Airman Certification Standards

What's New and What's Next?

Presented to: AABI I/E Forum – Panel 4

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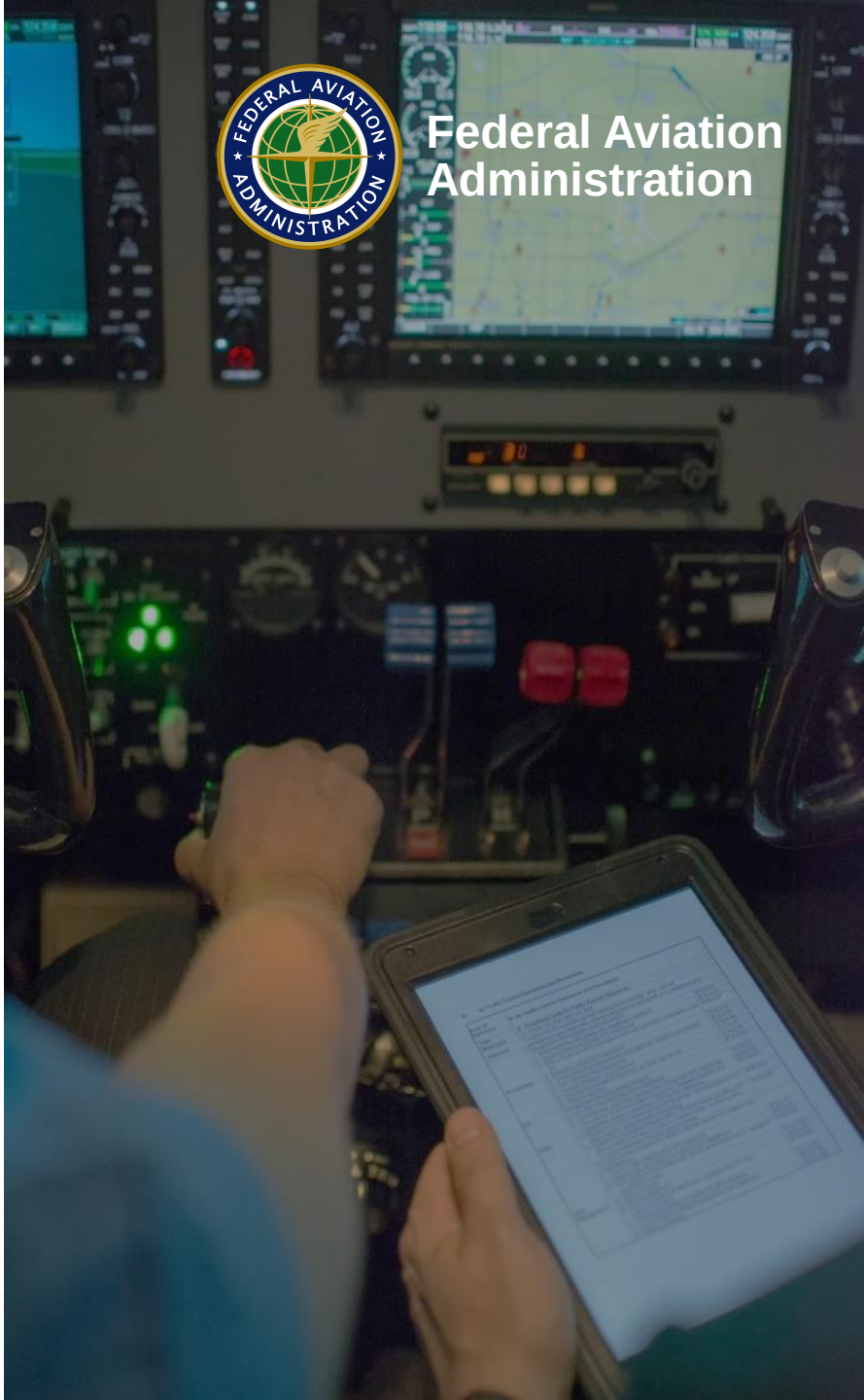


Overview – ACS Changes

- Recap –why, what, who?
- What's new in 2017?
  - Private Pilot Airplane – revised
  - Instrument Airplane rating – revised
  - Commercial Pilot Airplane – new
  - Modification of Slow Flight/Stall Tasks
- How do I use the ACS?
- What's next?
- Resources

Recap - Why change?

- ACS started in 2011 as a way to fix knowledge testing.
- FAA and industry partners determined the need for a systematic approach that would:

- Provide clear standards for aeronautical knowledge
- List specific behaviors for risk management and ADM
- Consolidate overlapping tasks in the PTS
- Tie the many “special emphasis” items to knowledge and skill
- Connect the standards for knowledge, risk management, and skill to guidance (H-series handbooks), to knowledge test questions, and the practical test

Recap – What is the ACS?

Definition & integration of elements = comprehensive standard

Task	*Task A. Steep Turns*
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with steep turns.

Aeronautical knowledge

Knowledge	The applicant demonstrates understanding of:
PA.V.A.K1	Purpose of steep turns.
PA.V.A.K2	Aerodynamics associated with steep turns, to include:
PA.V.A.K2a	a. Coordinated and uncoordinated flight
PA.V.A.K2b	b. Overbanking tendencies
PA.V.A.K2c	c. Maneuvering speed, including impact of weight changes
PA.V.A.K2d	d. Accelerated stalls
PA.V.A.K2e	e. Rate and radius of turn
PA.V.A.K3	Altitude control at various airspeeds.

Know

Aeronautical decision-making and special emphasis

Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.V.A.R1	Failure to divide attention between airplane control and orientation.
PA.V.A.R2	Collision hazards, to include aircraft, terrain, obstacles and wires.
PA.V.A.R3	Low altitude maneuvering/stall/spin.
PA.V.A.R4	Distractions, loss of situational awareness, and/or improper Task management.
PA.V.A.R5	Failure to maintain coordinated flight.

Consider

PTS-based flight proficiency

Skills	The applicant demonstrates the ability to:
PA.V.A.S1	Clear the area.
PA.V.A.S2	Establish the manufacturer's recommended airspeed or, if not stated, a safe airspeed not to exceed V_A.
PA.V.A.S3	Roll into a coordinated 360° steep turn with approximately a 45° bank.
PA.V.A.S4	Perform the Task in the opposite direction
PA.V.A.S5	Maintain the entry altitude ±100 feet, airspeed ±10 knots, bank and ±5°; and roll out on the entry heading, ±10°.

Do

Recap – What is the ACS?

I. Preflight Preparation

ACS coding system

Task	*Task D. Cross-Country Flight Planning*
References	14 CFR part 91; FAA-H-8083-2, FAA-H-8083-25; Navigation Charts; Chart Supplements; AIM; NOTAMs
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with cross-country flights and VFR flight planning.
Knowledge	The applicant demonstrates understanding of:
PA.I.D.K1	Route planning, to include consideration of special use airspace and selection of appropriate navigation/communication systems and facilities.
PA.I.D.K2	Altitude selection accounting for terrain and obstacles, glide distance of aircraft, VFR cruising altitudes, and the effect of wind.
PA.I.D.K3	Calculating:
PA.I.D.K3a	a. Time, climb and descent rates, course, distance, heading, true airspeed, and groundspeed
PA.I.D.K3b	b. Estimated time of arrival to include conversion to universal coordinated time (UTC)
PA.I.D.K3c	c. Fuel requirements, to include reserve
PA.I.D.K4	Elements of a VFR flight plan.
PA.I.D.K5	Procedures for activating and closing a VFR flight plan.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.I.D.R1	Pilot.
PA.I.D.R2	Aircraft.
PA.I.D.R3	Environment (e.g., weather, airports, airspace, terrain, obstacles).
PA.I.D.R4	External pressures.
PA.I.D.R5	Limitations of air traffic control (ATC) services.
PA.I.D.R6	Improper fuel planning.
Skills	The applicant demonstrates the ability to:
PA.I.D.S1	Prepare, present and explain a cross-country flight plan assigned by the evaluator including a risk analysis based on real-time weather, to the first fuel stop.
PA.I.D.S2	Apply pertinent information from appropriate and current aeronautical charts, chart supplements; NOTAMs relative to airport, runway and taxiway closures; and other flight publications.
PA.I.D.S3	Create a navigation log and simulate filing a VFR flight plan.
PA.I.D.S4	Recalculate fuel reserves based on a scenario provided by the evaluator.

The ACS assigns a unique code to each element of knowledge, risk management, & skill

PA.I.D.K4

PA = Private Pilot Airplane (*applicable ACS*)

I = Preflight Preparation (*Area of Operation*)

D = Cross-Country Flight Planning (*Task*)

K4 = Elements of a VFR Flight Plan (*Task Element*)

Recap - What is the ACS?

ACS is the single-source set of standards for knowledge test & practical test.

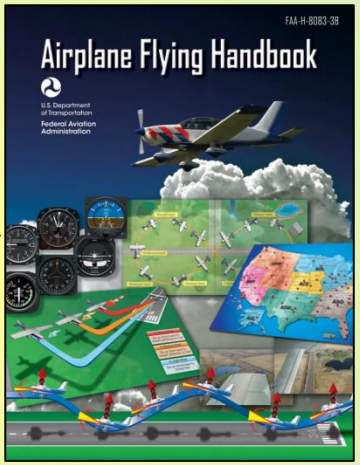
ACS integrates and connects certification standards for:

Knowledge

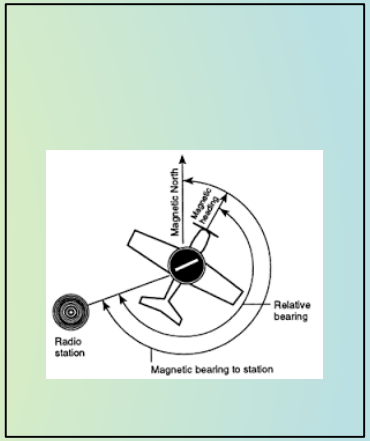
Risk Management

Skill

Standards



Guidance



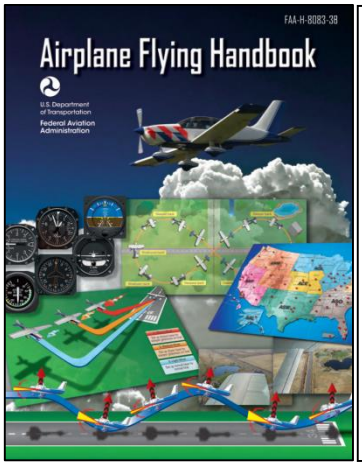
Test questions

ACS coding connects standards to guidance and test questions.

Recap - What is the ACS?

Changes to Regulations, Policies, Procedures

Standards



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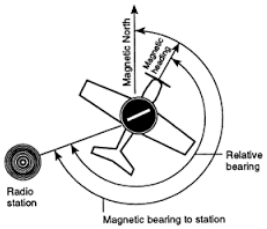
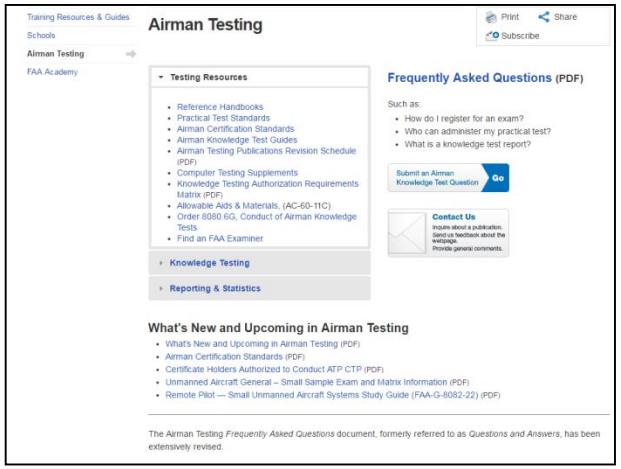


No more test questions on fixed card ADF

Test questions



Public data

Other Certificates / Ratings

Recap - Who created the ACS?

ACS arises from extensive FAA/industry collaboration

- Industry-led development – the ACS has been developed, refined, and tested through three consecutive aviation training industry groups with diverse representation.
- Public comment - the FAA established several dockets for the industry groups to receive public comments on the ACS.
- Prototyping - the FAA and its industry partners conducted ACS prototype activities to test and refine the ACS for private pilot (airplane) and instrument rating (airplane).

What's New?

June 2017:

- First version of ACS for Commercial Pilot – Airplane
- Updates to ACS for Private Pilot Airplane certificate and Instrument-Airplane Rating that will:
  - Incorporate corrections and changes suggested by stakeholders
  - Streamline presentation by consolidating certain task elements
  - Standardize phrasing and sequence of certain task elements
- Modifications to Slow Flight and Stalls Area of Operation in Private and Commercial Airplane ACS.
- Documents published to the FAA website's Airman Testing page with an effective date of June 12, 2017.

What's the Story on Slow Flight?

Maneuvering During Slow Flight in an Airplane

Change 3 (May 2, 2012)

VIII. Slow Flight and Stalls

(Note removed)

Task A: Maneuvering During Slow Flight (ASEL and ASES)

References: FAA-H-8083-3; POH/AFM.

Objective: To determine that the applicant:

1. Exhibits satisfactory knowledge of the elements related to maneuvering during slow flight.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet AGL.
3. Establishes and maintains 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.
4. Accomplishes coordinated straight-and-level flight, turns, climbs, and descents with landing gear and flap configurations specified by the examiner.
5. Divides attention between airplane control and orientation.
6. Maintains the specified altitude, ±100 feet; specified heading, ±10°; airspeed, +10/−0 knots; and specified angle of bank, ±10°.

Practical Test Standards

VII. Slow Flight and Stalls

Task	***Task A. Maneuvering During Slow Flight***
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with maneuvering during slow flight.
Knowledge	The applicant demonstrates understanding of:
PA.VII.A.K1	1. This maneuver as it applies to different phases of flight.
PA.VII.A.K2	2. The relationship between angle of attack (AOA), airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.
PA.VII.A.K3	3. The range and limitations of stall warning indicators (e.g.: aircraft buffet, stall horn, etc.).
PA.VII.A.K4	4. The difference between AOA and aircraft attitude during all flight conditions and how it relates to aircraft performance.
PA.VII.A.K5	5. How environmental elements affect aircraft performance.
PA.VII.A.K6	6. The importance of the 1,500-foot AGL (ASEL/ASES) or 3,000-foot AGL (AMEL/AMES) minimum altitude.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.VII.A.R1	1. The interplay of aerodynamic factors (angle of attack (AOA), airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude).
PA.VII.A.R2	2. Range and limitations of stall warning indicators (e.g.: aircraft buffet, stall horn etc.).
PA.VII.A.R3	3. The effect of environmental elements on aircraft performance.
PA.VII.A.R4	4. Collision avoidance, scanning, obstacle and wire strike avoidance.
PA.VII.A.R5	5. Failure to react appropriately to a stall warning.
PA.VII.A.R6	6. Failure to maintain coordinated flight during the maneuver.
PA.VII.A.R7	7. Failure to manage pitch attitude and power to avoid a stall warning or a stall.
Skills	The applicant demonstrates the ability to:
PA.VII.A.S1	1. Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
PA.VII.A.S2	2. Establish and maintain an airspeed, approximately 5-10 knots above the 1G stall speed, at which the airplane is capable of maintaining controlled flight without activating a stall warning.
PA.VII.A.S3	3. Accomplish coordinated straight-and-level flight, turns, climbs, and descents with landing gear and flap configurations specified by the evaluator without activating a stall warning.
PA.VII.A.S4	4. Divide attention between airplane control, traffic avoidance and orientation.
PA.VII.A.S5	5. Maintain the specified altitude, ±100 feet; specified heading, ±10°; airspeed +10/-0 knots; and specified angle of bank, ±10° or as recommended by aircraft manufacturer to a safe maneuvering altitude.

Private ACS – June 2016

What's the Story on Slow Flight?

Maneuvering During Slow Flight in an Airplane

Continuum of reducing aircraft speed and energy state of the aircraft:

Normal flight operations:

Slow flight - Operation at the bottom on the normal flight regime -- develops the notion that the stall warning device indicates an abnormal situation that needs to be addressed.

Abnormal flight operations:

Flight between the stall warning and the stall (up to the critical angle of attack). Part of stall prevention training is to respond to the warning and return to normal flight. Maneuvering flight in this area is not tested under the ACS.

Emergency flight operations:

Full stall and recovery training includes slowing/loading to the break in the stall through the full recovery. The testing standard for stall recovery is appropriately separate from the slow flight standard.

Please see FAA-H-8083-3B - Airplane Flying Handbook Chapter 4 -
https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/

What's the Story on Slow Flight?

Maneuvering During Slow Flight in an Airplane

VII. Slow Flight and Stalls

Task	***Task A. Maneuvering During Slow Flight***
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with maneuvering during slow flight.
Knowledge	The applicant demonstrates understanding of:
PA.VII.A.K1	1. This maneuver as it applies to different phases of flight.
PA.VII.A.K2	2. The relationship between angle of attack (AOA), airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.
PA.VII.A.K3	3. The range and limitations of stall warning indicators (e.g.: aircraft buffet, stall horn, etc.).
PA.VII.A.K4	4. The difference between AOA and aircraft attitude during all flight conditions and how it relates to aircraft performance.
PA.VII.A.K5	5. How environmental elements affect aircraft performance.
PA.VII.A.K6	6. The importance of the 1,500-foot AGL (ASEL/ASES) or 3,000-foot AGL (AMEL/AMES) minimum altitude.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.VII.A.R1	1. The interplay of aerodynamic factors (angle of attack (AOA), airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude).
PA.VII.A.R2	2. Range and limitations of stall warning indicators (e.g.: aircraft buffet, stall horn etc.).
PA.VII.A.R3	3. The effect of environmental elements on aircraft performance.
PA.VII.A.R4	4. Collision avoidance, scanning, obstacle and wire strike avoidance.
PA.VII.A.R5	5. Failure to react appropriately to a stall warning.
PA.VII.A.R6	6. Failure to maintain coordinated flight during the maneuver.
PA.VII.A.R7	7. Failure to manage pitch attitude and power to avoid a stall warning or a stall.
Skills	The applicant demonstrates the ability to:
PA.VII.A.S1	1. Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
PA.VII.A.S2	2. Establish and maintain an airspeed, approximately 5-10 knots above the 1G stall speed, at which the airplane is capable of maintaining controlled flight without activating a stall warning.
PA.VII.A.S3	3. Accomplish coordinated straight-and-level flight, turns, climbs, and descents with landing gear and flap configurations specified by the evaluator without activating a stall warning.
PA.VII.A.S4	4. Divide attention between airplane control, traffic avoidance and orientation.
PA.VII.A.S5	5. Maintain the specified altitude, ±100 feet; specified heading, ±10°; airspeed +10/-0 knots; and specified angle of bank, ±10° or as recommended by aircraft manufacturer to a safe maneuvering altitude.

Private ACS – June 2016

VII. Slow Flight and Stalls

Task	***A. Maneuvering During Slow Flight***
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with maneuvering during slow flight. ***Note:*** *See Appendix 6: Safety of Flight and Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
PA.VII.A.K1	Aerodynamics associated with slow flight in various aircraft configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, aircraft weight and center of gravity, aircraft attitude, and yaw effects.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
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	Failure to maintain coordinated flight.
PA.VII.A.R4	Effect of environmental elements on aircraft performance. (e.g., turbulence, microbursts, and high density altitude).
PA.VII.A.R5	Collision hazards, to include aircraft, terrain, obstacles, and wires.
PA.VII.A.R6	Distractions, loss of situational awareness, and/or improper task management.
Skills	The applicant demonstrates the ability to:
PA.VII.A.S1	Clear the area.
PA.VII.A.S2	Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
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.).
PA.VII.A.S4	Accomplish coordinated straight-and-level flight, turns, climbs, and descents with landing gear and flap configurations specified by the evaluator without a stall warning (e.g., aircraft buffet, stall horn, etc.).
PA.VII.A.S5	Maintain the specified altitude, ±100 feet; specified heading, ±10°; airspeed +10/-0 knots; and specified angle of bank, ±10°.

Private ACS – June 2017

- With the primary focus on understanding aerodynamics associated with flying slow in different phases of flight, there is now only one knowledge element for slow flight.
- The FAA refined and consolidated the risk management elements in the ACS.
- The FAA modified the phrasing of the skill element as follows: *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.).*

What's the Story on Slow Flight?

Modifications to Stall Tasks

VII. Slow Flight and Stalls

Task	*Task B. Power-Off Stalls*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with power-off stalls.
Knowledge	The applicant demonstrates understanding of:
PA.VII.B.K1	1. The importance of the 1,500-foot AGL (ASEL/ASES) or 3,000-foot AGL (AMEL/AMES) minimum altitude.
PA.VII.B.K2	2. How the maneuver relates to a normal flight.
PA.VII.B.K3	3. The components of a stabilized descent.
PA.VII.B.K4	4. Approach to stall indications.
PA.VII.B.K5	5. Full stall indications.
PA.VII.B.K6	6. Which aircraft inputs are required to meet heading or bank angle requirements.
PA.VII.B.K7	7. The stall recovery procedure.
PA.VII.B.K8	8. The importance of establishing the correct aircraft configuration during the recovery process and the consequences of failing to do so.
PA.VII.B.K9	9. Aerodynamics associated with stalls and spins in various aircraft configurations and attitudes.
PA.VII.B.K10	10. The circumstances that can lead to an inadvertent stall or spin.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.VII.B.R1	1. The interplay of aerodynamic factors (angle of attack (AOA), airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.)
PA.VII.B.R2	2. The range and limitations of stall warning indicators (e.g.: aircraft buffet, stall horn, etc.).
PA.VII.B.R3	3. The effect of environmental elements on aircraft performance.
PA.VII.B.R4	4. Required actions for aircraft maximum performance and the consequences of failing to do so.
PA.VII.B.R5	5. Collision avoidance, scanning, obstacle and wire strike avoidance.
PA.VII.B.R6	6. Failure to follow the stall recovery procedure.
PA.VII.B.R7	7. Failure to maintain coordinated flight during the maneuver.
PA.VII.B.R8	8. Secondary stalls.
PA.VII.B.R9	9. Inadvertent stall or spin.
Skills	The applicant demonstrates the ability to:
PA.VII.B.S1	1. Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
PA.VII.B.S2	2. Establish a stabilized descent in the approach or landing configuration, as specified by the evaluator.
PA.VII.B.S3	3. Transition smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.
PA.VII.B.S4	4. Maintain a specified heading, ±10°, if in straight flight, and maintain a specified angle of bank not to exceed 20°, ±10° if in turning flight, while inducing the stall or as recommended by the aircraft manufacturer to a safe maneuvering altitude.
PA.VII.B.S5	5. Recognize and recover promptly after a full stall has occurred.
PA.VII.B.S6	6. Retract the flaps to the recommended setting; retract the landing gear, if retractable, after a positive rate of climb is established.
PA.VII.B.S7	7. Execute a stall recovery in accordance with procedures set forth in the AFM/POH.
PA.VII.B.S8	8. Accelerate to V_X or V_Y speed before the final flap retraction and return to the altitude, heading and airspeed specified by the examiner.

Private ACS – June 2016

VII. Slow Flight and Stalls

Task	*B. Power-Off Stalls*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with power-off stalls. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
PA.VII.B.K1	Aerodynamics associated with stalls in various aircraft configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, aircraft weight and center of gravity, aircraft attitude, and yaw effects.
PA.VII.B.K2	Stall characteristics (i.e., airplane design) and impending stall and full stall indications (i.e., how to recognize by 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 demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.VII.B.R1	Factors and situations that could lead to inadvertent power-off stall, spin, and loss of control.
PA.VII.B.R2	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
PA.VII.B.R3	Failure to recognize and recover at the stall warning during normal operations.
PA.VII.B.R4	Improper stall recovery procedure.
PA.VII.B.R5	Secondary stalls, accelerated stalls, and cross-control stalls.
PA.VII.B.R6	Effect of environmental elements on aircraft performance related to power-off stalls (e.g., turbulence, microbursts, and high density altitude).
PA.VII.B.R7	Collision hazards, to include aircraft, terrain, obstacles, and wires.
PA.VII.B.R8	Distractions, loss of situational awareness, and/or improper task management.
Skills	The applicant demonstrates the ability to:
PA.VII.B.S1	Clear the area.
PA.VII.B.S2	Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
PA.VII.B.S3	Configure the airplane in the approach or landing configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
PA.VII.B.S4	Establish a stabilized descent.
PA.VII.B.S5	Transition smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.
PA.VII.B.S6	Maintain a specified heading, ±10 if in straight flight; maintain a specified angle of bank not to exceed 20°, ±10°, if in turning flight, while inducing the stall.
PA.VII.B.S7	Acknowledge cues of the impending stall and then recover promptly after a full stall has occurred.
PA.VII.B.S8	Execute a stall recovery in accordance with procedures set forth in the POH/AFM.
PA.VII.B.S9	Retract the flaps to the recommended setting; retract the landing gear, if retractable, after a positive rate of climb is established.
PA.VII.B.S10	Accelerate to V_X or V_Y speed before the final flap retraction; return to the altitude, heading, and airspeed specified by the evaluator.

Private ACS – June 2017

What's the Story on Slow Flight?

Commercial Pilot ACS – Stall Tasks

VII. Slow Flight and Stalls

Task	*Task B. Power-Off Stalls*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with power-off stalls.
Knowledge	The applicant demonstrates understanding of:
CA.VII.B.K1	Aerodynamics associated with stalls in various aircraft configurations and attitudes, to include the relationship between angle of attack, airspeed, load factor, power setting, aircraft configuration, aircraft weight, aircraft attitude, and yaw effects.
CA.VII.B.K2	Stall characteristics (i.e., airplane design) and impending stall and full stall indications (i.e., how to recognize by sight, sound, and feel).
CA.VII.B.K3	Factors and situations that can lead to a power-off stall and actions that can be taken to prevent it.
CA.VII.B.K4	Fundamentals of stall recovery.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
CA.VII.B.R1	Factors and situations that could lead to an inadvertent power-off stall, spin, and loss of control.
CA.VII.B.R2	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
CA.VII.B.R3	Failure to recognize and recover at the stall warning during normal operations.
CA.VII.B.R4	Improper stall recovery procedure.
CA.VII.B.R5	Secondary stalls, accelerated stalls, and cross-control stalls.
CA.VII.B.R6	Effect of environmental elements on aircraft performance related to power-off stalls (e.g., turbulence, microbursts, and high density altitude).
CA.VII.B.R7	Collision hazards, to include aircraft, terrain, obstacles, and wires.
CA.VII.B.R8	Distractions, loss of situational awareness, and/or improper task management.
Skills	The applicant demonstrates the ability to:
CA.VII.B.S1	Clear the area.
CA.VII.B.S2	Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
CA.VII.B.S3	Configure the airplane in the approach or landing configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
CA.VII.B.S4	Establish a stabilized descent.
CA.VII.B.S5	Transition smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.
CA.VII.B.S6	Maintain a specified heading, ±10 if in straight flight; maintain a specified angle of bank not to exceed 20°, ±5°, if in turning flight, while inducing the stall.
CA.VII.B.S7	Acknowledge the cues and recover promptly at the first indication of an impending stall (e.g., aircraft buffet, stall horn, etc.).
CA.VII.B.S8	Execute a stall recovery in accordance with procedures set forth in the POH/AFM.
CA.VII.B.S9	Retract the flaps to the recommended setting; retract the landing gear, if retractable, after a positive rate of climb is established.
CA.VII.B.S10	Accelerate to V_X or V_Y speed before the final flap retraction; return to the altitude, heading, and airspeed specified by the evaluator.

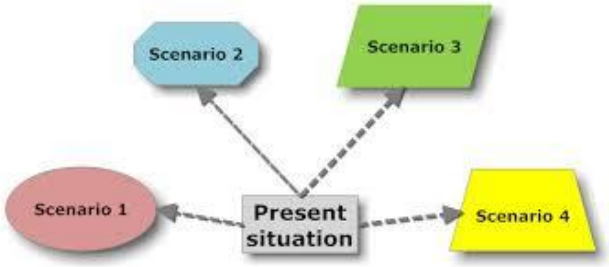
VII. Slow Flight and Stalls

Task	*C. Power-On Stalls*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with power-on stalls. ***Note:*** *See Appendix 6: Safety of Flight and Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
CA.VII.C.K1	Aerodynamics associated with stalls in various aircraft configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, aircraft weight and center of gravity, aircraft attitude, and yaw effects.
CA.VII.C.K2	Stall characteristics (i.e., airplane design) and impending stall and full stall indications (i.e., how to recognize by sight, sound, or feel).
CA.VII.C.K3	Factors and situations that can lead to a power-on stall and actions that can be taken to prevent it.
CA.VII.C.K4	Fundamentals of stall recovery.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
CA.VII.C.R1	Factors and situations that could lead to an inadvertent power-on stall, spin, and loss of control.
CA.VII.C.R2	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
CA.VII.C.R3	Failure to recognize and recover at the stall warning during normal operations.
CA.VII.C.R4	Improper stall recovery procedure.
CA.VII.C.R5	Secondary stalls, accelerated stalls, elevator trim stalls, and cross-control stalls.
CA.VII.C.R6	Effect of environmental elements on aircraft performance related to power-on stalls (e.g., turbulence, microbursts, and high density altitude).
CA.VII.C.R7	Collision hazards, to include aircraft, terrain, obstacles, and wires.
CA.VII.C.R8	Distractions, loss of situational awareness, and/or improper task management.
Skills	The applicant demonstrates the ability to:
CA.VII.C.S1	Clear the area.
CA.VII.C.S2	Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
CA.VII.C.S3	Establish the takeoff, departure, or cruise configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
CA.VII.C.S4	Set power (as assigned by the evaluator) to no less than 65 percent available power.
CA.VII.C.S5	Transition smoothly from the takeoff, departure, or cruise attitude to the pitch attitude that will induce an impending stall.
CA.VII.C.S6	Maintain a specified heading, ±10° if in straight flight; maintain a specified angle of bank not to exceed 20°, ±10°, if in turning flight, until an impending stall is reached.
CA.VII.C.S7	Acknowledge the cues and promptly recover at the first indication of an impending stall (e.g., aircraft buffet, stall horn, etc.).
CA.VII.C.S8	Execute a stall recovery in accordance with procedures set forth in the POH/AFM.
CA.VII.C.S9	Retract the flaps to the recommended setting, if applicable; retract the landing gear, if retractable, after a positive rate of climb is established.
CA.VII.C.S10	Accelerate to V_X or V_Y speed before the final flap retraction; return to the altitude, heading, and airspeed specified by the evaluator.

Commercial ACS – June 2017

How do I use the ACS?

As with the PTS, the evaluator's Plan of Action should combine Tasks and Task Elements to create an efficient, scenario-based test.



The ACS should not make either the oral portion or the flight portion of the practical test any longer than it was with the PTS.

How do I use the ACS?

- Read the entire document!
- Lengthy notes in individual PTS Tasks have been integrated into the appropriate Appendix.
- The ACS also places introductory material from the PTS in specifically focused appendices.
  - Some have been updated.

Appendix Table of Contents

How do I use the ACS?

Evaluator's Plan of Action must include:

- *At least* one Knowledge Element
- *At least* one Risk Management Element
- *All* Skill Elements from required Tasks
- All subjects missed on the knowledge test

  – The evaluator may use Task Elements from missed knowledge test subjects to meet the minimum requirement for one Knowledge and one Risk management element.

  – The evaluator has the discretion to select additional elements if the knowledge test report or the applicant's response to questions indicates weakness in a given Task.

Using ACS Codes

I. Preflight Preparation

Task	*Task D. Cross-Country Flight Planning*
References	14 CFR part 91; FAA-H-8083-2, FAA-H-8083-25; Navigation Charts; Chart Supplements; AIM; NOTAMs
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with cross-country flights and VFR flight planning.
Knowledge	The applicant demonstrates understanding of:
PA.I.D.K1	Route planning, to include consideration of special use airspace and selection of appropriate navigation/communication systems and facilities.
PA.I.D.K2	Altitude selection accounting for terrain and obstacles, glide distance of aircraft, VFR cruising altitudes, and the effect of wind.
PA.I.D.K3	Calculating:
PA.I.D.K3a	a. Time, climb and descent rates, course, distance, heading, true airspeed, and groundspeed
PA.I.D.K3b	b. Estimated time of arrival to include conversion to universal coordinated time (UTC)
PA.I.D.K3c	c. Fuel requirements, to include reserve
PA.I.D.K4	Elements of a VFR flight plan.
PA.I.D.K5	Procedures for activating and closing a VFR flight plan.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.I.D.R1	Pilot.
PA.I.D.R2	Aircraft.
PA.I.D.R3	Environment (e.g., weather, airports, airspace, terrain, obstacles).
PA.I.D.R4	External pressures.
PA.I.D.R5	Limitations of air traffic control (ATC) services.
PA.I.D.R6	Improper fuel planning.
Skills	The applicant demonstrates the ability to:
PA.I.D.S1	Prepare, present and explain a cross-country flight plan assigned by the evaluator including a risk analysis based on real-time weather, to the first fuel stop.
PA.I.D.S2	Apply pertinent information from appropriate and current aeronautical charts, chart supplements; NOTAMs relative to airport, runway and taxiway closures; and other flight publications.
PA.I.D.S3	Create a navigation log and simulate filing a VFR flight plan.
PA.I.D.S4	Recalculate fuel reserves based on a scenario provided by the evaluator.

ACS coding system

The ACS assigns a unique code to each element of knowledge, risk management, & skill

PA = Private Pilot Airplane (*applicable ACS*)

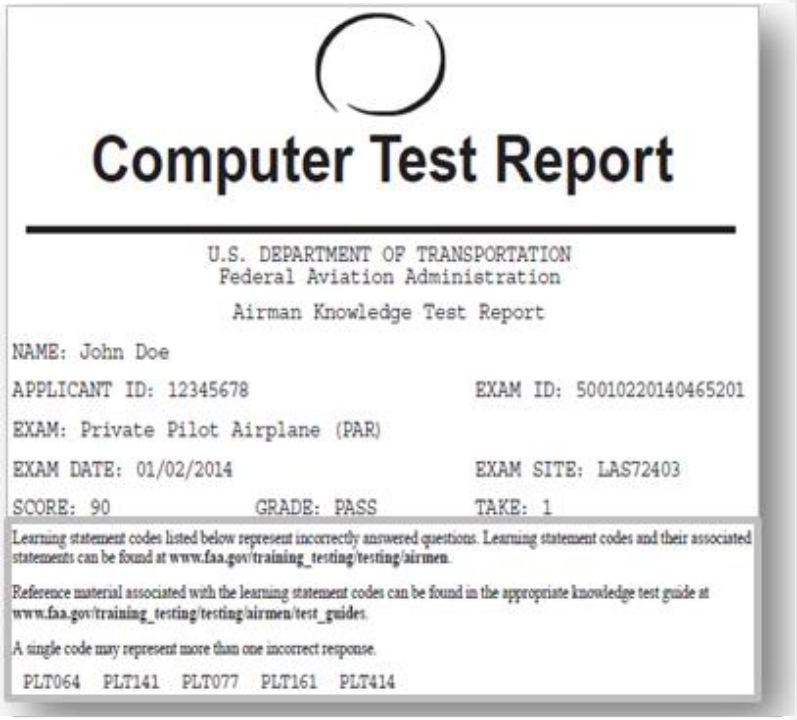
I = Preflight Preparation (*Area of Operation*)

D = Cross-Country Flight Planning (*Task*)

K4 = Elements of a VFR Flight Plan (*Task Element*)

Using ACS Codes

Current State



Computer Test Report

U.S. DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration

Airman Knowledge Test Report

NAME: John Doe

APPLICANT ID: 12345678 EXAM ID: 50010220140465201

EXAM: Private Pilot Airplane (PAR)

EXAM DATE: 01/02/2014 EXAM SITE: LAS72403

SCORE: 90 GRADE: PASS TAKE: 1

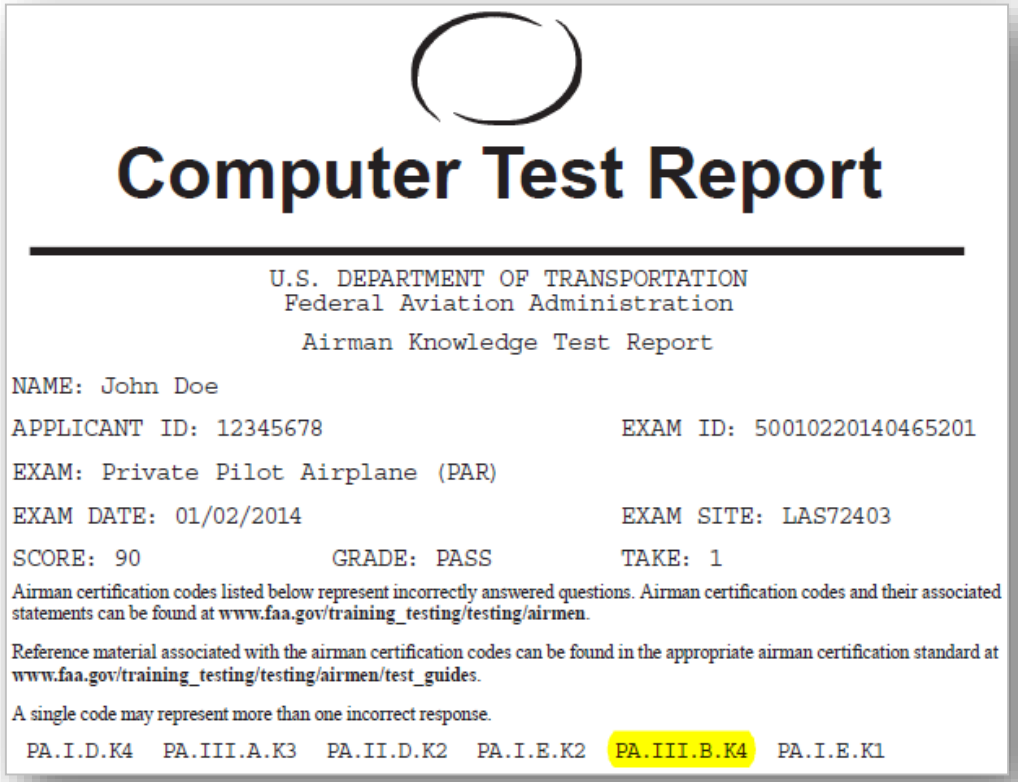
Learning statement codes listed below represent incorrectly answered questions. Learning statement codes and their associated statements can be found at www.faa.gov/training_testing/testing/airmen.

Reference material associated with the learning statement codes can be found in the appropriate knowledge test guide at www.faa.gov/training_testing/testing/airmen/test_guides.

A single code may represent more than one incorrect response.

PLT064 PLT141 PLT077 PLT161 PLT414

Future State



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Airman certification codes listed below represent incorrectly answered questions. Airman certification codes and their associated statements can be found at **www.faa.gov/training_testing/testing/airmen**.

Reference material associated with the airman certification codes can be found in the appropriate airman certification standard at **www.faa.gov/training_testing/testing/airmen/test_guides**.

A single code may represent more than one incorrect response.

PA.I.D.K4 PA.III.A.K3 PA.II.D.K2 PA.I.E.K2 PA.III.B.K4 PA.I.E.K1

Using ACS Codes

There is no one-to-one correlation between LSC (PLT) codes, which are anchored in a variety of reference documents, and ACS codes, which are unique to ACS task elements. It is thus not possible to provide a cross-reference, but instructors and evaluators can still benefit from the ACS coding system. Here's how:

- Use the Learning Statement Code Reference Guide to associate the missed knowledge PLT code(s) on the Airman Knowledge Test Report with a subject area. For example:
    - PLT003 Calculate aircraft performance – CG
- Perform a word search in the ACS, and use the results to retrain/retest the applicant's knowledge in the context of specific Tasks.

I. Preflight Preparation

Task	*Task F. Performance and Limitations*
References	FAA-H-8083-1, FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with operating an aircraft safely within the parameters of its performance capabilities and limitations.
Knowledge	The applicant demonstrates understanding of:
PA.I.F.K1	Elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance.
PA.I.F.K2	Factors affecting performance to include:
PA.I.F.K2a	a. Atmospheric conditions
PA.I.F.K2b	b. Pilot technique
PA.I.F.K2c	c. Aircraft condition
PA.I.F.K2d	d. Airport environment
PA.I.F.K2e	e. Loading
PA.I.F.K2f	f. Weight and balance
PA.I.F.K3	Aerodynamics.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.I.F.R1	Inaccurate use of manufacturer's performance charts, tables and data.
PA.I.F.R2	Exceeding aircraft limitations.
PA.I.F.R3	Possible differences between actual aircraft performance and published aircraft performance data.
Skills	The applicant demonstrates the ability to:
PA.I.F.S1	Compute the weight and balance, correct out-of-center of gravity (CG) loading errors and determine if the weight and balance remains within limits during all phases of flight.
PA.I.F.S2	Demonstrate use of the appropriate aircraft manufacturer's approved performance charts, tables and data.

What's Next for the ACS?

In development:

Airline Transport Pilot (Airplane)

Aircraft Mechanic Certificate with Airframe and/or Powerplant ratings

Instructor (Airplane)

FAA & ACS Working Group members will jointly determine priority for development of ACS in additional categories/classes and certificates/ratings.

Thanks to Aviation Community Partners!

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Polk State College
Redbird Simulations
RACCA
Robert Stewart, CFI
Savvy Aircraft Maintenance
Satcom Direct (Mariellen Couppee)
SAFE
Sportys Academy
UAA
UND

Resources

- **Airman Testing Web Page**
  - http://www.faa.gov/training_testing/testing/
  - http://www.faa.gov/training_testing/testing/acs/
- **FAASafety.gov – ALC-449***
  - www.faasafety.gov
- **ACS Focus Team**
  - 9-AVS-ACS-Focus-Team@FAA.gov
- **Safety Alert for Operators – 17009**
  - https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/