



# POH or No POH

What about abnormal procedures?

BY STEVE KROG

**IN TODAY'S WORLD OF** flight, the pilot's operating handbook (POH) is referred to on a regular basis — or at least it should be. When planning a short-field takeoff or landing, for example, a pilot needs to become familiar with the published procedure and then calculate the takeoff and landing distances using the manufacturer's provided charts and graphs.

The manufacturer's POH covers a host of topics from proper preflight actions to calculating aircraft performance in various configurations. It also provides checklists for some abnormal mechanical or weather-related situations a pilot might encounter. But what happens and what do you do if you encounter a problem that goes beyond the published operations and limitations of the POH data? For example, smoke in the cockpit.

What do you do about older production or experimental aircraft? Most antique and some classic aircraft were never provided with a POH. In its place, the manufacturer included a list of operations and limitations for each model aircraft. This was accomplished using the Civil Aeronautics Administration (CAA) Form 309 that listed key speeds and rpm limitations. Sometime after World War II, certified aircraft manufacturers began supplying a



POH for every model they produced, negating the need for the CAA Form 309.

Referencing commonly built experimental aircraft, for example, a standard POH probably doesn't exist. The operations and limitations numbers are readily available, but beyond that builders are often left to their own devices to determine what can and should be done in varied flight situations. Without a POH, there are no emergency procedures to refer to, and thus, a pilot may not know what to do to deal with situations pertaining to the aircraft being flown. Thankfully, we have the internet today, and there are volumes of information to refer to for help in developing a POH for your particular airplane.

Unfortunately, many GA pilots forget all about the POH once having earned a certificate to fly. And this is a source where incidents and accidents often originate. I'm sure many of you have watched the YouTube videos of airplanes attempting a takeoff at gross weight in less-than-ideal conditions, be it density altitude, length of runway, runway obstructions, surface wind direction, or some terrible combination of those.

Is your experimental, antique, or classic aircraft equipped with flaps? Are there published procedures for using flaps, either on takeoff or landing? The operations and limitations data will provide you with the maximum extension speed and the stall speed with flaps extended. But what about the best approach to landing speed for various flap positions? Can you perform slips with partial or full flap extension? What can you expect for stall recoveries with the flaps partially extended? If performing a turning stall with flaps partially or totally extended, what does your airplane act like? Wouldn't it be a good idea to know your airplane's characteristics in this configuration at a safe altitude rather than at 500 feet while turning onto final approach?

As I've mentioned previously, when conducting a flight review, I like to have an individual perform a go-around starting with full flap extension. Sometimes the pilot will attempt to retract the flaps instantly. At that point, it's obvious to me that the individual has not looked in the POH and reviewed the full-flap go-around procedure.

What should or would you do if experiencing a rough-running engine less than a minute after takeoff? You won't find the answer in

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the POH, even if you have a copy on your lap. This situation occurred to a pilot within the last year. Fortunately for the pilot and passengers, no one was hurt. But the aircraft experienced major damage.

The pilot landed for fuel and a short rest before continuing to the destination. The pre-takeoff checklist was conducted, and all systems were functioning properly. Shortly after takeoff, the pilot noticed slight engine roughness and a slight rpm drop followed by a hint of smoke. The engine was putting out power and the gauges were in the green. Rather than immediately turning back for a precautionary landing at the airport, the pilot opted to land in an open field less than 2 miles from the airport. Upon landing, the aircraft hit an obstruction, which sheared off one wing.

An examination of the aircraft and all component systems was conducted by the FAA and NTSB. The resultant finding was that a spark plug wire had come loose and was disconnected from the plug. The wire then laid atop the cylinder, got hot, and began to melt, causing the smoke. A situation of this nature wouldn't be covered in a POH. But it is a something that could be simulated with an instructor or another capable experienced pilot.

Today we follow the guidelines provided by the FAA and conduct simulated serious engine scenarios. For example, the engine begins making unusual sounds. Checking the oil pressure and temperature gauges, low pressure and high temperature are noted, which indicates the engine is beginning to fail. In

this situation, we teach the student to first fly the airplane, and then to turn to the nearest airport. Maintain altitude and don't fool with varying power settings. The engine is rough, still developing power, so use what it has left until you know you can glide to the airport. Only then reduce the power. When doing so, the engine will often quit, but you will have made it to the nearest airport. This is a pilot judgement call. Every situation is different depending on the aircraft being flown, so get to know your aircraft.

Have you ever experienced an inordinate amount of oil on the windshield while in flight? What did you do? This situation happens from time to time and isn't covered in most POHs. The cause can be anything from the front crankshaft seal to the oil filler cap not being installed properly. Again, this is not covered in the POH. From experience, fly directly to the nearest airport, and then place the aircraft in a slight slip to the left, allowing you to see forward through the left side window. Continue with the slight slip until leveling for the landing.

Another situation that occurs with some frequency is having a cabin door pop open in flight. It usually happens

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about 30 seconds after takeoff. Do you know what to do should this happen to you in your aircraft? You will not find this information in a POH.

Some aircraft, like single-engine Cessnas, will allow the door to be closed while in flight. I've had the door pop open on takeoff in a Beech Debonair. I was alone at the time after dropping off my two passengers. I tried everything I could think of to get that door to close — including slow flight, stalling, slipping, skidding — but nothing worked. I finally landed at the next nearest airport. Once on the ground and stopped, the door closed with no problem. After returning to my home base, I talked with several other pilots flying similar aircraft. Every one of them stated clearly that it is impossible to close the Debonair door while in flight. Another valuable lesson learned.

Some aircraft are equipped with a split cowling. Both sides are hinged to allow the pilot or mechanic to visually inspect the engine and engine compartment. What would you do if one side of the cowling fasteners let go and the cowling half is flapping in the wind? This happened to me

while flying with a student several days ago. The first thing I had the student do was fly the airplane, and then reduce the power so we could maintain best glide speed while controlling our descent. Then we tried light slips left and right to see if it would lessen the movement of the loose cowling. It didn't make a difference. The student then made a radio call alerting other aircraft in the traffic area that we had a mechanical problem and would be making a straight-in approach. The landing was uneventful. No damage was done to the loose cowling. I don't think you'll find this situation explained in a POH.

If you fly a tailwheel aircraft, do you know what to do if you experience a tail wheel shimmy while landing on a hard surface? Even if your airplane has a POH, it doesn't cover this situation. A low-time pilot will most likely pull back harder on the stick or yoke trying to slow the plane, but that only increases the downward load on the shimmying tail wheel. Within seconds the tension/compression springs come loose and cause the pilot to go for a scenic ride through the tall grass next to the runway.

Rather than pulling back on the control stick or yoke, release the downward load on the tail wheel by easing the control stick forward, and then gently begin applying back-pressure. You will never experience this on a turf surface.

There is an old but applicable saying that states, "Good judgement comes from experience. Experience comes from bad judgement." Use good judgement and learn more about your airplane. It could surprise you someday when you least expect it. So be prepared. Keep flying safe. *EAA*

**Steve Krog**, EAA 173799, has been flying for more than four decades and giving tailwheel instruction for nearly as long. In 2006, he launched Cub Air Flight, a flight training school using tailwheel aircraft for all primary training.

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