

Airman Certification Standards (ACS) Frequently Asked Questions for Applicants, Instructors, and Evaluators

Why did the FAA modify the slow flight task?

The PTS standard for maneuvering during slow flight was for the applicant to 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 an immediate stall.”

The certification standard in 23.207 states for airplane certification testing, the stall warning must “begin at a speed exceeding the stalling speed by a margin of not less than 5 knots and must continue until the stall occurs.” This is the primary reason the suggested range above stall speed has moved from “3-5 knots” to “5-10 knots without stall warning activation.” The certification standard for the stall warning does play a role in the airspeed selection for the maneuver, and stall warning activation will vary from one airplane to the next, so it is important for the applicant to select an airspeed where the stall warning should not activate except on a momentary basis (e.g., due to turbulence).

The current version of the Airplane Flying Handbook says slow flight should be performed at “the slowest airspeed at which the airplane is capable of maintaining controlled flight without indications of a stall—usually 3 to 5 knots above stalling speed.” The guidance has always intended for there not to be a stall warning, and that is consistent with slow flight guidance published in AC 120-111. However, the 3-5 knot range given does not pair well with the part 23 requirement for a stall warning (§23.207). It is not practical to maneuver in that airspeed range and not have the stall warning, which is an indication of a stall.

The standard in the PTS also implies being right above the critical AOA, which means the stall warning, would be activated. This result does not align with the guidance, or with what the FAA advocates. Specifically, the FAA does not advocate intentional disregard for a stall warning while maneuvering.

The purpose of teaching slow flight is to ensure that the pilot understands how the airplane responds with less airflow over the flight control surfaces. Since airplanes are operated at low airspeeds and high angles of attack during the takeoff/departure and approach/landing phases of flight, it is essential for pilots to learn the airplane cues and how to operate the airplane in this state.

Regardless of airplane type, a pilot does not need to be just below the critical AOA to experience the desired characteristics and achieve the slow flight objectives. These objectives can be accomplished without deliberately activating the stall warning through flight just below the critical AOA. We want to influence the behavior and practices the pilot will follow outside the training environment.

Therefore, with the exception of performing a full stall maneuver, a pilot should always perform the stall recovery procedure when the stall warning is activated. With respect to guidance, the change to AC 61-67 published just prior to the final decision on the Airplane Flying Handbook wording change, which drove the FAA's decision to modify this ACS Task element. We are working on another change to ensure the AC will align with the AFH and the ACS and be consistent with AC 120-111. To further explain these changes, the FAA is issuing a Safety Alert to Operators (SAFO)

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Teaching what an airplane will do at the critical AOA is part of stall training and should be addressed in that context. You allow someone to 'ignore' the warning in one narrow instance – as part of stall training. The pilot can still learn what happens at that point – but as part of stall training and learning the proper recoveries –not as part of slow flight.

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