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.
Here are the topics we'll cover.
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, & skill.

- **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.
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 to the practical test

- 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.
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 docketes 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.
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.
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.
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.
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.

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.

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.
• 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.

  – 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.
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 to assess.

<table>
<thead>
<tr>
<th>Task</th>
<th>Task F: Performance and Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>The applicant demonstrates understanding of:</td>
</tr>
<tr>
<td>PA.I.F.1</td>
<td>Elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance.</td>
</tr>
<tr>
<td>PA.I.F.2</td>
<td>Factors affecting performance to include:</td>
</tr>
<tr>
<td>PA.I.F.2a</td>
<td>a. Atmospheric conditions</td>
</tr>
<tr>
<td>PA.I.F.2b</td>
<td>b. Pilot technique</td>
</tr>
<tr>
<td>PA.I.F.2c</td>
<td>c. Aircraft condition</td>
</tr>
<tr>
<td>PA.I.F.2d</td>
<td>d. Airport environment</td>
</tr>
<tr>
<td>PA.I.F.2e</td>
<td>e. Loading</td>
</tr>
<tr>
<td>PA.I.F.2f</td>
<td>f. Weight and balance</td>
</tr>
<tr>
<td>PA.I.F.3</td>
<td>Aerodynamics</td>
</tr>
<tr>
<td>Risk Management</td>
<td>The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:</td>
</tr>
<tr>
<td>PA.I.F.3</td>
<td>a. Inaccurate use of manufacturer’s performance charts, tables and data.</td>
</tr>
<tr>
<td>PA.I.F.4</td>
<td>Exceeding aircraft limitations.</td>
</tr>
<tr>
<td>PA.I.F.5</td>
<td>Possible differences between actual aircraft performance and published aircraft performance data.</td>
</tr>
<tr>
<td>Skills</td>
<td>The applicant demonstrates the ability to:</td>
</tr>
<tr>
<td>PA.I.F.5</td>
<td>a. 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.</td>
</tr>
<tr>
<td>PA.I.F.52</td>
<td>Demonstrate use of the appropriate aircraft manufacturer’s approved performance charts, tables and data.</td>
</tr>
</tbody>
</table>
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.*

- 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.
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.

- **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)
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.
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.