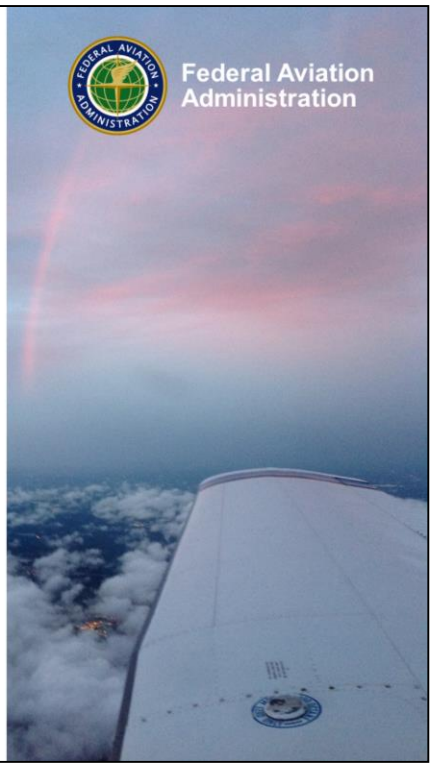
Airman Certification Standards

What's New and What's Next?

Presented to: Applicants, Instructors, Evaluators
By: Federal Aviation Administration
Date: Autumn/Winter 2017



- Welcome! Last June, the FAA replaced the Practical Test Standards for the Private Pilot Airplane certificate and the Instrument-Airplane rating with the corresponding Airman Certification Standards, or ACS.

- Revised versions of the ACS for the Private Pilot Airplane certificate and the Instrument Airplane rating, along with the first version of the ACS for the Commercial Pilot Airplane certificate, are in effect as of June 12, 2017.

- This presentation offers a recap of the ACS for those who haven't used it yet, and then it introduces and explains some of the key changes.

Overview – ACS Changes

- Recap – what, why, 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

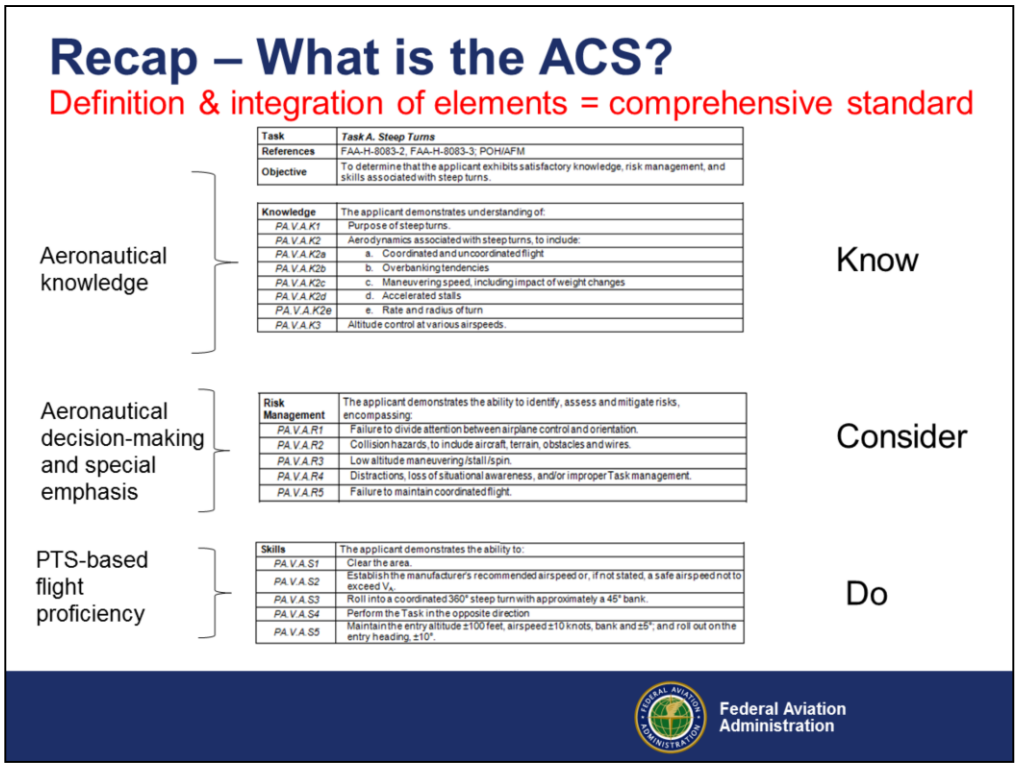
- Here are the topics we'll cover.

Recap - What is the ACS?

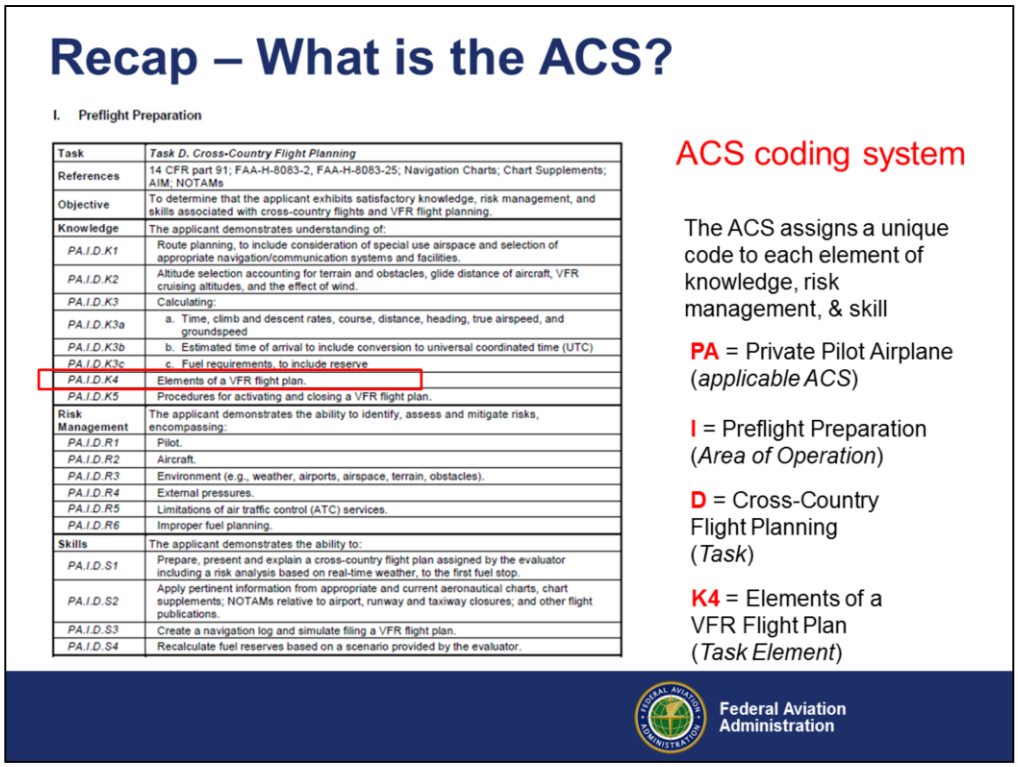
- **A**irman **C**ertification **S**tandards
  - "Enhanced" version of the Practical Test Standards (PTS) – ACS replaces the PTS
  - Adds task-specific knowledge and risk management elements to each PTS Area of Operation/Task
  - Result:
    - Integrated presentation of specific knowledge, risk management, and skill elements for each Task
    - Single source set of standards for both knowledge exam and the practical test

Federal Aviation Administration

- Here's a quick review.
- The ACS is an enhanced version of the PTS. The PTS-to-ACS transition started on June 15, 2016.
- The ACS adds task-specific knowledge and risk management elements to each PTS Area of Operation/Task. The result is an integrated presentation of specific knowledge, risk management, and skill elements for each Task.
- In summary, then, the ACS provides a single-source set of standards for both the knowledge exam and the practical test.

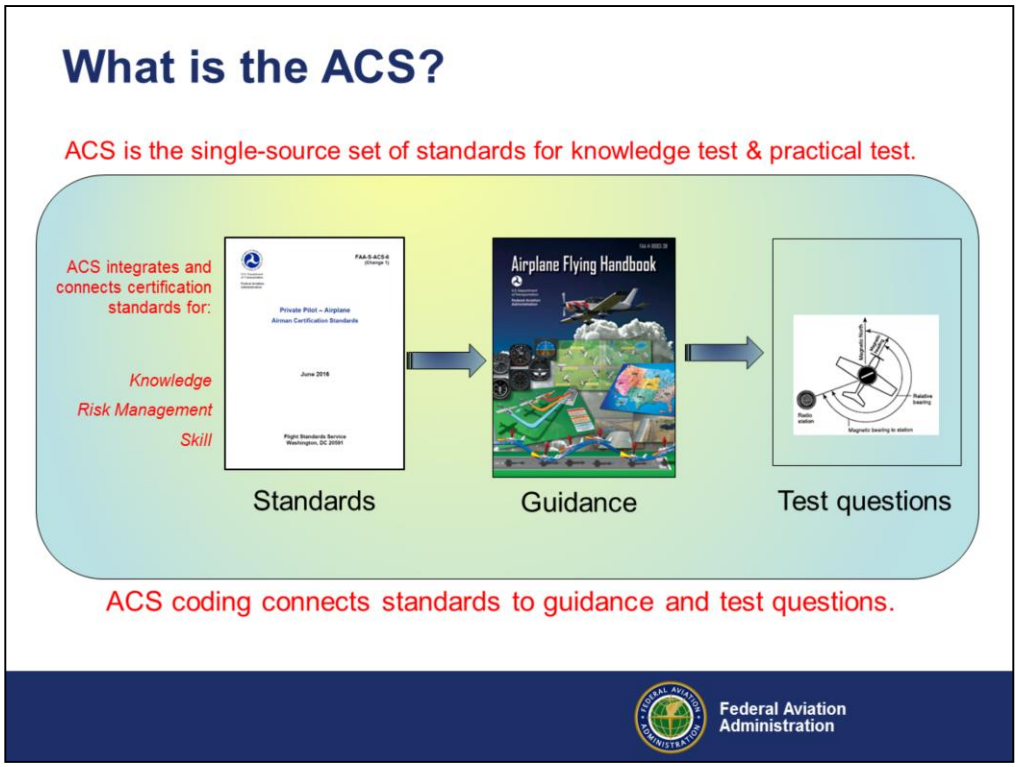


- The integrated format of the ACS has a number of benefits.
    - It clearly tells applicants, instructors, and evaluators what an airman must KNOW, CONSIDER, and DO to pass the knowledge test and the practical test for an airman certificate or rating.
    - It shows how the required knowledge, risk management, and skill elements for each Area of Operation/Task are connected.
    - It defines expectations and behaviors for risk management and connects them to specific Tasks.
    - It puts the “special emphasis” items from the PTS in the right context.
- The ACS approach enhances safety by making tests meaningful and relevant to actual operations and contributes to standardization in teaching and testing these concepts.



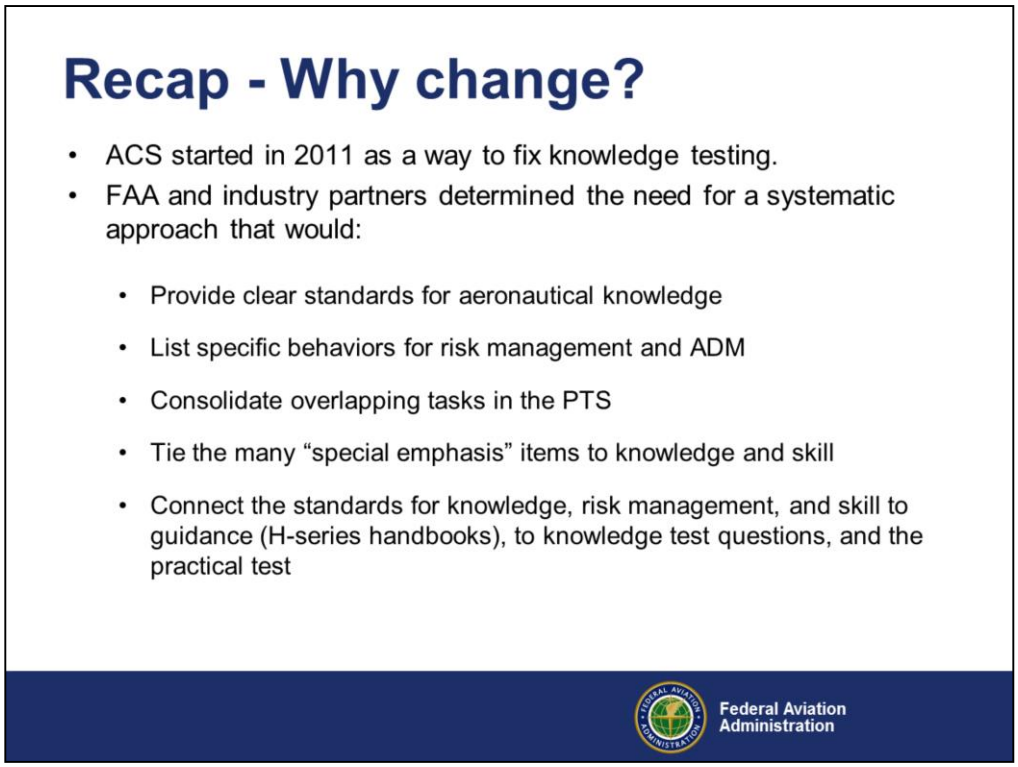
- One of the strongest tools that the industry team developed for the Airman Certification Standards framework is a coding system.
- The ACS assigns a unique code to each element of knowledge, risk management and skill.
- Let's take a look at what PA.I.D.K4 means:

  - **PA** = Private Pilot Airplane (*defines applicable ACS*)
  - **I** = Preflight Preparation (*defines Area of Operation*)
  - **D** = Cross-Country Flight Planning (*defines Task*)
  - **K4** = Elements of a VFR Flight Plan (*defines element*)



- As we mentioned already, the ACS is the single-source set of standards for both the knowledge exam and the practical test.
- The ACS coding system provides the “thread” that links standards to guidance and test questions, and keeps them aligned in the future.
- Later on, ACS codes will replace the Learning Statement Codes now shown on the Airman Knowledge Test Report.
- Already, though, the industry team has used the ACS coding to help ensure that handbooks are aligned with the standards as defined with the ACS. The FAA is incorporating industry recommendations for a number of these documents.
- Also, the FAA has already used the ACS coding system to revise and align all private pilot airplane, commercial pilot airplane, and instrument-airplane rating knowledge test questions to the knowledge, skill, and risk management elements in the corresponding ACS.

.



- Just to review why we made this change:
- ACS development started in 2011 as a way to fix knowledge testing, which was criticized for being out of step with today's operating environment.
- The FAA asked for help from the aviation training industry experts whose names you will see later in this presentation.
- They recommended a systematic approach to the overall airman certification system to achieve the goals you see here:
    - Provide clear standards for aeronautical knowledge
    - Make sure that knowledge reflects things airmen really need to know to operate safely.
    - List specific, observable behaviors for risk management and aeronautical decision-making.
    - Consolidate overlapping Tasks in the PTS.
    - Tie "special emphasis" items to knowledge and skill.
    - Connect the standards for knowledge, risk management, and skill to FAA handbooks, to knowledge test questions, and to the practical test.

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).

Federal Aviation Administration

- Industry participation is a very important point that we want to emphasize on this slide.
- The ACS reflects a great deal of input from industry experts, and from the public.
- The FAA has now used three groups of industry experts to develop, refine, and prototype the ACS.
- On behalf of industry working groups, the FAA twice established public dockets to receive public feedback on early ACS drafts.
- The working groups used those comments to refine the ACS, and also to develop a set of Frequently Asked Questions for the FAA website's Airman Testing page.
- With help from FAA and industry teams in Orlando and Seattle, we also conducted prototype testing of the Private Pilot Airplane and Instrument Airplane rating ACS before we introduced them in June 2016.

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.
- The FAA has published these documents to the FAA website's Airman Testing web page.

Federal Aviation Administration

- Now let's talk about what's new.
- This release includes the first version of ACS for Commercial Pilot – Airplane, which replaces the corresponding PTS.
- It also includes the first updates to the ACS for the Private Pilot Airplane certificate and the Instrument-Airplane Rating. These updated versions:
  - Incorporate corrections and changes suggested by stakeholders
  - Streamline the presentation by consolidating certain task elements
  - Standardize the phrasing and sequence of certain task elements
- There are also modifications to Slow Flight and Stalls Area of Operation in Private and Commercial Airplane ACS, which we will explain shortly.
- The effective date for all three documents is 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)]

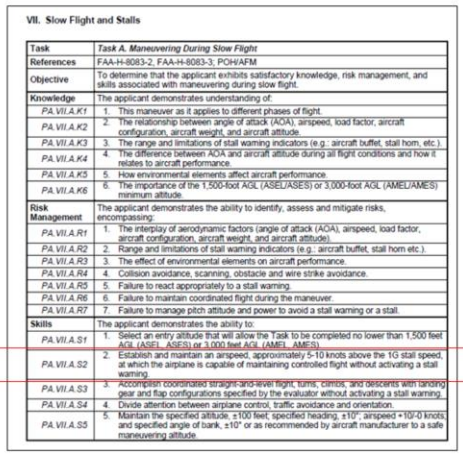
Task A: Maneuvering During Slow Flight (ASEL and ASES)

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



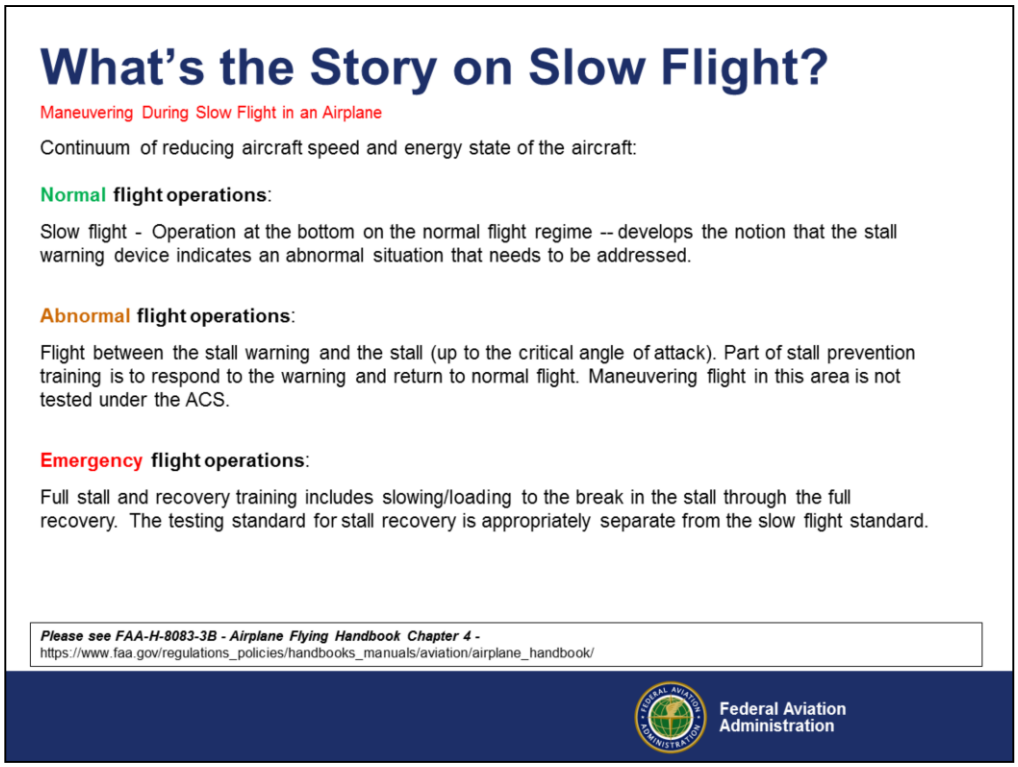
VII. Slow Flight and Stalls

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 attitude.

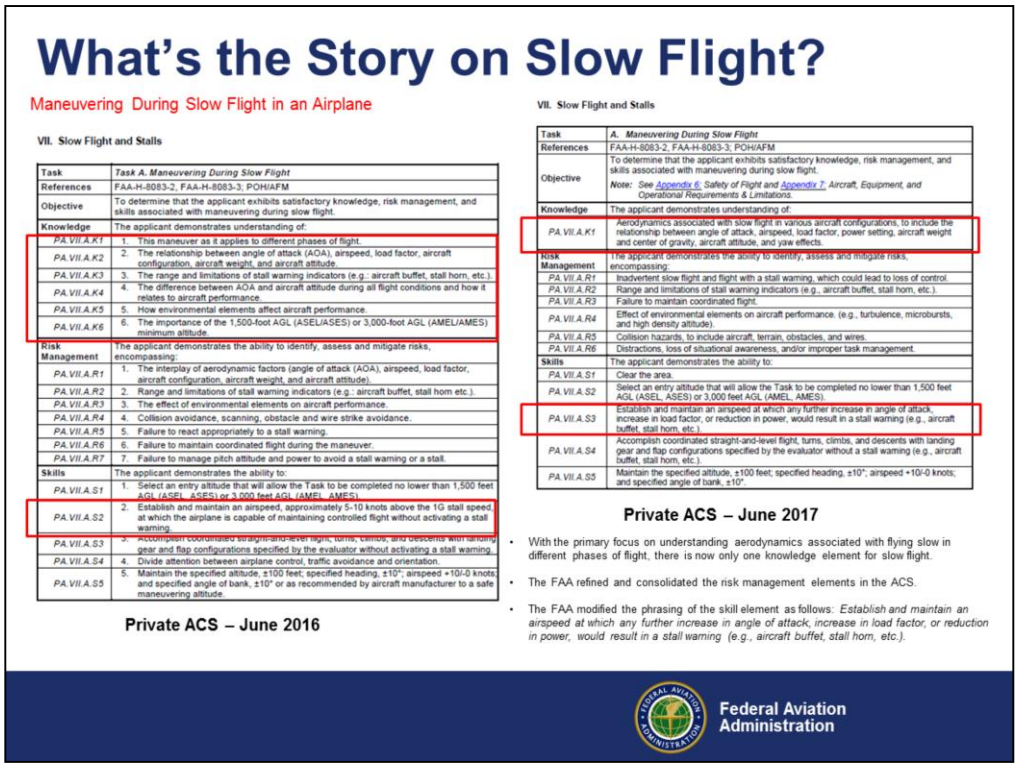
Private ACS – June 2016

Federal Aviation Administration

- Now let's talk about slow flight and stalls.
- When we introduced the Private Pilot Airplane ACS in June 2016, the FAA revised the slow flight evaluation standard to reflect maneuvering without a stall warning.
- In SAFO 16010, the FAA explained this change as one approach to addressing loss of control accidents in general aviation.
- SAFO 16010 also emphasized that a pilot is still expected to "know and understand the aerodynamics behind how the airplane performs from the time the stall warning is activated to reaching a full stall."
- SAFO 17009, which replaces SAFO 16010, expands on this discussion.



- Before we look at the specific changes, let's look at the big picture.
- This slide summarizes the FAA's approach to the overall Slow Flight and Stalls Area of Operation.
- It provides a conceptual framework for understanding how these elements relate to each other, and to real-world flight operations.
- In the continuum of reducing aircraft speed and energy state of the aircraft, slow flight is part of normal flight operations, and includes the speeds a pilot might use in the approach and landing sequence.
- Flight between the stall warning and the actual stall moves into abnormal flight operations. Part of stall prevention training is to respond to the warning and return to normal flight. The ACS does not test maneuvering flight in this area.
- An unintentional stall constitutes 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.



- Now for the details.
- In response to community concerns, the FAA reviewed the entire Slow Flight and Stalls Area of Operation.
- In consultation with the community, the FAA revised some of the slow flight and stall task evaluation standards in the private pilot-airplane and commercial pilot-airplane ACS.
    - 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.
    - The FAA modified the phrasing of the skill element to say that the applicant should: *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.).*

- This modification is consistent with the guidance published in Advisory Circular 120-111, Upset Prevention and Recovery Training, and the revised Airplane Flying Handbook (AFH), FAA-H-8083-3.

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 attitude.
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 attitude, heading and airspeed specified by the examiner.

Private ACS – June 2016

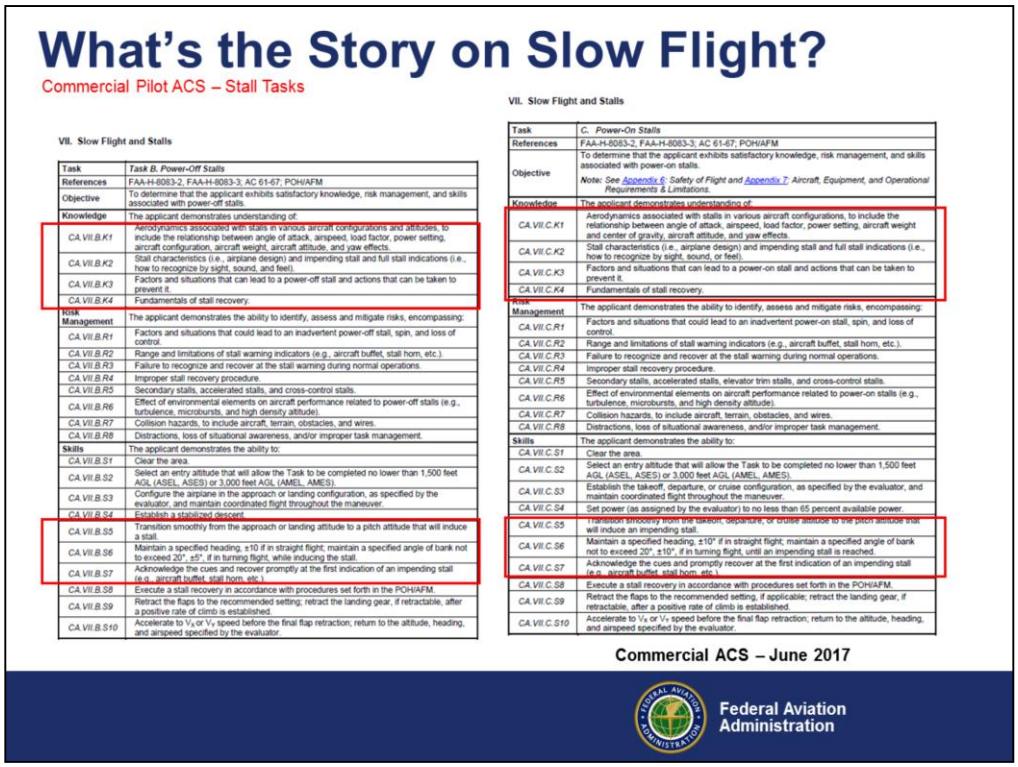
VII. Slow Flight and Stalls

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.	

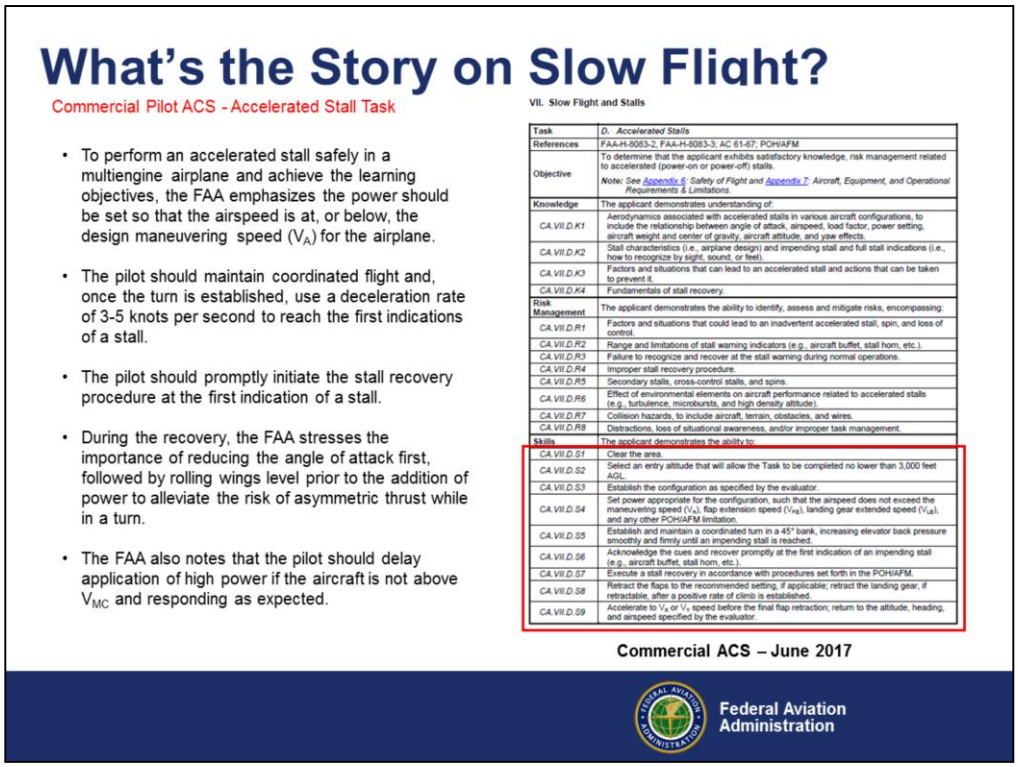
Private ACS – June 2017

Federal Aviation Administration

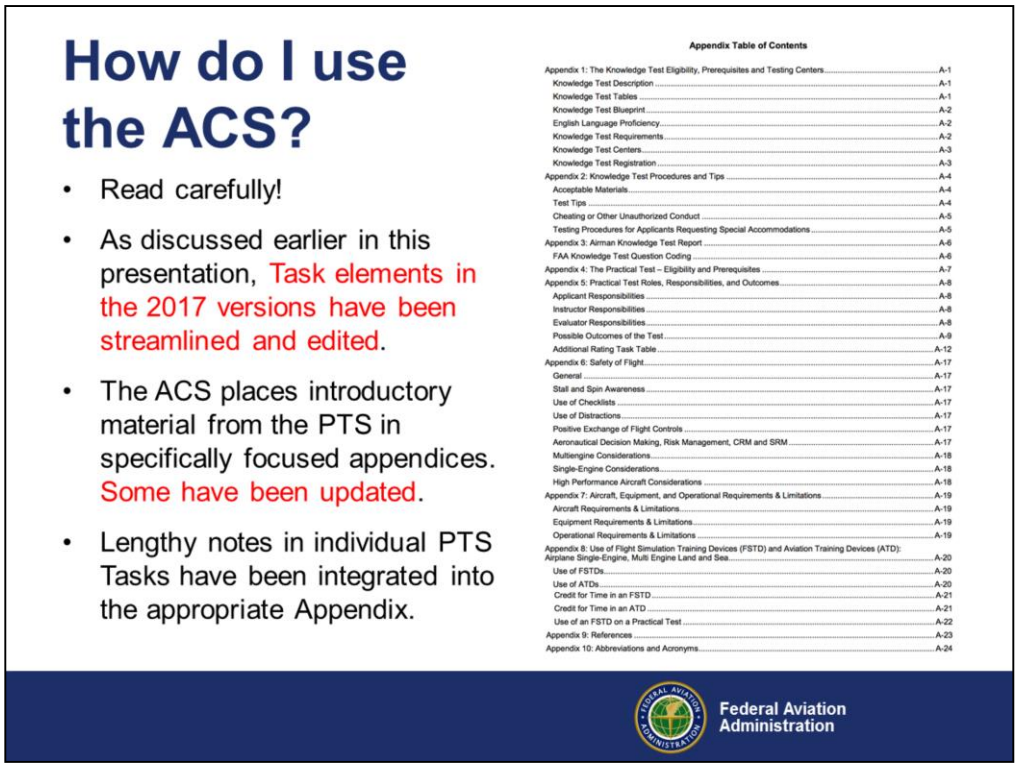
- Here's a look at changes to the Power-Off Stall Task in the Private Pilot Airplane ACS.
- This Task encompass the period of time from the stall warning to the stall.
- As with the slow flight Task, the FAA has made changes to the Stall Task knowledge, risk management, and skill elements.
- To evaluate a pilot's ability to recognize the airplane cues for an impending stall and a full stall, the FAA has added a requirement for the applicant to acknowledge the initial indication of an impending stall. The applicant could meet this requirement by simply stating "stall warning" or "buffet."



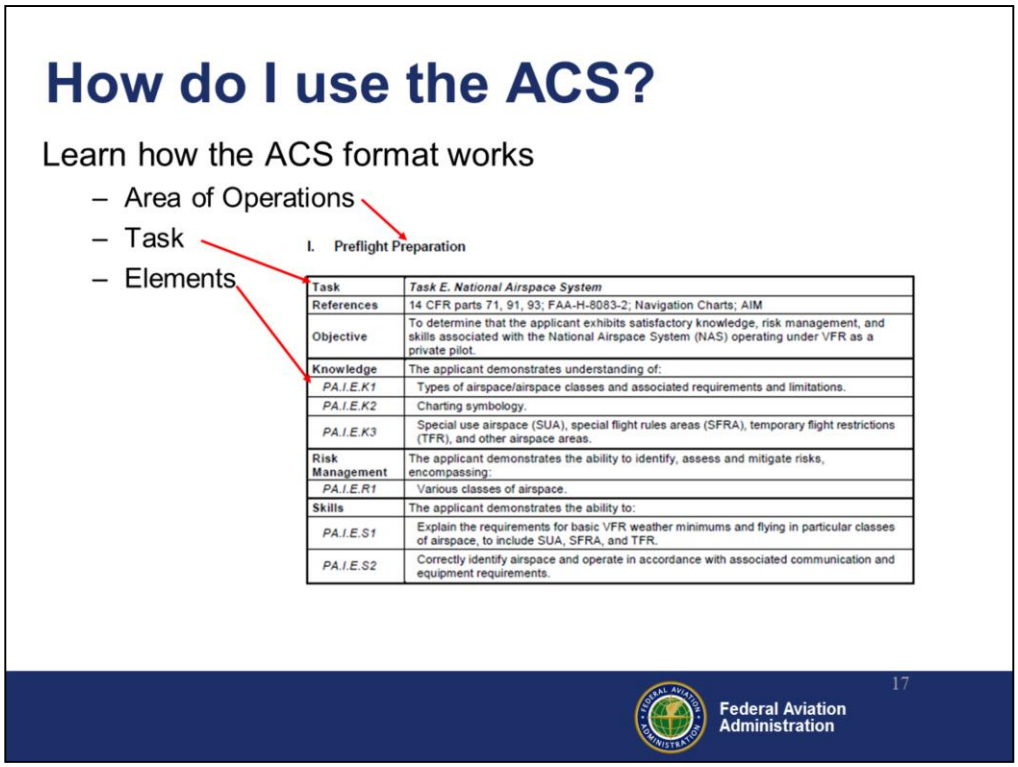
- In the Commercial Pilot Airplane ACS, the FAA maintained the requirement for stall recovery procedures to be executed at the first indication of an impending stall (e.g., buffet, stall horn, etc.).
- However, we modified the skill element to require the applicant to acknowledge the impending stall cues.



- Let's also take a look at the treatment of the Accelerated Stalls Task in the Commercial Pilot – Airplane ACS.
- Accident history shows that accelerated stalls occur, and pilots fail to recover from them.
- The FAA added this task to the Commercial Pilot – Airplane PTS in 2012 and required it to be performed in single-engine and multiengine airplanes.
- In response to safety concerns about performing accelerated stalls in multiengine airplanes on the practical test, the FAA reviewed the learning objectives, accelerated stall aerodynamics in multiengine airplanes, 14 CFR part 23 airplane certification standards, and insight from FAA flight test engineers.
- We determined that the maneuver can be performed safely in a multiengine airplane, so the FAA retained this task in the Commercial Pilot – Airplane ACS.
- The slide shows how the FAA expects the applicant to perform the Accelerated Stall Task on the practical test.



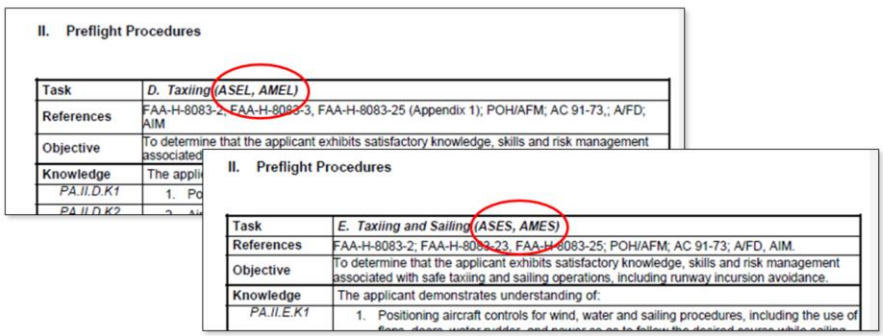
- Now let's review tips for using the ACS.
- As you may have seen with the original ACS documents, the ACS improves the presentation of important information.
    - Often-overlooked introductory material in the PTS has been relocated to specifically focused appendices.
    - Roles, responsibilities, and expectations are clearly defined.
    - Lengthy notes in individual PTS Tasks have been integrated into the appropriate appendix.
- In the June 2017 versions, the FAA and industry partners have worked to better align appendix material across the ACS documents.



- Next we will review using the ACS.
- Just like the PTS, the ACS is divided into Areas of Operations, Tasks, and Elements.
- The FAA has updated the IACRA tables to match the ACS.

How do I use the ACS?

- A Task within an Area of Operation applies to all classes in the category – in this case, the airplane category – unless the Task title includes a limitation.



II. Preflight Procedures

Task	D. Taxiing (ASEL, AMEL)
References	FAA-H-8083-2; FAA-H-8083-3, FAA-H-8083-25 (Appendix 1); POH/AFM; AC 91-73,; A/FD; AIM
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated
Knowledge	The appli
PA.II.D.K1	1. Po

II. Preflight Procedures

Task	E. Taxiing and Sailing (ASES, AMES)
References	FAA-H-8083-2; FAA-H-8083-23, FAA-H-8083-25; POH/AFM; AC 91-73; A/FD, AIM.
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with safe taxiing and sailing operations, including runway incursion avoidance.
Knowledge	The applicant demonstrates understanding of:
PA.II.E.K1	1. Positioning aircraft controls for wind, water and sailing procedures, including the use of

- The evaluator's Plan of Action must include all Areas of Operation and Tasks that apply to the category and class of the aircraft brought to the test.

Federal Aviation Administration

18

- In the ACS, a Task within an Area of Operation applies to all classes in the category unless the Task title includes a limitation.
- As the example shows, a seaplane applicant would not be tested on Task D. Taxiing. Instead, this applicant would be tested on Task E, Taxiing and Sailing.
- Otherwise, an evaluator must include each Task in the Plan of Action. It is acceptable to combine Tasks when it makes sense to do so, as long as each required element is evaluated.

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.

Federal Aviation Administration 19

- Just to recap, the evaluator's written 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.
- As with the PTS, evaluators have the discretion to select additional elements if the knowledge test report or the applicant's response to questions indicates weakness in a given Task.

How do I use the ACS?

If the Task includes sub-elements, the evaluator may select an appropriate sub-element to assess.

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.

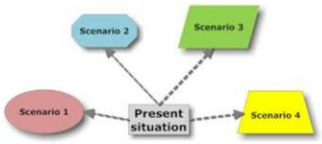
Federal Aviation Administration

20

- As this illustration shows, some ACS Tasks include sub-elements, which are coded with a lower-case alphabet letter.
- If the Task includes sub-elements, the evaluator may select an appropriate sub-element (e.g., weight & balance) to satisfy the requirement for at least one knowledge element.

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.

Federal Aviation Administration

21

- The 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.

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*)

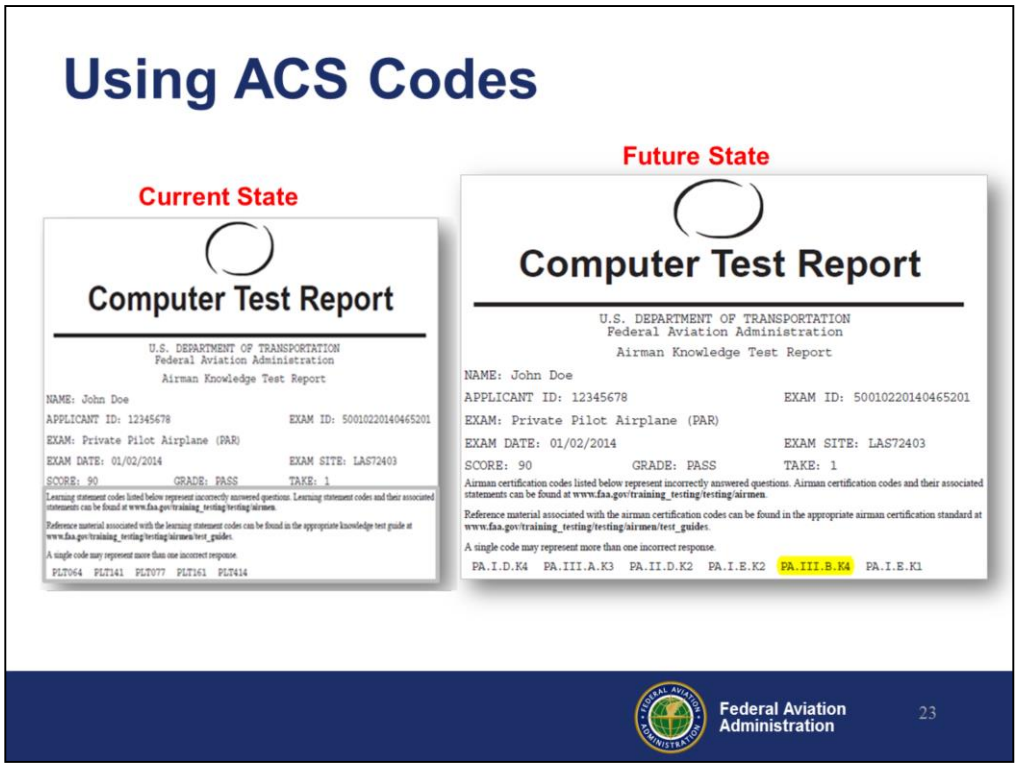
I = Preflight Preparation (*Area of Operation*)

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

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

Federal Aviation Administration

- As mentioned on an earlier slide, one of the strongest tools that the industry team developed for the Airman Certification Standards framework is a coding system.
- The ACS assigns a unique code to each element of knowledge, risk management and skill.

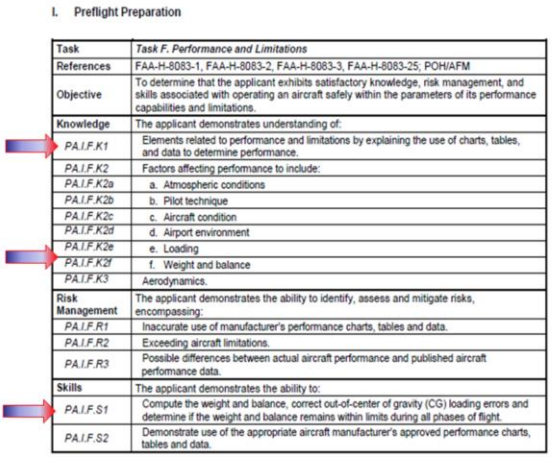


- The FAA is already using the ACS codes to ensure that the standards for knowledge, risk management, and skill are aligned with guidance material and test questions.
- That means that all active knowledge test questions for the private pilot airplane, the commercial pilot airplane, and the instrument-airplane rating exams have been aligned with the corresponding ACS.
- The FAA's current knowledge test management system does not have the capability to print ACS codes. For now, you will continue to see Learning Statement Codes on the Airman Knowledge Test Report.
- As we will explain on the next slide, though, you can still use the ACS codes to make retraining and retesting of missed knowledge test items more efficient.

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.

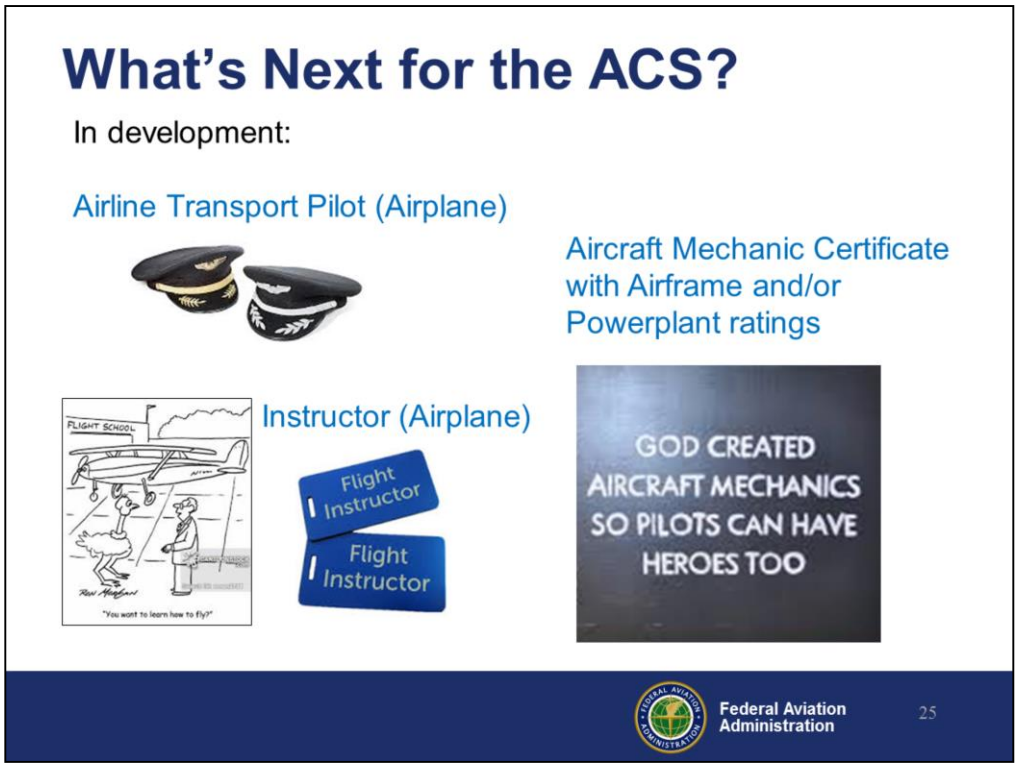


I. Preflight Preparation

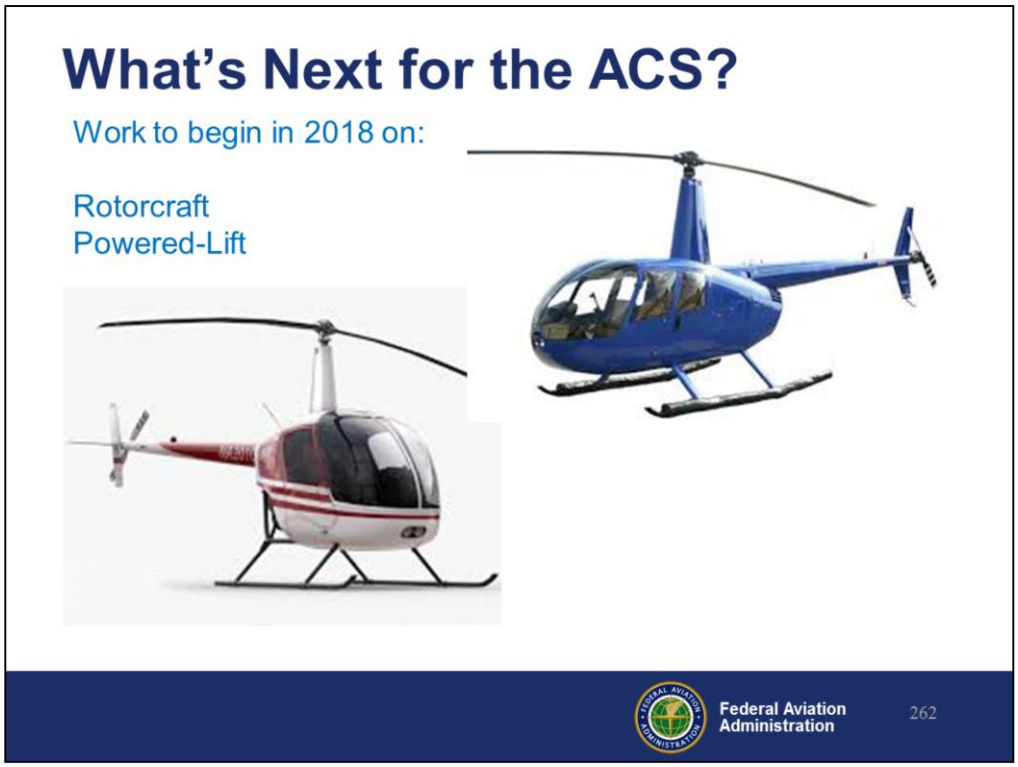
Task	*Task F. Performance and Limitations*
References	FAA-H-8083-1, FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with operating an aircraft safely within the parameters of its performance 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.

Federal Aviation Administration

- As you probably know, there are a lot of Learning Statement Codes. Because they are linked to references, they are difficult to manage and apply in a consistent way.
- By contrast, each ACS code is tied to a unique Task Element in the standard itself.
- Because of this difference, there is no one-to-one correlation between the Learning Statement Codes and the ACS codes.
- As you heard on a previous slide, though, all active knowledge test questions for the private pilot airplane, the commercial pilot airplane, and the instrument-airplane rating knowledge tests have been aligned with the corresponding ACS.
- As the example on this slide shows, that means that applicants, instructors, and evaluators can look up the Learning Statement Codes listed on the Airman Knowledge Test Report, and use the subject area to do two things:
  - Narrow the scope of material for retraining and retesting
  - Retrain and evaluate that material in the context of the appropriate Areas of Operation and Tasks.

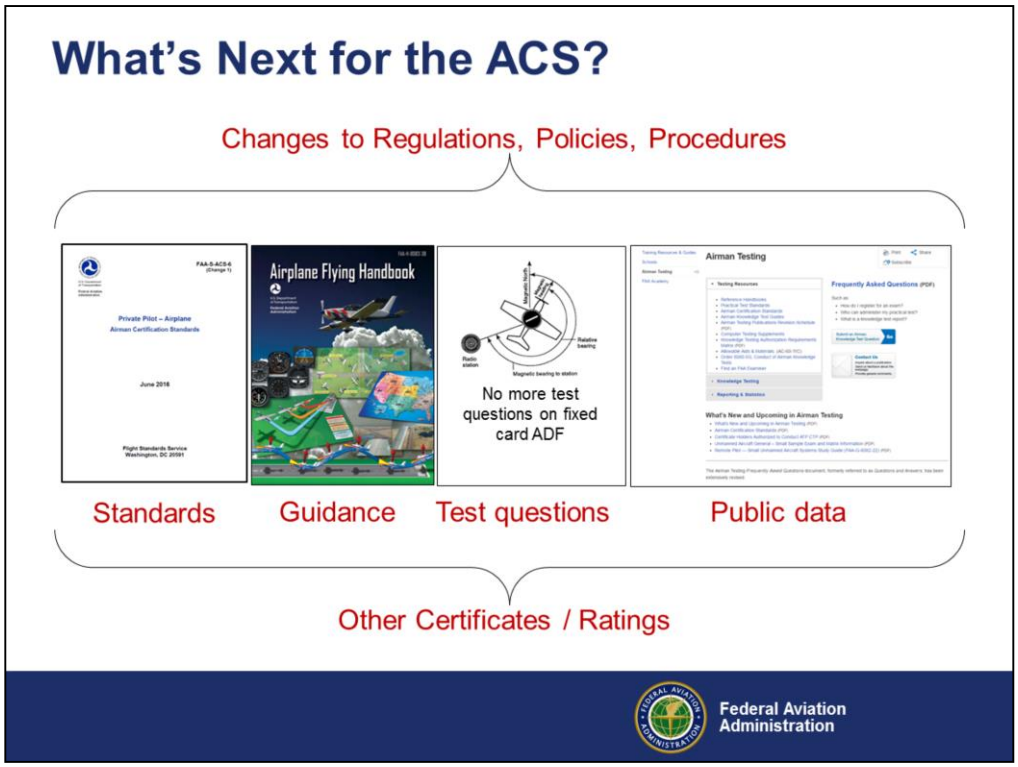


- So what's next?
- The FAA and its industry partners on the ACS Working Group are still developing Airman Certification Standards for the Airline Transport Pilot (airplane) and the Instructor (airplane) certificates.
- In 2016, we also started work on an ACS for the Aircraft Mechanic Certificate with Airframe and/or Powerplant ratings.
- As this work progresses, we will be in a position to use the foundational ACS documents as the template for expansion to other certificates and ratings.



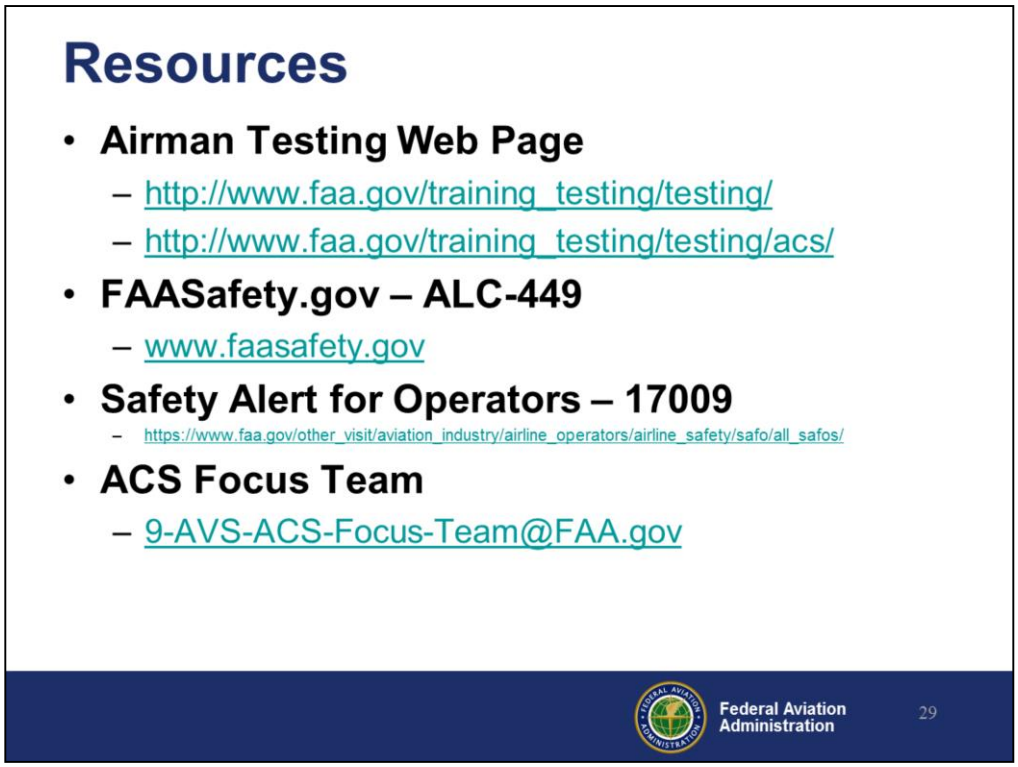
Specifically, we expect to begin work in 2018 on the ACS for:

Rotorcraft
Powered-Lift



- Also in the "what's next" department is how the FAA is using the ACS approach to ensure that changes are systematically incorporated not just in test questions, but also in the standards, handbooks and other guidance material, and in public data on the FAA website.
- For example, the FAA is using the systematic ACS approach to ensure that future test questions on things like BasicMed and graphical weather forecasts are appropriately supported by standards, guidance, and public data.

- Before we wrap up, it is very important to recognize and thank all those who have worked so hard on the ACS framework.
- This slide lists the individuals and organizations in the aviation community who have contributed to the development of the ACS since this project started in 2011.
- Please join us in thanking these dedicated members of the community for their enormous contributions.



- Let's close with a look at some of the resources the ACS team has created to support use of these documents.
- The FAA website's Airman Testing web page is the go-to source. It includes:
    - The ACS for Private Pilot Airplane (PAR) certificate, the Commercial Pilot Airplane (CAX) certificate, and Instrument-Airplane Rating (IRA)
    - ACS Frequently Asked Questions
    - An ACS Brochure
    - An ACS PowerPoint presentation with notes
    - Sample private, commercial, and instrument knowledge tests
    - A What's New in Airman Testing document that includes a list of subjects deleted from airman knowledge tests.
- The FAA established the ACS Focus Team as the one-stop-shop for answering any questions not addressed on the Airman Testing web page. Please contact the ACS Focus Team directly if you need help. There is no need, and no requirement, to go through anyone else! Just send an email to the ACS Focus Team address and you will get a response from us.
- We hope you enjoy using the Airman Certification Standards, and we welcome your feedback and suggestions for continued improvement.