

Update on the ACS

Airman Certification Standards

Winter 2016



Welcome to this introduction to the Airman Certification Standards, or ACS, concept. This presentation has two goals.

- First is to provide basic information on a new, industry-developed Airman Certification Standards framework that will replace the Practical Test Standards.
- Second is to offer an opportunity to provide comments and ask questions as we approach initial implementation. At the end of this presentation is a slide listing FAA Headquarters contact information and additional sources of information on this project.

What is the ACS?

- **Airman Certification Standards**

- “Enhanced” version of the PTS
- Adds task-specific knowledge and risk management elements to each PTS Area of Operation/Task.
- Result = integrated presentation of specific knowledge, skills, and risk management elements and performance metrics for each Task.



- The ACS is essentially an “enhanced” version of the PTS.
- It adds task-specific knowledge and risk management elements to each PTS Area of Operation and Task.
- The result is a holistic, integrated presentation of specific knowledge, skills, and risk management elements and performance metrics for each Area of Operation and Task.

What is the ACS?

Private Pilot – Airplane Airman Certification Standards
Airplane—Single Engine, Multi Engine Land and Sea Areas of Operation

V. Performance Maneuvers

ACS	PTS	Task	A. Steep Turns
		References	FAA-H-8083-2, FAA-H-8083-3, POH/AFM
		Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with steep turns.
		Knowledge	The applicant demonstrates understanding of:
		PA.V.A.K1	1. Coordinated flight.
		PA.V.A.K2	2. Attitude control at various airspeeds.
		PA.V.A.K3	3. Maneuvering speed, including changes in weight.
		PA.V.A.K4	4. Controlling rate and radius of turn.
		PA.V.A.K5	5. Accelerated stalls.
		PA.V.A.K6	6. Overbanking tendencies.
		PA.V.A.K7	7. Use of trim in a turn.
		PA.V.A.K8	8. Aerodynamics associated with steep turns.
		PA.V.A.K9	9. Aerobatic requirements and limitations.
		Skills	The applicant demonstrates the ability to:
		PA.V.A.S1	1. Establish the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_x .
		PA.V.A.S2	2. Rolls into a coordinated 360° steep turn with at least a 45° bank, followed immediately by a 360° steep turn in the opposite direction.
		PA.V.A.S3	3. Perform the task in the opposite direction, as specified by the evaluator.
		PA.V.A.S4	4. Maintain the entry altitude, ±100 feet, airspeed, ±10 knots, bank, and ±5°, and roll out on the entry heading, ±10°.
		Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
		PA.V.A.R1	1. Dividing attention between airplane control and orientation.
PA.V.A.R2	2. Task management.		
PA.V.A.R3	3. Energy management.		
PA.V.A.R4	4. Stall/spin awareness.		
PA.V.A.R5	5. Situational awareness.		
PA.V.A.R6	6. Collision avoidance. (Clearing the area).		
PA.V.A.R7	7. Importance of coordinated flight.		

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Here's what it looks like on the current draft Airman Certification Standards document for Private Pilot Airplane.

- The “skills” section of the ACS covers the flight proficiency performance metrics in today's PTS.
- For each PTS Area of Operation/Task, the ACS lists the elements of aeronautical knowledge that support that skill.
- In addition, for each PTS Area of Operation/Task, the ACS lists the risk management elements or behaviors associated with it.

What is the ACS?

V. Performance Maneuvers

Aeronautical knowledge	Task	A. Steep Turns	Know
	References	FAA-H-8083-2, FAA-H-8083-3, POH/AFM	
	Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with steep turns.	
	Knowledge	The applicant demonstrates understanding of:	
	PA.V.A.K1	1. Coordinated flight.	
	PA.V.A.K2	2. Altitude control at various airspeeds.	
	PA.V.A.K3	3. Maneuvering speed, including changes in weight.	
	PA.V.A.K4	4. Controlling rate and radius of turn.	
	PA.V.A.K5	5. Accelerated stalls.	
	PA.V.A.K6	6. Overbanking tendencies.	
Aeronautical decision-making and special emphasis	Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	Consider
	PA.V.A.R1	1. Dividing attention between airplane control and orientation.	
	PA.V.A.R2	2. Task management.	
	PA.V.A.R3	3. Energy management.	
	PA.V.A.R4	4. Stall/spin awareness.	
	PA.V.A.R5	5. Situational awareness.	
	PA.V.A.R6	6. Collision avoidance. (Clearing the area).	
PA.V.A.R7	7. Importance of coordinated flight.		
Flight proficiency	Skills	The applicant demonstrates the ability to:	Do
	PA.V.A.S1	1. Establish the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_{A} .	
	PA.V.A.S2	2. Rolls into a coordinated 360° steep turn with at least a 45° bank, followed immediately by a 360° steep turn in the opposite direction.	
	PA.V.A.S3	3. Perform the task in the opposite direction, as specified by the evaluator.	
	PA.V.A.S4	4. Maintain the entry altitude, ±100 feet, airspeed, ±10 knots, bank, and 55°, and roll out on the entry heading, ±10°.	

- The integrated ACS presentation helps applicants, instructors, and evaluators understand how knowledge, risk management, and skills are connected for each Area of Operation/Task.
- Another benefit comes from defining some of the terms and concepts now presented in a list of “special emphasis” items in the PTS introduction, and placing them in the right context.
- The presentation of risk management enhances safety, and it can also contribute to much greater standardization in teaching and testing these concepts. This outcome benefits applicants, instructors, and evaluators.
- To better align with the logical sequence of training and testing, the ACS Working Group and the FAA team have changed the presentation order of the three elements from earlier versions of the ACS.
- As shown here, the ACS will show what the applicant must *know*, *consider*, and then *do* to qualify for a given airman certificate or rating.

What is the ACS?

ACS includes unique codes for each element of knowledge, skill, and risk management.

V. Performance Maneuvers

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PA.V.A.K1	1. Coordinated flight.
PA.V.A.K2	2. Attitude control at various airspeeds.
PA.V.A.K3	3. Maneuvering speed, including changes in weight.
PA.V.A.K4	4. Controlling rate and radius of turn.
PA.V.A.K5	5. Accelerated stalls.
PA.V.A.K6	6. Overbanking tendencies.
PA.V.A.K7	7. Use of trim in a turn.
PA.V.A.K8	8. Aerodynamics associated with steep turns.
PA.V.A.K9	9. Aerobic requirements and limitations.
Skills	The applicant demonstrates the ability to:
PA.V.A.S1	1. Establish the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_A .
PA.V.A.S2	2. Rolls into a coordinated 360° steep turn with at least a 45° bank, followed immediately by a 360° steep turn in the opposite direction.
PA.V.A.S3	3. Perform the task in the opposite direction, as specified by the evaluator.
PA.V.A.S4	4. Maintain the entry altitude, ±100 feet, airspeed, ±10 knots, bank, and ±5°, and roll out on the entry heading, ±10°.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.V.A.R1	1. Dividing attention between airplane control and orientation.
PA.V.A.R2	2. Task management.
PA.V.A.R3	3. Energy management.
PA.V.A.R4	4. Stall/spin awareness.
PA.V.A.R5	5. Situational awareness.
PA.V.A.R6	6. Collision avoidance. (Clearing the area).
PA.V.A.R7	7. Importance of coordinated flight.

PA = Private Pilot Airplane (*defines applicable ACS*)

V = Performance Maneuvers (*defines Area of Operation*)

A = Steep Turns (*defines Task*)

K5 = Accelerated Stalls (*defines element*)



- One of the strongest tools that the industry team developed for the Airman Certification Standards framework is a new coding system.
- As you can see on the slide, the ACS assigns a unique and very intuitive code to each element of knowledge, skill, and risk management.
- Let's take a look at what PA.V.A.K5 means:
 - **PA** = Private Pilot Airplane (*defines applicable ACS*)
 - **V** = Performance Maneuvers (*defines Area of Operation*)
 - **A** = Steep Turns (*defines Task*)
 - **K5** = Accelerated Stalls (*defines element*)

What is the ACS?

- ACS codes replace Learning Statement Codes (LSCs).
- ACS codes are anchored in the *standard*, not in references like LSCs.
- ACS codes provide sharper, more focused feedback to applicants, instructors, and evaluators.
- ACS codes enable FAA to align standards to handbooks and test questions, to maintain that alignment, and to develop better test questions.

V. Performance Maneuvers

Task	A. Steep Turns
References	FAA-H-8083-2, FAA-H-8083-3, POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with steep turns.
Knowledge	The applicant demonstrates understanding of:
PA.V.A.K1	1. Coordinated flight.
PA.V.A.K2	2. Attitude control at various airspeeds.
PA.V.A.K3	3. Maneuvering speed, including changes in weight.
PA.V.A.K4	4. Controlling rate and radius of turn.
PA.V.A.K5	5. Accelerated stalls.
PA.V.A.K6	6. Overbanking tendencies.
PA.V.A.K7	7. Use of trim in a turn.
PA.V.A.K8	8. Aerodynamics associated with steep turns.
PA.V.A.K9	9. Aerobic requirements and limitations.
Skills	The applicant demonstrates the ability to:
PA.V.A.S1	1. Establish the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_{fe} .
PA.V.A.S2	2. Rolls into a coordinated 360° steep turn with at least a 45° bank, followed immediately by a 360° steep turn in the opposite direction.
PA.V.A.S3	3. Perform the task in the opposite direction, as specified by the evaluator.
PA.V.A.S4	4. Maintain the entry altitude, ± 100 feet, airspeed, ± 10 knots, bank, and $\pm 5^\circ$, and roll out on the entry heading, $\pm 10^\circ$.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.V.A.R1	1. Dividing attention between airplane control and orientation.
PA.V.A.R2	2. Task management.
PA.V.A.R3	3. Energy management.
PA.V.A.R4	4. Stall/spin awareness.
PA.V.A.R5	5. Situational awareness.
PA.V.A.R6	6. Collision avoidance. (Clearing the area).
PA.V.A.R7	7. Importance of coordinated flight.



- When the Airman Certification Standards approach is implemented, ACS codes will replace the Learning Statement Codes (LSCs) that are used on the airman test report right now. The ACS codes have several very strong advantages over the Learning Statement Codes.
- First, the ACS codes are anchored in the standard – not in handbooks and other reference documents, like today's Learning Statement Codes.
- Second, the ACS codes enable the FAA to align standards to handbooks and test questions, to maintain that alignment, and to develop better test questions.
- Third, ACS codes provide sharper, more focused feedback to applicants, instructors, and evaluators, thus enabling more effective retraining and retesting and making the FAA knowledge test a more useful component of the airman certification process.

Flight Plan - Waypoints

- What is the ACS?
- Why this approach?
- Who developed it?
- How is it better?
- What is the status?
- How do you know it will work?
- When does it take effect?
- How will I have to change?
- How can I learn more?



Let's talk next about the rationale for developing the ACS.

Why this approach?

- For each airman certificate or rating, 14 CFR lists required areas of *aeronautical knowledge* and *flight proficiency*.
 - FAA developed the PTS to provide practical test performance metrics for flight proficiency in each Area of Operation and Task.
 - In addition, each PTS now includes a lengthy list of largely undefined “special emphasis” areas.
 - There has never been a corresponding set of defined “KTS” (knowledge test standards) metrics for the aeronautical knowledge elements tested via “the written” exam.



- The ACS started as a way to improve knowledge testing.
- As you know, the regulations list required areas of *aeronautical knowledge* and *flight proficiency* for each pilot or instructor certificate and rating.
- Years ago, the FAA developed the Practical Test Standards (PTS) to provide practical test performance metrics for flight proficiency in each Area of Operation and Task.
- The PTS replaced the previous “flight test guides,” with the goal of ensuring a standardized approach to the practical test.
- The PTS is still a very solid and sound approach. Over time, though, the PTS has acquired a number of “barnacles” – things like overlapping or redundant tasks, and a long and growing list of largely undefined “special emphasis” items in the introductory material.
- There has never been a corresponding set of defined knowledge test standards – KTS -- metrics for the aeronautical knowledge elements tested via “the written” exam.

Why this approach?

- Lack of a “KTS” has allowed the accumulation of too many FAA knowledge test questions that are:
 - Out-of-date (e.g., lots of NDB, not much RNAV)
 - Overly complex (e.g., multiple interpolations required to calculate a two-knot difference in wind speed or landing distance within three feet (!))
 - Irrelevant (e.g., height of blowing sand)
 - Disconnected from “real” skills and knowledge required for safe operation in today’s NAS.



- The lack of a “KTS” to define and standardize aeronautical knowledge and risk management elements in the way that the PTS defines performance metrics for flight proficiency has created the situation we have today.
- The FAA knowledge test has been criticized for including too many questions that are:
 - Out-of-date (e.g., lots of NDB questions, but not many RNAV)
 - Overly complicated (e.g., questions requiring multiple interpolations to calculate very small values, such as a two-knot difference in wind speed or landing distance within three feet (!))
 - Irrelevant (e.g., questions on the height of blowing sand)
 - Disconnected from the “real” skills and knowledge required for safe operation in today’s National Airspace System (NAS).

Flight Plan - Waypoints

- What is the ACS?
- Why this approach?
- Who developed it?
- How is it better?
- What is the status?
- How do you know it will work?
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- How will I have to change?
- How can I learn more?



- We knew we needed to make improvements – and we knew we needed help from the aviation community.
- That leads to discussion of who developed the ACS.

Who developed it?

Phase I – 2011-2012:

- An ARC (Aviation Rulemaking Committee) developed the ACS concept and recommended that the FAA pursue it.

Phase II – 2012-2013:

- The FAA tasked the industry Aviation Rulemaking Advisory Council (ARAC) to develop the ACS concept through the Airman Testing Standards and Training Working Group.

Phase III – 2014-2016:

- The FAA tasked the ARAC to further advance the ACS concept through the Airman Certification System Working Group (ACS WG).



- The FAA used known, legally-sanctioned formats for getting stakeholder recommendations. There have been three industry groups so far:
- **Phase I – 2011-2012:** The FAA chartered the first industry stakeholder group in the form of an [Aviation Rulemaking Committee, or ARC](#).
 - The members of the Aviation Rulemaking Committee developed the Airman Certification Standards concept.
- **Phase II – 2012-2013:** The FAA asked the industry's Aviation Rulemaking Advisory Council – [ARAC](#) – for help in creating the ACS. ARAC formed the [Airman Testing Standards and Training Working Group \(ATST WG\)](#), which developed ACS documents for Private, Commercial, and Instructor certificates and the Instrument Rating. They also created a “baseline” proposal for an ATP ACS.
- **Phase III – 2014-2015:** The FAA asked [ARAC](#) to help us test and implement the ACS. ARAC formed the [Airman Certification System Working Group \(ACS WG\)](#) in March 2014. Ongoing tasks:
 - Refine & complete ACS for COM, ATP, and CFI certificates.
 - Help the FAA map standards to guidance (handbooks).
 - Prototype use of the ACS in selected locations.

Who developed it?

Current and Past Aviation Community Participants

Aircraft Owners & Pilots Association (AOPA)	Liberty University
Airlines for America	Mary Schu Aviation
Air Line Pilots Association	National Air Transportation Association
AnywhereEducation Inc.	National Association of Flight Instructors
Aviation Accreditation Bureau International	National Business Aviation Association
Aviation Research Training & Services	Oxford Flying Club
Aviation Supplies & Academics	Paul Alp, CFI
CAE	Polk State College
Cessna Pilot Centers	Redbird Simulations
Coalition of Airline Pilots	Regional Air Cargo Carriers Association
Embry-Riddle Aeronautical University	Robert Stewart, CFI
Flight Safety International	Satcom Direct
General Aviation Manufacturers Association	Society of Aviation and Flight Educators
Gleim	Sportys Academy
Florida Institute of Technology	University Aviation Association
Jeppesen	University of North Dakota
King Schools	



A number of very talented, very knowledgeable individuals and organizations have participated in the ACS effort over the past four years.

This slide lists the individuals and organizations who have participated in at least one of the three groups.

The industry participants include representatives from many sectors:

- Advocacy groups (AOPA has chaired the last two groups)
- Instructor groups (NAFI, SAFE)
- Academia
- Test prep providers
- Manufacturers
- Parts 61, 121, 141, 142 training providers
- Knowledgeable individuals

Flight Plan - Waypoints

- What is the ACS?
- Why this approach?
- Who developed it?
- **How is it better?**
- What is the status?
- How do you know it will work?
- When does it take effect?
- How will I have to change?
- How can I learn more?



We've already addressed some of the most obvious ways that the ACS improves the PTS, but now let's look at a few more.

How is it better?

By integrating knowledge and risk management elements with skill elements and a standards-based coding scheme, the ACS:

- Enables a holistic approach to standards, guidance, and testing.
- Provides better information and feedback to applicants, instructors, evaluators, and inspectors.
- Allows the FAA to develop better test questions that are clearly tied to need-to-know standards and supported by guidance (handbooks).
- Reduces subjectivity and increases system-wide standardization.
- Enhances safety by ensuring that Task elements are clearly defined and that standards, guidance and testing for airman certification all work together effectively.

Area of Operation	1. Preflight Preparation
Task	01. Cross-Country Flight Planning
Reference	14 CFR part 91, FAA-H-8083-2, FAA-H-8083-2B, Navigation Charts, AFD, AIM, NOTAMS
Objective	To determine time the applicant exhibits satisfactory knowledge, skills and risk management associated with cross-country flight and VFR flight planning.
Knowledge	1. The applicant demonstrates understanding of:
	1. Route planning, including consideration of special use airspace. PAI.D.K1
	2. Holding, enroute, coordinated area (ACE) flight planning. PAI.D.K2
	3. Computing and calculating time relative to time zones and EAT. PAI.D.K3
	4. Calculating time, rate, course, distance, heading, TAS and ground speed. PAI.D.K4
	5. Fuel planning. PAI.D.K5
	6. Altitude selection accounting for terrain and obstacles, glide distance of ground, VFR operating altitudes, and effect of wind. PAI.D.K6
	7. Conditions conducive to icing. PAI.D.K7
	8. Terminology found on VFR charts. PAI.D.K8
	9. Elements of a VFR flight plan. PAI.D.K9
	10. Procedures for activating and closing a VFR flight plan in controlled and non-controlled airspace. PAI.D.K10
11. Reported weather phenomena. PAI.D.K11	
Skills	The applicant demonstrates the ability to:
	1. Prepare a cross-country flight plan assigned by the evaluator including a risk analysis. PAI.D.S1
	2. Transfer knowledge used for one region to another region (given local climate, terrain, etc.). PAI.D.S2
	3. Update fuel planning/management fuel. PAI.D.S3
	4. Select appropriate routes, altitudes, and checkpoints. PAI.D.S4
	5. Recalculate fuel reserves based on a scenario provided by the evaluator. PAI.D.S5
	6. Create and file a VFR flight plan. PAI.D.S6
	7. Interpret departures, en route, arrival route with reference to proper charts. PAI.D.S7
	8. Explain or demonstrate diversion to alternate. PAI.D.S8
9. Apply pertinent information from AFD, NOTAMS relative to airport, runway and taxiway closures, and other flight publications. PAI.D.S9	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, incorporating:
	1. The pilot. PAI.D.R1
	2. The aircraft. PAI.D.R2
	3. The environment. PAI.D.R3
	4. External pressures. PAI.D.R4
	5. Lack of appropriate training when flight is planned in an area different from the pilot's local area, such as in mountains, high density airspace, or rural areas. PAI.D.R5
	6. Tendency to complete the flight in spite of adverse change in conditions. PAI.D.R6
	7. Appropriate VFR altitudes for the direction of flight. PAI.D.R7
	8. Limitations of AFD services. PAI.D.R8
	9. Consumption fuel reserves. PAI.D.R9
	10. A route involving significant environmental influences, such mountains, and large bodies of water. PAI.D.R10
	11. Flight in areas considered for landing or below personal minimums. PAI.D.R11
12. Recognition of assessed weather. PAI.D.R12	

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- By integrating knowledge and risk management elements with skill elements and a standards-based coding scheme, the ACS:
 - Clearly shows what an applicant must know, do, and consider to earn an airman certificate or rating.
 - Provides better feedback to applicants, instructors, evaluators, and inspectors on what the applicant may not understand in order to enable more focused retraining and retesting.
 - Allows the FAA to develop test questions that are clearly tied to standards and supported by guidance (handbooks).
 - Reduces subjectivity and increases system-wide standardization.
 - Through the standards-based coding, enhances safety by ensuring that standards, guidance and testing for airman certification all work together effectively.

How is it better?

Better Feedback →

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/airman.

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

A single code may represent more than one incorrect response.

PLT064 PLT141 PLT077 PLT161 PLT414 PKT163

Today's test report lists reference-based LSCs that are often very broad – creates an obstacle to effective remedial training and retesting.

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

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/airman.

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

PA = Private Pilot Airplane (Applicable ACS)
III = Airport & Seaplane Base (Area of Operation)
B = Traffic Patterns (Task)
K4 = Right of Way Rules (Element)

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Here's an example of better feedback.

- When an applicant finishes the knowledge test today, he or she gets a airman test report that looks like the example on the left. The Learning Statement Codes are on the bottom of the form, and they are intended to show the areas of knowledge the applicant missed on the test.
- The applicant, the instructor, and eventually the evaluator have to go to a separate publication and look up the codes. The codes are numerous, and some of them are overlapping. They are assigned somewhat subjectively, and they point to a broad area in one or more FAA reference documents. That makes it harder to ensure effective re-training.
- In the ACS world, the airman test report will list very specific ACS codes. For example, PA.III.B.K4 tells the applicant, the instructor, and the evaluator that there is a need to focus more on right-of-way rules.
 - PA = Private Pilot Airplane (Applicable ACS)
 - III = Airport & Seaplane Base (Area of Operation)
 - B = Traffic Patterns (Task)
 - K4 = Right of Way Rules (Element)
- The ACS codes (the “S” codes for skills) will be provided on the practical test Notice of Disapproval to show deficient skills.

How is it better?

Better Test Questions

- ACS Exam Review Board* is already using ACS codes as a tool to review and revise knowledge test questions – PVT, IFR, COM, ATP.
- Expansion of coding to other knowledge test question banks will follow.
- ACS codes will also provide guidance for developing new knowledge test questions that are more sharply targeted to essential knowledge, skill, and risk management.

* ACS Exam Review Board includes subject matter experts from several Flight Standards policy divisions, as well as one non-FAA representative who has extensive experience in the test development field.



Here's how the ACS helps with better test questions.

- The FAA has created an ACS Exam Review Board that includes subject matter experts from AFS-200 (Air Transportation Division), AFS-400 (Flight Technologies & Procedures Division), AFS-800 (General Aviation & Commercial Division), and AFS-600 (Regulatory Support Division).
- It also includes one non-FAA representative who has extensive experience in the test development field.
- The ACS Exam Review Board is using the ACS codes as a tool to review and revise knowledge test questions for the Private Pilot Airplane, Instrument Rating Airplane, and Airline Transport Pilot Airplane exams.
- Expansion of coding to other knowledge test question banks will follow.
- ACS codes also provide guidance for developing new test questions that are targeted to essential knowledge, skill, and risk management.
- In summary, the ACS helps the FAA ensure that each knowledge test question has a real purpose, and that it has a clear link to standards and guidance.

How is it better?

Better Presentation

- Often-overlooked introductory material in 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.

[APPENDIX 1 - The Knowledge Test - Eligibility, Prerequisites and Testing Centers](#)

[Knowledge Test Description](#)
[English Language Proficiency](#)
[Knowledge Test Requirements](#)
[Knowledge Test Centers](#)
[Knowledge Test Registration](#)

[APPENDIX 2 - Knowledge Test Procedures and Tips](#)

[Acceptable Materials](#)
[Test Tips](#)
[Cheating or Other Unauthorized Conduct](#)
[Testing Procedures for Applicants Requesting Special Accommodation](#)

[APPENDIX 3 - Airman Knowledge Test Report](#)

[General Information](#)
[FAA Knowledge Test Question Coding](#)

[APPENDIX 4 - The Practical Test - Eligibility and Prerequisites](#)

[APPENDIX 5 - Practical Test Roles, Responsibilities, and Outcomes](#)

[Applicant Responsibilities](#)
[Instructor Responsibilities](#)
[Evaluator Responsibilities](#)
[Possible Outcomes of the Test](#)
[Practical Test Checklist \(Applicant\)](#)
[Additional Station Task Table](#)

[APPENDIX 6 - Safety of Flight](#)

[General](#)
[Stall and Spin Awareness](#)
[Use of Checklists](#)
[Use of Distractions](#)
[Positive Exchange of Flight Controls](#)
[Aeronautical Decision Making, Risk Management, CRM and SRM](#)
[Weather Considerations](#)
[Single Engine Considerations](#)

[APPENDIX 7 - Aircraft, Equipment, and Operational Requirements & Limitations](#)

[Aircraft Requirements & Limitations](#)
[Equipment Requirements & Limitations](#)
[Operational Requirements & Limitations](#)

[APPENDIX 8 - Use of FSTDs and ATDs](#)

[Use of FSTDs](#)
[Use of ATDs](#)
[Credit for Time in an FSTD](#)
[Credit for Time in an ATD](#)
[Use of an FSTD on a Practical Test](#)

[APPENDIX 9 - References](#)

[APPENDIX 10 - Abbreviations and Acronyms](#)



Another improvement is the organization.

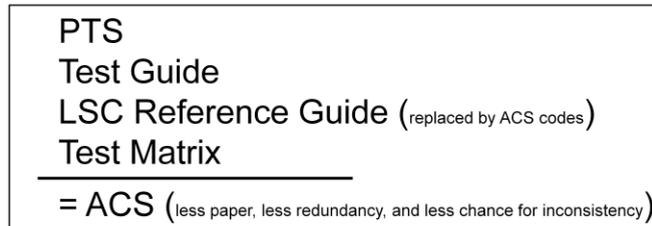
- The ACS introduction is much shorter than the PTS.
- As you see on the slide:
 - Often-overlooked introductory material in PTS has been relocated to specifically focused appendices.
 - Roles, responsibilities, and expectations are clearly defined.
 - Lengthy notes in individual PTS Tasks have been integrated into the appropriate appendix.

How is it better?

Better Presentation

The ACS simplifies “paper management” by integrating a number of FAA knowledge exam guidance documents:

- Test Guides (FAA-G-8082 series)
- Learning Statement Reference Guide
- Knowledge Testing Authorization Requirements Matrix



- Still another benefit is that the ACS simplifies paper management, because it consolidates and integrates several existing knowledge exam guidance documents into the ACS for each certificate and rating. These include:
 - The Private Pilot Test Guide (FAA-G-8082-17)
 - The Learning Statement Reference
 - The Knowledge Testing Authorization Requirements Matrix
- The ACS = the PTS + 8082 document + LSC Reference Guide + Test Matrix.
- The result is less paper, less redundancy, and less chance for inconsistency.

Flight Plan - Waypoints

- What is the ACS?
- Why this approach?
- Who developed it?
- How is it better?
- **What is the status?**
- How do you know it will work?
- When does it take effect?
- How will I have to change?
- How can I learn more?



Next we'll cover the status of this project.

What is the status?

- Standards
 - Draft ACS exists for PVT, COM, IRA, ATP (airplane only)
 - Authorized Instructor ACS still in development
- Guidance
 - Industry ACS Working Group has reviewed PHAK, AFH, RM, IFH, IPH, and CT-8080 supplements
 - FAA will incorporate many industry recommendations in next editions
- Testing
 - FAA contracting for comprehensive test management services
 - ACS Exam Review Board is using ACS to revise test questions

The ACS WG & FAA will begin applying ACS approach to the Aircraft Mechanic certificate and ratings in spring 2016.

The FAA is also using the ACS framework to develop the sUAS knowledge test.



Standards

- Draft ACS exists for PAR, IRA, COM, ATP (airplane only)
- Authorized Instructor remains in development

Guidance

- Industry ACS Working Group has reviewed Pilot's Handbook of Aeronautical Knowledge, Airplane Flying Handbook, Risk Management Handbook, Instrument Flying Handbook, Instrument Procedures Handbook, and CT-8080 test supplements
- FAA will incorporate many industry recommendations in next editions of these (and other) handbooks.
- ACS WG has also made recommendations to improve the next edition of the Aviation Instructor's Handbook.

Testing

- FAA contracting for comprehensive test management services
- ACS Exam Review Board is using ACS to revise test questions

ACS WG & FAA will begin applying ACS approach to the Aircraft Mechanic certificate and ratings in spring 2016. The FAA is also using the ACS framework for sUAS knowledge test.

What is the status?

- The Authorized Instructor ACS (still in development) will significantly improve instructor testing and training. It
 - Offers a practical (not rote) approach to Fundamentals of Instructing (FOI) Tasks
 - Requires understanding of how to teach risk management, and how to practice risk management in flight instructional activities
 - Includes only the flight maneuver tasks unique to the instructor certificate.



- The Authorized Instructor ACS (still in development) will improve instructor testing and training.
- Key features:
 - It offers a practical (not academic or rote) approach to Fundamentals of Instructing (FOI) Tasks
 - It requires understanding of how to teach risk management, and how to practice risk management in flight instructional activities
 - It includes only the flight maneuver tasks unique to the instructor certificate.Advantages:
 - Avoids duplication and eliminates potential for divergence
 - Pushes the applicant to constant use of foundational ACSs (e.g., PVT, COM)
- The industry working group expects to start sharing the draft instructor ACS for review and comment during the first half of 2016.

How do you know it will work?

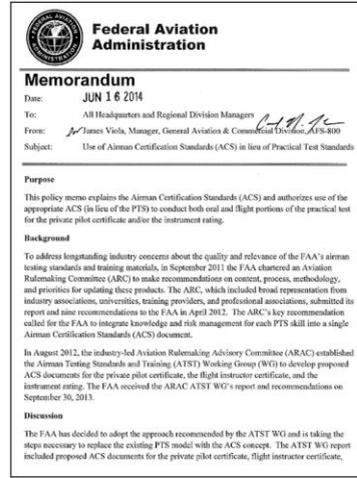
- The FAA and members of the industry-led ACS Working Group have “pressure tested” the ACS concept:
 - **Public comment** - the FAA established several docket for the ACS WG to receive public comments on the PVT, IRA, and Authorized Instructor ACS documents.
 - **Prototyping** - the FAA and the ACS WG have developed and used a formal prototyping process to gain experience with, and feedback on, the PVT and IRA ACS.
 - PVT prototyped twice in Orlando from June 2014-June 2015; feedback from applicants, instructors, evaluators, and FSDO has been positive.
 - IRA prototypes now underway in Seattle and Orlando.



- First is public comment.
- On behalf of the various industry working groups, the FAA twice established dockets to receive public feedback on the draft PVT, IFR, and Instructor ACS.
- The working groups have used those comments to refine the ACS, and also to develop a set of Frequently Asked Questions now available on the FAA website (link shown at the end of this presentation).
- A second big effort is prototyping.
- Prototype efforts started in the summer of 2014, with a small private pilot airplane certification course at the Embry-Riddle Aeronautical University’s Summer Academy program in Daytona Beach. Instructors, evaluators, and ORL FSDO inspectors all found the ACS to be a significant improvement over the current approach.
- From fall 2014 through spring 2015, ACS Working Group members and ORL FSDO inspectors collaborated on a larger prototype that includes part 61 instructors, applicants, and DPEs. Again, there was positive feedback from all groups who participated.
- In the fall of 2015, we launched ACS Instrument Rating Airplane prototype programs in Orlando and in Seattle.
- We look forward to the feedback we expect from these prototypes.

How do you know it will work?

- The FAA reviews each industry-developed ACS to validate its content and ensure that all PTS elements are included (albeit sometimes in a different place).
- In support of prototype effort, AFS 800 memo allows use of ACS in lieu of PTS.
- 8900 will reference “PTS or ACS;” changes already underway.
- New DPE guidance was developed with ACS in mind.



- The FAA reviews each industry-developed ACS to validate its content and ensure that all PTS elements are included (albeit occasionally in a different place).
- The FAA's General Aviation and Commercial Division (AFS 800) has issued guidance that allows use of the ACS in lieu of the PTS for prototyping purposes.
- AFS-800 is now working on two additional sets of ACS-enabling guidance:
 - A Notice to FAA aviation safety inspectors that builds on the original guidance
 - Changes to the FAA's 8900 order that will reference “PTS or ACS.”
- New DPE guidance (8900.2) was also developed with ACS in mind.

When does it take effect?

- Target:
 - March 2016 – Final ACS for PAR & IRA posted
 - June 2016 – PAR & IRA become effective
- Draft ATP ACS is under internal and external review
 - Next step – *Federal Register* publication for comment
- Authorized Instructor ACS is still in development
 - Next step – Initial prototyping and *Federal Register* publication for additional comment

June 2016 						
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26	27	28	29	30		

Note: We not be able to report ACS codes on Airman Knowledge Test Report at initial implementation; this step will occur when new test management services system is in place.



The FAA and the industry group are targeting June 2016* implementation for airplane:

- PAR ACS
- IRA ACS
- Draft ATP ACS is under internal and external review
 - Next step – *Federal Register* publication for comment
- Authorized Instructor ACS is still in development
 - Next step – Initial prototyping and *Federal Register* publication for additional comment

How will I have to change?

- *The ACS does not change the check ride or skill performance metrics in the PTS.*
- *The ACS will not lengthen the practical test.*
 - There is no difference between PTS and ACS requirements for in-flight evaluation of skill Tasks.
 - ACS codes on Airman Knowledge Test Report give the evaluator more focused information for use in developing a plan of action.



- The ACS does not change the checkride or PTS performance metrics.
- The ACS will not make the checkride any longer than it takes to conduct a PTS checkride today.
 - As is the case now, the evaluator has discretion to address additional knowledge and risk management elements if the airman knowledge test report and/or the applicant's response to questions suggests the need for more thorough coverage.
- Overall, the ACS could expedite the check ride because it gives the evaluator more focused information on:
 - Knowledge and risk management elements associated with each skill task.
 - Specific information (via ACS codes) on items the applicant missed on the knowledge test.

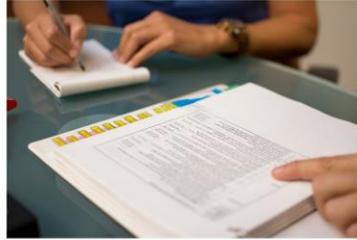
How will I have to change?

Applicants will use ACS to:

- Clearly understand what they must:
 - Know (knowledge)
 - Consider (risk management)
 - Do (skill)

in order to qualify for any given airman certificate or rating.

- Develop an understanding of how knowledge, risk management, and skill elements work together for safe performance of each Task.



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- Develop an understanding of how knowledge, risk management, and skill elements work together for safe performance of each Task.

How will I have to change?



- Instructors will use ACS to:
 - Ensure that the applicant meets the knowledge, risk management, and skill standards established for each Task.
 - Deepen the applicant's understanding of how knowledge, risk management, and skill elements work together to promote safe operation in the NAS.



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- Ensure that the applicant meets the knowledge, risk management, and skill standards established for each Task.
- Deepen the applicant's understanding of how knowledge, risk management, and skill elements work together to promote safe operation in the NAS.

How will I have to change?



- Evaluators will use ACS to:
 - Develop the Plan of Action
 - Create better / more focused questions and scenarios for both phases of the practical test
 - Identify (via ACS codes) and focus more sharply on deficient knowledge and risk management areas during the oral assessment phase
 - Report (using ACS codes) any deficient areas on the practical test.

Evaluators will use ACS to:

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- Create better / more focused questions and scenarios for both phases of the practical test
- Identify (via ACS codes) and focus more sharply on deficient knowledge and risk management areas during the oral assessment phase
- Report (using ACS codes) any deficient areas on the practical test.

How can I get more information?

Please contact:

- **Bob Newell**, Manager, Airman Testing Standards Branch (AFS-630)
 - Robert.L.Newell@faa.gov
 - 405-954-0473
 - www.faa.gov/training_testing/testing/
- **Susan Parson**, Special Technical Assistant, Flight Standards Service (AFS-3A)
 - Susan.Parson@faa.gov
 - 202-267-9064

Resources & info available upon request include:

- Links to ARC & ARAC reports
- FAQs on ACS
- AFS-800 memo on use of the ACS in lieu of PTS
- Copies of draft ACS documents
- PDF version of ACS presentation
- Sample PVT and IRA knowledge tests with ACS codes*

*Available at
www.faa.gov/training_testing/testing/



This slide shows contact and resource information.

The ACS development process is intended to be as transparent as possible, so questions and comments are welcomed and strongly encouraged.

Both the FAA employees assigned to this project and the industry experts who created the ACS are eager to benefit from stakeholder viewpoints and perspectives.

Thanks for taking the time to learn about the ACS. Please keep a lookout for future developments in this exciting project.