

# SONERAI NEWSLETTER

OCT-NOV-DEC 2010

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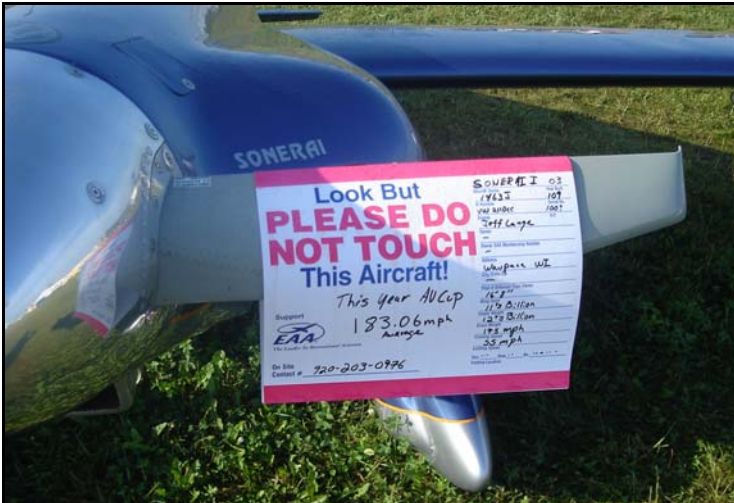
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## **JEFF LANGE'S SONERAI I "SKYE RACER" AT OSHKOSH AIRVENTURE 2010**

*This is Jeff Lange's Sonerai I at Oshkosh AirVenture this year. His was the only Sonerai to show up for the event. Admittedly, Jeff has no excuse for not being there since he hangs the airplane on the field. But it's not like he just taxied over from his hangar to be there. Jeff flew the airplane in the AirVenture Cup again this year, and posted an average speed of 183.06 mph. Pretty darn good for a little bitty VW-powered airplane. And he gets a little faster each year. In its current configuration, the airplane has a 2110 cc VW conversion with a Prince P-tip prop, and a RevFlow carb.*

## MORE OSHKOSH 2010 PHOTOS



Just to show that I wasn't making up Jeff's average AV Cup speed, here's his prop card

The Annual Sonerai Picnic, hosted by Jeff Lange. The Sonerai II is one of Jeff's projects, and it may be for sale..



The Sonerai Picnic, continued:  
The two gents with their arms crossed are Jeff Lange on the left, and Steve Bennett from Great Plains Aircraft Supply on the right (just in case you were wondering who these guys are).





As a Sonerai builder, you've got to love Golden Age racers like this Cauldron C.460; small wing area, big engine, retractable gear, truly a "go fast" machine.

Then there's the current crop of Reno racers, like this Cassutt M1-11, with the Thunder Mustang in the background.



The new Homebuilders' Hangar. Yours truly got to spend most of the convention working in and around this facility as part of my duties as a member of the Homebuilt Aircraft Council.. This is the beginning of several improvements to the Homebuilt area on the convention grounds.

Jack Kearbey's replica SE-5A in the Homebuilt Showcase area of the Homebuilders' Hangar. If you have the opportunity to check out this airplane, you'll find that it is a masterpiece of the homebuilder's art.



## OSHKOSH 2010 IN REVIEW

If you weren't there, you should have been. It was a truly unique year. Some referred to it a "Slosh-kosh". Others called it "Splash-kosh". And still others thought that "Galosh-kosh" was a good name. For several days before it started, the Oshkosh area was inundated with rain; several inches of it, so needless to say, things were WET!

When I got there on Saturday, a large portion of the grounds was literally underwater. The high spots in the campground were OK, but the low spots were small lakes and running rivers. Luckily for me, my site in Paul's woods was on a high spot, but the roads to it were pure mud. The only way to get to it was to drive very quickly across a neighboring unoccupied campsite, which I did. Once on the site I was glad that I had no plans to go anywhere for several days, because there was no way to get out without help from one of the big green John Deere tractors that were cruising the site.

This year I was fortunate to have the opportunity to borrow a small pop-up camper. I decided that I really didn't want to sleep on the ground in a tent anymore. It was a wise choice this year.

As you can probably guess, I decided to leave my Sonerai at home again this year. She'd been to the convention for twenty of the last twenty-four years, so I felt that she'd paid her dues. Plus, with my recent election to the EAA Homebuilt Aircraft Council (HAC), and my responsibilities during AirVenture, it was just impractical to have the airplane there.

That was too bad, because if I had brought it, there would have been two Sonerai's there. As you can see in the Oshkosh Photos, Jeff Lange had the only Sonerai on the grounds all week. I spoke with couple of the past regulars, and they all decided to leave their airplanes home because of the weather.

Being the newest member of the HAC, I spent the entire week manning the new Homebuilder's Hangar. It was fun for me to be fully involved as a volunteer for the entire week of the convention, again. It certainly made the week fly by, and I got to participate in the Homebuilders Dinner, the Tech Counselor/Flight Advisor Breakfast, Homebuilder's Donut Day (notice how a lot of the homebuilder's functions are centered around food?), the Homebuilder's Awards, and the dedication of the Hangar. We have high hopes for several improvements to the Homebuilt area in 2011, so if

you get to OSH 2011, stop by and say "hello". (Also, any and all suggests to improve the homebuilder's experience at OSH are very welcome.)

I also gave three forums during the course of the week. The Sonerai Builder's Forum was well attended as usual. My forums on building and flying my Sonerai, and building my Wag-a-bond were also pretty well received. Hopefully, I can continue to do variations on them in 2011.



The Granite Photo and The Plaque

Finally, I'd thank Steve and Linda Bennett for their small ceremony at the Sonerai Picnic on Wednesday night. Steve and Linda presented me a very nice plaque, and a photo-etched granite picture of my Sonerai, in appreciation for my efforts in publishing this newsletter for the past 14 years. It was totally unexpected, and I was truly moved by everyone's good wishes. It was the highlight of my Oshkosh week. And I want to thank Jeff for the bottle of Jim Beam Black Label. It was smoooooth.

See you there next year...

## CANOPY LATCH – REVISITED

As you all know, I've spent a fair amount of time and editorial space over the past several issues discussing the various details involved in building the Sonerai fuselage. The one thing that I haven't covered yet is the construction of the canopy. I've kinda done this on purpose.

First of all, canopy construction was covered in great detail in three articles by James Gay III in the first three issues of the 2005 **Sonerai Newsletter**, and there is no real need to duplicate that effort. Secondly, by now, you've probably figured it out anyway. Basically, like every other component, the canopy frame must be built in place on the fuselage to guarantee proper fit.



What I'd really like to spend a little bit of time discussing is the proper construction of the Sonerai II canopy latch mechanism, and the need for a good safety catch to keep the canopy from opening inadvertently in flight. I covered this once before in the AMJ 2002 issue, but I think it bears repeating, particularly since I keep hearing of canopies continuing to open on their own.

This is a subject that is near and dear to my heart. I had my canopy come open on my first flight due to an incorrectly built latch, and there is absolutely no reason why it should happen to you. So, please look at your latch, and check the following items:

1. When you're welding the three pairs of latch pin bushings to the LH top longeron and LH canopy frame member, make absolutely certain that they are all in line. A long, straight piece of  $\frac{1}{4}$ " all-thread rod threaded thru all of the bushings works quite well. (Note that the same applies to the hinge pin bushings.)
2. When you fabricate and weld up the latch pin assembly, do your best to get it as straight as possible. Obviously, when everything is straight and smooth, the latch will work with very little effort.
3. When you fabricate the pins themselves, grind a short lead-in taper on each of the pins to make it easier to slide the pins into the bushings welded to the longerons. BUT, don't make the taper too long. You do not want the taper to cross the joint between the fuselage bushing and the canopy frame bushing. Why? Because while in flight, the canopy wants to lift up off the fuselage, and if the taper crosses the bushing joint, the lifting force from the canopy will try to force the latch pins to back out.



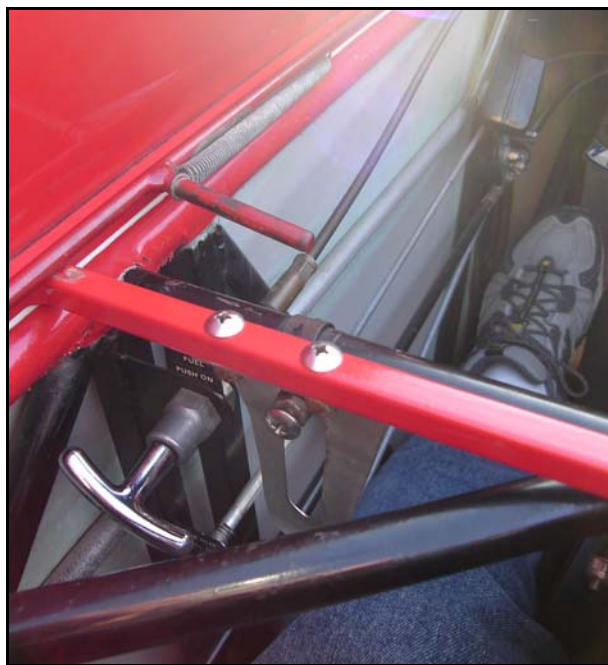
My Latch Spring and Safety Catch

4. When you install the latch pin assembly into the canopy frame, it is **ABSOLUTELY NECESSARY** to install a latch pin return spring to guarantee that

the canopy pins remain engaged when the canopy is latched. If you do not have a return spring, put one on **BEFORE THE NEXT FLIGHT**.



Safety Catch Pin



Latch Pins and Safety Catch Engaged

5. And finally, consider some type of a safety catch that will prevent the canopy from opening in case you forget to latch it. The catch should be automatic, and easily disengaged. Don't install a second latch on the inside of the canopy that only you can disengage. If you are unfortunate enough to be involved in a crash, and are incapacitated, you don't want to be locked in the airplane, waiting for someone to try to figure out how to get you out. It might even be wise to put small placards on the outside of the canopy with instructions as to how to get the darn thing open.

On my airplane, I've installed a moderately stiff extension spring on the latch pin mechanism. You can see it plainly in the photo. My safety latch is a simple slotted aluminum tab attached to the canopy frame cross-member that engages a screw that is attached to the cross-member between the seats. The idea was stolen from the Vari-Eze. It allows the canopy to open about 1-1/2" so that I can slip my hand in to push back the tab to disengage it from the screw. It is simple and straight forward, and works flawlessly.

OK, I've ranted enough. Be safe...

## RUDDER TRIM

As most of you are aware, I've been flying my Sonerai IIL for quite a while (over 24 years, actually). The whole time, the airplane has been out of trim in the yaw axis. When I take my feet off the rudder pedals while in cruise flight, the airplane will yaw hard to the right. If left alone, it'll try to fly thru the air sideways at almost a 45 degree angle.

Up until recently, this hasn't been a big deal. The rudder pedal forces are light, and since my legs straddle the front seat, there's no place other than the rudder pedals to put my feet anyway. So, I have provided the rudder trim with my feet.

Now it's not that I haven't considered installing a trim tab on the rudder. It would certainly have fixed the problem, but I just couldn't bring myself to rivet an aluminum trim tab to the rudder. The esthetics just didn't cut it.

So, what has changed to make me reconsider the installation of rudder trim? First, I'm getting older, and my knees are starting to go. In particular my left knee. In the last year or so, I have found that when I sit in the airplane for more than 45 minutes, my left knee starts to ache badly. I can reduce the ache by flexing the joint, but when I take my left foot off the rudder pedal, the airplane does its hard to the right routine.

The second thing is my discovery of the trim wedge that has been used by the RV guys for years. It is a plastic wedge that is 3/8" thick, 1-1/2" wide and 6" long. It gets glued to the side of the rudder at the trailing edge, and airflow over the wedge causes the rudder to deflect away from the wedge. It's a neat solution, that once it's painted to match the rudder, becomes almost invisible.



The Wooden Test Wedge

To test the wedge idea on my airplane, I cut a wedge of the same general dimensions as the plastic one out of a piece of pine 2 by 6 using my table saw. I sanded it smooth, and cut it into three pieces; one 3" long, and two 1-1/2" long. I then glued the 3" piece to the rudder using clear silicone glue. After the glue cured, a test flight showed only minimal effect at my normal 130 mph cruise speed, but that it did trim the rudder to neutral when I dove the airplane to 150 mph.

Next, I glued the remaining two pieces to the rudder so that the wedge is now 6" long. This configuration works much better. At 125 mph IAS, the nose still wants to wander to the right a little, but at 130 mph the nose tries to remain centered. Any minor upset, though, will allow the nose to wander one way or the other, not just to the right.

This points out a condition that most of Sonerai II drivers have known for a long time. With the standard vertical tail/rudder size, the airplane is, at best, neutrally stable in yaw. That's not a terribly bad thing. It just means that you must use the rudder all the time. A larger vertical stabilizer would help increase the stability, but I'm not going to increase its size on my airplane any time soon.

So, now that I know the wedge trim works, I'm going to saw out a new wedge, probably 7" long. It'll get a couple coats of epoxy varnish, and then a coat or two of red paint, and then it will get glued to the rudder in place of the test wedge. Hopefully, I'll be able to continue flying for more than 45 minutes at a time for several more years.

## DIRECTORY 2010

ISSUE	TITLE	SUBJECT
JFM '10	Welcome to 2010	Misc
JFM '10	Renewal Time, One Last Time	Misc
JFM '10	Fuselage Construction, Part 4	Fuselage
JFM '10	An Alternative Elevator Push-Pull/Quick	Controls
JFM '10	2010 Fly-In Schedule	Misc
JFM '10	Directory 2009	Misc
AMJ '10	A Look Back at the Sonerai I, Part 1/Fisher	History
AMJ '10	Fuselage Construction, Part 5	Fuselage
AMJ '10	Floyd Smith's Tale/Barton	Misc
AMJ '10	2010 Fly-In Schedule	Misc
JAS '10	Are You Coming to AirVenture 2010?	Oshkosh
JAS '10	A Look Back at the Sonerai I, Part 2/Fisher	History
JAS '10	Fuselage Construction, Part 6	Fuselage
JAS '10	Taper Pin Puller/Mattingly	Wings
JAS '10	Tubing Specifications	Humor
JAS '10	2010 Fly-In Schedule	Misc
OND '10	Oshkosh 2010 in Review	Oshkosh
OND '10	Canopy Latch - Revisited	Canopy
OND '10	Rudder Trim	Controls
OND '10	Directory 2010	Misc
OND '10	Hello, Goodbye, So Long, Farewell...	Misc
	Humor	

## HELLO, GOODBYE, SO LONG, FAREWELL...

Well folks, this is it. This is the last issue of the **Sonerai Newsletter** to be edited and published by me. Since no one has come forward to take over as editor and publisher, then this will truly be the last issue. It saddens me some that this is true, but on the other hand, times have changed. The internet website has replaced the newsletter, and that's a good thing. The information is more accessible, more easily kept up-to-date, and the availability of the "forum" makes the exchange of the information much easier. So please, if you are not already doing it, participate in Scott Plischke's [www.sonerai.net](http://www.sonerai.net) website. It is very well run, and the amount of information staggering.

I have a lot people to thank for making the **Sonerai Newsletter** possible for the last 14 years. First, and most important, all of you who have purchased subscriptions over the years. Without you this newsletter would not have happened, and I would have been harder pressed to support my airplane addiction. I hope that I have met your needs over the years.

Second, I need to thank Ed Sterba for starting the newsletter back in 1987. He helped keep the Sonerai brand alive after the demise of Monnett Experimental in 1986, and he helped keep all of us Sonerai builders connected to each other. All I tried to do is continue the work that he started.

And thirdly, I have to thank Steve and Linda Bennett, owners of Great Plains Aircraft Supply, for all of their support. It was Steve and Linda, along with Ed, who decided back in 1987 that it was necessary to keep the Sonerai brand going. They have continued to sell plans and parts ever since, and the designs continue to built in large numbers. That's a wonderful thing. They have also allowed me to install and test some of their new products over the years, and write about them in this newsletter. I know that it was a little self-serving on their part, but I got a better airplane in the deal, and they got the word out to you, the builder.

So, what's on my agenda for the post-newsletter era? Well, first of all, I plan to continue flying my Sonerai IIL for the foreseeable future. I will continue to work on my Wag-a-bond project, which is at the 90% done, 90% to go stage. I would like to continue providing technical support to you the builder. You've got my phone number and email address. And I will continue to offer the **Sonerai Newsletter** back issues on CD. I am considering digitizing all of the Monnett newsletters that were published prior to 1987, and I am thinking about doing a Sonerai Fuselage Construction Manual to go along with the Wing Construction Manual. Keep your eyes on sonerai.net for information, as it becomes available.

So, so long, and hopefully I'll see you out there...

**Have a  
Merry Christmas  
and a  
Happy New Year**

*Fred*



# WANT ADS

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**SONERAI WING CONSTRUCTION MANUAL:** There are 18 pages of text, 85 photographs, and 12 drawings, as well as a complete materials and a tools list. If you have an older set of plans (The manual is now included with the plans, so you new plans holders already have it.) and would like your own personal copy, send cash, check, money order, or PayPal) for \$25.00. Postage is included. Fred Keip, (262) 835-7714, [fredkeip@aol.com](mailto:fredkeip@aol.com)

**BACK ISSUES: Sonerai Newsletter** back issues are available in three forms. The first is a CD which contains all of the complete newsletters published by Ed Sterba from 1987 through 1995 in ".pdf" format. It costs \$40.00. The second is a CD which contains complete copies of all of the newsletters published from 1996 through 2008, also in ".pdf" format. The cost is \$50.00. If you buy both CD's, the package price is \$75.00.

And finally, there are also hardcopy back issues. I have the last two issues from 1994, and all of the issues from 1995 thru 2007 (That's 54 issues!). Contact me for pricing, and I'll make you a deal. As usual, I accept cash, check, money order, or PayPal for the correct amount. Postage is included. Fred Keip, (262) 835-7714, [fredkeip@aol.com](mailto:fredkeip@aol.com)



The Wag-a-bond, 90% Done and 90% To Go