

**A**s a long-time Cirrus instructor and Chief Pilot of a crew of veteran instructors, I am often asked by clients for suggestions about what to work on during their simulator training sessions. Most are surprised by my answers ... at least, that is, until they've completed some training.

### So, your wing falls off ...

Most pilots, particularly the ones with a few hundred hours in their Cirrus, tend to think of themselves as proficient in their flying. They are! There is a caveat, though: They are proficient at the things they **normally** do when flying their **normal** routes in their **normal** weather with their **normal** distractions.

Proficient pilots often assume that recurrent training will consist of several difficult challenges, where they have various catastrophic failures heaped upon them. They believe their stick and rudder skills will be pushed to the extreme as they wrack their brain across three different emergency checklists at once, while also trying to deal with an instructor laughing maniacally next to them.

Sometimes this is exactly what's happening and thus this expectation has been developed for good reasons. The recurrent training experiences administered by more seasoned instructors tend to be quite a bit different.

### A Curve Ball

One of the first things we do to throw people off their game is to toss a minor curve ball into the normal routine. Sometimes it's something so small as a vector across final for spacing. It might be an instruction to fly to an intermediate fix on an approach, a query from ATC just when the power reduction should be made upon glide slope capture, or flying over the middle of the airport to enter downwind on the other side. Many pilots reading this would be surprised that it could take something so small as the examples above to throw them off their game, and most are probably thinking that it would surely never happen to them. I can attest that it does, quite regularly, to most of you.



Photo by: Mike Radomsky

## It Isn't the Tough Stuff

by John Fiscus

### What to work on during simulator training

*Guest Editor's Note: During a discussion following the "Stump the Instructors" session at M6, John Fiscus talked about ways to use the flight simulator. Pilots often come with unrealistic self-assessments of their flying skills and false self-assurances of what they will do when faced with emergency situations. John offered to write this article to encourage Cirrus pilots to use the simulator to its best advantage.*

Pilots are often very willing to accept clearances without understanding them first. They often allow a distraction to keep them from flying the aircraft, or may lose awareness of the current situation.

While situations like these might not always become life threatening (but sometimes do), it definitely cranks the workload up high enough that mistakes are made. Mistakes in this environment will always lead to more errors, unless the pilot does something right away to rectify the situation ... and that usually involves removing himself from the situation entirely.

### Simulated Emergencies

My simulator instructors and I have another unique opportunity when it comes to dealing with Cirrus pilots. Like most instructors, we talk to pilots about what they would do in this or that situation, but in a simulator with a CAPS handle,

we get to put their words to the test. What we found struck us as a little odd at first, but it really shouldn't have.

Most pilots are under the impression that they could handle an emergency. Any pilot who isn't should probably not be flying in the first place, so that's no surprise. The interesting part is what happens to people (and their perceptions of themselves) when the real thing hits.

What we find in the "safe" environment of the simulators is that people are often not prepared for the common emergencies discussed with instructors. Situations are much more graphic and progress farther in the sim. Unlike real flying, the sim instructor will not step in to guarantee the scenario doesn't get out of hand. In fact, most of the best learning happens when it does.

Our primary findings: Pilots who do not practice memory items for emergencies rarely get them right, and often are caught by surprise to the extent that they would not survive some of the more basic situations.

During post-instruction briefings, these pilots do not remember the entire scenario and are often shocked to realize that they did not do what they thought they would.



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## Sweat the Small Stuff

As Luke mentions in his top-ten list of fundamentals for safe flying (see page 35), the little things are the weakest in most of our clients:

- Basic hand-flying is almost always lax in every pilot with whom we do currency work (hence the need for currency work).
- Checklists aren't being used (probably the simplest things to operate!).
- VORs make pilots go cross-eyed (yes, they're still in very regular use, even by Cirrus pilots).
- The autopilot does EXACTLY what it's told to do (what's it doing now?).
- Few people remember the rules of thumb for gusty crosswind landings (how much speed do you add? Hint: the number is specific, not "about 5 knots or so!").

Basic airmanship decays if it isn't tended to carefully. These basic skills must be strong before a pilot can expect to be truly proficient enough to handle busy airspace, lower weather minimums, or complex situations involving multiple layers of distraction.

Take away any of the basics, and the more difficult parts become impossible. To this end, we encourage our clients to challenge themselves in some of the more realistic, yet "simple" modes:

- Fly by hand in IMC.
- When possible, shoot the full procedure (procedure turn, DME arc, etc.) for an approach.
- Use checklists beyond the run-up.

As those are becoming more solid, challenge yourself to know a little more about what's going on. For example, what does it really mean to activate the approach in the Garmin? What does un-suspending when you go missed really mean?

## Not Using Standard Procedures

Finally, and maybe the most overarching, we find that a large number of medium-time and even high-time pilots are shortcutting, or flat out not using personal minimums and standardized procedures.

Standard procedures and minimums are arguably the number-one reason why corporate aviation has the lowest number of accidents in all of general aviation. These are simultaneously the most simple and most effective ways to prevent mishaps.

All of these techniques and skills are probably not new subjects for any pilot. As an instructor and the lead for many other instructors, I can say with confidence that they aren't happening with numerous pilots who would call themselves "proficient and safe." To that end, they are neither as proficient, nor safe as they could be.

## An Observation

While recently teaching at a CPPP event, I had the opportunity to closely observe four similar pilots who were performing their normal routine on instrument approaches. I like to start the training off in this way so that I can audit, observe, and offer the best suggestions.

In this particular instance, I watched all four do the same approach to the same airport the same way in very short order. What struck me was the relative level of tension, the number of mistakes, and the ultimate outcome for each pilot as evidenced by the little things that each did.

Two of these pilots were working very hard (yet were still safe in a "normal" situation) and the other two had quite an easy time. The primary difference I observed between these sets of pilots was at a very basic level: their use of standard procedures.

The first set that worked hard did not brief the approach (even when we had a 20-minute flight before the approach started), did not run checklists (and one forgot to bring the mixture to rich for the missed – the engine doesn't like that), and did not have a clear-cut profile for the approach. Things which were needed happened, but they didn't go in any particular order and seemed to depend on the pilot remembering to do X, Y, and Z prior to the FAF. Often-times, something would be forgotten or missed until the last second. The result was an approach that, while stable, was very stressful and had very little room for hiccups.

As I'm good at my instructor job, I had both pilots who were flying without routine procedures do the approach again and I gave them something very small to deal with at an inopportune time. Predictably, things fell apart and the approach was on its way to becoming dangerous before I stepped in.

### A Simple Way to Improve Your Safety

Procedures! It's a nebulous word to most pilots and I dare say it isn't well understood by many, which is a shame. The habit of using standard procedures is actually quite easy to acquire and can be very expansive in scope.

The tough part for instructors who are trying to convince their clients of this fact is that it is possible to get away without using procedures for quite a while in flying ... it's just uncomfortable ... until something bad happens. The pilots who fail to use them often pay for it in small ways, as described above.

In the context of an instrument approach, "procedures" means many different things. It includes when to slow down, when to configure flaps, when the approach is loaded and briefed, when frequencies are loaded and checked, when checklists are run, how a missed approach is handled, and finally, what criteria mandates a rejection of the approach outright (and an early missed).

When the plan is laid out well in advance, it is much easier to deal with curve balls and have a predictable outcome.

### Training Resources for You

Cirrus Design has made it very easy for us to follow standardized procedures. They publish a Flight Operations Manual (FOM) with procedures for VFR traffic patterns, instrument approaches, and all other normal and abnormal phases of flight. Contact them directly if you'd like a free copy of their manual and they'll mail it to you. These guides can also be picked up at most training centers.

Flying like a professional is something that many pilots aspire to do and the purpose of this article is to get the point across that it really isn't that hard. It requires a small amount of discipline, an open mind, and a willingness to try. Using standardized procedures that are robust and adaptable is something that any instructor can help you do. To that end, if anybody wants an adaptable copy of my instrument approach procedures I'd be happy to email it to all who ask.

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### Your 2009 New Year's Resolution

In 2009, resolve to make a change to be safer in your flying. We can all do it with simple ways and there isn't a pilot out there who couldn't improve.

Safe flying!

*Input to this article comes from Jesse Owen, Hugh Gommel, and Tim Rhoden – Cirrus simulator instructors who see a lot of the best and worst of us.*

About the author: John Fiscus, Chief Pilot and co-founder, The Flight Academy, has given over 7,000 hours of Cirrus instruction. John continues to support COPA through instruction at CPPP weekends and contributions to safety discussions on the COPA forum. You can e-mail John at [john@theflightacademy.com](mailto:john@theflightacademy.com).