

## Fuel Management at Altitude

...and when the screaming began...

Flying high above the central valley of California in my 1955 Piper Apache in route to San Diego, my wife, our thirteen year old son and I were returning to San Diego from the Reno Air Races in September 1980. The flight up from San Diego three days before had been pleasant and uneventful. The Apache held 108 gallons of fuel in 4 tanks that gave it a range of six hours with two hours of fuel held in the outboard auxiliary tanks which were only to be used in level flight. No problem. I leaned the fuel mixture according to the pilots hand book and figured I would switch back to the main tanks ten minutes early just to make sure I wouldn't run those long range tanks dry pushing their two hour capacity limit. Switching back to the main tanks early seemed like a good idea.

After reaching my cruise altitude of 8,500, I switched to the auxiliary tanks. Two hours of fuel to burn before switching back to my main tanks would leave four hours of fuel less the amount of time used to start, taxi, takeoff and climb to cruise altitude—roughly three and a half hours. I knew it was going to be a good trip back to San Diego, just like the trip up.

As the flight continued I mulled the time change over and decided to shift tanks back to the mains twelve minutes early just to be sure everything kept running nicely since my family was aboard. That would be a better idea. I kept a close eye on the time.

Then abruptly, a fuel management problem reared its ugly head. The humming stopped two minutes before my previously calculated twelve minutes to shifting the tanks back to the mains. Both engines abruptly sputtered dry at one hour and forty six minutes. Much later after the flight, I did reason that at least I had kept the wings level during the entire time flying on the auxiliary tanks since both engines gave up the ghost at the exactly the same moment. Oh well.

All was quiet in the cabin for maybe two seconds before my wife's screaming began. I had already hurriedly thrust my right hand between the seats to the fuel tank levers shifting them to the main tanks while cursing silently the engines excessive fuel burn as well as scraping my knuckles on the fuel tank levers in my haste to switch tanks. Then my fingers ran to the instrument panel to switch the electric fuel pumps to on. It was only seconds, but the wife's screaming continued even though the engines were spooling back to life. At the time, my bloody knuckle was the least of my priorities. Examination of my knuckles could wait. Do you think my wife was concerned about my knuckles?

Both engines coughed back to life in seconds, and very little altitude of the 8,500 feet was lost in the whole affair. But the screaming continued even though I had already started my explanation of the situation to my wife. Couldn't she hear the engines were purring again? My son in the back seat was quiet but watching intently. By the time, maybe five or so seconds passed, my wife thought it was longer, but hey... both engines were again humming their music as if nothing had happened. I was pleasantly surprised both engines needed no other coaxing for the restart. I was happy. I was in the 'here and now' mode while my wife was still locked in the engines 'had quit running' mode. If my wife had been sleeping when the 'incident' happened the engines would have restarted before she would have realized an interruption. Oh well...she didn't think that had anything to do with it.

Again I looked over at my wife after checking to see that the electric fuel pumps were on and the fuel tank levers were in the proper place and they were. Everything was back to normal except for the screaming. It continued. I wondered why. It was only a matter of few seconds, maybe five or ten, and I gave 'the her' a weak smile and told her everything was okay. She didn't think so and answered my smile by saying "that's not funny." I didn't say it was funny as I scanned the instruments again checking to see if I'd missed anything. I looked to my son in the back seat and he was okay, but grinning. Good man.

It was only a reassuring smile. Guess 'the she' thought we were going to crash at any moment not realizing we were still eighty five hundred feet in the air and the engines were purring. That's more than a mile and a half above the ground with plenty of time to work with—she didn't seem to understand.

Boy or boy, you just can't win even if it's a slight miscalculation in the fuel flow analysis of a twenty five year old airplane. I know, I know, it could be the engines hadn't been leaned properly or maybe older engines with an excessive fuel burn rate. Maybe the time calculation was off when I first switched tanks and looked at my watch later than I thought. Maybe ... maybe, well you know, it could have been anything...right...?

I would say that the rest of the flight went well, but that wasn't the case. The screaming finally stopped, but there was still an icy feeling swirling around in the cabin. I don't remember any pleasant words after the incident. No happy songs being sung or questions about where we were going out to dinner after we landed back in San Diego. No good natured humor of any sort. It was not a happy time. It was explained to me again this was no laughing matter. I didn't laugh; only smiled reassuringly as the engines restarted. It was only a smile to let the wife know everything was okay. All 'the pilot' remembers is that one passenger wanted to hurry and get on the ground while the engines were still working. Our son didn't seem to care, he just said, "Everything okay Pop?" I think I replied with something like, "Yep, suppose so, tell your mother for me."

All and all it was a good flight and our time spent in Reno. Everyone enjoyed the air races, and we got to see The Kingston Trio in one of the lounges in downtown Reno on Saturday night. And it was a good flight back to San Diego except for those five or six seconds of real concern. Okay, maybe ten seconds but nothing more. I would have remembered. It was just those few seconds ... only seconds ... I'll always remember those few seconds ... that's the way it was in September 1980.

My wife never asked me how my knuckles were doing.

Jim Davis, West Valley Flying Club