

# SONERAI

OCT-NOV-DEC 89

# NEWSLETTER

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Oshkosh has come and gone and so has the Summer if the nighttime temperatures are any indication. This can be some of the finest flying weather of the year of course. We had a good turnout of Sonerais at the Convention even though there were quite a few less homebuilts than normal due to the rough weather on the Eastern half of the country. I imagine from the reports brought in by Tony Castellano and Earl Folsom, both from Conn., that more than one of you decided not to try the flight. That was probably a wise decision. The weather on the way home later in the week was not a whole lot better, two of the guys only going a 125 miles South spent the last few minutes (hours) staring at their Lorans trying to find their home field.

At any rate, to those in attendance, thanks for making the effort. Glenn Eisenbrandt got things off to a good start by ensuring the Sonerai row had it's old spot on the flightline even though other aircraft were moved. One noticable improvement -- the KR's were placed opposite our row rather than down the line with the EZ's, it was interesting to spend time around some other VW engine pilots.

The Sonerai Forum on the Flightline at the Homebuilders Corner was filled to overflowing even though it was pretty difficult to hear ourselves think what with all the flightline noise. You would think that they could suspend operations for the hour that we have our talk. I'll have to get with Ben Owen about that point. Since this hour is devoted to lots rather than the general public, I think we got to quite a few problems that people have encountered over the year. Some of it will find it's way into this Newsletter.

The Sonerai Builders Forum in the forum tent was also very well attended with quite a bit of interest shown by outsiders in our fine little airplanes. I was greatly relieved to have so many of you join in on the discussions that ensued. We almost had a fist fight between some of the taildragger and nosewheel Sonerai pilots but cooler heads prevailed and the dispute was postponed until next year. Teams have been picked for a volleyball game in the tent when we meet again.

The Sonerai Dinner was attended by about 85 people on Monday night at Butch's. We had room for a maximum of 100 so it was pretty full. John and Betty Monnett were able to join us again. I've got the space reserved again for next year on the same night, we had a request from two of our members to have a program at the dinner and they have so kindly volunteered to get involved. Thanks guys.

The following pilots with their Sonerai's flew in:

Ed Hasch	Clyde Seager
Pete Newkirk	E. Cunningham
Fred Kiep	Floyd Blaine
Jim Phillips	Mica Doane
John Giordano	Dave Rawlings
Bob Scannell	Dale Severs
Bob Brown	Tony Castellano
Earl Folsom	Ed Sterba

Thanks to everyone who made Oshkosh 89 the success it was.



### End of the Year Sign Up Time

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This is the last issue for 1989 so it is time to Re-Up for 1990. The cost as before is \$12.00 US and \$15.00 overseas. I hope you have enjoyed the last years' issues as much as I have enjoyed putting them together. I look forward to the mail everyday. For a few reasons actually. Please get involved if you would like, I know there are some of you who have sent in articles that have not yet made the Newsletter, hang in there, and if you haven't seen your picture maybe you need to send another one in. Put your wife or girlfriend (or both) in front of the Sonerai to make sure it gets noticed on the Editors desk. There will probably be another Re-Up notice in the next month or two, you never know.

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### Oshkosh Forum Tapes

Believe it or not one of the Sonerai owners who couldn't make it to the big airshow wanted to know if I could tape the Sonerai Forums. I forgot that all the forums at the convention are taped automatically through the PA system. I bought one tape of the Sonerai Forum just to see if it sounded any good (sure, sure). It's a bit hard to hear the questions from the audience but most of them get repeated anyway, so it's quality (if not content) is pretty good. You can send for a listing of all the convention forums through:

Forum Recordings / Dave Yeoman  
 3410 St. Peters Rd.  
 Marion, IA 52302  
 or phone 319-377-4188

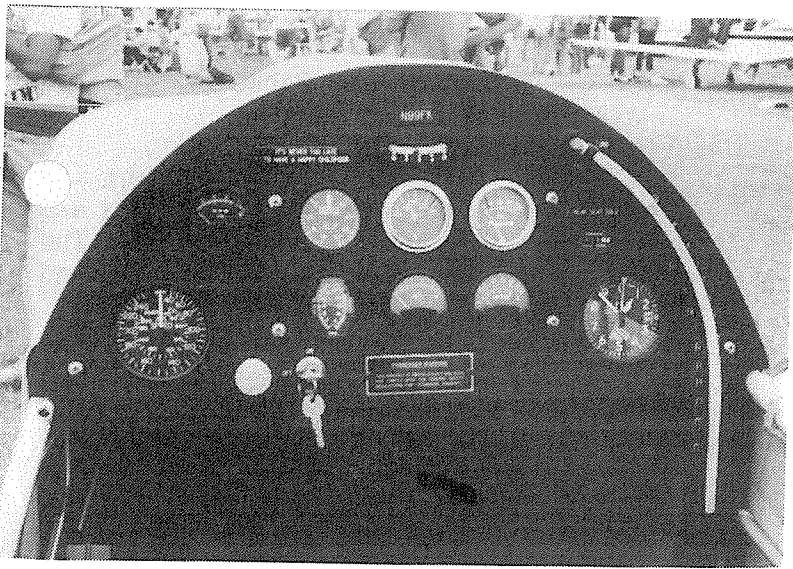
If you have trouble sleeping at night,  
 have I got the answer for you!

### Time To Spare Column

We took the family on a vacation down to Florida this past summer (no, not in the Sonerai) to visit a part of the state I hadn't seen in about 7 years, the ocean. All those trips to Sun N Fun left us in the middle of the state out of sight of water, so I refused to go back there without seeing one coast or the other. The flight was out of Milwaukee with a stop in Nashville to change planes and finally into Orlando with a drive over to Cocoa Beach. The typical All-American Family trip. Now, here's why I bring this mundane item up -- We left home at 5:30 AM and arrived at our final destination (the Motel) at 5:00 PM with only a 15 minute change of flight in Nashville. Without going into all the details, I have made it to Florida quicker than that about 3 times out of 7 in my Sonerai II. Maybe it's not so slow after all.

### Notice on Wick's Aircraft

In the last issue I had made a quick reference to the fact that Wick's Aircraft would be supplying Sonerai Components for Great Plains Aircraft. (They currently sell most of their VW parts.) It works out that this will not come to pass. However, all premade components will still be available through Great Plains as before. Should you need the hardware kits, wing skins or spar capstrips, etc. you can of course still order such parts from Wicks as before. They will not be selling the premade parts, ei. cowling, wing spars, landing gear, etc. If you are confused, you can join the club.



**\*\* Panel of the Month \*\***  
goes to Fred Keip. The long calibrated fuel gauge looks good when you get down to those last few gallons. We don't do it all the time, but it is nice to know exactly what is left.

#### Rocker Arm Blues

by Fred Keip  
11428 Six Mile Rd.  
Franksville, WI 53126

I'd like to relate a little incident that happened to me on my way home from Oshkosh "89. My Sonerai II, N99FK, is based at Kenosha, WI so I'm only about an hour's flight south of Oshkosh. About half way home, over Watertown, WI, my engine went from purring like a kitten to serious rough and shaky. Fortunately, Watertown has a very nice airport right on the edge of town so I put her down there and commenced to look for the problem.

To make a long story short, after checking everything attached to the engine (plugs, wires, magneto, mag. coupling, carb, fuel, etc.) and finding nothing, I proceeded to pull the left hand valve cover. Inside I found lying loose one half of a rocker retaining spring clip and three thrust washers. These were the parts used to secure the #3 exhaust valve rocker arm. After they left the rocker shaft the rocker arm was free to move along the shaft and it moved about 1/2". In so doing it was no longer pushing down on the valve stem, but was pushing on the spring retainer instead. With the valve not actuating properly, the engine was running, at best, on three cylinders.

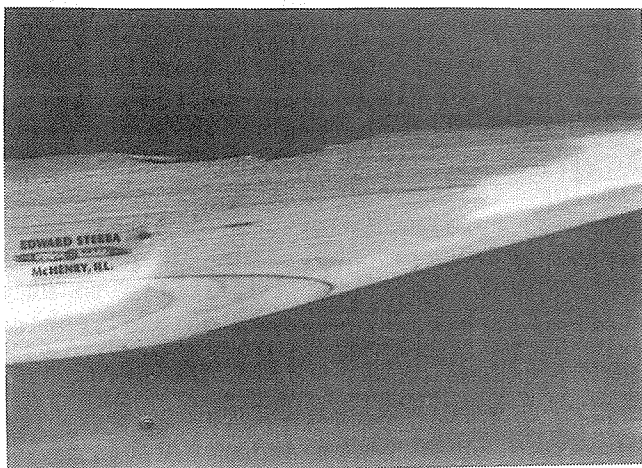
My engine is an 1850 EV with a relatively high-lift long duration cam, stock 1.1 to 1 rockers and swivel feet adjusters. In discussing the problem with Steve Bennett of Great Plains Aircraft Supply, he said he has encountered similar failures of similarly equipped engines. Apparently, this combination of parts increases the side load on the spring clip and thus contributes to its short life. My solution to the problem will be to install a set of SCAT "bolt-on" rocker shafts, which eliminate the clips and to replace the swivel foot adjusters with stock adjusters. I'm also going to be considerably more diligent in inspecting the valve train at valve adjusting time.

For those of you having a similar combination of parts in your engine, please do yourself a favor. Take a few minutes and pop those valve covers and carefully inspect your rocker assemblies. It might save a bit of unneeded excitement.

**\*\*\* Rusty Seats \*\*\***  
( valves that is )

Two of you Sonerai flyers have called to let me know of a problem with the valve seats leaking after a very short time in service, we are talking only 5 to 15 hours time between valve jobs or cleanings. When the heads were pulled to grind the valves because there was an obvious valve leak noise on propping the engine, a close inspection revealed a build up of a rusty substance on the seats that was keeping the valves from seating. There was no damage to the valves or seats, so the valves were lapped in place and the heads installed in the usual fashion. Within a very short time the same problem re-occurred, quite a lack of compression. Rust again.

Both aircraft were flown often, both aircraft were using 100LL. Any ideas?? I plug my exhaust pipes with foam plugs at all times (on the ground). It has been recommended to shut the engine off by using the mag switch instead of the fuel valve, with the idea of coating the valve surfaces with carbon as a protective measure (thanks to our rich idling Posa carbs). I'm not a real engine man and am open to suggestions.



\*\* Takes a Lickin' \*\*  
 \* But Keeps on Tickin' \*

Something came up the other day after a fellow Sonerai driver stopped in at Lake Lawn Airport for breakfast. This problem has to do with the hinge wires that most of us use to hold the cowling halves together. They can be very tight and difficult to get back in place when the airplane is new, but as time goes by and the cowl is pulled off somewhere between 5 and 10 thousand times, it is possible for them to become a little too loose for our own good. This must occur somewhere about 3 years into the project.

Well, if the cowl wires happen to come loose in flight the only place they can go is forward, and since very few of us are using jet engines (this doesn't apply to you Bob O'Day since your machine is jet powered according to one newspaper account) there is only the propeller to get in the way. As you can see in the picture the result is about what you would expect from such a thing happening. The total flight time was about 20 to 25 minutes although who knows how long the wire was actually in contact with the trailing edge of the prop. There was no noticeable sound or vibration. I don't think you could safely say that each and every prop would withstand this treatment without a failure so don't let this become a habit.

The fix can be as simple as a slight bend in the last inch or so of the wire so that it will go in easily until the last little bit which then locks it in place. I suppose a piece of safety wire in the right spot would also do the trick. Or you could leave it real loose and slippery and just replace the prop after every flight--that would be OK with me.

## -----<----- Formula Vee Races ----->-----

A talk with Rick Leonard about the Formula Vee scene revealed that there are two races scheduled yet in 1989. The first will be in Miami, FL Nov.4-5 and the second at Kissimmee, FL Nov.11-12. So if you happen to be in the Florida area at those times please show your support. If you have a chance to help, make yourself available, you might get involved so deep you can't get out without a Sonerai I. It has happened to better people than you.

## Prop Hub Washers

Those of you using a taper shaft type prop hub would be well advised to find out if your prop hub washer is cupped. This is the washer that is under the big nut that is holding your hub (and propeller) onto the front of your aircraft. You may say it is quite essential to safe operation. This is not so critical to the shrink fit hubs that are used in the Monnett conversion, but if the occasion comes up to check the torque on this hub also, it would be a good idea to do so. In either case it will be necessary to remove the bolt to discover the problem.

Some of the washers that are installed on the taper type hubs have been found to be cupped as much as .090" to .100" which has effectively lost all torque on the taper hub. Remember that on this type hub once that torque is lost, there is a good chance for the hub to work loose and then begin to rock side to side very quickly. The only possible result would be a broken crankshaft right up in the nose. Repeat, this can happen quickly! By the same token, some of the washers that have been found to be badly cupped have been on actively flying aircraft that have not noticed anything unusual.

New type 4130 Hardened washers are available from Great Plains Aircraft for \$2.95 plus ship. Cheap at any price. There is a good chance that those forged cranks that have broken up in the hub area probably had this as a contributing factor. Monnett gives a torque for the shrink fit hub of 65-70 ft-lbs. the torque for the taper type hub is 90 ft-lbs.



\*\*\*\* Picking Up Speed \*\*\*\*

("We can't hold this speed much longer, Captain, the engines won't take it!")

This article was prompted by a phone call from Floyd Blaine about his Sonerai II.

When you start to talk cruise speeds and top speeds, there is always a bit of discrepancy between airplanes' numbers. Often the owner of a new Sonerai will be disappointed in the performance at cruise of his airplane. The information pack said that his machine would cruise at about 140 mph and he isn't getting anywhere near that number. The original specifications for the stock Sonerai II were with a 1700 cc VW. The expected cruise speed was 140 mph at 3400 RPM with a machine weighing 506 lbs. Quite a bit has changed since then obviously, significantly the engine sizes and the empty weights. My airplane first came in at 504 lbs. without baggage compartment, wheel pants, radio, nav lights, strobe or ballast in the tail. It has now edged up to about 530 lbs. I still have the same old 1850 cc VW which tops out at about 3600 to 3700 RPM. (When it's heart is in it.) Remember that in the old days with the small VW John Monnett was looking at a cruise RPM of 3400 and a top RPM somewhere in the neighborhood of 3900 to 4000. Most of us don't run the engine that fast anymore (notice I said Fast, not Hard).

The little 1700 turning 4000 RPM was probably putting out as much if not more power than my 1850 at 3600 RPM. Using the RPM cubed formula, the 3400 RPM cruise for the 1700 engine works out to just about to 70 % power which is the same as my 1850 turning about 3250 RPM. If I run my engine that fast the speed will be edging up into the 135 TAS range. These numbers are for low altitude and are corrected for density altitude. This isn't that far off the listed cruise speed.

However, why don't all the Sonerai's go this fast? There are a couple of obvious things to get straight first. Wheel pants are worth about 5 to 8 MPH at cruise or to the top speed. Some of the airspeeds that are mounted under the wing instead of at the wing tip seem to read 5 to 10 MPH slow. (The readings get worse as the speed goes up, so watch those 180 MPH fly-bys, they might be a lot faster than that.) Propellers can make a big difference on cruise (and climb) although the top speed may not change that much. My first props would only let the engine turn up about 3200 max in flight, and yet the top speed was within 5 to 10 MPH of what it is today. Your cruise speed will be affected by how much throttle you are putting to it however, and you can't tell this without some type of Manifold Pressure gauge or in our case, Vacuum gauge.

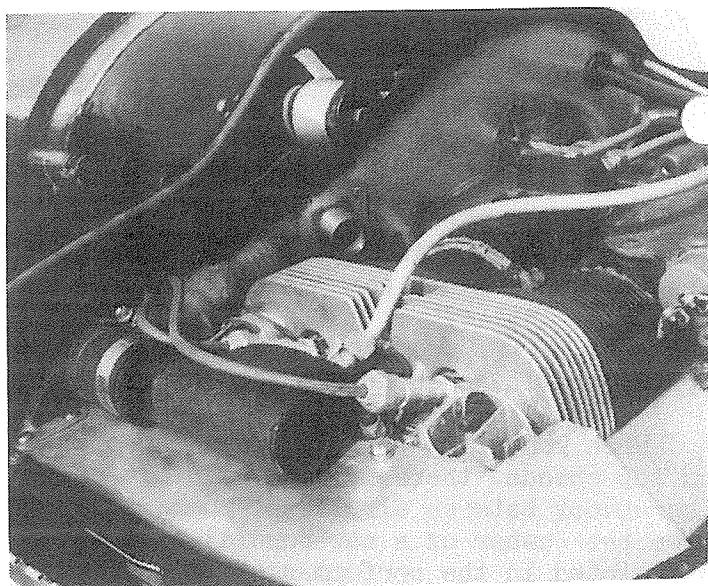
So now we can come into an area that I am not well versed in, but that hasn't stopped me from plunging on in headfirst in the past. When heading out on a long trip with the aux tank up front and the airplane pretty well loaded with baggage, I never get my cruise speed up where it belongs until an hour or hour and a half into the flight. The extra weight up front normally means holding a few pounds of back pressure until the aux tank is empty and the main is starting to go down. How much speed are we talking here? Somewhere on the order of 5 to 8 MPH. Why? I am assuming it is the drag from the up elevator and the additional angle of attack needed to maintain level flight. I don't have an adjustable stabilizer that could be moved to maintain the desired pitch angle, just a spring system to hold back pressure on the stick which of course is causing drag by being reflexed up into the slipstream. Of course I try to load the baggage weight aft but you must keep in mind what will happen 3 hrs. later when all this fuel is burned off and the CG is marching out the tail, so a little moderation is called for.

I'd like to finish this discourse off with another hazy area on my part. As stated previously in the Newsletter, sometimes in order to correct a wing heavy condition you will need to lower one rear spar attach a washer or two. And we have also tried adjusting the reflex on the ailerons to get the proper airfoil shape to our wings. What happens when you change the Angle of Incidence of the whole wing by lowering both wing trailing edges at the same time? Bob Brown did this in his Sonerai II L to see about lowering his stall speed and found that he had created quite a pitch change instead. (Actually it proved difficult to notice a real stall reduction.) If you would like to experiment in this area it will probably be possible to get the whole airplane rigged a little straighter for your application (Speed vs Stall) and pick up a bit of Speed. Any well documented results can be published in this rag.

Are there any other areas where a guy might pick up something fast? (Other than a local bar.) How about the rig of your engine? My airplane really likes to climb with full power. Maybe it should and maybe it shouldn't.

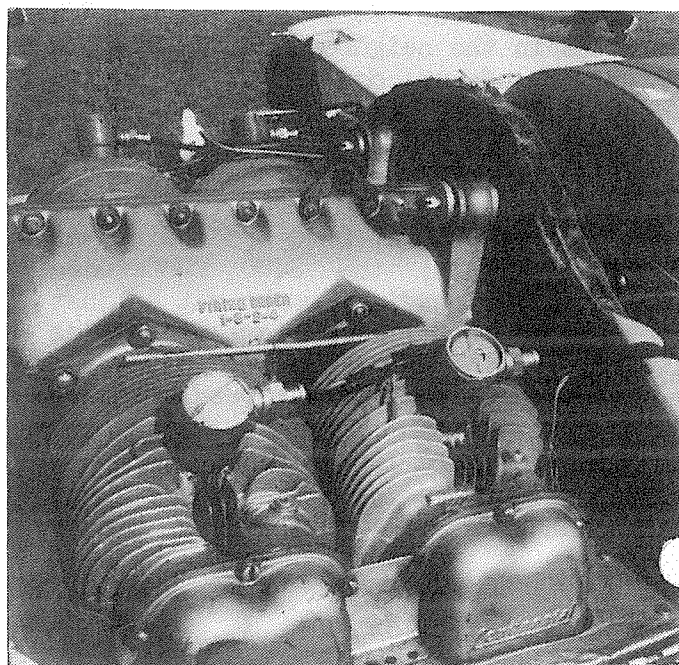
### Spar Builders Tip

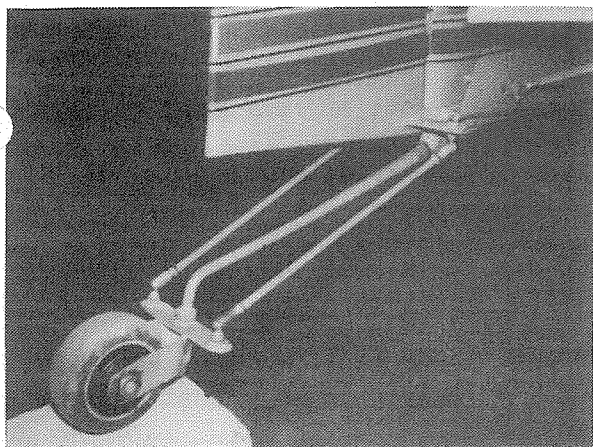
We all like to think that the materials we purchase that are aircraft quality are accurate but that always isn't the case. All you have to do is look inside a Slick magneto and you'll lose a little confidence in high priced stuff. When rivetting up the main spar on the Sonerai, we make the assumption that the thickness on the material that we are assembling is as stamped. I wish that were true, but the total thickness of the spar may work out to be more than you plan. For that reason it is probably a good idea to "mic" each piece before assembly to make sure the total doesn't add up to more than the .790" you should have. Any burrs or imperfections can also get in the way of the proper thickness. By the same token it seems to make sense to assemble your spars before the spar box is welded up. I imagine most people do it that way anyhow, but you never know.



Intake Manifolds turned out, yes it can be done and look how easy it is to service the plugs. The tube is for a intake cross-over. (Sorry I lost the owner of this engine installation.)

A Continental in a Sonerai II owned by Earl Folsom, maybe more on this at a later date.





Joe Hillebrand's dual steering tail wheel assembly. He says it works quite well

### Turned Needles

This little bit probably goes without saying, but a reminder never hurt anyone. If the needle in the Posa type carburetor should happen to turn from it's proper position then you will experience a rough running engine. We all know this (hopefully) but when is the last time you checked to see if your needle is in the correct position. One of our Sonerai pilots had a very rough running engine a few weeks ago that threatened to quit on final. Upon landing it was discovered that the needle was turned a full 90 degrees so the rough running was understandable.

This finding made the other Sonerai pilots nervous enough about their own Posa's to take a quick look, and one of them had the needle about 5 degrees (?) out of position. When this needle was returned to it's proper position, there was a noticable increase in performance. So apparently it doesn't take much of a movement to have a noticable difference. You have to remember that this carburetor operates on the vortex generated downstream from the needle's flat side, so it doesn't take much of a turn to upset the delicate balance determining your mixture. In my humble (?) opinion, this also explains why you should be very careful filing on those needles since the sharp edge of the flat is important to this process, should it be rounded over with careless file work you will no longer generate that vortex. Don't do that.

### Summary of Notes from the Plans

The following Notes were contained in the last plans supplied by Monnett Experimental Aircraft. A copy of the notes can be obtained from Ed Sterba if you feel that there is a need. You could also call to get a reading of any particular Note.

1. Wing mount jig 2x4's --8" apart.
2. Control travel limits:  
Ailerons 2" up to 1" dn  
Elevator 15 to 20 dg. up 10 to 15 dn
3. Wire gauge sizes.
4. Stringer materials 1/2" tubing OK.
5. Fuel Shut-off valve under tank now.
6. Fuel line 5/16 to gasc. 1/4 to carb.
7. Motor mount bolts AN6-60A.
8. Son.IIL Rear carry thru length, bend hinge tube, aileron push rod assy.
9. Aileron rig -- 1/4" up on tips.
10. Wing construction notes.
11. Parking brake for hand brakes.
12. Magneto can from coffee can.
13. Vert. tubes spar car.thru 1 1/8" apart.
14. Top Long. attach at tailpost.
15. Eng.Mt. rubber steel bushing length.
16. Ail. balance lead installation.
17. Cherry CC rivet specs.
18. Bolt torque values.
19. AN bolt specs.
20. Marking Aluminum.
21. Aircraft lubrication.
22. Bending Longerons.
23. Tubing layout on plans, top is top.
24. Long. splice 5/8" into 3/4".
25. Horiz.Tail Spar assembly weld beads.
26. Posa carb needle turning.
27. Brake cable installation.
28. Fuse.layout from plans Station pos.
29. Fuel tanks sliding back.
30. Horiz.stab.inboard rib fit to fuse.
31. Engine bottom baffle pan.
32. Int.Manifold crossover tube.
33. Welding rod - mild steel.
34. Engine - Head bolt torque, Alt.ring for tightness, mag coupling wear.
35. Eng.mount weld reinforce and insp.

## Corrections to Sonerai II Plans

1. Drawing 6. Stab. bolts 3/16" dia.
2. Drawing 9. Wing hinge tube sta. 47 3/8
3. Drawing 9. Gear spacers 2024 T3
4. Drawing 12. Rear Carry thru length
5. Drawing 18. Axle bolt 6 1/2"
6. Wing fold tube on fwd side of spar.
7. B & S taper reamers #3 and #5
8. Aileron travel limits
9. Elevator travel limits
10. Rudder travel max. without hitting
11. Fabric needed to make aircraft
12. Tubing used to make stringers
13. Turtle deck alum. attachment
14. Adjustable rudder pedals

## Sonerai IILS and IILTS Notes

1. Sheet 5. Long. splice details
2. Sheet 9. Note on rear seat back should read "see SH.".
3. Sheet 13. Horiz. Stab. detail should read 1-1/8" X .035" and .035" X-moly ribs should be .032".
4. Sheet 14. X-moly tail ribs should be .032" not .035"
5. Sheet 27 "See detail on Sh. 4 " should read "See detail on Temp. SH. FT-22".
6. Optional Axle assem. sheet changes.



Bob Scannell at Oshkosh 89  
(Is the landing light in the wing for those long night cross countries? Or to tell which is the left wing?)

## Loose Magnets

Sometimes the slightest sound can trigger a reaction when you have probably overlooked the same sound many times before. I remember Pat Mangan from the Monnett factory up in Oshkosh telling us how he scared himself while flying his Sonerai II by chewing gum in flight. Apparently he had never done this before and found the engine giving out this weird pulsing sound as if it was running out of synch with something. It turns out that his headphones were being unseated from his head as he chewed the gum and made the rhythmic noise. My noise turned out to be a little more important.

We are all used to the normal click or clack that our impulse coupling makes as the engine is rotated by hand. If you rock the engine back and forth slowly it will give you that reassuring noise to let you know that the magneto is still hooked up to the engine. This time however the normal mag noise was accompanied by another very faint click that was more evident when the cowl was pulled. It would have been easy to overlook it and go flying on this beautiful morning but instead I went to get my inspection mirror and flashlight. By carefully turning the prop while looking at the alternator windings and magnet ring, it became obvious that the slight clicks were occurring everytime one of the 12 magnets passed the stator coils.



A call to Steve Bennett confirmed that a number of people have had their alternator magnet caps come loose and make quite a racket that eventually caused a forced landing situation. The gradual destruction was preceded by a voltage failure, the grinding noise, and then having the engine seize up as power was reduced for landing. Quite an expensive experience. (The magnet caps are a thin piece of sheetmetal that are pressed in place over the magnet itself. This is what you see when the stator is removed.)

When my engine was pulled and the X-casting removed to reveal the alternator in all its glory, I found that 5 of the 12 magnet caps could be moved by hand in the shell! The slight radial movement was about .010" on the worst magnet. As the engine was slowly rotated these magnet caps would be attracted to the winding coils and shift back and forth making the noise.

My fix could have been to replace the magnet assembly or repair the one I had. I opted to repair the magnet ring in place since I was now aware of the noise indicating a problem developing. The caps were all staked in place to stop any radial movement. It's the sort of thing that will be added to my preflight song and dance and if it starts up again then it's obviously time to change the magnet ring. At least I'm not like Pat Mangan and get scared trying to chew gum and fly at the same time.

PS... I also took time to pop rivet the magnet ring in place with two rivets so that it was no longer just epoxied in place. Most people have done that a long time ago but my engine hasn't been off in about 4 years.

### Rear Spar Re-Rig

I had a discussion with Dean McGinnes of 1503 Clairdale Ln. Lakeland, FL 33801 about rigging the rear spar of his Sonerai II in order to eliminate a wing heavy condition. He has lowered the rear spar about 2 washers (1/8th") but does not feel that the roll can be corrected without a substantial increase in washers. My Sonerai had always flown hands off in roll until the first trip to Sun N Fun some 7 years ago. All the way back to Illinios it was not possible to let go of the stick in order to flip a

chart without a pronounced right rolling tendency. Somebody or something must have sat on a wing while the airplane was at the airshow. When I got home it took 2 standard AN washers to remove that rolling tendency, and they are still there to this day. I don't know what happened in Florida, maybe the hot weather "warped" the wings or I flew too close to the Sun on the way down there!

Back to Dean McGinnes and his problem. I told him that he should be aware of the geometry between the rear spar and the aileron actuating arm when moving the spar up or down. If the rear spar is moved down to correct a right rolling condition, but the aileron linkage is not touched, this will tend to force the aileron UP. You've got to think this through carefully to get it straight in your mind (and I hope that I have done so myself in writing this). If the actuating arm to the aileron is left the same length, but the rear spar goes down, then the leading edge of the aileron is also going down which is reflexing the aileron to an UP position, which tends to cancel out the increase of angle of incidence of the wing in it's new position. So you may not get the result that you expect.

You can get this same effect when the wings are being reinstalled on the airplane and the aileron pin does not fit in the hole of the aileron. By pushing the rear spar up and down you get the pin to fall in place even though it doesn't look like it will in the beginning.

What this all means is that any significant change of rear spar position may also require a change to the aileron actuating arm on that side. As stated in various Sonerai newsletters over the years, the normal rig is to have the aileron balance tips reflexed up about 1/4" at the leading edge in order to get rapid response in roll and eliminate any dead spots in the controls by having the ailerons in good positive airflow. I hope that I explained this correctly, it's the kind of thing that can get turned backwards in my mind if not carefull. I'm sure that has never happened to any of you of course.

FRANKSVILLE WI 53126  
11428 SIX MILE RD  
FRED KEIP

To:

414-728-1367  
Delavan, WI 53115  
412 S. 5th  
c/o Ed Sterba  
SONERAI NEWSLETTER

# Sonerai News



XXXXX WANT ADS XXXXX

For Sale --- Sonerai II Mid-wing 2180  
450 TT 300 Eng., KX-145 Nav/Com  
\$6900 w/ Narco Loran, \$6000 w/o  
Wright Bros. Award Winner  
Jim Wendel 4100 N. Victoria  
Hoffman Estates, IL 60195  
312-545-9522 wk. phone

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

For Sale -- Sonerai II Tri-gear, wing  
mod., 1835 Monnett conv., tow pack.  
Deane Nelson W6862 Soldal Rd.  
Mauston, WI 53894  
608-847-7248

For Sale -- Sonerai II Mid-wing 1700 VW  
Alt., Strobe and Nav. 60 hrs TT  
Ron Pfeil W 199 N11525 Rosewood  
Germantown, WI 53022  
414-628-4716

For Sale -- Sonerai II Mid-wing project  
Ready for turtleneck and cover, all  
parts to finish except fabric, instr.  
engine and prop. \$2500 negotiable  
Dick Baner 608 Lake Rd.  
Bureka, IL 61530 309-467-3208

For Sale -- Sonerai II LT 95% complete  
Hapi 1834 dual ign., Great Am. Prop,  
Trade up or down f/ flying airplane  
\$ 6500 or best offer  
Roy Johnson 26 Raleigh Rd.  
Framingham, MA 01701

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

Wanted -- Sonerai I for Formula Vee  
Bob Cowart Rt 1 Box 1346 A  
Columbus, TX 78934

For Sale -- Unused Son. II Main Fuel  
Tank --\$150 also Aux. Tank \$125  
or Both for \$250  
Tim VanAckeren 8039 W. Howard  
Milwaukee, WI 53220  
414-546-0986

For Sale -- 1700 cc Monnett VW Engine  
w/ Electro X, tuned exhaust, oil  
cooler, Super-carb, Slick mag,  
spinner a/ prop from Q-2 77 hr TT  
\$ 2650.00 complete  
Bill Slattery 17119 Wentworth  
Lansing, IL 60438

For Sale -- Diehl Supercase \$80, late  
mod. Type 1 Case \$80, Ritz 54x36  
prop drilled for G/P hub \$100,  
Set Azusa mech. brakes \$30.  
Stewart Bergner 6015 Brentwood  
Arvada, CO 80003

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 ev.

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