

Go with the flow

BY NEIL SINGER

ILLUSTRATION BY CHARLES FLOYD

Flow patterns add to safety and efficiency for single pilots

Particularly when new to flying—or new to a specific aircraft—pilots often perform checklists as “to-do lists.” As opposed to checking that items have been done, the checklist is used to prompt the pilot through performing the actions needed for a given phase of flight. While entirely appropriate when a pilot is learning an aircraft for the first few hours, the to-do list technique is inefficient, and does not achieve optimal safety. Always important, efficiently configuring the aircraft for various phases of flight is particularly critical in single-pilot operations, which lack the backup of a co-pilot.

Enter the flow pattern. When teaching flow patterns in aircraft-specific type-rating training, I always start by stating what a flow is not. The term flow pattern has been misused by many flight instructors, likely in a well-meant attempt to bring professional “big aircraft” concepts to small aircraft. What a flow is not is a vague directional movement of attention over the cockpit—a left-to-right review of cockpit switches before takeoff, for example.

Rather, a flow pattern is a specific, defined number of steps, performed in a specific order, and is committed to memory. While flow patterns are often organized so that attention is, indeed, moving in a consistent direction across the panel, only specific items are being performed or checked during a given flow. The flow is performed from memory without reference to a checklist, and then when

complete, the checklist is read to confirm nothing was skipped during the flow.

An example of a simple flow pattern would be the after-landing flow in a common light jet. Clear of the runway the pilot would retract speed brakes, retract flaps, turn off strobes and landing lights, turn off pitot-static heat, and configure the anti-ice/deice system as needed for ambient surface conditions. Once sufficiently practiced, the flow can be completed in a fraction of the time it takes to read the preceding sentence describing them. After the flow is complete, the pilot will pull out the after-landing checklist, which will contain the same items as the flow, sometimes in a slightly different order.

If a checklist is performed as a do-list, there exists no opportunity to “trap” an error. For example, if the pilot is distracted while performing the before-taxi checklist and neglects to test the trim systems, he

may think he has completed the checklist properly, and move on to the next phase of flight. Using the flow and checklist method, in contrast, for the trim system to remain untested the pilot would need to both skip the test in his normal flow, and then skip the line of the checklist questioning if it was accomplished. It’s apparent that the chances of missing an item during a memorized flow—then missing that same corresponding line during a checklist read-through—is extremely unlikely.

In addition to the error trapping benefits, the flow/checklist method can be dramatically more time efficient in the cockpit, as well. A pilot accomplishing eight items on a given checklist would need to move eyes and attention 16 times if using the do-list technique. Each change of attention will require a small bit of time to acquire the desired switch visually, refocus on the checklist, confirm location on the checklist, et cetera. In contrast, a pilot completing a flow will quickly build “muscle memory” that enables the hand and attention to move nearly automatically to the next item to be accomplished. Once the flow is complete, reading through an entire checklist at once, without looking away, can be accomplished very quickly. **AOPA**

NEIL SINGER is a Master CFI with more than 7,200 hours in 15 years of flying.

