

EAA Mount Rainier Chapter 326 Newsletter

Thun Field - April 2006

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Meeting Notice

**Tuesday, April 11th, 7 PM
CAP Building, Thun Field**

Program: Col Bob DeFee, F-4, O-2, FB-111 pilot will talk about his adventures in the USAF.

Refreshments: Curt Bryan & Al Reiter

From the Secretary

March 14th, 2006 – EAA Chapter 326 Meeting
Tonight's meeting was called to order by Gordy

Visitors included:

Randy Albright - returning member
Steve Herr - new member
Tim Pitner - Interested in building
Ron Talcott - Interested in Young Eagles – Has Cessna 207
Bob Slater - Restoring a Stinson 108-2 got it in 1964.
Looking for some help.

Darren brought the refreshments this month!

Lance is looking for donations towards a PA system for the Chapter. Amp, mixer, mic. This would really help with the programs to give enough volume as we grow larger and larger.

RV8 memorial project is being built by the family of Ron Alexander (RV8). If you are interested in helping out contact Lance for more information.

Darren - Young Eagles is June 10th this year. Signup will start next month. Start thinking about what you can do to help out. We will be hosting it again at Spencer's main hanger on the field.

NW Aviation conference was a great success. Thanks for everyone who helped out. New interest was great in Sport Pilot. Let's figure out how to leverage this info into a community program that would help share that info with new member interests.

Dave Thomas - Viperjet update. The plane is on the gear, working on the exhaust system. Doing body work; priming is next. Hydraulics and fuel system go in after that.

Tonight's main presentation was provided by Jim Triggs and dealt with checklists, emergency training and preparation. If we learned nothing new other than a reminder to build and use our checklists I think Jim would be happy!

Andy

Young Eagles Day

We'll start the volunteer signup this month. We only have two meetings before the big event...hard to believe. To answer your question though, we'll need pilots and ground crew. The date is **June 10th** and I've scheduled great weather!

I would like to have an LSA type aircraft on site. I'm hoping to get Sport Pilot and LSA information from the EAA and I'll be working on a Sport Pilot display to setup. We might even have an "Authority" on the subject; one of our guest's from the last meeting recommended a guy to us that has been presenting on the SP/LSA topic for some time.

Darrin

Fuel Tank Service Bulletin

Andy Karmy

Well, I dove in today and fixed up my tanks to comply with the SB. First, it took 7 hours to do both tanks, including draining 7 gallons of gas, removing the intersection fairings and reinstalling everything.

I'll give some of the rest of you a bit more detail as I sure wanted some before I started.... Tools required: 1 stiff and 1 flexible 1 1/4" putty knives. A 1/2" x 3/4" block of hardwood. Hammer, 3/8" short handled socket set with 1/4" socket. Short Phillips ACR bit to go in the 1/4" socket. Make sure the ratchet has a smooth top (mine has the release button on the back) so you can apply pressure with one hand while turning it. Wagner heat gun.

Using the ratchet all of the screws came out with no trouble at all. Very easy overall. So now my confidence is high.... Hum, how to get the putty knife started.... There is only one location that you can get it started, that's the lower front section. Everywhere else has too large of a flange on the edge of the tanks (at least on the RV9 tanks). A little heat and a lot of pushing with the flexible knife got it started. Now, others have said to slice through the proseal. That works for about 2" in each direction, then your knife bottoms out and there is no other way to get leverage on it.

After lots of head scratching I finally started prying on the access cover with my stiff putty knife. By applying heat, and simply prying up and outward it started to let loose. I pried the first side that I had access to out enough to fit the 3/4" block of oak in place and hold it open. Then moving the knife and prying more with more heat the rest of the flange let go.

By now I figured I would have a taco from all the force needed to get it free, but the plate is still flat and unbent after the event. All my connections were still tight just as the day I built it... 450hrs and 3 years of flying. I drilled them and drilled the corner of the anti-rotation bracket as others have. Next was to

clean up the proseal. Scraping with the putty knife and an exacto knife got most of it off, then some red scotch-brite took the rest off nicely. Once the plate is done, then you need to clean the tank flange, bit harder, but not bad compared to what you've already done by now.

I got the single serving proseal from Vans so I would have a new batch. You simply mix it in the can it comes in. They have that down perfect as it was just enough with about a marble sized drop left when finished. Proseal on both the flange of the tank and the access cover, put it in place and put a touch of proseal on each screw as they get started. I used all new screws (just the same #8 screws). They were easy to get in place using the same ratchet.

All in all it was not that bad, but was the worst thing I've had to do since I started flying my 9A three years ago. Oh well... Good times! Now... How long does that proseal need to cure before filling those tanks?

Good luck with yours...

Andy

Glitches

John Brick

RV-4, N474JB is nearing the end of its phase 1, 40 hour test period. Some people have asked what problems I've had so here is a summary:

Heavy right wing:

This is due to the left wing incidence being about 0.4 deg higher than the right. It is one of those choices you make during construction when drilling the rear spar to the fuselage carry-through. I chose to preserve edge margin rather than getting the incidence the same.

I have temporary balsa wedges taped in place on the rudder and on the bottom of the left aileron. A wedge on the rudder is pretty standard. The wedge under the aileron is small and very effective. Despite what I would call a pretty heavy wing, the aileron deflection to fix it is so small that I can't see it from the cockpit.

I am getting ready to install electric aileron trim per Van's spring bias design for other RV's, except I will put it in the wingtip because of space limitations. If that works, I may not need the aileron wedge. I'm also looking at possibilities for adjustable rudder trim.

Alternator pulley rubbing cowl:

This was discovered on the first flight. A shorter belt fixed that before the second flight.

Channel rubber came loose from wing root fairings under wing:

There is nothing to hold the rubber in place except pressure against the side of the fuselage. That worked fine on top but the fuselage slopes away too much on the bottom. The fix was to pop rivet the rubber to the fairing.

Pitot / Static system:

I have a heated pitot tube (AN 5814) that has the static ports as holes on the top and bottom of the tube a few inches behind the front pitot opening. Seemed like a good idea at the time. Even though it is 6" below the wing, the static pressure was way off at anything above traffic pattern airspeeds. I noticed this problem on the first flight and every flight. The airspeed indicator was reading very high and was jumpy. On traffic pattern entry, I felt like I was too low over the water tower even though I was at 1500' indicated. But then on downwind, all of a sudden I would be reading 1200'. I just attributed that to sloppy flying and didn't know what to make of it. Later, when I did 3-way GPS runs to get true airspeed and calculate what indicated airspeed should have been, I found airspeed errors of 18 to 20 knots.

This took a long time to figure out. I tried a different airspeed indicator...no help. Put an alternate static source in the cockpit...no help. I had Spencer do an IFR altimeter and static check. That amounts to bench checking the altimeter and synching the altitude encoder with the altimeter, and checking the static system for leaks. None of those checks will determine if your static ports are sensing static pressure correctly. The transponder transmits the wrong altitude, but nobody knows that because you are at your assigned altitude and the transponder says so too.

Finally I called Warren Gretz who makes and sells pitot tubes. He said to give up trying to make it work and move the static ports to the aft fuselage where Van says to put them. From what I've read, it took Van quite a while to come up with that location. So that's what I did and it is a lot better now. I've calculated errors from three to seven knots. I need to get more data to see if I want to fiddle with it some more.

I have a good Excel program that will calculate both airspeed and altimeter errors. It requires a lot of patience because you have to record 3-way GPS runs and pressure altitude, OAT, and IAS. Then you have to go home and plug into the computer. But unless you do that, I don't know how else to assess the accuracy of your system. If you want the program, I will send it to you.

Baffle seal fabric blowing out:

This was surprising. There is a lot of pressure under the cowl. In order to help the fabric around the compound curves, I scissor'd slits in the top edge every few inches. When I would remove the top cowl after flight I could see where the fabric was bent the wrong way. Surprising because the aluminum to cowl clearance was 3/8" at most. The fix was to lay strips of baffle material along the blow out area and pop rivet it to the existing fabric. I would fix one area and then another would blow out. It took about four tries. Most of the trouble was along the aft seal, especially the corners, one on the front, none on the sides.

Battery replacement:

I started with a Powersonic PS-12180 and switched to the Odyssey PC680. They are the same size except that the Odyssey is a couple pounds heavier. When I hit the start button, the prop would make a half turn, hesitate for a split second and then crank normally. I checked all the connections and couldn't find anything wrong. My O-360 has high compression pistons (9.2:1)

so I assumed that was causing the hesitation. The Odyssey has less internal resistance and is famous for cranking power so I switched. No more problems.

#1Cylinder head temp:

The EGT's and CHT's were very close except CHT on #1. I just put metal tape on the fins on the front of the cylinder expecting a trial and error process. Right away, that brought it in line with the other temps so I'm going to just leave it that way.

Prop gov:

Max rpm was 2660. My Jihostroj prop governor is fairly easy to get at so I adjusted it to get 2700 on takeoff and climb. I borrowed Marv's optical tach to validate my own and the readings were identical. There is no restriction on the Whirlwind prop so I climb at 2700. Heavy as my airplane is, and with 43 gallons on board, I climbed to 12k' in 7 minutes.

RF interference:

The Trutrak Digiflight 200VS autopilot is installed right next to my Icom A200 com radio. It will break squelch on the radio for about one second after the transmit button is released. The autopilot doesn't have to be engaged...just on. I reported this to Trutrak and they said to send it back and they would replace an oscillator and that would fix it. They have it now. Hope they don't screw it up because it works great and I'm really happy with it.

Oil on belly:

Not sure if it is oil or a mixture of oil and fuel. It is green and is there after every flight. I'm pretty sure it is coming out of the air intake...past the throttle plate. There is always a drop of black liquid at the drain hole in the bottom of the airbox. When the engine is shut down, some fuel can be expected to drain back down the intake manifold but not oil. I hoped that this would just go away but it hasn't. Can't figure this one out.

Add On's:

Breaking in the engine during the coldest three weeks in January on record, I added the **Reiff Hotstrip** to the oil sump.

G-Meter. I managed to squeeze it onto the last square inch of panel space. I didn't think I would need one but without it I suspect I am babying the aircraft unnecessarily. Over-the-top stuff has been intentionally slow (and sloppy) in order to avoid high speed, high G, on the pullout. Haven't flown it yet but maybe this will make for more consistent maneuvers.

It has been fun working through these issues and very satisfying to find a solution that works. This is a great airplane and it just gets better and better.

jb

Thielert Exercises Stock Option to Buy Superior Air Parts

The German firm Thielert, manufacturer of the Centurion jet fuel/diesel aircraft engine, has exercised a longstanding stock option to take control of Superior Air Parts located in Coppell, Texas, in a reported \$10 million deal. Preliminary agreement was reached March 13, but the deal was expected to be signed as soon as today. CEO Frank Thielert said the acquisition of Superior Air Parts is a "final step along the road" into the U.S. market.

Thielert had planned the move for some time and already makes camshafts, cylinders, crankshafts, and connecting rods for Superior Air Parts. In addition, Superior Air Parts, manufacturer of the Vantage piston engine, has long been the dealer for the Centurion engine. Thielert had waited to make the move until it became a public company—something it accomplished last November with an initial stock offering that raised \$189 million.

The purchase of Superior Air Parts gives Thielert—which had a net profit of \$9.27 million in 2005, up from \$4.45 million in 2004—a U.S. presence for its Centurion engine, and ownership of U.S.-approved component parts with the possibility of designing and approving additional U.S.-approved parts.

Calendar

June 3, Chelan Fly-In

June 10, Young Eagles Day – Thun Field

June 17, RV Fly-In, Scappoose (SPB)

June 30-July 2, Northwest Formation Clinic, Redmond, KRDM

July 5-9, Arlington, 35th Annual Northwest EAA Fly-In.

July 22, Concrete (3W5) Fly-In [Date change...formerly May]

July 24-30, EAA AirVenture, Oshkosh (OSH)

August 18-20, McMinnville Annual fly-In. (MMV)

September 2, 3, Van's Homecoming. Aurora State (UAO)

October 26-29, Copperstate Fly-In, Casa Grande, AZ (KCGZ)

Don't worry about the world ending today, it's already tomorrow in Australia." (Charles Schultz)

End

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