

There is no excuse

Prevent fuel-related engine failure

THERE ARE FOUR primary causes that allow a piston engine to fail. One is structural failure. Thankfully, critical components ordinarily do not fail when engines are operated and maintained properly.

Three other reasons involve depriving an engine of ignition, air, or fuel. An engine failure because of ignition malfunction is rare because of redundancy (two magnetos). Choking an engine of air is usually the result of carburetor or induction icing. An attentive pilot can usually resolve that problem by applying carburetor heat or selecting the alternate air source (in fuel-injected engines).

A fourth cause of power failure is among the most common and among the most avoidable: fuel-related issues, and this includes fuel mismanagement. A predictable number of airplanes and lives are lost every year because pilots are insufficiently judicious about maintaining fuel flow to the engine. This is perplexing because fuel exhaustion and starvation are so easily preventable. Nevertheless, such events continue to occur with regularity.

Fuel starvation and exhaustion are not the same. Starvation occurs when an engine is starved of fuel, usually while there remains a supply of fuel in an unselected tank. Exhaustion means there is no available fuel. You starve the engine or exhaust the supply. The following are tips that can help to prevent fuel-related engine failure:

During every preflight inspection, determine that none of the fuel vents are obstructed. A clogged vent can result in reduced air pressure in the fuel tank(s) that can eventually prevent fuel flow to the engine. Should this occur, switch to another tank and land as soon as possible.

Personally determine the fuel quantity, type, and purity in each tank. Never take the word of someone else, especially important advice for those who rent airplanes.

Selecting the fullest tank for takeoff is advised on the before-takeoff checklist for most aircraft. Personally, I don't believe a pilot should wait this long. Instead, select the appropriate tank before engine start and use it exclusively for taxi, runup, and departure. This affords more opportunity to determine the integrity of fuel flow from that tank. Switching tanks shortly before takeoff does not provide that luxury. It is possible to select a tank with a fuel-flow problem shortly before takeoff and have just enough fuel in the lines to barely get off the ground before the engine fails.



BY BARRY SCHIFF / AOPA Foundation Legacy Society chairman

When selecting fuel tanks (at any time), note the integrity of the detents. A worn detent that is too easy or difficult to move can lead to fuel starvation and warrants maintenance.

Speaking of detents, do you know what happens to fuel flow when the fuel selector is inadvertently placed halfway between two tanks or halfway between a tank and the Off position on the airplane you fly? It might take a while, but in many aircraft, the engine will sputter, stammer, and stop.

Switch tanks en route only when within gliding range of an airport with long runways, just in case.

Do not rely on memory to switch tanks. If your avionics does not include a clock or timer, purchase a small, battery-powered alarm clock that beeps so loudly that it can be heard even when wearing a noise-canceling headset. Use it as a reminder to switch tanks at predetermined times. You would be amazed at how many accidents result from pilots failing to switch to the fullest tank prior to an approach and landing, an indication that many pilots fail to use their before-landing checklist.

Many years ago, I wrote here that one of my early instructors drummed into me that there is absolutely no excuse for running out of gas. He obviously was right, even though numerous pilots attempt to offer excuses for doing so every year.

If they are honest with themselves, pilots interviewed following fuel exhaustion will admit they had become uncomfortable with their fuel status at some time prior to running out of gas; it rarely comes as a surprise. Running out of gas, therefore, often can be prevented simply by paying attention to that gut feeling telling you things are not quite right.

More good advice comes from John and Martha King: If there is any doubt whatsoever about having enough fuel to reach your destination when planning a flight, plan to land for fuel at the halfway point. In this way, you will be certain to have enough fuel for each of the two short legs, and—perhaps more important—you won't be tempted while en route to stretch your fuel to the more distant destination.

Do these things and you will likely never run out of gas. Besides, it only happens to the other guy, right? ■

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