posa Supercarb that is mounted horizontally with a carb heat box drawing air off one of the exhaust pipes. This arrangement has worked well for the last year and more.

On this year's trip South, Mark's engine began to miss and cutout after partway into the flight. He didn't think the problem was carb icing, but pulled on carb heat to see if it had any effect. Luckily, it did and the missing stopped. There was a slight loss of RPM, perhaps 100 or so but a small price to pay for a smooth running engine. After a time he felt the possible icing might be gone and returned to cold air, but found that his miss returned in about a minute. So back on went the heat and eventually he ended up flying the whole way down with it on.

While we were all standing around for the week, Mark thought that he might have a restriction in his fuel system. He was using an inline fuel filter with a replacable filter element. We pulled it open and found fine filaments in the filter. Mark decided that this part wasn't necessary so the element was left out. A full power run up for at least two minutes ended with no miss. Problem solved?

Mark had made his own prop for the airplane and found that it limted his maximum RPM to 3200 in flight. His normal cruise configuration is to leave the throttle wide open and stay with the 3200. Fuel burn at this setting is a little over 4 gal/hr. Dave Rawlings and

I felt that this was not enough fuel going through the engine for the pov being asked so Mark also opened up the mixture by one turn.

It was time to go back North. While leaving the airshow, and not very far along the way, the engine started it's old routine again and on came the carb heat until the first stop at Live Oak. The plugs were pulled and it was noticed that the outside shell of each by the 13/16 hex was discolored blue. Pretty obviously from the heat. A test of the plugs showed two were not doing their job and these were replaced. The insulators were cracked on the inside and slightly burned away. It was at this time that Dave Rawlings showed up and they did some more brainstorming on the problem. The new plugs performed well so off they went on home. (Dave says that his new GPS showed ground speeds hanging in there at 190 to 192 mph for the last legs of the trip, some of which may be attributable to a tail wind, but these boys tend to fly fast).

It was after the flight that I called Mark to get the end of the story, but it hasn't quite got an end yet. The smooth running on carb heat may be because of the normal mixture richening it causes. Mark also wants to rethink his plenum chamber/carb heat box situation to see if there is enough change in airflow to cause the mixture switch. (Posa's on ram air run differently than Posa's on normal updraft flow.) If you have seen Mark's Sonerai, you know he is meticulous in his workmanship and will eventually solve this little problem too.

Mark Elyea Box 81 Garden Prairie, IL
61038

***** WANT ADS *****

For Sale -- Sonerai I Project: Welded fuselage-tail-controls--primed-- spars, caps, sheet stock for ribs and skins, some hardware. Manuals and video. \$1700.00
Bob Schank 313-697-7057 home

For Sale -- Canopy for Sonerai II, bronze standard size \$165.00 + ship
Bill Rossman 1754 Parkview Cr.
Palmyra, WI 53156 414-495-4370

For Sale -- Sonerai II midwing 177 hr. TTAR, new -- tires, tailwheel spring, paint and fabric. Must sell \$6000 OBO
513-378-3040 after 4 PM

For Sale -- Sonerai II 1834 HAPI 100 TTAF with S-wing, folding wings, dual ign., starter, gen. Health forces sale. Asking \$6000. Dave Zeidler 516-868-8827

For Sale -- HAPI 55 hp 70 hr. TT POSA, hyd. lifters, starter, stub exh, dual elec. ign, Sterba prop, oil press & temp tach. \$2600 or best offer.
John Mitchell 402 S. Hickory
Shannon, IL 61078

Wanted -- Right wing for Son. II L and landing gear for Son II.
Jerry Van Nort 719-738-1290 day
719-742-3746 nite

For Sale -- Sonerai II midwing w/ 1700 Monnett conv. needing to be rebuilt. Aircraft partially disassembled. \$6000.
Tom Freeman 708-526-3180

Wanted -- 5/8" main gear, S-wing kit, taper pins, fabric, canopy, interior kit, wheel pants for 5.00 X 5 and 11.4 x 5 Lamb, rubber donuts for tri-gear, rivets and misc. hardware.
Darwin Mc Kinney 610 S. 318th Pl.
Federal Way, WA 98003 206-839-6531

Wanted -- Top cowling for Super V
Sonerai II -- also handheld radio wanted
Bob Florence 513-378-3040

Wanted -- Clecos and Rib Forms used to build Sonerai wings.
Walt Augustine 6948 Neptune Ct.
New Orleans, LA 70126 504-245-8940

For Sale -- Sonerai IIL low time 1834 engine w/ HAPI acces. case, starter and alternator. Ellison TBI, VSI, T & Slip, STS radio w/ VOR. Wing tip lights strobe 5/8" landing gear. \$ 5000 O.B.O.
Doug 714-528-7061 So. Calif.

For Sale -- Early Monnett engine mount casting w/ bushings and 4016 Slick mag unused \$300.00 O.B.O. Also -- V-Witt extension casting (Larson) machined per Wittman's drawings, Best Offer.
Bill Spellman 1408 Josephine
Waukesha, WI 53186 414-544-6252

Wanted -- Sonerai IIL plans. My set #1493 and photo documentation were stolen! Anyone seeing plans or photos of N19JK please contact :

Joe Koch 23 Robinhood Dr.
Fallington, PA 19054 215-736-2247

For Sale -- Sonerai I fuselage complete from seat aft including tail feathers \$200.00 + ship or u-pick-up. TPX Terra handheld w/charger \$250.00 Ray Jeff Loran \$200.00 A/S \$75.00 Alt. \$75.00 ROC \$50 009 Dist. w/ 90 cap \$30.00
Mike Kellems 341 Ellington Pkwy Apt D214
Lewisburg, TN 37091

For Sale -- Sonerai II LT, Great Plains 2180 (brand new), Sterba prop, hydraulic brakes, fuse. primed, canopy finished, fabric covering, some minor finishing, wings ready to skin. Owner actively working on project. Great project for quick finish.
501-968-2794 or 501-964-5384

For Sale -- Sonerai II midwing, Hapi 1834 with Monnett mount, x-over exhaust, Posa w/ mixture, top mount oil cooler, baffled Great America 52x44, Eng. and VFR instr. Wing Mod done Firm price of \$4000.00
John Danak 2015 Yorktown Ct. North
League City, TX 77573 713-332-9976

Wanted -- Sonerai II Builder looking for Engine and airframe parts
Martin Roy 1342 Magnolia Ave.
Escondido, CA 92027 619-743-2144

For Sale -- 1/2" Sonerai II landing gear slightly bent, also mech. brakes/wheels
Make offer Kelvin Anderson
8 Monterosa Ct Sacramento, CA 95823
916-427-5202

For Sale -- Sonerai II L Hapi 1834, Aux. tank, elec. starter, fib. tailspring Nav/com, folding wing, EGT/CHT all four \$8900.00 Chris Russell 614-366-7071
289 Gladys Ave. Newark, OH 43055-3003

Wanted to buy -- Sonerai II L w/spar mod, prefer elec. start, low time engine, good condition Harry Russell 1513 Pawnee Cir.
Olathe, KS 66062 913-782-1620

For Sale -- Ray Jeff Loran almost new, in box w/STS amps and splitters \$ 175.00
Russ Larson Box 124 Somera, MT 58832
406-857-3304

For Sale -- Spar kit \$200, Cap strip kit \$150, Pr. ailerons \$225, or all for \$550
Rob Bastian 919-595-9028 before 2 pm EST

For Sale -- Sonerai IIL 1700 VW, 1000 TT 100 STOH, new ICOM A21, Intercom, new interior, excellent paint, 110 mph on 3.5 gph \$8000 Runs Flys and looks great!
Steve 605-336-7791

For Sale -- Sonerai IIL 250 hrs. 2275 VW Sterba prop, Loran Days 708-837-8130
Ev. 708-639-0246 \$5600.00

Lining up for the Sun 100 Race



Sonerai News

Copyright Ed Sterba, 1988

SONERAI NEWSLETTER

C/O Ed Sterba

412 S. 5th

Delavan, WI 53115

414-728-1367

To:

FRED KEIP PD 93
11428 SIX MILE RD
FRANKSVILLE WI 53126

