



# CHECKLISTS

## THE ULTIMATE BACKUP

**I**'ve never made a mistake in my life. I thought I did once, but I was wrong." That quote appeared in a Peanuts comic strip. Humans do make unintentional errors, a situation that pilots avoid by using checklists. The proper use of checklists is a controversial subject, so I'll fan the flames with my 51 years of experience.

Have you ever observed a pilot who promoted himself as God's gift to aviation? I have, and when they screw up the results are usually disastrous. The very best pilots that I've flown with know that mistakes are possible, so they aggressively guard against performance errors by using checklists. Three methods are used: flow patterns, mental checklists, and written checklists. To prevent errors, at least two methods must be used for every event. To rely on only one is an open invitation for mistakes.

Flow patterns, the precursor to mental and written checklists, should be highly stressed in any training program. The preflight inspection that starts and ends at a specific point is an excellent example. Upon completion, the pilot reviews the written preflight checklist to ensure that nothing was missed.

Subsequent flow patterns occur in the cockpit before engine start, engine runup, takeoff, and landing—and after takeoff, landing, engine shutdown, or when something seems amiss.

A good flow pattern is essential in order to quickly and efficiently review cockpit status—all cockpits have a certain logic to their design. In one airplane you might start between the pilot seats, move forward and upward, and then horizontally across the lower instrument panel followed by the upper instrument panel. In other airplanes you may need to scan the cockpit's sidewalls, a panel that's above the windshield, or use vertical paths as you scan the instrument panel. Develop one that works for you.

Mental checklists—often used incorrectly—are next. Two common ones are CIGARS before takeoff and GUMPS

before landing. CIGARS: Controls, Instruments, Gas, Attitude Trim, Runup and Radios, and Seatbelts. GUMPS: Gas, Undercarriage, Mixture, Prop, and Seatbelts.

### **WHY SHOULD A STUDENT PILOT USE GUMPS? BECAUSE THE DAY WILL COME WHEN HE OR SHE WILL FLY A COMPLEX AIRPLANE, AND THAT HABIT PATTERN MUST BE DEEPLY INGRAINED.**

Some individuals will erroneously add items to commonly used mental checklists. I call those additions housekeeping chores, because missing them will not kill you or cause a major problem. Proper mental checklists are short, sweet, and cover items that would cause critical mistakes such as landing with the wheels retracted. If you're new to aviation, you're saying, "I'd never do that," but every year there are those who do.

I'm a good example of the necessity for ingrained mental checklists, because I have flown safely for my entire career and have used them for everything I flew regardless of whether or not they were applicable: light airplanes, airliners, helicopters, and gliders. Others who were with me did not know I was doing that, but my brain did.

Good habit patterns are excellent insurance, and here's one example of misuse that I often see with respect to GUMPS. I'm flying with a pilot in a beautiful, complex airplane who announces the GUMPS items prior to landing but does not advance the prop control to the high-rpm position. When I question him, he says, "I only do that if I must go around." So on short final

I say, "Truck on the runway—go around, go around!" He jams the throttle forward, retracts the landing gear, and starts climbing. I then say, "Look at your prop control. Are you trying to ruin your engine?"

As Forrest Gump said, "Stupid is as stupid does." My advice: When the landing gear is extended the airplane becomes noisy; that's the perfect time to set the prop control.

Written checklists are the final authority: Preflight, Before Engine Start, Before Takeoff, Before Landing, Engine Shutdown, and emergency and irregular procedures. You use flow patterns and mental checklists, and you back everything up with the written checklists to ensure proper completion.

New student pilots are the exception. They must use the written checklist as a do-list until they become familiar with the airplane and learn to use flow patterns and mental checklists. Why should a student pilot use GUMPS? Because the day will come when he or she will fly a complex airplane, and that habit pattern must be deeply ingrained.

With respect to performance, proper use of the three checklist techniques will help you to fly safely. Good judgment, however, is another mandatory requirement, and individuals without good judgment should never have received a pilot certificate in the first place. Yes, they're out there. Read the accident reports to see for yourself. ☛

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