ONE OF THE MORE CONTROVERSIAL
topics in flight instruction has been spin training. For decades
the focus has been on avoiding spins through stall recognition.
We’ve seen steady improvements in general aviation accident rates, but stall/spin accidents still occur. The stall/spin killer is alive and well.

It Starts With a Stall
In our pilot training we learn that a stall is a necessary ingredient for a spin. When flight becomes uncoordinated, one wing stalls before the other, causing a yawing moment, and the aircraft enters a spin.

A spin is a maneuver where the aircraft descends in a helical path while the wing’s angle of attack (AOA) is greater than the critical AOA. Factors such as weight and balance, configuration, and engine power can all affect the transition from stall to spin, the spin’s characteristics, and the pilot’s ability to recover from the spin. Some spins are recoverable; others are not. Different aircraft have varying stall characteristics, different control sensitivities, and differing propensities toward entering spins. Sometimes, a pilot can get a surprise spin when stall practice runs awry.

Such may have been the case when two private pilots were flying their new Cirrus SR22. They had taken possession of the aircraft six days before the ill-fated flight that departed from New York’s Syracuse Hancock International Airport (SYR) one April evening. The pair planned to fly to Rochester and to practice procedures and maneuvers, including a practice instrument approach in VFR conditions at Oswego County Airport (FZY) in Fulton, New York, along the way.

A witness said the aircraft completed the practice approach to Runway 24, circled to Runway 6, and made a stable approach and touch-and-go. The weather included clear skies, 54°F, 10 miles visibility, and wind 060° at 6 knots. The aircraft reportedly stayed in the pattern, made another well-executed touch-and-go, and then departed.

Radar data showed that after the aircraft departed FZY it flew some maneuvers over a sparsely populated area southeast of the airport. The radar track showed the SR22 making 90-degree turns, perhaps clearing turns, followed by increasingly smaller 360-degree turns to the left and right, as though the pilots were practicing steep turns.

A witness on the ground saw the aircraft, and his description suggests that the pilots were practicing power-off stalls. This witness and others reported that after completing its final maneuver, the aircraft entered a flat spin, from which the pilots never recovered.

The National Transportation Safety Board (NTSB) investigation determined that the left-seat pilot had 311 flight hours, with an estimated 20 hours in the SR22. The right-seat pilot had 475 hours and an estimated 30 hours in make and model. It is unclear the amount or type of instruction the pilots may have received in the Cirrus SR22 prior to the accident.

Oddly enough, the SR22 was equipped with the Cirrus Airplane Parachute System (CAPS)—a manually activated ballistic parachute system designed to be deployed in an emergency. Apparently the pilots did not activate it.

While it’s unclear who was flying or what exactly went wrong, it seems clear that the pilots, bent on proficiency, found themselves in a situation for which they were unprepared.

The message is to get thorough training when transitioning to a new aircraft. Exercise extra caution until you’re comfortable with the aircraft throughout its spectrum of configurations and maneuvers. Anything less may not be enough.

Base to Final Follies
Typically, stall practice begins after making clearing turns at a safe altitude. The Federal Aviation Regulations require pilots to recover from maneuvers at 1,500 feet AGL or above (and 3,000 feet AGL in multiengine aircraft).
In real life the traffic pattern is where pilots most often enter an unintentional stall/spin. Distractions, such as looking for traffic, retrieving dropped items, or using the checklist, can cause pilots to deviate from their airspeed, ground track, altitude, and control coordination. Low, slow, and with nowhere to go, the pilot who unintentionally enters a stall/spin in the pattern will likely do so only once.

Probably the worst scenario is a distracted pilot who overshoots the turn from base to final and tries to correct the problem with too much rudder. Without good control coordination the pilot can easily enter an accelerated stall in a cross-controlled condition, resulting in an abrupt spin entry.

Such may have been the case for the private pilot in a Grumman AA-1C at the South Jersey Regional Airport (VAY) in Medford one July afternoon. Having made the short hop from Northeast Philadelphia Airport (PNE), the pilot entered the pattern for Runway 26.

Noting that the Grumman was flying a low, tight pattern, the pilot of a Cherokee opted to execute a 360-degree turn on the downwind to increase spacing. The Grumman made a steep turn and immediately entered a spin. The Cherokee pilot counted about 2.5 revolutions before the Grumman hit the ground. The pilot didn’t survive.

The NTSB said the Grumman pilot had about 320 total hours, with only 13.8 hours in the AA-1. In the previous 90 days he’d logged 3.9 hours, but none of it in an AA-1.

**Low-Level Maneuvering**

Considering the potential risks, pilots should limit their low-level maneuvering to that necessary for takeoff and landing. Needlessly maneuvering at low altitude is often a first-class ticket to trouble.

Late one April afternoon a private pilot was maneuvering over Estero Bay, Florida, in a Hartman Buccaneer II. Witnesses in a boat saw the aircraft pass over at an estimated 150 to 200 feet AGL. The aircraft made a steep right turn. The right wing dropped, the nose pitched down, and the aircraft spun into the bay. Boaters rushed to the scene and removed the pilot’s body and a dog from the wreckage, which sank and was not recovered.

**Instructional Accidents**

Some of the saddest stories come when pilots spin with their instructors at the controls. Too frequently instructors make fatal errors in judgment concerning spin instruction. At times it appears that CFIs are trying to impress students by demonstrating spins early in training. Unless an instructor is highly proficient in spinning the trainer, the situation can turn ugly in a heartbeat.

Such was the case when a 307-hour CFI gave a student his first lesson in a Cessna 152. The instructor had 95 hours in the 152, including 77 hours of instruction. This training flight departed from Boon Airport (SUW) in Superior, Wisconsin, on a cool April afternoon. The wind was 020° at 3 knots.

About 10 minutes after the 152 took off a witness watched the Cessna fall to earth and hit the ground in an inverted attitude. No one survived. Students who’d flown with the CFI said he demonstrated spins within the first three lessons.

Learning to avoid stalls and spins is more than a lesson in mechanics; it’s a lesson in judgment. Lest we become complacent, we should all recognize that stalls and spins often represent the edge of the envelope when it comes to flight.

Only by exercising good judgment, observing regulations and common-sense rules, obtaining thorough, professional instruction, and maintaining the highest standards of proficiency can we reasonably expect to avoid the stall/spin killer.