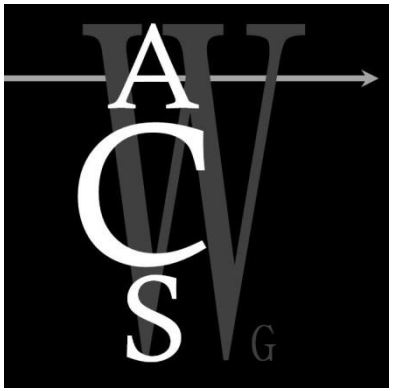
Aviation Rulemaking Advisory Committee
Airman Certification System Working Group

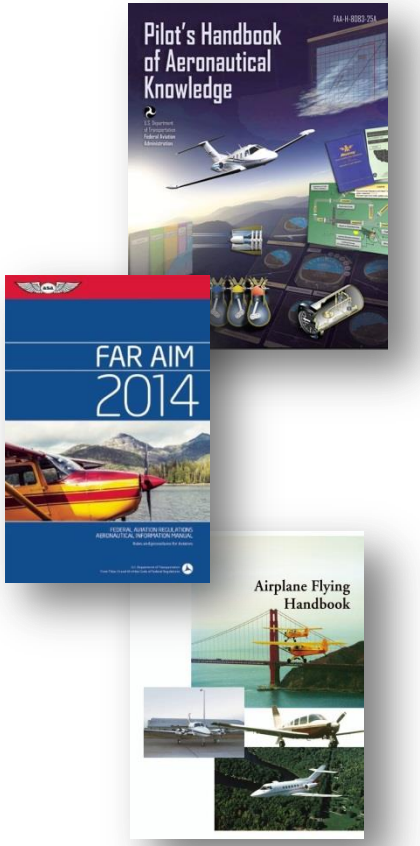
Airman Certification Standards



BACKGROUND

- Pilots and Industry have long contended FAA testing is outdated, not relevant and/or meaningful
  - Hurdle to get out-of-the way in order to become a certificated pilot
  - Rote memorization

CURRENT PROCESS



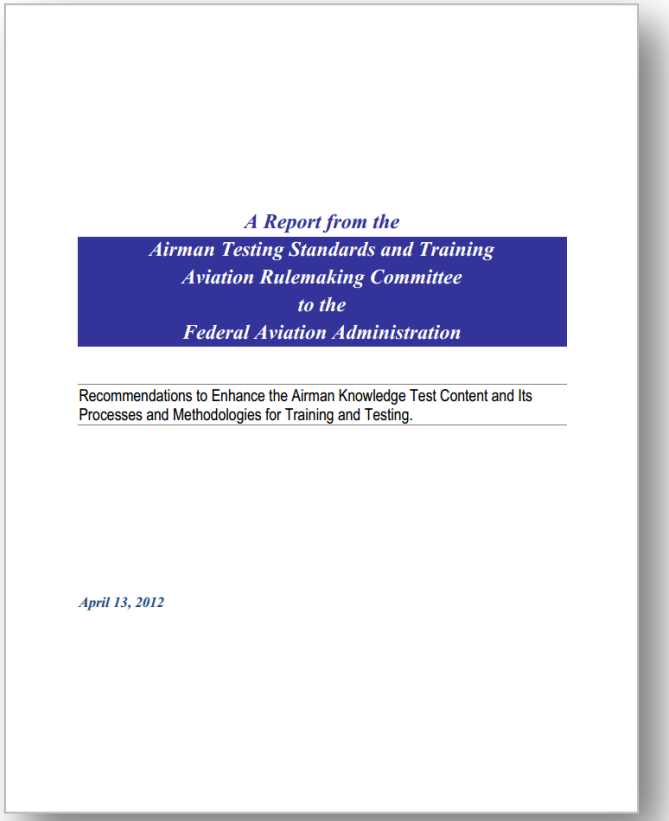
CURRENT PROCESS

CURRENT PROCESS

CURRENT PROCESS

AVIATION RULEMAKING COMMITTEE

- Formed September 2011
- Recommendations:
  - Integrate knowledge, skill, and risk management elements for each task and area of operation
  - Create one reference document for each certificate called the Airman Certification Standards (ACS)
  - Align training, testing, and reference materials and maintain alignment


A Report from the
Airman Testing Standards and Training
Aviation Rulemaking Committee
to the
Federal Aviation Administration

Recommendations to Enhance the Airman Knowledge Test Content and Its Processes and Methodologies for Training and Testing.

April 13, 2012

AVIATION RULEMAKING ADVISORY COMMITTEE

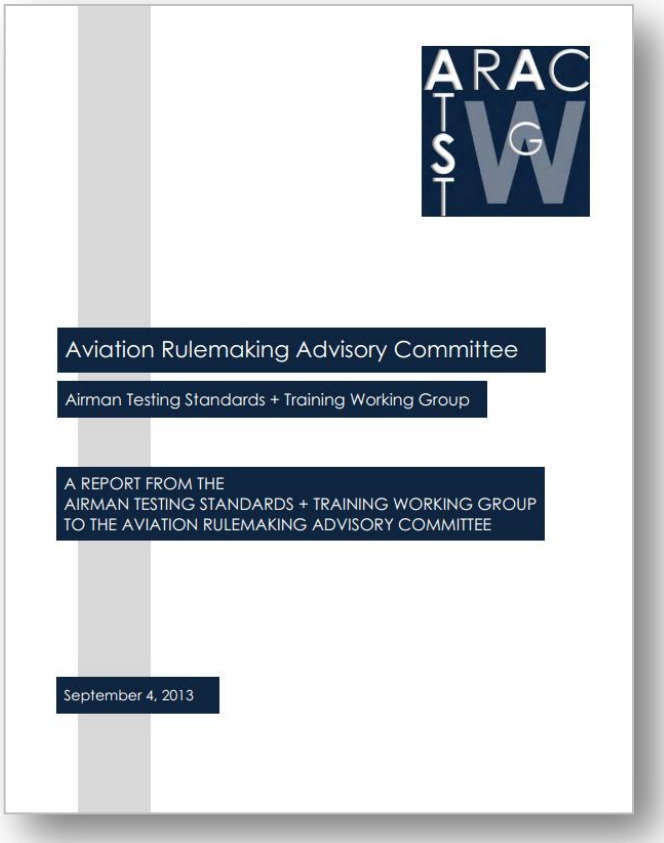
- FAA accepted ARC report September 2012
- ARAC
  - Standing committee is collaboration between industry and FAA to assist with regulatory matters
- To act upon the ARC recommendations, formed Airman Testing Standards and Training Working Group (ATST WG)

ARAC ATST WG TASKS

- Develop draft Airman Certification Standards (ACS)
  - Private Pilot
  - Instrument Airplane
  - Authorized Instructor
- Proposal to realign, streamline, and consolidate FAA guidance material such as FAA-H-8083-XX series handbooks
- Develop knowledge test question bank that aligns with, or “maps” to, the ACS

ARAC ATST WG

- Completed work – September 2013
- Final Report and Recommendations unanimously accepted and forwarded to the FAA for implementation



ARAC ATST WG

- Recommendations –
  - Adoption and Implementation of Airman Certification System
    - Standards, Guidance, and Testing
  - Recommendations on Effectively Managing the Integrated Airman Certification System
    - Stakeholder Participation
    - Quality Management System

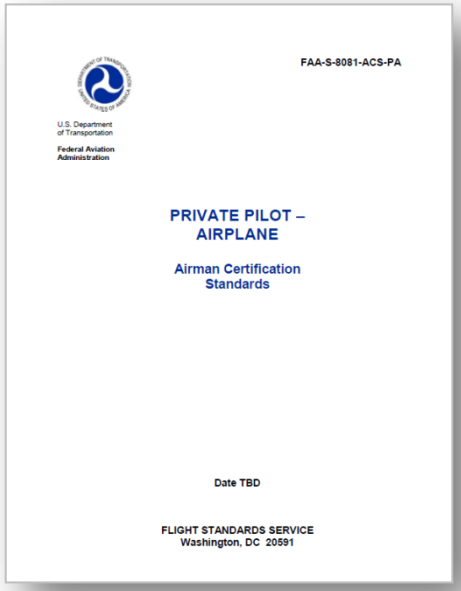
Airman Certification System Working Group

- Formed February 2014
  - Membership includes industry associations, academia, test prep providers, pilot examiners, and multiple FAA offices and staff
- Tasks
  - Finalize ACS documents
  - Map guidance and test questions to ACS
  - FAA internal guidance, training, and conversion from PTS to ACS
  - Prototype beta testing

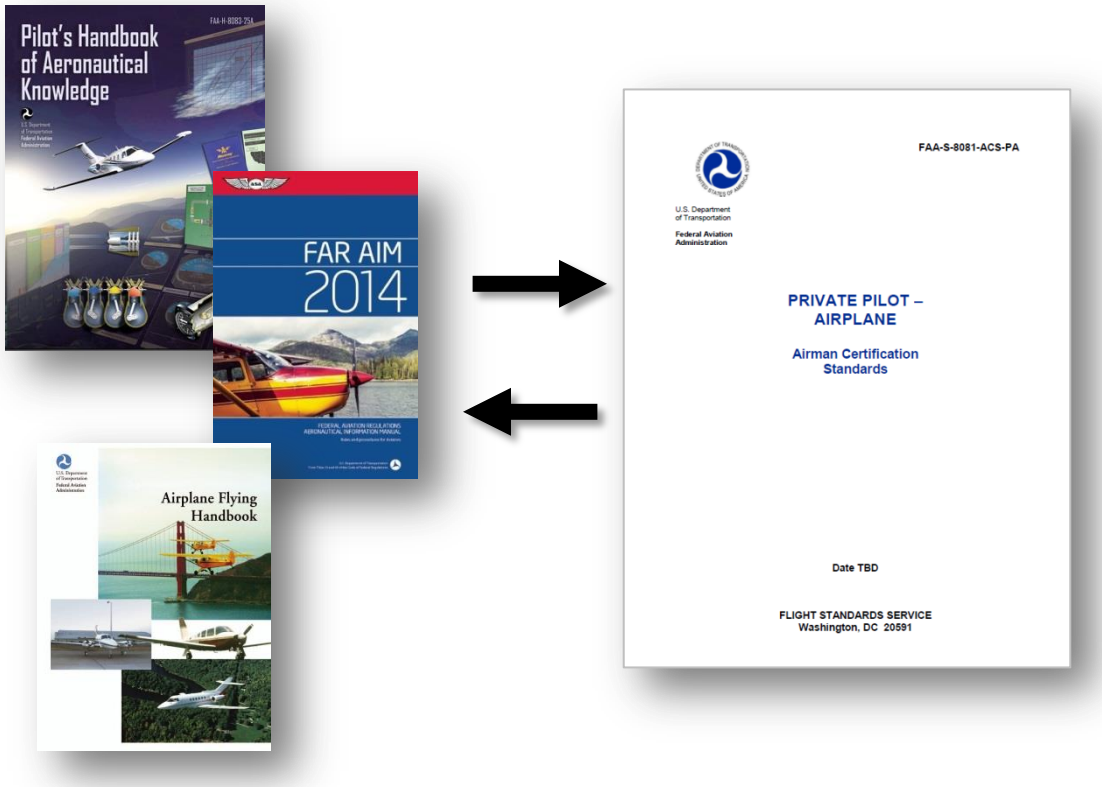
Airman Certification System Working Group

- **A**irman **C**ertification **S**tandards
- The core of the system
- Aligns aeronautical knowledge areas with flight proficiency areas of operation
- Integrates risk management
- Incorporates and supersedes the PTS

NEW SYSTEM


FAA-S-8081-ACS-PA
U.S. Department of Transportation
Federal Aviation Administration
PRIVATE PILOT – AIRPLANE
Airman Certification Standards
Date TBD
FLIGHT STANDARDS SERVICE
Washington, DC 20591

NEW SYSTEM


Pilot's Handbook of Aeronautical Knowledge
FAR AIM 2014
Airplane Flying Handbook
FAA-S-8081-ACS-PA
U.S. Department of Transportation
Federal Aviation Administration
PRIVATE PILOT – AIRPLANE
Airman Certification Standards
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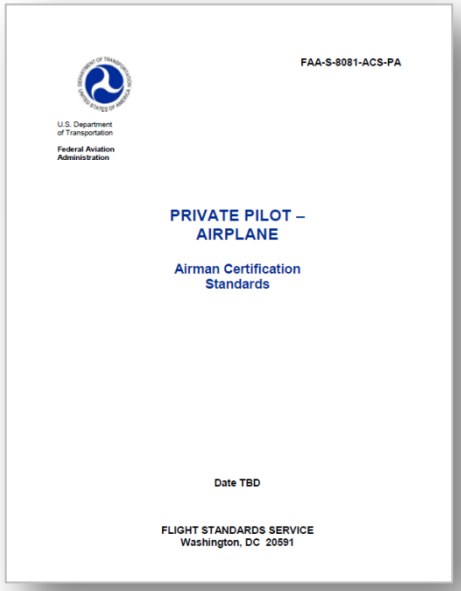
Washington, DC 20591

NEW SYSTEM


Pilot's Handbook of Aeronautical Knowledge
FAR AIM 2014
Airplane Flying Handbook


FAA-S-8081-ACS-PA
U.S. Department of Transportation
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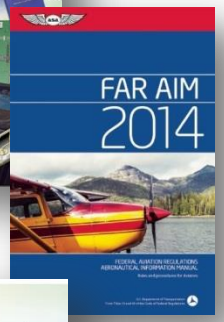
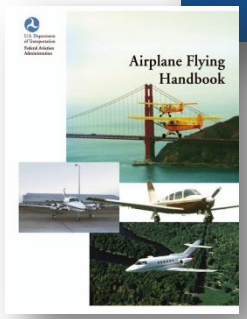
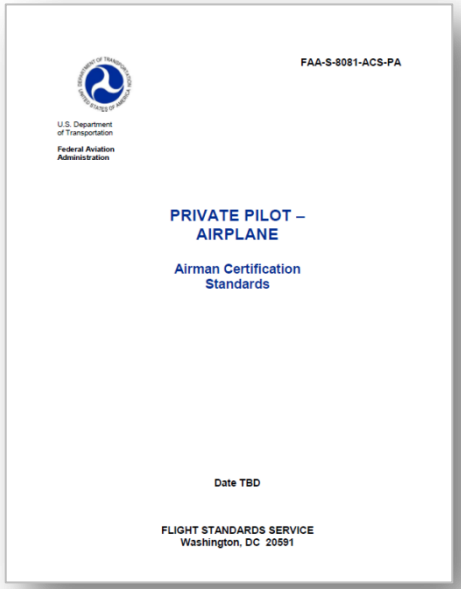
Pilot's Handbook of Aeronautical Knowledge


FAR AIM
2014


Airplane Flying Handbook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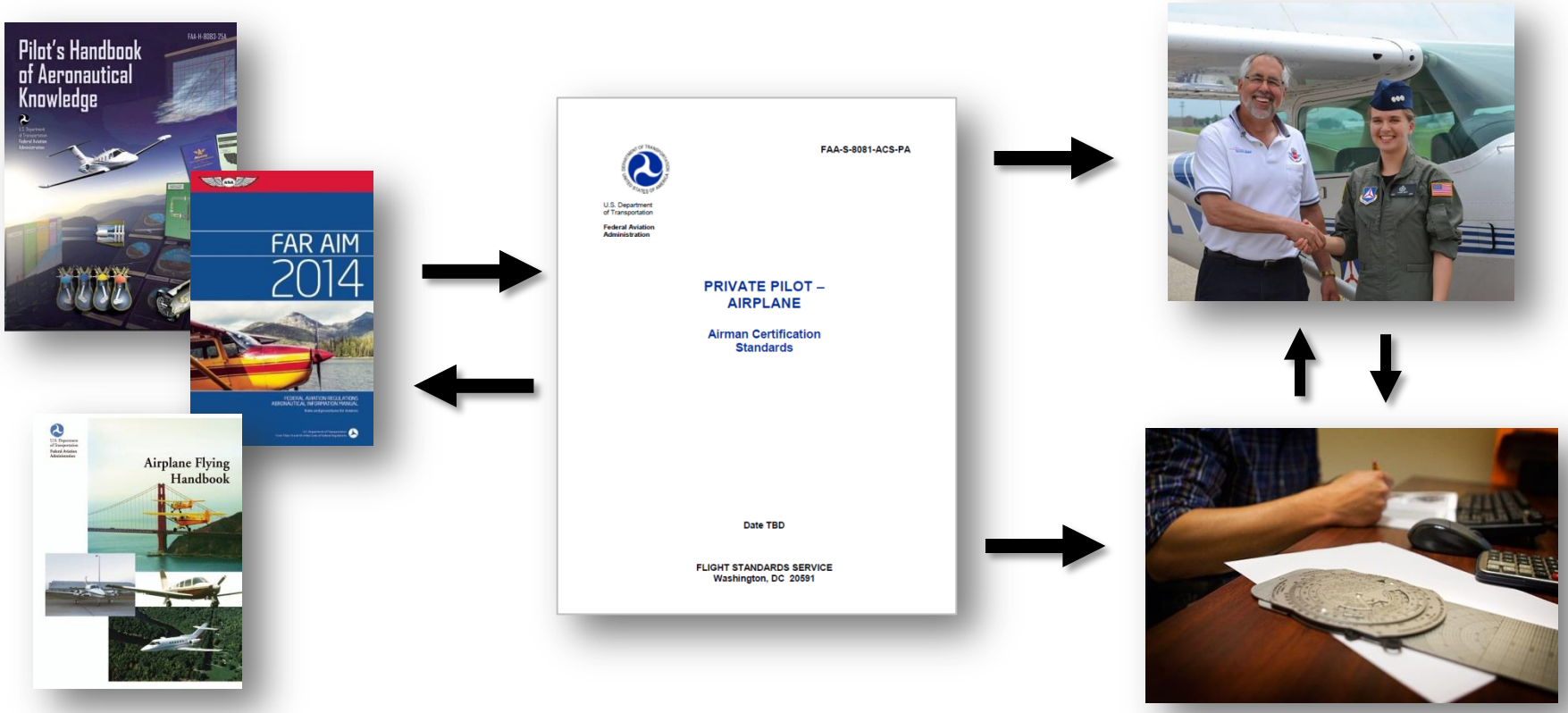
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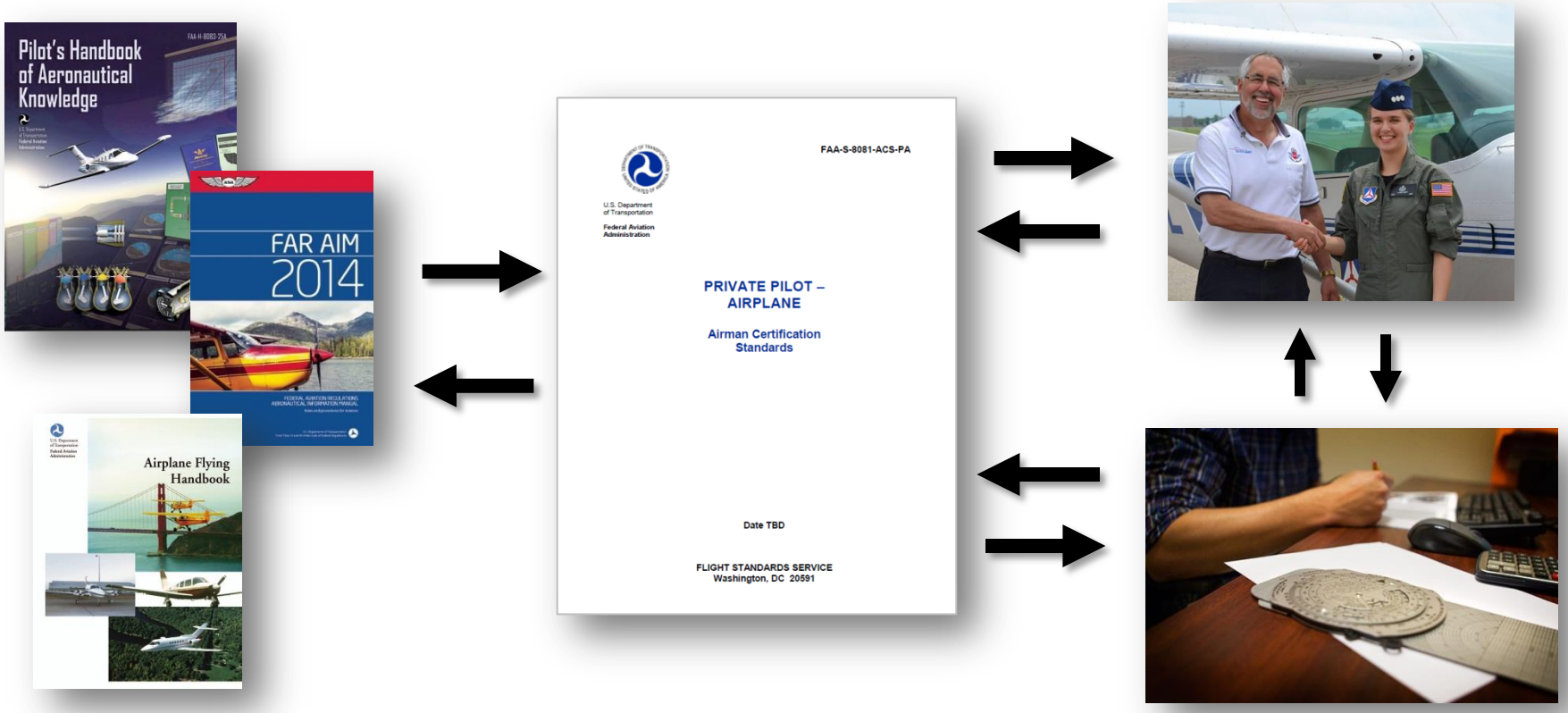
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Washington, DC 20591

Safety Management System Framework

- Safety Policy: Defines and describes aeronautical knowledge, flight proficiency, and risk management as integrated components
- Safety Risk Management: Processes through which internal and external stakeholders identify and evaluate regulatory changes, safety recommendations, or other factors that require modification of airman testing and training materials
- Safety Assurance: Processes to ensure the prompt and appropriate incorporation of changes arising from new regulations and safety recommendations
- Safety Promotion: Ongoing engagement with both external stakeholders (e.g., the aviation training industry) and FAA policy divisions

AIRMAN CERTIFICATION STANDARD

- Standards are clarified and enhanced
  - Material is presented better
- Check rides are not changing
- The ACS will be the only necessary reference for both knowledge and skill
- Flight instructors can train more effectively
- Examiners can test more effectively
- Training will tie to testing

AIRMAN CERTIFICATION STANDARD

- Areas of operation and tasks largely unchanged
- Each task has five blocks
  - Reference
  - Objective
  - Knowledge
  - Skills
  - Risk Management
- Each block has itemized standards or elements

AIRMAN CERTIFICATION STANDARD

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

V. Performance Maneuvers

Task	***A. Steep Turns***	
Reference	FAA-H-8083-3; POH/AFM	
Objective	To determine the applicant exhibits satisfactory knowledge, skills and risk management associated with steep turns.	
Knowledge	The applicant demonstrates understanding of:	
	1. Coordinated flight.	PA.V.A.K1
	2. Attitude control at various airspeeds.	PA.V.A.K2
	3. Maneuvering speed, including changes in weight.	PA.V.A.K3
	4. Controlling rate and radius of turn.	PA.V.A.K4
	5. Accelerated stalls.	PA.V.A.K5
	6. Overbanking tendencies.	PA.V.A.K6
	7. Use of trim in a turn.	PA.V.A.K7
	8. Aerodynamics associated with steep turns.	PA.V.A.K8
	9. Aerobatic requirements and limitations.	PA.V.A.K9
Skills	The applicant demonstrates the ability to:	
	1. Establish the manufacturer's recommended airspeed or if one is not stated, a safe airspeed not to exceed V_A.	PA.V.A.S1
	2. Coordination entering, during, andexitinga45bankturnfor360degrees.	PA.V.A.S2
	3. Perform the task in the opposite direction, as specified by the evaluator.	PA.V.A.S3
	4. Maintain the entry altitude, ±100 feet, airspeed, ±10 knots, bank, and ±5°; and roll out on the entry heading, ±10°.	PA.V.A.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Dividing attention between airplane control and orientation.	PA.V.A.R1
	2. Task management.	PA.V.A.R2
	3. Energy management.	PA.V.A.R3
	4. Stall/spin awareness.	PA.V.A.R4
	5. Situational awareness.	PA.V.A.R5
	6. Rate and radius of turn with confined area operations.	PA.V.A.R6

AIRMAN CERTIFICATION STANDARD

- Task Reference and Objectives
  - Same as PTS
  - Refer to listed references just like in the PTS
    - FAA Handbooks
    - Advisory Circulars
    - Regulations
    - AFM
    - Etc.

AIRMAN CERTIFICATION STANDARD

- Task Knowledge Elements
  - Better than the PTS
  - Clearly itemizes the knowledge required
  - Correlates directly to knowledge test
  - Effective retraining and retesting for failed knowledge test questions

OLD TASK KNOWLEDGE ELEMENTS

VII. Navigation

Task B: Navigation Systems and Radar Services (ASEL and ASES)

References: FAA-H-8083-3, FAA-H-8083-6, FAA-H-8083-25; Navigation Equipment Operation Manuals; AIM.

Objective: To determine that the applicant:

1. Exhibits satisfactory knowledge of the elements related to navigation systems and radar services.
2. Demonstrates the ability to use an airborne electronic navigation system.
3. Locates the airplane's position using the navigation system.
4. Intercepts and tracks a given course, radial, or bearing, as appropriate.
5. Recognizes and describes the indication of station passage, if appropriate.
6. Recognizes signal loss and takes appropriate action.
7. Uses proper communication procedures when utilizing radar services.
8. Maintains the appropriate altitude, ±200 feet and headings ±15°.

NEW TASK KNOWLEDGE ELEMENTS

VI. Navigation

Task	*B. Navigation Systems and Radar Services*	
Reference	FAA-H-8083-3, FAA-H-8083-6, FAA-H-8083-25; Navigation Equipment Operation Manuals; AIM	
Objective	To determine the applicant exhibits satisfactory knowledge, skills and risk management associated with navigation systems and radar services.	
Knowledge	The applicant demonstrates understanding of:	
	1. Ground-based navigation (orientation, course determination, equipment, tests and regulations).	PA.VI.B.K1
	2. Global Positioning System (GPS) (equipment, regulations, databases authorized use, Receiver Autonomous Integrity Monitoring (RAIM)).	PA.VI.B.K2
	3. Radar assistance to VFR aircraft (operations, equipment, available services, traffic advisories).	PA.VI.B.K3
	4. Transponder (Mode A, C, and S).	PA.VI.B.K4
Skills	The applicant demonstrates the ability to:	
	1. Demonstrate the ability to use installed electronic navigation system.	PA.VI.B.S1
	2. Locate the airplane's position using the navigation system.	
	3. Intercept and track a given course, radial, or bearing, as appropriate.	
	4. Recognize and describe the indication of station passage, if appropria	
	5. Recognize signal loss and take appropriate action.	
	6. Use proper communication procedures when utilizing radar services.	
	7. Maintain the appropriate altitude, ±200 feet and headings ±15°.	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risk encompassing:	
	1. Automation management.	
	2. Task management.	
	3. Situational awareness.	
	4. Limitations of the navigation system in use.	
	5. Planning to avoid automation distractions.	

ACS TASK SKILL ELEMENTS

- Built upon current Practical Test Standards
- Completion standards for flight proficiency largely unchanged

PTS TASK SKILL ELEMENTS

VII. Navigation

Task B: Navigation Systems and Radar Services (ASEL and ASES)

References: FAA-H-8083-3, FAA-H-8083-6, FAA-H-8083-25; Navigation Equipment Operation Manuals; AIM.

Objective: To determine that the applicant:

1. Exhibits satisfactory knowledge of the elements related to navigation systems and radar services.
2. Demonstrates the ability to use an airborne electronic navigation system.
3. Locates the airplane's position using the navigation system.
4. Intercepts and tracks a given course, radial, or bearing, as appropriate.
5. Recognizes and describes the indication of station passage, if appropriate.
6. Recognizes signal loss and takes appropriate action.
7. Uses proper communication procedures when utilizing radar services.
8. Maintains the appropriate altitude, ±200 feet and headings ±15°.

ACS TASK SKILL ELEMENTS

VI. Navigation

Task	***B. Navigation Systems and Radar Services***	
Reference	FAA-H-8083-3, FAA-H-8083-6, FAA-H-8083-25; Navigation Equipment Operation Manuals; AIM	
Objective	To determine the applicant exhibits satisfactory knowledge, skills and risk management associated with navigation systems and radar services.	
Knowledge	The applicant demonstrates understanding of:	
	1. Ground-based navigation (orientation, course determination, equipment, tests and regulations).	PA.VI.B.K1
	2. Global Positioning System (GPS) (equipment, regulations, databases authorized use, Receiver Autonomous Integrity Monitoring (RAIM)).	PA.VI.B.K2
	3. Radar assistance to VFR aircraft (operations, equipment, available services, traffic advisories).	PA.VI.B.K3
	4. Transponder (Mode A, C, and S).	PA.VI.B.K4
Skills	The applicant demonstrates the ability to:	
	1. Demonstrate the ability to use installed electronic navigation system.	PA.VI.B.S1
	2. Locate the airplane's position using the navigation system.	PA.VI.B.S2
	3. Intercept and track a given course, radial, or bearing, as appropriate.	PA.VI.B.S3
	4. Recognize and describe the indication of station passage, if appropriate.	PA.VI.B.S4
	5. Recognize signal loss and take appropriate action.	PA.VI.B.S5
	6. Use proper communication procedures when utilizing radar services.	PA.VI.B.S6
	7. Maintain the appropriate altitude, ±200 feet and headings ±15°.	PA.VI.B.S7
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Automation management.	PA.VI.B.R1
	2. Task management.	PA.VI.B.R2
	3. Situational awareness.	PA.VI.B.R3
	4. Limitations of the navigation system in use.	PA.VI.B.R4
	5. Planning to avoid automation distractions.	PA.VI.B.R5

RISK MANAGEMENT ELEMENTS

- Practical Test Standards
  - Lists generic special emphasis areas and SRM tasks
  - Gives no guidance for specifically how they correlate to each task
- Airman Certification Standards
  - Does away with generic special emphasis areas and SRM tasks
  - Itemizes risk management elements for each task

PTS RISK MANAGEMENT ELEMENTS

Special Emphasis Areas

Examiners shall place special emphasis upon areas of aircraft operations considered critical to flight safety. Among these are:

1. Positive aircraft control,
2. Positive exchange of the flight controls procedure,
3. Stall/spin awareness,
4. Collision avoidance,
5. Wake turbulence avoidance,
6. LAHSO,
7. Runway incursion avoidance,
8. CFIT,
9. ADM and risk management,
10. Wire strike avoidance,
11. Checklist usage,
12. Temporary flight restrictions (TFRs),
13. Special use airspace (SUA),
14. Aviation security,
15. Single-Pilot Resource Management (SRM), and
16. Other areas deemed appropriate to any phase of the practical test.

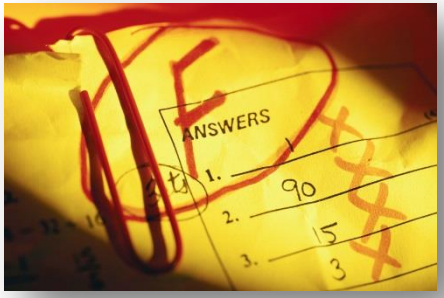
A given special emphasis area may not be specifically addressed under a given Task. All areas are essential to flight and will be evaluated during the practice test.

ACS RISK MANAGEMENT ELEMENTS

VI. Navigation

Task	***B. Navigation Systems and Radar Services***	
Reference	FAA-H-8083-3, FAA-H-8083-6, FAA-H-8083-25; Navigation Equipment Operation Manuals; AIM	
Objective	To determine the applicant exhibits satisfactory knowledge, skills and risk management associated with navigation systems and radar services.	
Knowledge	The applicant demonstrates understanding of:	
	1. Ground-based navigation (orientation, course determination, equipr tests and regulations).	
	2. Global Positioning System (GPS) (equipment, regulations, databas authorized use, Receiver Autonomous Integrity Monitoring (RAIM)).	
	3. Radar assistance to VFR aircraft (operations, equipment, available services, traffic advisories).	
	4. Transponder (Mode A, C, and S).	
Skills	The applicant demonstrates the ability to:	
	1. Demonstrate the ability to use installed electronic navigation systen	
	2. Locate the airplane's position using the navigation system.	
	3. Intercept and track a given course, radial, or bearing, as appropriat	
	4. Recognize and describe the indication of station passage, if approp	
	5. Recognize signal loss and take appropriate action.	
	6. Use proper communication procedures when utilizing radar services.	PA.VI.B.S6
	7. Maintain the appropriate altitude, ±200 feet and headings ±15°.	PA.VI.B.S7
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Automation management.	PA.VI.B.R1
	2. Task management.	PA.VI.B.R2
	3. Situational awareness.	PA.VI.B.R3
	4. Limitations of the navigation system in use.	PA.VI.B.R4
	5. Planning to avoid automation distractions.	PA.VI.B.R5

REVIEWING THE KNOWLEDGE TEST



REVIEWING THE KNOWLEDGE TEST

FA 121 Private Pilot (ASEL)
Prerequisite for Practical Tests [61.39(a)]

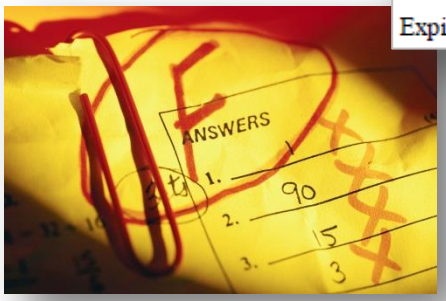
I certify that _____
(First, Middle, Last)

has received and logged 3 hours of training in preparation for the Private Pilot Airplane Single-Engine Land Practical Test within 2 calendar months preceding the month of application for the practical test, is prepared for the practical test, and has demonstrated satisfactory knowledge of the subject area(s) in which he/she was shown to be deficient by the FAA Airman Knowledge Test Report.

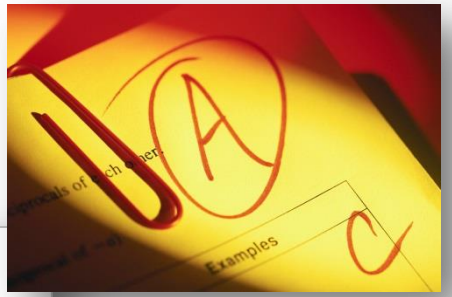
Signed: _____ Date: _____ - _____ - _____

Print: _____ FI #: _____ CFI
(First, Middle, Last)

Expires: _____ - _____ - _____



REVIEWING THE KNOWLEDGE TEST



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Signed: _____ Date: _____ - _____ - _____

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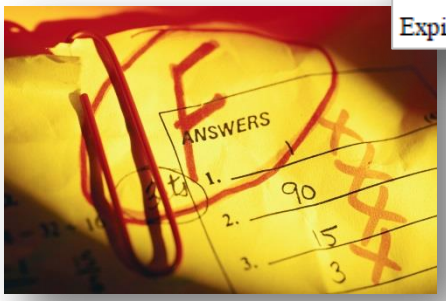
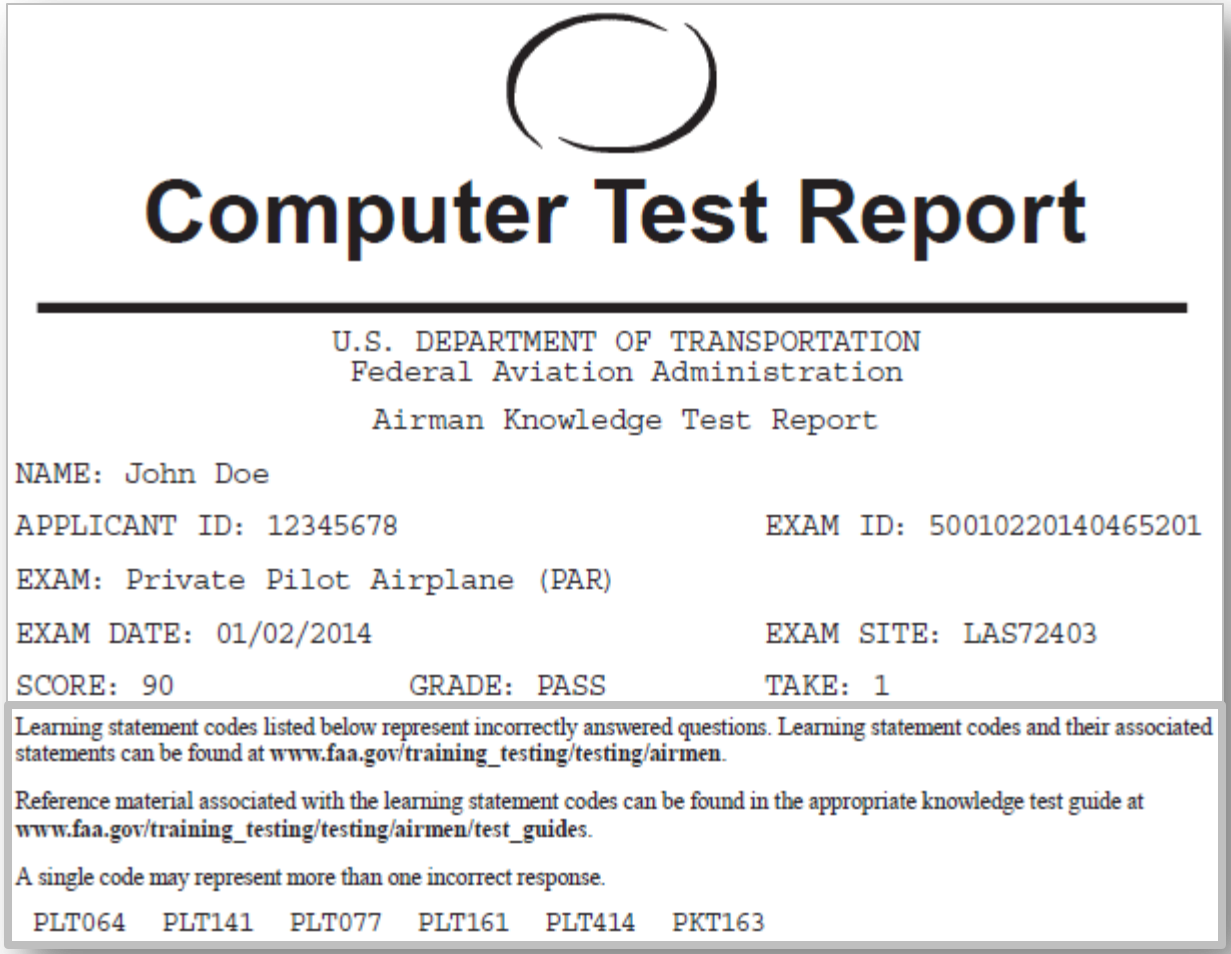
(First, Middle, Last)

Expires: _____ - _____ - _____



CURRENT LEARNING STATEMENT CODES



Computer Test Report

U.S. DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration

Airman Knowledge Test Report

NAME: John Doe

APPLICANT ID: 12345678 EXAM ID: 50010220140465201

EXAM: Private Pilot Airplane (PAR)

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

SCORE: 90 GRADE: PASS TAKE: 1

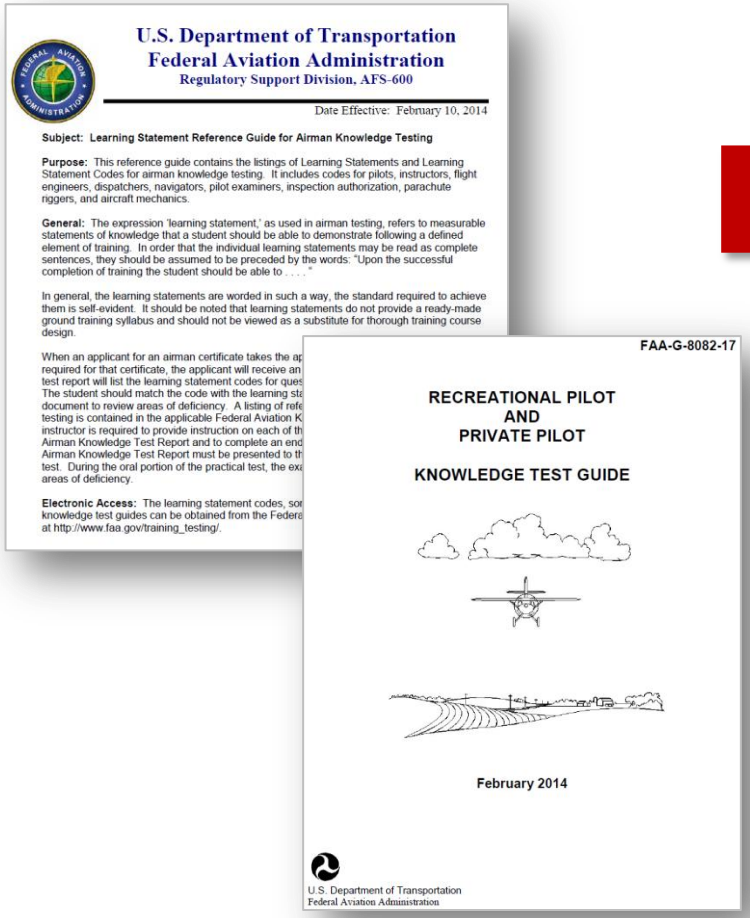
Learning statement codes listed below represent incorrectly answered questions. Learning statement codes and their associated statements can be found at **www.faa.gov/training_testing/testing/airmen**.

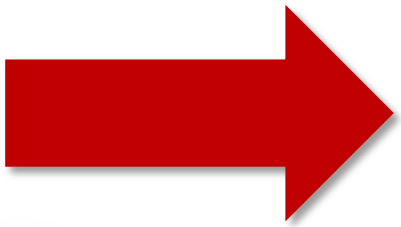
Reference material associated with the learning statement codes can be found in the appropriate knowledge test guide at **www.faa.gov/training_testing/testing/airmen/test_guides**.

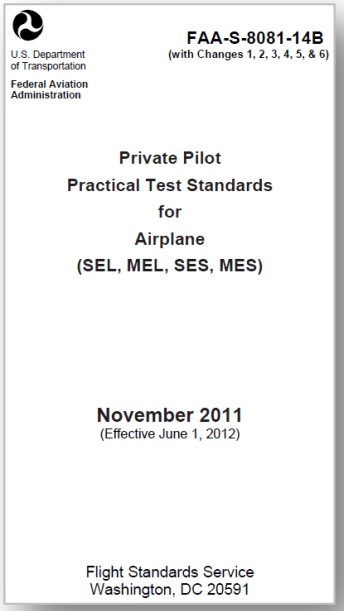
A single code may represent more than one incorrect response.

PLT064 PLT141 PLT077 PLT161 PLT414 PKT163

REVIEWING THE KNOWLEDGE TEST

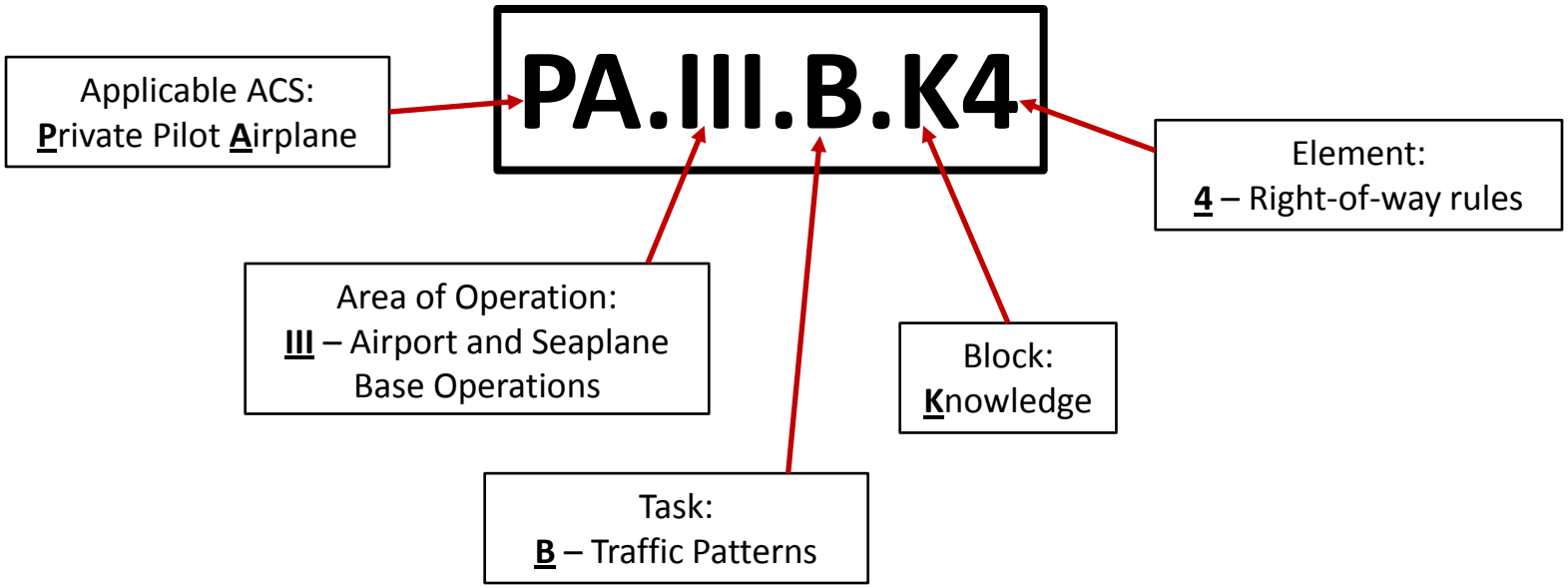




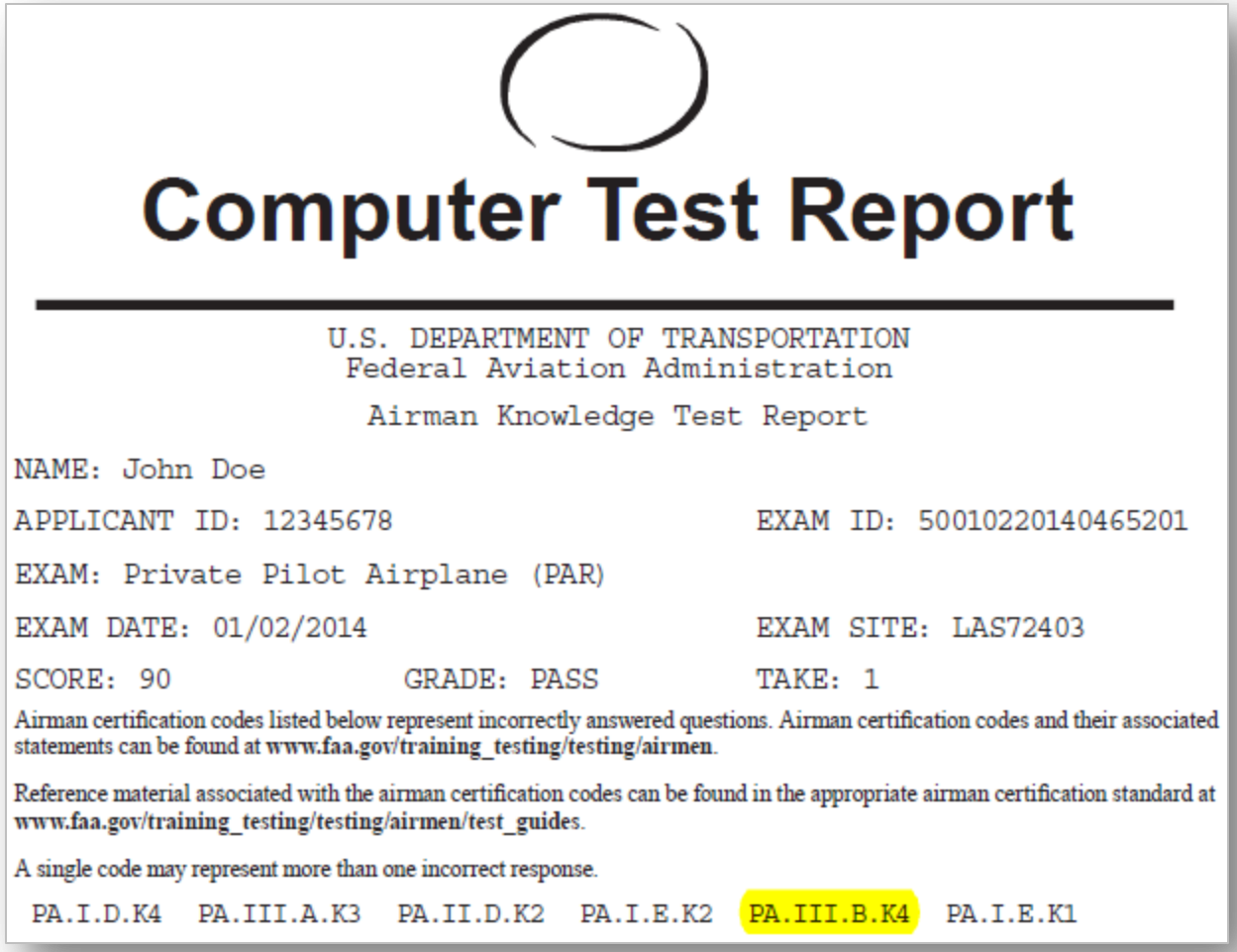


ACS TEST QUESTION CODING

- Allows everything to be mapped and tracked to each specific element for each task and area of operation in a particular ACS



NEW ACS TEST REPORT



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Federal Aviation Administration

Airman Knowledge Test Report

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EXAM: Private Pilot Airplane (PAR)

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

SCORE: 90 GRADE: PASS TAKE: 1

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

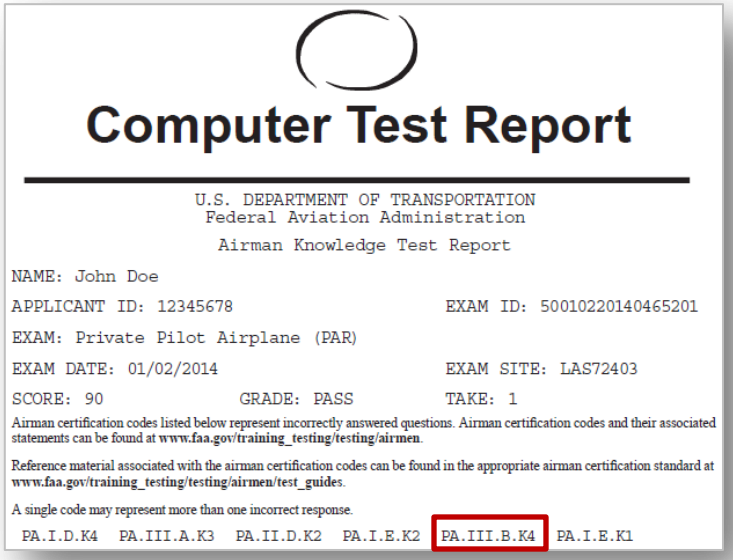
A single code may represent more than one incorrect response.

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

ACS KNOWLEDGE TEST MAPPING

- ACS codes replace PLT codes
- Every test question correlates to a knowledge element in ACS
- Instruction and retesting will be specific, targeted, and based on specified learning criteria
- Notice of Disapproval for the practical test will use the ACS codes to identify the deficient skill(s)

ACS KNOWLEDGE TEST REVIEW



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

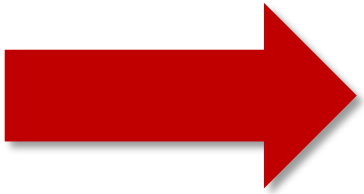
SCORE: 90 GRADE: PASS TAKE: 1

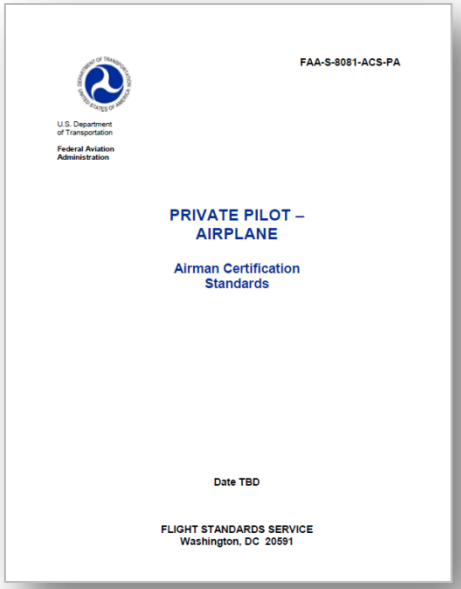
Airman certification codes listed below represent incorrectly answered questions. Airman certification codes and their associated statements can be found at **www.faa.gov/training_testing/testing/airmen**.

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

A single code may represent more than one incorrect response.

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





FAA-S-8081-ACS-PA

U.S. Department of Transportation
Federal Aviation Administration

PRIVATE PILOT – AIRPLANE

Airman Certification Standards

Date TBD

FLIGHT STANDARDS SERVICE
Washington, DC 20591

ACS KNOWLEDGE TEST REVIEW

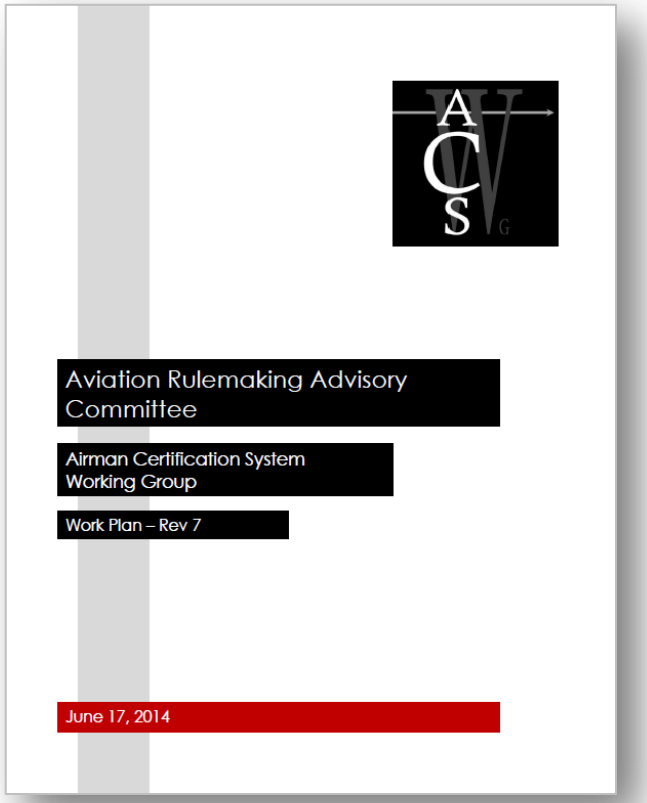
Private Pilot – Airplane Airman Certification Standards
Airplane—Single Engine, Multi Engine Land and Sea Areas of Operation

III. Airport and Seaplane Base Operations

Task	*B. Traffic Patterns*	
Reference	FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; AC 90-66; AIM	
Objective	To determine the applicant exhibits satisfactory knowledge, skills and risk management associated with safe operations in and around the airport traffic patterns.	
Knowledge	The applicant demonstrates understanding of:	
	1. Towered and non-towered airport operations and runway selection.	PA.III.B.K1
	2. Airport markings, lighting, wind indicators.	PA.III.B.K2
	3. Collision avoidance.	PA.III.B.K3
	4. Right-of-way rules.	PA.III.B.K4
	5. Wake turbulence recognition and resolution.	PA.III.B.K5
	6. Wind shear avoidance.	PA.III.B.K6
	7. Runway incursion avoidance.	PA.III.B.K7
	8. Use of automated weather and airport information.	PA.III.B.K8
	9. Parachuting operations.	PA.III.B.K9
Skills	The applicant demonstrates the ability to:	
	1. Properly identify and interpret airport/seaplane base runways, taxiways, markings, and lighting.	PA.III.B.S1
	2. Comply with proper traffic pattern procedures.	PA.III.B.S2
	3. Maintain proper spacing from other aircraft.	PA.III.B.S3
	4. Correct for wind drift to maintain the proper ground track.	PA.III.B.S4
	5. Maintain orientation with the runway/landing area in use.	PA.III.B.S5
	6. Maintain traffic pattern altitude, ±100 feet, and the appropriate airspeed, ±10 knots.	PA.III.B.S6
	7. Maintain an awareness of the position of other aircraft in the pattern.	PA.III.B.S7
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.III.B.R1
	2. Scanning.	PA.III.B.R2
	3. Wake turbulence.	PA.III.B.R3
	4. Lack of situational awareness.	PA.III.B.R4
	5. Aircraft separation and closure rates.	PA.III.B.R5
	6. Maintaining a sterile cockpit environment.	PA.III.B.R6

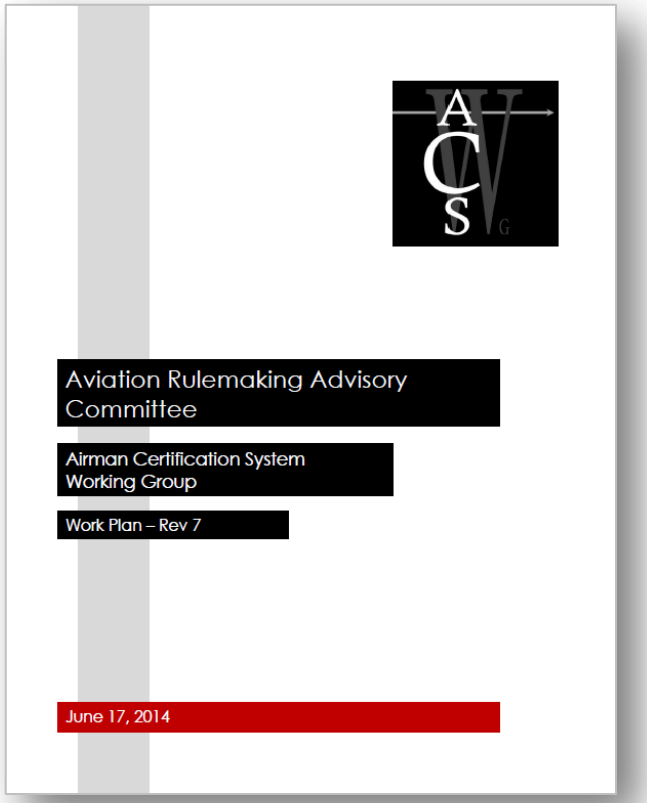
ACS WG PROGRESS TO DATE

- Multi-year, multi-phase project
  - Culmination and built upon previous work
- Published Commercial and Authorized Instructor in Federal Register for comments
  - FAA-2013-0316
- Prototyping Private ACS
  - ERAU – Daytona Beach Campus



ACS WG PROGRESS – NEXT STEPS

- Finalize foundation ACS's
- Expand Prototyping
- FAA
  - Train Inspectors
  - Draft new test questions
  - New internal guidance/orders
  - Train evaluators
- Switch from current system to integrated Airman Certification System



Aviation Rulemaking Advisory Committee
Airman Certification System Working Group

Airman Certification Standards

Questions

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