Twelve Stall/Spin Myths Exposed

Excerpted from the book, *The Light Airplane Pilot's Guide to Stall/Spin Awareness*
by Rich Stowell, www.richstowell.com

Myth #1: Flying too slowly causes stalls.

Reality: Astute as the Brothers were, even Orville and Wilbur Wright erroneously believed that stalling was related to slow airspeed. Angle of attack is the defining parameter for the stall; thus, airspeed by itself is useless as an indicator of our margin to the stall. Yet the airspeed myth persists, often being reinforced by the simplistic, wings-level, one-*g* stalls practiced repeatedly for check rides.

Myth #2: Stalls cause spins.

Reality: Two elements must be present in order for an airplane to spin: stall & yaw. By themselves, neither stalling nor yawing result in spinning; however, simultaneously stalling with sufficient yawing always results in a spin.

Myth #3: All cross-controlled flight increases your stall / spin potential.

Reality: Cross-controlled flight comes in two basic flavors: skids and slips. Skids tend to have a greater stall / spin potential than coordinated flight. Slips, on the other hand, tend to have a lower stall / spin potential than even coordinated flight.

Myth #4: If you inadvertently stall or spin, just let go of the controls.

Reality: Aerodynamics, human factors, and the practicalities of the situation can conspire to make this advice suspect:

1. Some light airplanes might be able to self-recover from the early stages of some stall / spins; however, letting go of the controls a bit later in the process, or under a different set of conditions, may not result in recovery at all.
2. Letting go of the controls during a surprise stall / spin is not a natural instinct – clutching the stick or yoke even tighter is a more common reaction.
3. The majority of stall / spin accidents occur at or below traffic pattern altitude. Even if the airplane can self-recover and the pilot is capable of instantly releasing the controls, more altitude will likely be consumed compared to a prompt application of precisely choreographed recovery controls.

Myth #5: During recovery from upright spins, the elevator control should not be moved forward until rotation ceases.

Reality: Although opposite rudder alone may effect recovery in some airplanes in the early stages of some spins, it may not be sufficient by itself for recovery from fully developed or aggravated spins. Therefore, pilots should not rely on opposite rudder alone during spin recovery. Pilots should always expect the need for full opposite rudder followed by forward movement of the elevator control to terminate spinning, regardless of the airplane or the type of upright spin encountered.

Myth #6: During spins, the slip / skid indicator shows spin direction.

Reality: The slip / skid ball it totally unreliable when spinning.

Myth #7: The longer an airplane stays in a spin, the more airspeed it gains and the faster it rotates.

Reality: The spin is a high Drag maneuver. Consequently, airspeed will not continue to increase, but will generally stabilize at a relatively low and constant value. And once the spin develops (usually two to four turns), rate of rotation will stabilize as well.

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Myth #8: The longer an airplane stays in a spin, the greater the chance of structural damage.

Reality: The spin itself is a relatively low *g* maneuver. A normal upright spin, for example, imposes essentially one *g* on the pilot and the airplane. It is during the pullout following the spin recovery where significant *g*-load could be generated. It's up to the pilot to manage the *g*-load to stay within design limits during the pullout.

Myth #9: Since most accidental spins occur too low for recovery, spin training is a useless exercise.

Reality: This myth might be true if pilots were suddenly waking up and finding themselves spinning in an airplane. The typical stall / spin accident is not a sudden, random event devoid of pilot participation. Instead, it is largely a pilot-driven process that culminates in a stall or spin prior to ground impact. Stall / spin accidents evolve as a chain of events with warning signs that, if recognized and corrected, can be broken before reaching the spin. Proficiency in the elements of a comprehensive, scenario-based stall / spin training program should provide pilots with the awareness and skills to prevent an accidental spin departure in the first place.

Myth #10: Pilots with more experience are better at avoiding fatal stall / spins than pilots with less experience.

Reality: If "more experience" means "higher flight times and more advanced certificates / ratings" then this assertion is false. A study by the AOPA Air Safety Foundation revealed that students pilots, who made up fifteen percent of active pilot population during the years 1993-2001, were involved in just four percent of the fatal stall / spins – a better showing than even ATPs. Private and commercial pilots, on the other hand, made up 61 percent of the active pilots, but were involved in 83 percent of the fatal stall / spin accidents.

Myth #11: As a whole, flight instructors are well qualified to teach stalls and spins.

Reality: Even though flight instructor applicants receive logbook endorsements certifying that they are competent to teach spins, published studies and anecdotal evidence reveal that flight instructors nationwide tend neither to be well trained in stall / spin dynamics, nor to have sufficient hands-on experience with spins to be able to provide meaningful spin training.

Myth #12: Spins can be hard on an airplane's gyro instruments.

Reality: This claim is often cited as the reason why a particular instructor or flight school cannot provide spin training in an airplane approved for spins. According to senior gyroscope technicians at TGH Aviation in Auburn, CA – an aviation instrument and overhaul facility with more than 50 years and several hundred thousand gyroscopes of experience behind it:

> *In general there would be no additional wear factors on either an attitude gyro or a directional gyro caused by spins. While the attitude gyro – if not caged and of the type not designed for a full 360 degrees of movement – would hit the mechanical stops and would experience gimbal lock, this would not result in any appreciable additional wear beyond what is normally expected....*
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> *As for the turn coordinator, we have seen evidence that this instrument can realize negative effects in an aircraft that has experienced excessive flat spins. As not many pilots are purposely inducing flat spins on a regular basis in airplanes equipped with turn coordinators, such negative effects would be a rare occurrence.*

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