

Task A. Maneuvering During Slow Flight

References: FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with maneuvering during slow flight in cruise configuration.

Note: See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.

Knowledge: The applicant demonstrates understanding of:

PA.VII.A.K1 Aerodynamics associated with slow flight in various airplane configurations, including the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.

Risk Management: The applicant is able to identify, assess, and mitigate risk associated with:

PA.VII.A.R1 Inadvertent slow flight and flight with a stall warning, which could lead to loss of control.

PA.VII.A.R2 Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).

PA.VII.A.R3 Uncoordinated flight. **1**

PA.VII.A.R4 Effect of environmental elements on airplane performance (e.g., turbulence, microbursts, and high-density altitude).

PA.VII.A.R5 Collision hazards.

PA.VII.A.R6 Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills: The applicant exhibits the skill to:

PA.VII.A.S1 Clear the area. ✖

PA.VII.A.S2 Select an entry altitude that allows the Task to be completed no lower than 1,500 feet above ground level (AGL).

PA.VII.A.S3 Establish and maintain an airspeed at which any further increase in angle of attack, increase in load factor, or reduction in power, would result in a stall warning (e.g., aircraft buffet, stall horn, etc.). **2**

PA.VII.A.S4 Accomplish coordinated straight-and-level flight, turns, climbs, and descents with the aircraft configured as specified by the evaluator without a stall warning (e.g., aircraft buffet, stall horn, etc.). **3**

PA.VII.A.S5 Maintain the specified altitude, ± 100 feet; specified heading, $\pm 10^\circ$; airspeed, $+10/-0$ knots; and specified angle of bank, $\pm 10^\circ$.

4

HOW IS THIS TESTED? You should be able to explain the “region of reversed command” in the theoretical sense on the ground. You should also have a practical sense for how to make corrections in the air. The current standard is no stall warning, which isn’t really that slow. Be able to transition between coordinated turns, descents, and climbs at this low speed without overshooting.

1 | Coordination Matters, Cross-Control Less So

Don’t confuse “cross-controlled” with “uncoordinated.” There are times when you have some aileron input one way and opposite rudder (such as climbing turns at high power) but the ball is centered. — *Bruce W. (CFI)*

I see lots of uncoordinated flight with a stall warning blaring and the pilot unaware. Coordination is one of the things specifically tested on slow flight, so that shouldn’t be happening. There are times when slight cross-control occurs in slow flight during turns, but this should be by choice, not by accident. — *Name Withheld (DPE)*

Applicants should know the proper pitch attitude for slow flight, and be able to hold it within a degree or two, while setting the power to manage the vertical speed. Some cross-control is part of maintaining coordination in slow flight. — *Hobie T. (DPE)*

2 | Stay Ahead of Required Power Changes

When initially entering slow flight, maintain altitude with elevator and control decreasing airspeed with throttle. As desired speed approaches, stop airspeed decrease with added power while still maintaining altitude with elevator.

Common error: Raising the nose to lower airspeed. This results in a climb. — *Name Withheld (DPE)*

Appropriate initial power is important to enter slow flight. Too often power is too low, which is fine—until the deceleration increases exponentially and the airplane loses altitude. Adding power to stop the descent at that point usually doesn’t happen fast enough to avoid busting the lower altitude limit for the task. — *Doug S. (DPE)*

3 | It’s More Than Straight and Level

Practice climbs, descents, and turning flight in slow flight with the airplane in various configurations. Too often, I find applicants only understand corrective measures to maintain straight-and-level slow flight in one configuration. — *Hobie T. (DPE)*

Slow flight rarely happens only in straight-and-level flight. Certainly not on a checkride. — *Pete R. (DPE)*

4 | Make Tiny Adjustments, and Do So Proactively

Use tiny adjustments of power and pitch in combination in slow flight. If you’re chasing altitude by $\pm 50'$ or airspeed by ± 10 knots, you’re likely over-correcting, or you’re not really in slow flight. — *Elaine K. (CFI)*

Task B. Power-Off Stalls

References: AC 61-67; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with power-off stalls.

Note: See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.

Knowledge: The applicant demonstrates understanding of:

- PA.VII.B.K1 Aerodynamics associated with stalls in various airplane configurations, including the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
 - PA.VII.B.K2 Stall characteristics as they relate to airplane design, and recognition impending stall and full stall indications using sight, sound, or feel.
 - PA.VII.B.K3 Factors and situations that can lead to a power-off stall and actions that can be taken to prevent it.
 - PA.VII.B.K4 Fundamentals of stall recovery.
- Risk Management:** The applicant is able to identify, assess, and mitigate risk associated with:
- PA.VII.B.R1 Factors and situations that could lead to an inadvertent power-off stall, spin, and loss of control. 1
 - PA.VII.B.R2 Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
 - PA.VII.B.R3 Stall warning(s) during normal operations. ✖
 - PA.VII.B.R4 Stall recovery procedure.
 - PA.VII.B.R5 Secondary stalls, accelerated stalls, and cross-control stalls. 2
 - PA.VII.B.R6 Effect of environmental elements on airplane performance related to power-off stalls (e.g., turbulence, microbursts, and high-density altitude).
 - PA.VII.B.R7 Collision hazards.
 - PA.VII.B.R8 Distractions, task prioritization, loss of situational awareness, or disorientation.

HOW IS THIS TESTED? The power-off stall will likely be tested first, possibly right out of slow flight and often during a turn. Ensure you are prepared to stall in any of these flight attitudes and configurations.

1 | Elevator to Reduce AOA, Rudder to Stop Yaw

I once had a client in a Centurion put the airplane in a spin while recovering from a power-off, landing configuration stall to a full break. (This wasn't a checkride, so I was in a teaching role.) Here's what happened:

The applicant was hesitant to add sufficient back elevator to get beyond the critical angle of attack. In my frustration, I said to the client to pull harder. In his anxiety, he pulled hard, which resulted in an accelerated stall and a sharp break and the left wing dropping. His instinctive, but incorrect, reaction to that was adding full power and full right aileron. The airplane immediately snapped into a spin to the left.

It took 2200' to recover. That's why we practice with altitude to spare.

The takeaway here is to practice so the correct recovery happens before a spin: Reduce the angle of attack and control yaw with rudder alone. Also, know the fundamentals of spin recovery (and practice them with an appropriate instructor). — Doug S. (DPE)

2 | Skidding Stalls = Bad; Slipping Stalls ... OK

People think "cross-controlled" is inherently dangerous. This is incorrect. A stall while skidding a turn is the problem you must avoid. A stall while slipping, not so much. That fear means they avoid this maneuver.

The pilots I meet who can comfortably stall even from a slipping attitude, seem to fly just about everything else well, too. Get the instruction and experience to be one of those pilots. — David S. (DPE)