

## Training

In the last few training columns we talked about making sure that the mechanical parts of your airplane are properly assembled and we discussed some specific examples of what to do or not to do. We discussed that it is really important to ***learn to analyze the parts*** and determine how to ***make them work as intended by the designer***. We applied this logic to the installation of wheel collars, battery packs, receivers and other components.

This time we will talk about a recent mistake made by your Training Coordinator (yes me) that I think demonstrates how easy it is to cause yourself a problem. I was fortunate that the problem showed-up on the ground, but this kind of problem could lead to a “dead-stick” landing or the loss of a plane. At least my mistakes make great material for this training column!

This particular problem has to do with the fuel system on my Funtana 100 with an OS .91 engine. When I plumbed the plane, I put a filter in the line from the tank to the engine's needle. I also have a filter in the line from the hand pump on my fuel bottle. So, no dirt can get from the bottle to the plane, and if any dirt comes from the muffler up into the tank, the filter in the line to the needle will catch it, right???

Well here's the mistake...it looks obvious now... but watch how I got tripped up! I put a Dubro fill valve in the line from the tank to the needle also....and... for routing convenience, I put it downstream of the filter. I remember thinking it would be OK because of my filter on the fuel bottle...and for quite some time (fifty or more flights) that was true! But then there was a little nuisance issue I had to contend with. The Dubro fueling probe does not fit into the little "holder" tube on the fuel bottle cap, and if you just lay it down, or if it falls, it can siphon fuel out of the bottle and / or get dirt in the probe! So, I started taking the Dubro probe (along with the short piece of fuel line to adapt it to the standard fueling tip), and keeping it in my right front pants pocket while making each flight (the pocket is of course clean and nothing else is in it). **Uh-oh!!**

How many of you have now figured it out??? **POCKET LINT !!!** I actually injected it into the system *past the filter*. After all those times in my pocket without a problem, last week a tiny little piece got into the filling probe / piece of tube and thusly into the needle valve / carburetor area of the engine.

How did I find it??? How do I know that was the problem? I took the plane home and used my "Mighty-Vac" hand held vacuum pump along with the automotive brake bleeding little bottle to "catch" whatever was in the needle valve / carburetor area (I applied the vacuum in the reverse direction). The only thing that came out was this lint, same color as I've seen out of my pockets, and about as big as a small deer tick. It was enough to make the engine run lean and die at anything past 1/3 throttle. It would idle just fine all day. I noticed the problem in the pits because I make it a practice to warm-up and then rev-up the engine at least once before each flight.

As an aside, I also used the vacuum pump to check the tank and all the lines for leaks and found no other problems. It is a pretty handy tool.

Remember... ***“Learn to analyze the parts*** and determine how to ***make them work as intended by the designer”*** is still great advice, I just kinda' failed to totally follow it in this case and you can see that it caused me a problem.

We hope this discussion will be helpful to our student pilots and perhaps to our more experienced club members as well. And until next month...

Remember to try something new each time you fly!

Steve Klute

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