U.S. Department of Transportation
Federal Aviation Administration

FAA-S-ACS-8C
Includes FAA-G-ACS-2 (Change 1)

Airman Certification Standards

Instrument 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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FAA-G-ACS-2

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

Instrument Rating – Airplane
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 Instrument Rating – Airplane Airman Certification Standards (ACS) to communicate the aeronautical knowledge, risk management, and flight proficiency standards for the Instrument Rating 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-8081-4E	Instrument Rating Practical Test Standards for Airplane, Helicopter, and Powered Lift (with Changes 1-5)	January 2010
FAA-S-ACS-8	Instrument Rating Airplane Airman Certification Standards	June 1, 2016
FAA-S-ACS-8	Instrument Rating Airplane Airman Certification Standards (Change 1)	June 15, 2016
FAA-S-ACS-8A	Instrument Rating – Airplane Airman Certification Standards	June 12, 2017
FAA-S-ACS-8B	Instrument Rating – Airplane Airman Certification Standards	June 11, 2018
FAA-S-ACS-8B	Instrument Rating – Airplane Airman Certification Standards (with Change 1)	June 6, 2019
FAA-S-ACS-8C	Instrument Rating – Airplane Airman Certification Standards	November 2023

Major Enhancements to FAA-S-ACS-8C

- The following ACS codes have been added:

IR.I.B.K2a	IR.I.C.K1d	IR.III.B.S3a	IR.V.A.S10
IR.I.B.K2b	IR.I.C.K1e	IR.IV.B.K3	IR.VI.A.S15
IR.I.B.K2c	IR.I.C.K1f	IR.IV.B.K4	IR.VI.B.S17
IR.I.B.K2d	IR.I.C.K1g	IR.IV.B.R4	IR.VI.E.K3
IR.I.B.K2e	IR.I.C.K1h	IR.IV.B.R5	IR.VI.E.R4
IR.I.B.K2f	IR.II.A.K2	IR.IV.B.R6	IR.VII.A.S5
IR.I.B.K2g	IR.II.A.R3	IR.IV.B.R7	IR.VII.B.R6
IR.I.C.K1a	IR.II.A.S2	IR.IV.B.R8	IR.VII.C.S14
IR.I.C.K1b	IR.II.B.K3	IR.IV.B.R9	
IR.I.C.K1c	IR.II.B.S2	IR.IV.B.S2	

- 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.

  IR.IV.B.R2
  IR.VII.C.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. Pilot Qualifications

References: *14 CFR part 61; AC 68-1; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25*

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with requirements to act as pil ot-in-command under instrument flight rules.

Knowledge:	The applicant demonstrates understanding of:
IR.I.A.K1	Certification requirements, recency of experience, and recordkeeping.
IR.I.A.K2	Privileges and limitations.
IR.I.A.K3	Part 68 BasicMed privileges and limitations.
Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IR.I.A.R1	Proficiency versus currency.
IR.I.A.R2	Personal minimums.
IR.I.A.R3	Fitness for flight and physiological factors that might affect the pilot's ability to fly under instrument conditions.
IR.I.A.R4	Flying unfamiliar aircraft or operating with unfamiliar flight display systems and avionics.
Skills:	The applicant exhibits the skill to:
IR.I.A.S1	Apply requirements to act as pilot-in-command (PIC) under Instrument Flight Rules (IFR) in a scenario given by the evaluator.

Task B. Weather Information

References: *14 CFR part 91, AC 91-92; AIM; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25, FAA-H-8083-28*

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with obtaining, understanding, and applying weather information for a flight under IFR.

Note: *If K2 is selected, the evaluator must assess the applicant's knowledge of at least three sub-elements.*

Note: *If K3 is selected, the evaluator must assess the applicant's knowledge of at least three sub-elements.*

Knowledge:	The applicant demonstrates understanding of:
IR.I.B.K1	Sources of weather data (e.g., National Weather Service, Flight Service) for flight planning purposes.
IR.I.B.K2	Acceptable weather products and resources required for preflight planning, current and forecast weather for departure, en route, and arrival phases of flight such as:
IR.I.B.K2a	a. Airport Observations (METAR and SPECI) and Pilot Observations (PIREP)
IR.I.B.K2b	b. Surface Analysis Chart, Ceiling and Visibility Chart (CVA)
IR.I.B.K2c	c. Terminal Aerodrome Forecasts (TAF)
IR.I.B.K2d	d. Graphical Forecasts for Aviation (GFA)
IR.I.B.K2e	e. Wind and Temperature Aloft Forecast (FB)
IR.I.B.K2f	f. Convective Outlook (AC)

IR.I.B.K2g	g. Inflight Aviation Weather Advisories including Airmen's Meteorological Information (AIRMET), Significant Meteorological Information (SIGMET), and Convective SIGMET
IR.I.B.K3	Meteorology applicable to the departure, en route, alternate, and destination for flights conducted under Instrument Flight Rules (IFR) to include expected climate and hazardous conditions such as:
IR.I.B.K3a	a. Atmospheric composition and stability
IR.I.B.K3b	b. Wind (e.g., windshear, mountain wave, factors affecting wind, etc.)
IR.I.B.K3c	c. Temperature and heat exchange
IR.I.B.K3d	d. Moisture/precipitation
IR.I.B.K3e	e. Weather system formation, including air masses and fronts
IR.I.B.K3f	f. Clouds
IR.I.B.K3g	g. Turbulence
IR.I.B.K3h	h. Thunderstorms and microbursts
IR.I.B.K3i	i. Icing and freezing level information
IR.I.B.K3j	j. Fog/mist
IR.I.B.K3k	k. Frost
IR.I.B.K3l	l. Obstructions to visibility (e.g., smoke, haze, volcanic ash, etc.)
IR.I.B.K4	Flight deck instrument displays of digital weather and aeronautical information.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IR.I.B.R1	Making the go/no-go and continue/divert decisions, including:
IR.I.B.R1a	a. Circumstances that would make diversion prudent
IR.I.B.R1b	b. Personal weather minimums
IR.I.B.R1c	c. Hazardous weather conditions, including known or forecast icing or turbulence aloft
IR.I.B.R2	Use and limitations of:
IR.I.B.R2a	a. Installed onboard weather equipment
IR.I.B.R2b	b. Aviation weather reports and forecasts
IR.I.B.R2c	c. Inflight weather resources

Skills:	The applicant exhibits the skill to:
IR.I.B.S1	Use available aviation weather resources to obtain an adequate weather briefing.
IR.I.B.S2	Analyze the implications of at least three of the conditions listed in K3a through K3l, using actual weather or weather conditions provided by the evaluator.
IR.I.B.S3	Correlate weather information to make a go/no-go decision.
IR.I.B.S4	Determine whether an alternate airport is required, and, if required, whether the selected alternate airport meets regulatory requirements.

Task C. Cross-Country Flight Planning

References: *14 CFR part 91; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-16, FAA-H-8083-25; IFR Enroute Charts; NOTAMS; IFR Navigation Charts*

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with planning an IFR cross-country and filing an IFR flight plan.

Note: *Preparation, presentation, and explanation of a computer-generated flight plan is an acceptable option.*

Knowledge:	The applicant demonstrates understanding of:
IR.I.C.K1	Route planning, including consideration of:
IR.I.C.K1a	a. Available navigational facilities
IR.I.C.K1b	b. Special use airspace
IR.I.C.K1c	c. Preferred routes
IR.I.C.K1d	d. Primary and alternate airports
IR.I.C.K1e	e. Enroute charts
IR.I.C.K1f	f. Chart Supplements
IR.I.C.K1g	g. NOTAMS
IR.I.C.K1h	h. Terminal Procedures Publications (TPP)
IR.I.C.K2	Altitude selection accounting for terrain and obstacles, glide distance of airplane, IFR cruising altitudes, effect of wind, and oxygen requirements.
IR.I.C.K3	Calculating:
IR.I.C.K3a	a. Time, climb and descent rates, course, distance, heading, true airspeed, and groundspeed
IR.I.C.K3b	b. Estimated time of arrival, including conversion to universal coordinated time (UTC)
IR.I.C.K3c	c. Fuel requirements, including reserve
IR.I.C.K4	Elements of an IFR flight plan.
IR.I.C.K5	Procedures for activating and closing an IFR flight plan in controlled and uncontrolled airspace.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IR.I.C.R1	Pilot.
IR.I.C.R2	Aircraft.
IR.I.C.R3	Environment (e.g., weather, airports, airspace, terrain, obstacles).
IR.I.C.R4	External pressures.
IR.I.C.R5	Limitations of air traffic control (ATC) services.
IR.I.C.R6	Limitations of electronic planning applications and programs.
IR.I.C.R7	Fuel planning.

Skills:	The applicant exhibits the skill to:
IR.I.C.S1	Prepare, present, and explain a cross-country flight plan assigned by the evaluator including a risk analysis based on real time weather, which includes calculating time en route and fuel considering factors such as power settings, operating altitude, wind, fuel reserve requirements, and weight and balance requirements.

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

FAA-G-ACS-2
(with Change 1)

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/training_testing/testing/acs.

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
FAA-G-ACS-2	Airman Certification Standards Companion Guide for Pilots (Change 1)	September 2024

Record of Changes

Change 1 (September 19, 2024)

- Updated the hyperlink in the Foreword to point directly to the ACS webpage on faa.gov (page 42).
- Removed the duplicated paragraph in the “ACS Archived Test Codes” subsection of Section 2 (page 49).
- Added 14 CFR part 73, Special Use Airspace to the list of References in Section 5 (page 54).
- Removed AC 00-30C, Clear Air Turbulence Avoidance from the list of References in Section 5 (page 54).
- Removed SAFO 19001 from the list of References in Section 5 (page 57).

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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) *Instrument Rating – Airplane Category Airman Certification Standards* (ACS) document provides the aeronautical knowledge, risk management, and flight proficiency standards for the Instrument Rating in the airplane category. 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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ASA-ACS-8C