

**Subject: Re: [c-a] fuel exhaustion lessons learned**

**Date:** Tue, 14 Sep 1999 02:33:11 -0400

**From:** alwick@juno.com

**To:** canard-aviators@betaweb.com

[The Canard Aviators's Mailing list]

On Mon, 13 Sep 1999 09:39:33 -0400 writes:

> Al

> I am restoring a Long-ez and would like to put some kind of fuel monitoring  
> system in the plane. I have already run a tank dry at 9500 feet ( woke me  
> up ! ) and agree that the sight gauges are crude. My question is, how do  
> these systems work. Would I have to install a measuring device in the fuel  
> tanks ? I don't feel real good about my expertise in installing anything  
> electrical but I have a good mechanic, How hard are these systems to  
install  
> ? Thanks for any information you can give me

I've received a few other requests for details, but no one is posting to group.

I have to be honest. I'm thoroughly convinced the computer controlled approach I'm using is the best way by far. But you can't just run out and buy a turnkey sys such as this, so blah blah ....

By far the least expensive route you can go is to make use of the inexpensive auto sensors. Millions of auto's use them and wrecking yards are full of cheap parts ready to go. I'm talking about that sensor that lights up on your dash that says "low fuel". That sensor is the size of the tip of your baby finger, weighs a few ounces, and will tell you about low fuel condition regardless of cause. If you got interrupted during pre-flight, fuel cap came off, or you forgot to switch tanks, it doesn't care. It will sense you are low on fuel and tell you. This represents a dramatic improvement in safety.

I have wiring diagram for my low fuel sensors. It is:

```
+12v -----+-----+-----+-----+
              |               |               |
              bulb            10k resist      sensor
              |               |               |
ground-----+-----+-----+-----+
```

Pretty simple wiring. I secured the sensor near bottom of tank and ran the 2 wires thru my vent lines. This way I didn't need to penetrate the wet area of tank. When I built my tanks I used larger diam vent tubing to prevent vent restrictions due to internal wires. Probably best for most people to just run the two wires thru wall of tank however. I would expect flox to be adequate for sealing holes near top of tank. You have to use bulb of proper resistance.

I'm using both the low fuel senders and the analog senders from Subaru auto's. Any auto will do. This allows the computer to compare the readings and make intelligent decisions. You can buy "low fuel" sensors used for \$5 from wrecking yard.

The most important feature of any sensor system is to have something that recognizes a problem, instead of waiting for you to notice. I've seen some of those advertised, but haven't looked into any of them since I already have a far more sophisticated sys. In someone elses shoes, I would not hesitate a second to buy one of those systems that has low

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limit and hi limit settings. These will flash and sound alarm if levels or pressures fall outside of normal operating conditions. I can't emphasize enough how important this is.

al wick

Canopy Latch System guy.

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