

Lateral Learning

Jammed Fuel Selector

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I was in cruise in my 1967 V35 Bonanza the day before my trip to Sun n Fun 2017. My purpose was to have a final shakedown of my avionics after having a Flightstream 210 installed the prior week. I'd also grab a quick seafood lunch with a buddy.

Over the Sugarland, Texas airport I reached down and twisted the fuel knob to the left tank. The fuel knob stopped dead center between the two positions. It felt like someone installed a mechanical stop. I twisted it back with normal ease to the right fuel tank detent. I attempted this one more time with the same result, and again went back to using the right tank.

Both mains were full and the tips had five gallons each. I told my friend we were returning home as I needed to know one way or the other if our trip the next day was to be cancelled.

I had thoughts of trash preventing the valve from rotation, or something very wrong with the selector handle or the valve itself internally.

The flight back was uneventful. I called the local mechanic to come help figure out the issue. The first thing we did was to remove the fuel filter screen, and it was clean. Next the mechanic pulled the cover off the fuel selector and found what you see in the pictures.

(photo 1)
Interior/fuel selector cover removed.



(photo 2)
Flat Tinnerman nut had fallen from the cover blocking movement of the fuel selector handle, about halfway between the Left and Right positions.

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This is a reminder to do three things:

1. **Check all fuel tank selections before takeoff.** The Tinnerman nut may have fallen off in flight, but it may also have done so before I took off. If I had started the engine on one tank, then switched to the other before my engine run-up (as BPPP teaches), there's a chance I would have discovered this problem before I left the ground.
2. Instead of changing tanks exactly when your Garmin reminder tells you, **switch tanks over an airport or at least a good emergency landing field.** It's possible the fuel selector valve could have ridden over and got stuck on the Tinnerman nut instead of blocked by it. That would have meant an engine failure in a matter of seconds with no way to switch to either tank.
3. **Always leave at least 10-15 minutes' worth of emergency reserve fuel in both main tanks,** don't run one tank completely dry. If I'd run the right tank dry and then found I could not select the left, I would have ended up gliding to a landing with plenty of fuel still on board that I could not use.

