Subject: Re: [c-a] Ellison TBI/auto fuel
Date: Thu, 29 Jul 1999 18:08:06 -0400
From: CBuschksee@AOL.COM
To: canard-aviators@canard.com, Rossair@AOL.COM

[The Canard Aviators's Mailing list]

In a message dated 7/29/99 8:33:07 AM EST, Rossair@aol.com writes:

<<
As a side note I have flown a few hundred hours on auto fuel, but I have also had 3 (Yes three!, but not with a TBI) complete engine failures in flight due to auto fuel vapor lock - Replacing the fuel with avgas returned the aircraft to normal functionality. After the third time I decided avgas was really cheap after all!

Ross Mahon
>>
Ross, what type aircraft were you flying when the vapor lock w/auto fuel occurred? If an EZ, did you have the plans configuration fuel system?

I live in SOCAL and fly a Long. Originally I had an L2C running on 100LL when it sucked an exhaust valve. Replaced it with a freshly overhauled O-320-E3D (low comp 150HP) and have run that engine on auto fuel for about 1900 hours with no fuel related problems.

I have the stock plans fuel system. I specifically run ARCO regular grade (87) fuel. When I was commuting between KSEE and KFUL (~200 miles R/T) I was using about 50 gals/week. The routine was that I would purchase 50 gals or so and transfer it to another drum with a filter and water separator before pumping into the airplane. Over the years I found zero water and almost undetectable levels of debris in the filter / separator. I can honestly say I have found substantially more debris/water (sump drain water, gascolator water/contamination) in the AVGAS used when I had the O-235.

The only noticeable difference I have found operationally is starting the engine if the airplane sits for a while. If I do a normal shutdown (pull mixture) and let the plane sit for more than about a week, I notice that starting takes a few tries. I use the accelerator pump to prime the engine by three full strokes of the throttle. The engine will initially start and run for about 2 seconds and then sputter to a stop. Same sequence for try # 2. On the third sequence it starts and runs just fine. I've experimented a little and found that if I turn off the fuel valve and let the engine run out of gas (drain the carb bowl) then on the next start sequence it will start on the first time in 3 blades. I attribute this difference to the volatile fractions in the fuel vaporizing out of the carb bowl when it sits stagnant for more that a week. If I fly weekly or more frequently, then it will start in 3 blades first time, every time. Hot starts are accomplished by setting the mixture to about mid-lean and cracking the throttle ¼ inch. Starts in 3 blades every time. If I give it any prime at all when hot then it will not start until I pull the mixture to ICO, wait for a burp and then mixture to mid lean.

Bottom line on my use of auto fuel for ~1900 hrs; no vapor locks, no valve problems, no tank problems (epoxy/glass), no water problems, no contamination problems, one minor operational difference and approximately ((1900 * 8 GPH * $2.00 /gal avgas= $30,400) - (1900 * 8 *

1.15/gal ARCO = 17,480 = 12,920 Saved on fuel costs

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Chuck Busch
Long Ez N143CL