

Accelerating Your Stalls

If you're a primary student, you've probably been exposed to accelerated stalls, or soon will be. If you're a certificated pilot, it's likely been some time since you performed one. Either way, here's a primer on why we do them and how.

WHY

The idea behind demonstrating accelerated stalls is it includes determining an airplane's stall characteristics, developing in the pilot a sense for when he/she might be approaching an accelerated stall and teaching how to instinctively recover from one at

its onset. Importantly, according to the FAA's Airplane Flying Handbook, FAA-H-8083-3A (AFH), "an accelerated stall, although usually demonstrated in steep turns, may actually be encountered any time excessive back-elevator pressure is applied and/or the angle of attack is increased too rapidly."

HOW

After climbing to an altitude appropriate for the airplane's performance (i.e., expected/allowable altitude loss) and clearing the area, establish straight-and-level flight at an airspeed below the airplane's published design maneuvering speed, V_A . Flaps and landing gear, if any, should be retracted. Establish a bank of the desired angle (most references suggest no more than 45 degrees), then apply back pressure smoothly, firmly and progressively increasing the angle of attack until a stall occurs.

ERRORS

Common errors include failure to maintain the desired bank angle by either shallowing it out or allowing it to steepen, failure to establish an appropriate pitch/power combination below V_A and failure to apply sufficient back pressure exceeding the wing's critical angle of attack. For this latter error, pitch trim may be applied as long as the pilot understands doing so may interfere with stall recovery and will require applying additional nose-down pitch during the recovery.

RECOVERY

As with any other stall, recovery is accomplished by promptly releasing sufficient nose-up pressure on the pitch control and increasing power to reduce the angle of attack. If an uncoordinated turn is made, one wing may tend to drop suddenly, causing the airplane to roll in that direction. If this occurs, the excessive back elevator pressure must be released, power added and the airplane returned to straight-and-level flight with coordinated control pressure.

