

# June 2004 Meeting Minutes



**THUS - JULY. 15, 2004**

(Compiled by Jeff)

Most of our time was spent talking about leaning the aircraft, so finance and maintenance are near the bottom.

## Notes on Leaning:

- **Taxi:** Leaning starts during start-up and taxi. Some members like to start with the throttle at full idle, others with it cracked just a little. While it's a good practice (especially in the winter) to start the with the lowest possible RPM, it's even more important to lean on the ground. When we overhauled 4SA there was enough blow-by on the cylinders to suggest that we ran too rich. Failing to lean on the ground results in fouled plugs. Fouled plugs not only mean rough running at low RPM, there's also a slim chance that they can lead to pre-ignition (a great way to induce an early top overhaul) if the carbon deposits build up enough. So what do you do? Lean to maximum RPM on both 9SP and 4SA. If you start at 1,000RPM, you'll see a couple of hundred RPM increase on a hot day.

- **Runup:** Opinions differed here. Some people went to full rich for the run-up, some left the mixture out a little bit to simulate the maximum power mixture setting for 4SA on a warm day. I go full rich because at the end of my run-up I bring the throttle to idle and I want to make sure I don't stall at idle even with the mixture full rich. There's no "right" way to do this. The POH says run full rich even if you lean for taxi.

- **Take-Off:** Leslie probably had the most high altitude experience in the group present at the meeting, and she emphasized leaning for maximum power on 4SA (use the placard in the plane to cheat if you want to go by the fuel flow gauge). A number of folks in the room suggested that you should adjust the fuel flow in 4SA to 19gph on the take-off roll to achieve maximum power. I think I was in the minority by saying that I'll usually take-off at full rich in 4SA, trading off a bit of power for a bigger detonation margin and extra cooling during the summer. If you're at max gross, then lean for maximum power. In 4SA, that's 19gph at a 2,000' density altitude. Here's where I have a problem with dogmatically setting 19gph on the take-off roll (as at least one very well respected CFI teaches): pretend that it's February. The temperature is 20 degrees Fahrenheit, and the barometric pressure is a standard 29.92"Hg. The density altitude under these conditions is -1,613 feet. Hmm...extrapolating the max power placard in the plane for -1,600 density altitude says you need a max power fuel flow of about 21.6gph. Anything less than 21.6gph is not only failing to produce max power, it's also reducing the detonation margin on the engine and increasing the chance you'll shorten the life of the engine due to light detonation. As I write this on Sunday afternoon with an outside temperature of 83 degrees, the density altitude at Schaumburg is 2,719 feet, so leaning to 19gph for peak power makes sense (actually about 18.7 gph if you interpolate from the placard). During the winter though, the placard in the plane recommends against any leaning for take-off, and I would only take-off full rich. For take-off, I would argue that it's more important to be worried about density altitude and performance than leaning, especially during the summer or at higher altitudes. Remember that performance is significantly poorer in the summer.

- **Climb:** One major point here -- lean during the climb (just not too far...). Pick one of two methods. Method One: On 4SA lean to the placarded maximum fuel flows. Remember that these are the maximum placarded fuel flows when you have the throttle fully open. If you're going to pull back to the top of the green on MP and RPM then you can use 15GPH. That's what the manual says. Method Two: Note the EGT on take-off (barely registering on 4SA). Lean to keep it there. You're running too lean if you're getting any real EGT reading on 4SA in the initial climb.

- **Cruise:** See the links I've provided below for much more about leaning in cruise and the possibilities of lean of peak operation (please DO NOT run lean of peak with the club airplanes right now -- we don't have

good enough engine monitoring). Opinions in the group went from running peak EGT to 125 degrees rich. The POH for 4SA says that you can run at peak EGT below 80% power for maximum economy or 125 rich of peak (that's 5 bars below peak on the EGT) for maximum performance. For those of us who cruise at 7,500 or above I would run at peak EGT -- the engine can no longer generate enough power to reduce detonation margins to a worrisome level. Down at the lower altitudes, I think it makes sense to run 125 degrees rich of peak to buy yourself the detonation margin. Read the links at the end of this section for more detail.

- **Descent:** Remember to bring in the mixture slowly in the descent. Slamming the mixture forward will cool the cylinders more rapidly than pulling back the power ever will. I don't know if I believe all the gloom and doom about shock cooling, but why take the chance?

- **Landing:** Lean again for peak RPM on the ground and get those cowl flaps open on 4SA.

If you want to know more about leaning, I would highly recommend this series of articles:

<http://www.avweb.com/news/columns/182179-1.html>  
<http://www.avweb.com/news/columns/182176-1.html>  
<http://www.avweb.com/news/columns/182583-1.html>  
<http://www.avweb.com/news/columns/183094-1.html>

The author of these articles is in league with the GAMIjector folks which is why he stresses lean of peak operations so much, but the science seems to support him (nothing I read contradicted what I can remember of my old thermo courses in college and one of the diagrams parallels what I have in an old textbook). Amusingly, when I polled people at Oshkosh and listened to seminars over the past few days everyone except Lycoming and Continental recommends LoP when you have good engine instrumentation. Two Cessna Pilot's Association staff members were in favor of it, a presenter from AeroShell thought it was a good idea when you had 6 cylinder engine monitoring, a bunch of pilots were using it, and the GAMI and JPI people were obviously all for it. Lycoming has a little booklet (I have a copy if anyone wants it) saying that LoP operation is a really bad idea, but even this publication says that a skilled pilot with good engine instrumentation can safely take advantage of it.

### **Financial Notes:**

I'm omitting detailed financial data. Bill began handing out a more abbreviated version of our finances at the July meeting, and if anyone would like a copy of that, please e-mail Bill. If anyone would prefer the detail of the old format, let us know. I am happy to report that we billed just over 108 hours of flight time in June for \$7,209 (excluding \$1,050 in dues). That's up from 92 hours in May and 85 hours in April. The more we fly the more cheaply we fly, so this is good news. Here's the quick tabular summary:

Revenue billed in June for flight time:	\$7,209
Revenue billed in June for dues:	\$1,050
Total Revenue Billed:	\$8,259
Bills Paid in June:	\$6,943.73
Engine and Prop Reserves Required:	\$1,234.70
Total Costs for June:	\$8,178.43

So we were \$80 in the black in June (I know the accountants are cringing right now because I didn't do any accruals, sorry about that). Going for us was an increase in flight time. Going against us were higher fuel prices (which will hit us even higher in July and August) and the \$2,640.75 insurance payment to Avemco that covers us for the next 3 months. All-in-all June was a good month, but we should expect June-September to be profitable in order to support the winter months. We haven't put together the numbers for July yet, but I expect that the fuel surcharge will help offset the fuel costs from Northwest Aviation. As a point of reference, the invoice we received in July from NWF was \$896 higher than the one we received in June, so it's a good thing we've got the fuel surcharge in place.

## **Maintenance Notes:**

9SP finally got a new DG, so the precession problems are a thing of the past. The turn coordinator was also replaced, but as you can see from Norb's e-mails over the past several days the new turn coordinator also looks to be having some problems. A warranty replacement is on the way. Credit to Norb for buying the components himself instead of just letting Poplar Grove or Waukegan do it. He saved us about \$600 over what PG would charge by taking the time to shop around.

I'd also like to thank Norb for staying on top of the oil changes in both aircraft. Thanks also to everyone who showed up back on Sunday, July 25th, to help Norb change the oil in 9SP. The more members who get involved with maintaining the aircraft the better off we'll be. The oil change only took about an hour, and a bunch of us got to poke and prod 9SP with the cowling off to learn a little.

## **Some Random Notes:**

I wanted to include one or two other quick notes before wrapping up.

- For the instrument rated pilots in the club, please record a VOR check the next time you fly. Let's keep the airplanes legal for IFR.
- I'm putting a tire pressure gauge in each airplane when I next go out to update the GPS databases. You might want to add this step to your pre-flight if the tires look a little low.
- What aviation related topic should we talk about at the August meeting? I'd be happy to moderate and contribute to (not present) a discussion on tips and tricks with the GPS. Another option might be a quick Oshkosh debrief from those of us who got up there this year. Any volunteers from the club to share their best Oshkosh photos/stories/findings? Let me know what you want on the agenda.
- It might seem like a long way away, but our annual meeting where we elect the board is coming up in October. If you're interested in running for any of the positions please let me know so we can let the membership know ahead of the meeting what to expect. I'm not trying to preclude nominations from the floor in October, but I am interested in hearing from those who would like to participate more actively in the club.

## **A Survey** (Meaning you're almost done with my ramblings):

We (Norb and I) exchanged far too many e-mails last week about minimums and taking club planes for extended trips. Rather than keep speculating about how the club feels, the two of us figured we would just ask. Your responses will help us to come up with some additional proposals to improve the club.

- 1) Is aircraft availability acceptable right now? If not, why not? Is one plane not available enough? Can you not take that long trip you wanted to? Can you not get the plane for short hops on short notice? What type of availability are you looking for?
- 2) Are the minimums reasonable? We may be enforcing them now, but the minimums that we enforce are below the number of hours the plane would fly if not taken on a trip during the summer. To match up trip time to local time, we would have to raise the minimums to about 2 hours/weekday and 3 hours/weekend-day.
- 3) Is anyone in favor of using minimums as a tool to make aircraft more available on the weekend? Here's what I mean: make daily minimums on the weekend 3.5 or 4 hours/day. That will probably make some people re-think that long three-day weekend to a destination just a few hours away. The result will probably be that more total members get to fly for shorter blocks on the weekend that aren't susceptible to daily minimums. What do you think?
- 4) Is it time to reverse our rule from several months ago and say that if 4SA is gone then 9SP can't be taken overnight?

5) Are Norb and I getting all worked up over nothing? Should we just let things be? Should we be worrying about something else?

Please respond in the next week or so to allow me to summarize the results prior to the August meeting.

Thanks,

Jeff

**Members Attending**

Matt Aaronson

Neil Dohe

Tom Gaare

Paul Hoppe

George Moshos

Mike O'Brien

Norb Paprocki

Jeff Puglielli

Don Segreti

Leslie Wadsworth

Bill Wetmore

**Next Meeting**

7:30pm on Thursday, Aug 19th. The usual crew will probably gather at Pilot Pete's beforehand around 6:15 or so.

Our next meeting will be the 3rd Thursday of the month at 7:30PM. This time it will be July 15th. We'll do the usual Maintenance and Finance updates.

Posted Aug 18, 2004

Looking for [previous meetings](#)?