Other Extreme Stalls

Beyond the straight-ahead and accelerated varieties, there are two other stall types of which we need to be aware. One results from poor technique and lack of coordination. The other can result from either forgetting to reconfigure a secondary control or from a mechanical failure. In both cases, as well "normal" and accelerated stalls, the object here is to recognize them, prevent them and, if that's not possible, recover from them

CROSS-CONTROL STALL

As its name implies, this stall can occur when aileron pressure is applied in one direction and rudder pressure in the opposite direction. Then, add some back pressure to the pitch control and watch the fun.

This type of stall most likely occurs thanks to a late base-to-final approach turn, resulting in overshooting the runway's extended centerline. The pilot attempts to correct by banking toward the runway and adding more rudder than appropriate to coordinate the turn, perhaps due to some apprehension about steep banks relatively close to the ground. To arrest the steepening bank, opposite aileron is applied. The resulting uncoordinated flight generally means an increased rate of descent, hence the nose-up pressure on the pitch control. Because the airplane isn't in coordinated flight, one wing will stall before the other. The result will be a rather enthusiastic stall break. If insufficient altitude remains to effect a recovery....

ELEVATOR TRIM STALL

A likely scenario for this type of stall involves a faster airplane following a slow one in the traffic pattern. The faster airplane's pilot goes into "hover mode" by slowing down more than would be the case for the airplane's normal pattern operation, extending flaps and gear and then trimming off the resulting nose-down pitching moment with nose-up trim. Inevitably, the slower airplane ahead also is late to taxi off the runway, so a go-around is initiated by cramming on full power. The nose comes up dramatically, thanks in part to the full flaps and in part to the previously applied nose-up trim. Unless the pilot applies strong nose-down force to the pitch control, the nose will rise enough to exceed the wing's critical angle of attack. Again, this likely will occur close to the ground.

Another scenario in which this type of stall can occur involves a malfunctioning autopilot, which fails to trim the airplane in pitch. Whether disengaged manually or by the autopilot itself, the pilot is suddenly presented with an airplane trimmed significantly nose-up.

Avoiding this type of stall depends on its cause. In the first scenario—a go-around—smoothly apply power only to arrest the descent, then add more to initiate a climb. Once a positive rate of climb is established, retract the flaps incrementally. In the second scenario, smooth, firm nose-down force on the pitch control is mandatory as the airplane is retrimmed. A power reduction in this scenario is problematic as it may result in a stall-mush.