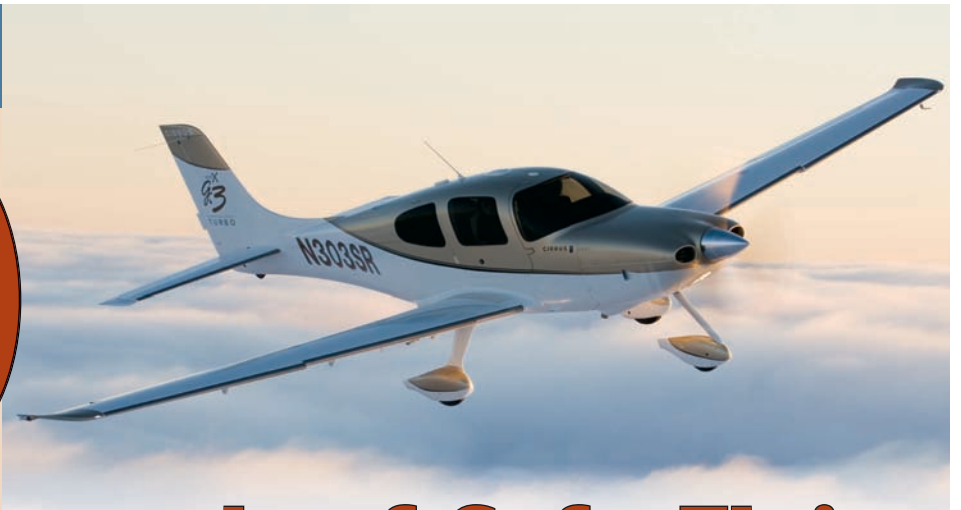
TOP 10 Fundamentals of Safe Flying



by Luke Lysen

Following the session called "Stump the Instructors" at the M6 migration, several instructors stayed to discuss Cirrus pilots and safe flying. The decline in basic flying skills concerned all of these instructors. This top-ten list highlights the fundamental skills that any Cirrus pilot will need for safe flying. Use this list to see where your skills need work – and then focus on your key areas.

1. Fly straight and level
2. Follow checklists
3. Track a VOR
4. Land the airplane
5. Use the autopilot
6. Pre-flight plan
7. Set personal minimums
8. Develop a CAPS strategy
9. Review the missed approach
10. Slow down!

Check yourself against this list before your next training session

George Orwell once said, "Never use a 25-cent word when a 10-cent word will do." I am pretty sure that Mr. Orwell never flew an airplane, but the advice still applies – keep it simple and focus on the fundamentals.

Your Cirrus aircraft has many great safety advancements, including avionics, autopilot, wing design, seats, CAPS and others. The good news is that these tools give you more information, situational awareness, and insight about the places you fly than ever before. The bad news is that pilots are still finding ways to stumble when it comes to the basics.

It is in this regard that I offer the following top-ten list of basic skills, or habits, I think all safe pilots should be able to do well.

1 Fly Straight and Level

This may seem like Flying 101 and too simple for this list, but test yourself.

The next time you fly, pick a heading and altitude and see if you can **trim the airplane** to hold straight and level without the autopilot. Make your tolerances +/– 100 feet and +/– 10 degrees of heading. The airplane should stay within this area for over one minute without you having to touch anything; and you should be able to correct the trim in less than five minutes.

If after your flight your forearm is sore, then you have a problem.

2 Follow Checklists

All Cirrus aircraft have checklists on the MFD, as well as the POH, and most pilots also have a bound checklist in the airplane. Do you use yours for preflight, startup, before taxi, before takeoff, takeoff, climb, cruise, descent and after landing? Maybe you have most of these memorized or have a flow pattern (I am a big proponent of this), but do you back yourself up with the checklist?

If you have ever taken off with the door open, flaps up, seatbelt unbuckled, wrong altimeter setting, or landed with the fuel leaned out or worse; you are not alone. Fortunately, nothing serious happened, but why take the chance next time?

Following a checklist every time provides peace of mind and **helps ensure a safe flight.**

3 Track a VOR

You might be saying, "VOR? I have two GPS units in my Cirrus, so forget the VOR. If I wanted a VOR, I would have bought a (insert old airplane of your choice here)."

The VOR still has relevance, but even more than as a navigation tool, it says that as a pilot, you have **situational awareness**, understand course versus heading, and how wind can affect you in the air. You should be able to track to a VOR on a direct course as well as on a specific radial. Every pilot should also be able to triangulate his/her position using a VOR, or two. Hint: The bearing pointer is great for this.

4 Land the Airplane

Are you **consistent** when you land the airplane?

Every landing should look the same. Are you able to have the same airspeed on final and during the other legs of the traffic pattern? Do you have a power setting or MP that you use on downwind, base and final? Do you feel comfortable that the touchdown will be the same each time?

A good landing is one in which the stall horn honks just a split second before the main wheels touch down, then hold the nose wheel off and pull back on the yoke until it gently touches down on its own, several seconds after the main wheels. Preceding this, hold constant airspeeds in the pattern (100, 90, 80) and don't jockey the throttle back and forth. A good landing should be smooth; small inputs on the throttle and yoke. Be cool – think "Iceman," not "Maverick."

5 Use the Autopilot

The autopilot is a great tool, and one that should be incorporated into most of your flying. It eases workload and allows for focus on other things in the cockpit and outside.

But can you explain what these functions do: HDG, VS, ALT, VS & ALT, NAV, NAV GPSS? Can you press ALT before HDG? Why, or why not? Has the airplane ever not climbed when you selected VS & ALT? Why did that happen? Can you explain why your passengers should know SYNC, HDG, ALT? *

If these answers come easily to you, pat yourself on the back and find new areas to master. If you cannot immediately answer these, find a Cirrus-specific instructor and sign up for some additional practice. The autopilot is most valuable when fully utilized.

* Those three actions can keep the airplane flying straight and level if the pilot becomes incapacitated.

6 Pre-flight Plan

What is your routine? A pilot is required to check weather, fuel requirements, runway information at arrival and departure airports, and ATC delays.

At a minimum, you need to be doing these, but there are more. What are your outs? If the weather changes, what will you do? Where will you go? If your engine sputters or quits, what's next? Have you practiced in your mind responses to an engine-out situation? When you do so,

visualize all the actions you will take; sit in your plane and touch each lever and control including the CAPS handle.

Having a routine is critical to being safe. Determine where you are going; plan the route using software or the old-fashioned way, check weather and NOTAMs (even on a sunny day). Get in the habit of doing this – like brushing your teeth before going to bed.

7 Set Personal Minimums

When deciding what weather (ceiling, visibility, and wind) you are comfortable flying in, think about it in terms of **what am I comfortable flying in by hand without the autopilot.**

Determine a set of personal minimums for VFR and IFR day and night, and only change them after a flight, never before.

For example:

- IFR Precision approach night: DA add 1,000 feet, Visibility add 2 miles
- IFR Non-Precision day: MDA add 1,000 feet, Visibility add 1 mile
- IFR Non-Precision night: MDA add 1,500 feet, Visibility add 2 miles
- VFR day: 3,000 foot ceiling, 5 miles visibility
- VFR night: 5,000 foot ceiling, 10 miles visibility

When you first start the Cirrus, there is an Envelope of Safety page that most pilots quickly pass over. It has some good recommendations for pilots based on years of safe flying experience; take a look at it during your next startup.

8 Develop a CAPS Strategy

When will you pull the parachute?

Under what circumstances are you going to reach for the red handle? When you have an engine out at 5,000 feet AGL, at 3,000 feet or at 1,000 feet? Will you glide to a touchdown in an open field? What will you do over water? Over a city? Over a forest?

Cirrus pilots are aware of the CAPS, but I have found that many have not sat down on the ground and analyzed exactly when they would pull the chute. Go over your last flight in detail. What runway did you depart from? Where did you make your crosswind turn? What altitude did you cruise at? What terrain did you fly over? At each point on that flight, if you lost the engine, what would you have done? When would you have pulled the chute, if ever?

I have never pulled the chute (outside of the simulator), yet I imagine that a situation that would require a CAPS deployment would be dramatic, traumatic and scary. Having a well-thought-out plan and a practiced reflex is a way to increase your odds of making the correct decision and surviving. A simulator is a great tool for this (See John's article entitled, "It Isn't the Tough Stuff," page 41.).

9 Review the Missed Approach

When and where do you **start your missed approach**?

What in the cockpit do you look at to determine this? When do you unsuspend the Garmin? What does unsuspending do anyway? What happens if you press OBS (unsuspend) before it is suspended? How do you enter the hold and what heading will you fly to that hold entry?

These are all questions that need to be answered prior to starting the approach. Arriving at the Missed Approach Point (MAP) is a really bad time to try and figure out what's next. Include a full review of this as part of your approach briefing and, if necessary, sketch out the missed approach procedure on your kneeboard.

10 Slow Down!

Everyone likes to go fast – that may be one of the reasons you purchased a Cirrus, but there is a **difference between flying fast and thinking fast**.

When we rush, mistakes can, have, and will continue to happen.

Imagine, if you will, a hypothetical student who was running 15 minutes late, pulled his airplane out of the hangar, jumped in and fired up. Now imagine a hypothetical CFI who gets a call from ATC asking how to land a Cirrus with a tow bar attached. The pilot and plane both made it to the ground safe. The plane was remarkably unscathed, but the pilot was understandably shaken.

We always tend to think that this kind of thing happens to some other pilot, but it can, and will happen to you if you rush. Take time to plan your flight, check weather and preflight the airplane.

It takes longer to do these things than we think, so be aware of that and plan for it. If you are running late, do not abbreviate your preflight routine or run-up to save time. If you need to go faster, fly rich of peak.

Top Ten Fundamentals

Safety is the most important aspect of flying we teach. Practicing and implementing these top ten fundamentals will go a long way to improving your proficiency and safety as a pilot. COPA

About the author: *Luke Lysen, President and co-founder, The Flight Academy, offers skilled, specialized flight training in Cirrus aircraft nationwide. Luke continues to be an active participant in COPA activities, including instructing at CPPP weekends.*