

ICS NE Fly-in Maintenance Seminar Sky Manor Air Repair Sky Manor (N40) Airport

June 18, 2016

Notes by CJ Stumpf

The Seminar covered two areas:

- 1) Changes to the airport (new owners, restaurant, and maintenance facility)
- 2) Comanche Maintenance, with plenty of Q&A, before moving on to a great lunch and Northeast tribe meeting.



Sky Manor Air Repair hangar

INTRODUCTION

Glenn Sinibaldi

22 years AF pilot, still in reserves Flew for Continental 33 years, retiring as Senior Captain 737 A&P 45 years, IA 15 years

Sky Manor was recently transferred to a community group of owners and some good changes have occurred:

- Upgraded restaurant – great, except now really busy!
- Maintenance shop – now fully certified. 5 days a week, 2 IAs, 3 A&Ps.

- 1) Focus is light aircraft and warbirds– everything up to light twins (C310)
- 2) Avionics shop added in 2014 - Distributor for many avionics manufacturers, and do lots of avionics.
- 3) We really set out to make sure we're on time and in budget.



MAINTENANCE SEMINAR

Gearboxes

– Comanches have grease filled and oil type gearboxes

Oil type boxes run forever

Grease type gearboxes – remove every 10 years have it taken apart and serviced as the grease gunks up. Synthetic grease okay. It's a special grease that Piper supplies that has problems.

Wiring Harnesses

- Insulation on wiring harnesses gets brittle over time

If you get an unsafe gear indication no reason to panic, the wiring probably is bad. 99 percent of the time your gear is down and locked.

The switches are wired in series and if one goes, all go. Replace the wiring harness.

To troubleshoot this you can do a field check:

- a) Have someone sit in the cockpit and watch the gear light
- b) The wiring harnesses are under the right and left wing in the gear wells – if you twist the wiring harness and see the light flicker you’ve got a problem

Can also do this test with a power probe – put 12V through the system – then you only need one person

Fuel Caps leaks and effects on Fuel Bladders (bet you didn’t see this coming)

– if you have a leak because of bad seals on your caps, the suctions will not just suck the fuel out of your airplane, it will also suck the bladder to the top of the wing. Then you can’t put fuel in it.

You can try to wait it out if it’s a warm day and get a stick and push the bladder back down, but it doesn’t always go. It gets wrinkles and then doesn’t want to let go. So be careful about fuel cap seals.

Lycoming bulletins and how to save yourself money with AD Log

All manufacturers put out service bulletins and Lycoming is one of the best manufacturers for doing that. (This week it was about oil overflow from the breather and what to do about it).

Also puts out mandatory service bulletins like most manufacturers. These are not required, it’s not federal – if you don’t comply it doesn’t mean you are illegal and doesn’t necessarily mean it’s unsafe

Then there are service letters from Lycoming - if they want you to start using a different type of part they will send a service letter.

If you do an annual here we go through all service bulletins and all service instructions and all service letters

To save yourself money, use AD Log. It saves the mechanics a ton of time and you won’t be paying for the mechanic to go through your logbooks for hours. AD Log is \$135 to join and \$40/year

Comanche Tail caution – be sure to use Close Tolerance Bolt Type:

When you disassemble the Comanche tail make **SURE** you use the type of bolt Piper supplies – they are close tolerance bolts. Aircraft Spruce has the bolts and they are easy to get but not all mechanics know about it

Comanche Gear inspections – give it a good shake when you work on it not just side to side but backwards and forwards. There are all sorts of bushings and things that can be used to tighten things up

Hint: Lube your gear at the scissors linkages with liquid wrench or penetrating oil every 6 months, especially if it’s coastal – been seeing corrosion. WD40 ok, liquid wrench better.

Magnetos – Slick Mags caution (vs Bendix)

People are missing the 500-hour inspection on the mags. Not so bad if it’s the Bendix mag, they are great mags. Even the Slicks are almost as good, but they have nylon gears and they do go bad. They have an egap and on the Slick mags this is extremely critical – 4 degrees off and you’re supposed to overhaul it. So make sure the guys that do your annual do that 500-hour inspection on the Slick mags! In addition, if you have Slick mags, if they are over 1000 hours get them rebuilt or replaced.

It's about \$3000 to overhaul or replace Slick Mags. (Used to be \$900 and then Champion bought Slick and more than doubled the price.) Slick went overseas for a part in 2002 – 2004 and the carbon piece was poor quality. They didn't admit it, just said replace the rotor and the cap, but it's because of this bad part. Now they are back to making them in Ohio and the American parts are good.

Oil Types and Oil Changes

Aeroshell oil vs Phillips: Aeroshell, in the red bottles, changed their formula a few years ago and their oil started gunking up. Continental engines in particular had problems (one of the Comanche attendees had had this problem), so don't mix Aeroshell with the Continental engine. He simply uses Phillips.

Oil Changes – do every 25 hours!

They say 50, ignore that. The way he learned that, he was watching fish spotters come in and change their own oil in 8 minutes. They swore up and down they were getting 6000 hours out of the bottom end (change the filter too).

MAINTENANCE SEMINAR Q&A

The **electric gear motors** are pretty solid; it's more likely the wiring harness than anything. To tell which gear motor you have check Aircraft Serial number

Price of New **Landing gear harnesses:** it's about \$2000 to buy and about 8-9 hours to put it in. About 7-8 years ago it was about \$1000 to buy the harness.

What to do if your engine is removed for a major: When the engine is out, have the exhaust system overhauled. There is a guy in Wisconsin makes them like brand new. Also have your Lord mounts (motor mounts or engine mounts) replaced. Break it in using mineral oil for the first 15 hours.

Cracks: Don't get excited about tiny cracks around the rivets. They are normal for the Pipers as they use a very thin aluminum.

INVITATION TO CONSULT

If you come across questions don't be afraid to call the shop and ask for Glenn. They will give you his cell phone. If he doesn't have an answer, he knows the Lycoming, Cessna and the Piper reps real well.

Shop opens 7 am weekdays and people are here until 4:30 or 5pm

Avionics shop is a 6 days a week operation

Shop will put you through to Eric or Jay or Glenn, who are always happy to answer questions

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