

In defense of stick-and-rudder training

It happened in the early 1990s. That was the time we saw the diminishing influence of World War II-era flight instructors (and their instructional



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progeny). Our pilots didn't fly jets, they flew airplanes that demanded exceptional stick-and-rudder skills. As one veteran instructor told me, you could give a P-38 pilot a P-51 manual to read, then send him to the airplane—where he'd easily and safely check himself out in the machine. Pilots of that era could do these things safely because they had good stick-and-rudder skills. Their lives depended on it.

Without the mooring provided by stick-and-rudder pilots of an earlier age, general aviation's flight training curricula came under the influence of the airline and jet community. It was no longer enough to produce a private pilot when it seemed as though you could create an airline pilot lite, the GA version of the professional pilot. But a funny thing happened on the way to the practice area: It disappeared.

In the past 20 years, the idea of emphasizing stick-and-rudder skills during a primary student's training became passé. In its place, many prominent flight schools and academic institutions began emphasizing higher-order learning strategies, such as scenario-based training—a method used extensively in the airline and jet community and originally intended for use in über-sophisticated flight simulators. The intent was to expose student pilots to higher-order training scenarios (decision making, risk assessment, situational awareness, et cetera) while they were simultaneously taught how to turn, climb, descend, and fly straight and level. Flight training syllabi evolved to reflect these ambitions, with emphasis on autopilot usage, GPS instruction, and pilot workload management, to name just a few of these higher-order scenarios. The FAA even published an advisory circular encouraging instructors to combine basic presolo flight training with cross-country trips, thus eliminating the once-venerable practice area altogether.

Unfortunately, there's no law of psychology—not one!—supporting the idea that presolo students learn the basics of flying more effectively or efficiently when they are distracted by the burden of *simultaneously* having to learn higher-order flight skills. The concept is antithetical to the building-block principle of learning. For years the progressive teaching movement advocated a higher-order, experiential method of reading instruction known as the *whole language* reading method, which teaches students to guess at the meaning of words, while *phonics* emphasizes the building blocks of sounds associated with each

letter of the alphabet. The important difference between the two was that whole language reading also is antithetical to the building-block principle of learning. The results of the whole language reading philosophy? Several generations of students never learned to read, read properly, or even spell correctly. In 1995, after years of failure, California put the whole language idea in the Dumpster and adopted the building-block strategy of phonics.

Many aviation corporations, flight centers, and universities now exclusively use experiential or scenario-based flight training curriculums, all with FAA sanction and approval. As one instructor put it, we've "front-end loaded" our flight training syllabi with learning modules that introduce advanced behavior skills during training times when the emphasis has always been on basic skills.

This explains why student pilots are being taught to fly instrument approaches before they've learned how to land an airplane.

Failure to focus on stick-and-rudder skills—especially during the formative hours of a primary student's development—often reveals itself in the same way a geologic fault does when it comes under excessive stress: something breaks. A commuter pilot's failure to lower the nose of his turboprop airplane during a stall is just one example of such a fault. After Congress directed an aviation group to probe why some professional pilots seemingly forgot how to fly, the group recommended that airline pilots be better trained in manual flying skills, among other things.

The fault lines appear to be opening even wider, given the FAA's recent demand that flight instructors receive more training in the concept of angle of attack. How is it possible that a flight instructor can be deficient in such a basic stick-and-rudder concept? One can only guess how little the students of these instructors know about the subject of basic airmanship. Yet, many of these instructors were trained under our newer, higher-order training philosophy. If this strategy were as effective as its proponents claim, then we should be seeing a reduction in aviation accidents. Unfortunately, the personal flying accident rate has increased over the past decade. That's a sad statistic, but it does support the idea that we need to modify our training curricula to emphasize stick-and-rudder skill development.

Educational psychology teaches that students learn quickly and effectively when they're taught using building blocks of knowledge, one step at a time—but no step before its time. Returning to a flight curriculum based on stick-and-rudder training is how to make flying safer for everyone, while making the private pilot certificate more affordable and attainable. We should certainly teach higher-order skills, but not by sacrificing fundamental skills in the process.

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