U.S. Department of Transportation
Federal Aviation Administration

FAA-S-ACS-11A
Includes FAA-G-ACS-2

Airman Certification Standards

Airline Transport Pilot and Type Rating

Airplane

Flight Standards Service
Washington, DC 20591

Aviation Supplies & Academics, Inc.
Newcastle, Washington 98059

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Visit asa2fly.com/acsupdates for FAA revisions affecting this title.

None of the material in this book supersedes any operational documents or procedures issued by the Federal Aviation Administration.

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**Federal Aviation
Administration**

FAA-S-ACS-11A

Airline Transport Pilot and Type Rating for Airplane Category Airman Certification Standards

November 2023

Flight Standards Service
Washington, DC 20591

Foreword

The U.S. Department of Transportation, Federal Aviation Administration (FAA), Office of Safety Standards, Regulatory Support Division, Airman Testing Standards Branch has published the Airline Transport Pilot (ATP) for Airplane Category Airman Certification Standards (ACS) to communicate the aeronautical knowledge, risk management, and flight proficiency standards for ATP pilot and type rating certification in the airplane category.

This ACS is available for download, in PDF format, from www.faa.gov.

Comments regarding this ACS may be emailed to acsptsinquiries@faa.gov.

The FAA created FAA-G-ACS-2, Airman Certification Standards Companion Guide for Pilots, to provide guidance considered relevant and useful to the community. The number of appendices in the ACS was reduced and much of the non-regulatory material was moved to the Airman Certification Standards Companion Guide for Pilots. Applicants, instructors, and evaluators should consult this companion guide to familiarize themselves with ACS procedures. FAA-G-ACS-2 is available for download, in PDF format, from www.faa.gov.

Revision History

Document #	Description	Date
FAA-S-8081-5F	Airline Transport Pilot and Type Rating Practical Test Standards for Airplane	July 2008
FAA-S-ACS-11	Airline Transport Pilot and Type Rating for Airplane Airman Certification Standards	May 10, 2019
FAA-S-ACS-11	Airline Transport Pilot and Type Rating for Airplane Airman Certification Standards (Change 1)	May 28, 2019
FAA-S-ACS-11A	Airline Transport Pilot and Type Rating for Airplane Category Airman Certification Standards	November 2023

Major Enhancements to FAA-S-ACS-11A

- The following ACS codes have been added:

AA.I.C.K2a	AA.I.C.K2g	AA.II.D.R7	AA.IV.B.R9
AA.I.C.K2b	AA.I.F.R4	AA.IV.B.R4	AA.VI.F.R10
AA.I.C.K2c	AA.I.G.K7	AA.IV.B.R5	AA.VI.F.R11
AA.I.C.K2d	AA.I.H.K1i	AA.IV.B.R6	AA.VI.H.R8
AA.I.C.K2e	AA.II.C.R6	AA.IV.B.R7	AA.VI.H.R9
AA.I.C.K2f	AA.II.D.R6	AA.IV.B.R8	

- The following ACS codes have been removed and archived. Please see the Airman Certification Standards Companion Guide for Pilots (FAA-G-ACS-2) for more information.

AA.IV.B.R2	AA.V.C.S2	AA.VI.F.R3b	AA.VI.H.R3b
AA.V.A.S2	AA.VI.F.R3	AA.VI.H.R3	AA.VIII.A.R2
AA.V.B.S2	AA.VI.F.R3a	AA.VI.H.R3a	AA.VIII.B.R2

- Non-regulatory material has been moved from the appendices to the Airman Certification Standards Companion Guide for Pilots (FAA-G-ACS-2).
- Legends have been added to the Additional Ratings Task Tables.

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Introduction

Airman Certification Standards Concept

The goal of the airman certification process is to ensure the applicant possesses the knowledge, ability to manage risks, and skill consistent with the privileges of the certificate or rating being exercised, in order to act as pilot-in-command (PIC).

Safe operations in today's National Airspace System (NAS) require the integration of aeronautical knowledge, risk management, and flight proficiency standards. To accomplish these goals, the FAA drew upon the expertise of organizations and individuals across the aviation and training community to develop the ACS. The ACS integrates the elements of knowledge, risk management, and skill required for each airman certificate or rating. It thus forms a more comprehensive standard for what an applicant must know, consider, and do to demonstrate proficiency to pass the tests required for issuance of the applicable airman certificate or rating.

Area of Operation I. Preflight Preparation

Task A. Operation of Systems

References: *AC 90-117, AC 91.21-1, AC 91-78, AC 120-76; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; FSB Report (type specific); POH/AFM*

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with aircraft systems and their components; and their normal, abnormal, and emergency procedures.

Note: *See Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge: The applicant demonstrates understanding of:

AA.I.A.K1	Landing gear–extension/retraction system(s), indicators, float devices, brakes, antiskid, tires, nose-wheel steering, and shock absorbers.
AA.I.A.K2	Powerplant–controls and indications, induction system, carburetor and fuel injection, turbocharging, cooling, mounting points, turbine wheels, compressors, deicing, anti-icing, and other related components.
AA.I.A.K3	Propellers–type, controls, feathering/unfeathering, auto-feather, negative torque sensing, synchronizing, synchrophasing, and thrust reverse, including uncommanded reverse procedures.
AA.I.A.K4	Fuel system–capacity, drains, pumps, controls, indicators, cross-feeding, transferring, jettisoning, fuel grade, color and additives, fueling and defueling procedures, and fuel substitutions.
AA.I.A.K5	Oil system–capacity, allowable types of oil, quantities, and indicators.
AA.I.A.K6	Hydraulic system–capacity, pumps, pressure, reservoirs, allowable types of fluid, and regulators.
AA.I.A.K7	Electrical system–alternators, generators, batteries, circuit breakers and protection devices, controls, indicators, and external and auxiliary power sources and ratings.
AA.I.A.K8	Pneumatic and environmental systems–heating, cooling, ventilation, oxygen, pressurization, supply for ice protection systems, controls, indicators, and regulating devices.
AA.I.A.K9	Avionics and communications–autopilot, flight director, Electronic Flight Instrument Systems (EFIS), Flight Management System (FMS), Electronic Flight Bag (EFB), Radar, Inertial Navigation Systems (INS), Global Navigation Satellite System (GNSS), Space-Based Augmentation System (SBAS), Ground-Based Augmentation System (GBAS), ground-based navigation systems and components, Automatic Dependent Surveillance – Broadcast (ADS-B) In and Out, Automatic Dependent Surveillance – Contract (ADS-C), traffic awareness/warning/avoidance systems, terrain awareness/warning/alert systems, communication systems (e.g., data link, Ultra High Frequency (UHF)/Very High Frequency (VHF)/High Frequency (HF), satellite), Controller Pilot Data Link Communication (CPDLC), indicating devices, transponder, and emergency locator transmitter, Head Up-Display (HUD).
AA.I.A.K10	Ice protection–anti-ice, deice, pitot-static system protection, turbine inlet, propeller, windshield, airfoil surfaces, and other related components.
AA.I.A.K11	Crewmember and passenger equipment–oxygen system, survival gear, emergency exits, evacuation procedures and crew duties, quick donning oxygen mask for crewmembers, passenger oxygen system.
AA.I.A.K12	Flight controls–ailerons, elevator(s), rudder(s), control tabs, control boost/augmentation systems, flaps, spoilers, leading edge devices, speed brakes, stability augmentation system (e.g., yaw damper), and trim systems.

AA.I.A.K13	Pitot-static system–associated instruments and the power source for those flight instruments. Operation and power sources for other flight instruments.
AA.I.A.K14	Fire & smoke detection, protection, and suppression–powerplant, cargo and passenger compartments, lavatory, pneumatic and environmental, electrical/avionics, and batteries (on aircraft and personal electronic devices).
AA.I.A.K15	Envelope protection–angle of attack warning and protection, and speed protection.
AA.I.A.K16	The contents of the Pilot Owner's Handbook (POH) or Airplane Flight Manual (AFM) with regard to the systems and components in the airplane.
AA.I.A.K17	How to use a Minimum Equipment List (MEL) and a Configuration Deviation List (CDL).

Risk Management: The applicant is able to identify, assess, and mitigate risk associated with:

AA.I.A.R1	Detection of system malfunctions or failures.
AA.I.A.R2	Management of a system failure.
AA.I.A.R3	Monitoring and management of automated systems.
AA.I.A.R4	Following checklists or procedures.

Skills: For the airplane provided for the practical test, the applicant demonstrates the ability to:

AA.I.A.S1	Explain and describe the operation of the aircraft systems and components using correct terminology.
AA.I.A.S2	Recall immediate action items or memory items, if appropriate.
AA.I.A.S3	Identify system or component limitations listed in the POH/AFM.
AA.I.A.S4	Demonstrate or describe, as appropriate, the process for deferring inoperative equipment (e.g., MEL) and using a CDL.
AA.I.A.S5	Comply with operations specifications, management specifications, and letters of authorization, if applicable.
AA.I.A.S6	Through the use of the appropriate checklists and normal and abnormal procedures, demonstrate the proper use of the aircraft systems, subsystems, and devices, as determined by the evaluator.

Task B. Performance and Limitations

References: *14 CFR parts 1, 91; AC 20-117, AC 61-107, AC 61-138, AC 91-74, AC 91-79, AC 120-27, AC 120-58, AC 120-60, AC 135-17; AIM; Chart Supplements; FAA-H-8083-1, FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM; SAFO 19001*

Objective: To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with operating an aircraft safely within its operating envelope.

Note: *See Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge: The applicant demonstrates understanding of:

AA.I.B.K1	Elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance.
AA.I.B.K2	How to determine the following, as applicable to the class sought:

AA.I.B.K2a a. Accelerate-stop / accelerate-go distance

AA.I.B.K2b b. Takeoff performance [e.g., balance field length and Velocity, Minimum Control (ground) (V_{MCG})]

AA.I.B.K2c c. Climb performance

AA.I.B.K2d d. Cruise performance (e.g., optimum and maximum operating altitudes)

AA.I.B.K2e e. Descent performance

AA.I.B.K2f f. Landing performance

AA.I.B.K2g g. Performance with an inoperative powerplant for all phases of flight (AMEL, AMES)

AA.I.B.K2h h. Weight and balance and how to shift weight

AA.I.B.K3 Factors affecting performance, including:

AA.I.B.K3a a. Atmospheric conditions

AA.I.B.K3b b. Pilot technique

AA.I.B.K3c c. Aircraft configuration (e.g., flap setting)

AA.I.B.K3d d. Airport environment (e.g., runway condition, land and hold short operations (LAHSO))

AA.I.B.K3e e. Loading (e.g., center of gravity)

AA.I.B.K3f f. Aircraft weight

AA.I.B.K4 Aerodynamics and how it relates to performance.

AA.I.B.K5 Adverse effects of exceeding an airplane limitation or the aircraft operating envelope.

AA.I.B.K6 Effects of icing on performance.

AA.I.B.K7 Clean wing concept; deicing and anti-icing procedures, including use of appropriate deice fluid, hold-over tables, calculating hold-over times, and pre-takeoff contamination checks.

AA.I.B.K8 Air carrier weight and balance systems (e.g., average weight program). Air Transport Pilot (ATP) (AMEL, AMES).

AA.I.B.K9 Runway assessment and condition reporting and use of the Runway Condition Assessment Matrix (RCAM). (ATP)(AMEL, AMES).

Risk Management: The applicant is able to identify, assess, and mitigate risk associated with:

AA.I.B.R1 Use of performance charts, tables, and data.

AA.I.B.R2 Airplane limitations.

AA.I.B.R3 Possible differences between calculated performance and actual performance.

AA.I.B.R4 Airplane icing and its effect on performance and stall warning.

AA.I.B.R5 Runway excursions.

Skills: For the airplane provided for the practical test, the applicant demonstrates the ability to:

AA.I.B.S1 Describe the airspeeds used during specific phases of flight.

AA.I.B.S2 Describe the effects of meteorological conditions on performance for all phases of flight and correctly apply these factors to a specific chart, table, graph, or other performance data.

AA.I.B.S3 Describe the procedures for wing contamination recognition and any deice/anti-ice procedures prior to takeoff.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Airman Certification Standards
Companion Guide for Pilots

November 2023

Flight Standards Service
Washington, DC 20591

Foreword

The Federal Aviation Administration (FAA) developed this Airman Certification Standards Companion Guide FAA-G-ACS-2, for use with the Airman Certification Standards (ACS) for pilot certification. This guide, along with the regulatory material in the ACS, may assist an applicant preparing for the knowledge and practical test(s) that lead to pilot certification. This document is intended only to provide clarity to the public regarding existing requirements under the law or agency policies. The contents of this document do not have the force and effect of law and are not meant to bind the public in any way.

This guide and the ACS are available for download from www.faa.gov.

Comments regarding this document may be emailed to acsptsinquiries@faa.gov.

Revision History

Document #	Description	Date
FAA-G-ACS-2	Airman Certification Standards Companion Guide for Pilots	November 2023

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Why the FAA Created this Guide

The Federal Aviation Administration (FAA) publishes the Airman Certification Standards (ACS) to communicate the aeronautical knowledge, risk management, and flight proficiency standards for various certificates and ratings available to airmen. The ACSs are incorporated by reference into 14 CFR part 61; therefore, the material contained in the ACS is regulatory. This guide, FAA-G-ACS-2, provides additional information to the regulated community to facilitate airman testing. The ACS complies with the safety management system (SMS) framework that the FAA uses to mitigate risks associated with airman certification training and testing. Specifically, the ACS, incorporated by reference (IBR) into the Federal Aviation Regulations, conforms to four functional components of an SMS:

- Safety Policy—Each ACS specifies the Tasks selected by the FAA from the regulatory Areas of Operation. Evaluators formulate a Plan of Action that determines if an applicant can operate safely within the NAS. The ACS represents the FAA's commitment to continually improve safety by including risk management elements in addition to knowledge and skill elements;
- Safety Risk Management that complies with the Administrative Procedures Act (APA) allows the FAA to work with internal and external stakeholders during document formulation. The public at large and stakeholders have an additional chance to provide input during public comment periods;
- Safety Assurance processes ensure a methodical and reasoned incorporation of changes arising from safety recommendations or new developments in aviation; and
- Safety Promotion in the form of engagement and discussion between both external stakeholders (e.g., the aviation training industry) and the FAA policy divisions going forward will determine the content of any ACS that publishes in a Notice of Proposed Rulemaking.

The FAA develops the ACS documents along with associated guidance and updated reference material in collaboration with a diverse group of aviation training experts. The goal is to drive a systematic approach to all components of the airman certification system, including knowledge test question development and conduct of the practical test. The FAA acknowledges and appreciates the many hours that these aviation experts have contributed toward this goal. This level of collaboration, a hallmark of a robust safety culture, strengthens and enhances aviation safety at every level of the airman certification system.

Note: *This document does not apply to the Practical Test Standards.*

The Non-Regulatory Material in this Guide

This guide provides test preparatory information for an applicant seeking a certificate or rating. This guide also provides a list of references and abbreviations/acronyms used in any ACS and a practical test checklist for use by an applicant. The material in this guide is non-regulatory and may contain terms such as should or may:

- Should indicates actions that are recommended, but not regulatory.
- May is used in a permissive sense to state authority or permission to do the act prescribed.

This document is not legally binding and will not be relied upon by the FAA as a basis for affirmative enforcement action or other administrative penalty. Conformity with the guidance is voluntary only and nonconformity will not affect rights and obligations under existing statutes and regulations.

Section 1: Knowledge Test Eligibility, Description, and Registration

Eligibility

For detailed airman knowledge test eligibility and applicable prerequisites, applicants should refer to the 14 CFR part 61 rules that apply to a specific certificate or rating.

Steps for Knowledge Test Registration

Step 1. Obtain an FAA Tracking Number

The FAA Airman Knowledge Test registration system requires the applicant to have an FAA Tracking Number (FTN). Applicants may obtain an FTN through the Integrated Airman Certification and Rating Application (IACRA) website.

This video describes creating an IACRA account and obtaining an FTN. The specific instructions begin at the 14-minute mark.

Step 2. Create an Account with PSI

After obtaining an FTN, applicants should create an account with the FAA's contracted testing vendor, PSI, a professional testing company which operates hundreds of test centers. Visit PSI's website for information on authorized airman knowledge test centers and how to register, schedule, and pay for an Airman Knowledge Test:

Note: *The IACRA and PSI systems share data that verifies the applicant's FTN and name based on the information input into IACRA by the applicant. The PSI system does not allow applicants to make changes to their name. Applicants who need to make a correction to their name should process that correction in the IACRA system. The applicant's name correction will appear in the PSI system once the applicant logs back into the PSI system and refreshes their account.*

Step 3. Select Test and Testing Center

After obtaining an FTN and creating an account with PSI, applicants may schedule knowledge tests. The PSI system walks the applicant through the process to select a test center in their area and select one or more specific knowledge tests.

Step 4. Select an Available Time Slot

After selecting the test center and test, the applicant may select a date and time slot.

Step 5. Pay for Test

After selecting an available time slot, the PSI system prompts the applicant to pay for the test. After completing this step, the applicant receives an automated email confirmation from PSI.

Applicants are required to meet any applicable Airman Knowledge Test eligibility requirements before arriving at a test center to take a specific knowledge test.

Testing Procedures for Applicants Requesting Special Accommodations

Applicants may request a special accommodation for their airman knowledge test through the PSI test registration and scheduling process. The process allows the applicant to select the specific accommodation(s) needed in accordance with the Americans with Disabilities Act (ADA). The PSI special accommodations team will work with the applicant and the selected testing center to provide appropriate accommodation(s). The PSI special accommodations team may request medical documentation for verification.

Acceptable Forms of Identification

14 CFR part 61, section 61.35, requires an applicant for a knowledge test to have proper identification at the time of application. Before beginning an Airman Knowledge Test, test center personnel will ask to see the applicant's state or federal government-issued photo identification. The identification must contain the applicant's photograph, signature, and date of birth. If the applicant's permanent mailing address is a PO Box number, the applicant must provide a current residential address.

Acceptable Forms of Applicant Address Verification

The table below provides examples of acceptable identification.

All Applicants	U.S. Citizens & Resident Aliens	Non-U.S. Citizens
Identification information must be: ✓ valid ✓ current Identification must include **all** of the following information: ✓ photo ✓ date of birth ✓ signature ✓ physical, residential address	✓ Identification card issued by any **U.S.** state, territory, or government entity (e.g., driver permit or license, government identification card, or military identification card) **or** ✓ Passport **or** ✓ Alien residency card	✓ Passport **and** ✓ Driver permit or license issued by a U.S. state or territory **or** ✓ Identification card issued by any government entity

Airman Knowledge Test Description

The airman knowledge test consists of multiple-choice questions. A single correct response exists for each test question. A correct response to one question does not depend upon, or influence, the correct response to another.

Taking the Knowledge Test

Before starting the actual test, the test center provides an applicant with the opportunity to practice navigating the test software. This practice or tutorial session may include sample questions to familiarize the applicant with the look and feel of the software (e.g., selecting an answer, marking a question for later review, monitoring time remaining for the test, and other features of the testing software). PSI also provides sample tests for registered users on their website.

Acceptable and Unacceptable Materials

The applicant may use the following aids, reference materials, and test materials when taking the knowledge test provided the material does not include actual test questions or answers:

Acceptable Materials	Unacceptable Materials	Notes
Supplement book provided by the proctor	Written materials that are handwritten, printed, or electronic	Testing centers may provide calculators and/or deny the use of personal calculators.
All models of aviation-oriented calculators or small electronic calculators that perform only arithmetic functions	Electronic calculators incorporating permanent or continuous type memory circuits without erasure capability	Proctor may prohibit the use of an applicant's calculator if the proctor is unable to determine the calculator's erasure capability
Calculators with simple programmable memories, which allow the addition to, subtraction from, or retrieval of one number from the memory, or simple functions, such as square root and percentages	Magnetic Cards, magnetic tapes, modules, computer chips, or any other device upon which pre-written programs or information related to the test can be stored and retrieved	Printouts of data should be surrendered at the completion of the test if the calculator incorporates this design feature
Scales, straightedges, protractors, plotters, navigation computers, blank log sheets, holding pattern entry aids, and electronic or mechanical calculators that are directly related to the test	Dictionaries	Before, and upon completion of the test, while in the presence of the proctor, actuate the ON/OFF switch or RESET button, and perform any other function that ensures erasure of any data stored in memory circuits
Manufacturer's permanently inscribed instructions on the front and back of such aids (e.g., formulas, conversions, regulations, signals, weather data, holding pattern diagrams, frequencies, weight and balance formulas, and air traffic control procedures)	Any booklet or manual containing instructions related to the use of test aids	Proctor makes the final determination regarding aids, reference materials, and test materials

Test Taking Tips

When taking a knowledge test, applicants should:

- Read the test instructions carefully;
- Mark difficult questions for later review in order to use the available time efficiently;
- Examine graphs and notes that pertain to the question;
- Request and mark a printed copy of any graph while computing answers, if needed;
- Understand that since only one answer is complete and correct, the other possible answers are either incomplete or erroneous;
- Answer each question in accordance with the current regulations and guidance publications; and
- Answer all the questions before time allotted for the test expires.
- Review 14 CFR part 61, section 61.37 regarding cheating or other unauthorized conduct.

This Federal Aviation Administration (FAA) *Airline Transport Pilot and Type Rating for Airplane Category Airman Certification Standards* (ACS) document provides the aeronautical knowledge, risk management, and flight proficiency standards for ATP pilot and type rating certification in the airplane category, single-engine land and sea, and multi-engine land and sea classes (ASEL, ASES, AMEL, AMES). The FAA ACS comprise the testing standard for practical tests and proficiency checks for persons seeking or holding an airman certificate and/or rating. This book also includes the *Airman Certification Standards Companion Guide for Pilots* (FAA-G-ACS-2), with additional information relevant to applicants seeking FAA airman certification.

The goal of the airman certification process is to ensure the applicant possesses the knowledge, ability to manage risks, and skill consistent with the privileges of the certificate or rating being exercised, in order to act as pilot-in-command (PIC). The ACS is the guide for students, instructors, and evaluators to understand what applicants must know, consider, and do to pass the FAA Knowledge Exam and practical (checkride) and earn their pilot certificate or rating.

FAA Certification Standards available from ASA:

Airman Certification Standards

- **Private Pilot** Airplane
- **Private Pilot** Rotorcraft Helicopter
- **Instrument Rating** Airplane
- **Instrument Rating** Helicopter
- **Commercial Pilot** Airplane
- **Commercial Pilot** Rotorcraft Helicopter
- **Flight Instructor** Airplane
- **Flight Instructor** Rotorcraft Helicopter
- **Airline Transport Pilot and Type Rating** Airplane
- **Remote Pilot** Small Unmanned Aircraft Systems
- **Aviation Mechanic** General, Airframe, Powerplant

Practical Test Standards

- **Aircraft Dispatcher**
- **Flight Instructor** Instrument Airplane & Helicopter

Visit **asa2fly.com/acsupdate** for FAA revisions affecting this title.

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