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Appendix 1: The Knowledge Test Eligibility, Prerequisites, and Testing Centers

Knowledge Test Description

The knowledge test is an important part of the airman certification process. Applicants must pass the knowledge test before taking the practical test.

The knowledge test consists of objective, multiple-choice questions. There is a single correct response for each test question. Each test question is independent of other questions. A correct response to one question does not depend upon, or influence, the correct response to another.

Knowledge Test Tables

Test Code	Test Name	Number of Questions	Age	Allotted Time	Passing Score
AIF	Flight Instructor Instrument Airplane (Added Rating)*	20	16	1.0	70
FIH	Flight Instructor Instrument Helicopter	50	16	2.5	70
FII	Flight Instructor Instrument Airplane	50	16	2.5	70
HIF	Flight Instructor Instrument Helicopter (Added Rating)*	20	16	1.0	70
ICH	Instrument Rating Helicopter Canadian Conversion	40	15	2.0	70
ICP	Instrument Rating Airplane Canadian Conversion	40	15	2.0	70
IFP	Instrument Rating Foreign Pilot	50	n/a	2.5	70
IGI	Ground Instructor Instrument	50	16	2.5	70
IRA	Instrument Rating Airplane	60	15	2.5	70
IRH	Instrument Rating Helicopter	60	15	2.5	70

*See Rating Table [Appendix 4](#)

Knowledge Test Blueprint

IRA Knowledge Areas Required by 14 CFR part 61, section 61.65 to be on the Knowledge Test	Percent of Questions Per Test
Regulations	5 - 15%
IFR En Route and Approach Procedures	5 - 15%
Air Traffic Control and Procedures	5 - 20%
IFR Navigation	5 - 20%
Weather Reports, Critical Weather, Wind shear and Forecasts	10 - 20%
Safe and Efficient IFR Operations	5 - 10%
Aeronautical Decision-Making	5 - 10%
Crew Resource Management (CRM)	5 - 10%
Total Number of Questions	60

English Language Standard

In accordance with the requirements of 14 CFR part 61 and the FAA Aviation English Language Proficiency standard, throughout the application and testing process the applicant must demonstrate the ability to read, write, speak, and understand the English language. English language proficiency is required to communicate effectively with Air Traffic Control (ATC), to comply with ATC instructions, and to ensure clear and effective crew

communication and coordination. Normal restatement of questions as would be done for a native English speaker is permitted, and does not constitute grounds for disqualification.

Knowledge Test Requirements

In order to take the IRA Knowledge Test, you must provide proper identification. To verify your eligibility to take the test, you must also provide one of the following in accordance with the requirements of 14 CFR part 61:

- 14 CFR part 61, section 61.35 lists the prerequisites for taking the knowledge test, to include the minimum age an applicant must be to sit for the test.
 - Received an endorsement, if required by this part, from an authorized instructor certifying that the applicant accomplished the appropriate ground-training or a home-study course required by this part for the certificate or rating sought and is prepared for the knowledge test;
 - Proper identification at the time of application that contains the applicant's—
 - (i) Photograph;
 - (ii) Signature;
 - (iii) Date of birth;
 - (iv) If the permanent mailing address is a post office box number, then the applicant must provide a government-issued residential address
- 14 CFR part 61, section 61.49 acceptable forms of retest authorization for **all** Instrument Rating tests:
 - An applicant retesting **after failure** is required to submit the applicable test report indicating failure, along with an endorsement from an authorized instructor who gave the applicant the required additional training. The endorsement must certify that the applicant is competent to pass the test. The test proctor must retain the original failed test report presented as authorization and attach it to the applicable sign-in/out log.

Note: *If the applicant no longer possesses the original test report, he or she may request a duplicate replacement issued by the [Airman Certification Branch \(AFS-760\)](#).*
- Acceptable forms of authorization for Instrument Rating Airplane Canadian Conversion (ICP) only:
 - Confirmation of Verification Letter issued by AFS-760 ([Knowledge Testing Authorization Requirements Matrix](#)).
 - Requires **no** instructor endorsement or other form of written authorization.

Knowledge Test Centers

The FAA authorizes hundreds of knowledge testing center locations that offer a full range of airman knowledge tests. For information on authorized testing centers and to register for the knowledge test, contact one of the providers listed at www.faa.gov.

Knowledge Test Registration

When you contact a knowledge testing center to register for a test, please be prepared to select a test date, choose a testing center, and make financial arrangements for test payment when you call. You may register for test(s) several weeks in advance, and you may cancel in accordance with the testing center's cancellation policy.

Appendix 2: Knowledge Test Procedures and Tips

Before starting the actual test, the testing center will provide an opportunity to practice navigating through the test. 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.)

Acceptable Materials

The applicant may use the following aids, reference materials, and test materials, as long as the material does not include actual test questions or answers:

Acceptable Materials	Unacceptable Materials	Notes
Supplement book provided by 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.	Unit Member (proctor) may prohibit the use of your calculator if he or she is unable to determine the calculator's erasure capability
Calculators with simple programmable memories, which allow 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 must 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 Unit Member, 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 use of test aids	Unit Member makes the final determination regarding aids, reference materials, and test materials

Test Tips

When taking a knowledge test, please keep the following points in mind:

- Carefully read the instructions provided with the test.
- Answer each question in accordance with the latest regulations and guidance publications.
- Read each question carefully before looking at the answer options. You should clearly understand the problem before trying to solve it.
- After formulating a response, determine which answer option corresponds with your answer. The answer you choose should completely solve the problem.
- Remember that only one answer is complete and correct. The other possible answers are either incomplete or erroneous.

- If a certain question is difficult for you, mark it for review and return to it after you have answered the less difficult questions. This procedure will enable you to use the available time to maximum advantage.
- When solving a calculation problem, be sure to read all the associated notes.
- For questions involving use of a graph, you may request a printed copy that you can mark in computing your answer. This copy and all other notes and paperwork must be given to the testing center upon completion of the test.

Cheating or Other Unauthorized Conduct

To avoid test compromise, computer testing centers must follow strict security procedures established by the FAA and described in FAA Order 8080.6 (as amended), Conduct of Airman Knowledge Tests. The FAA has directed testing centers to terminate a test at any time a test unit member suspects that a cheating incident has occurred.

The FAA will investigate and, if the agency determines that cheating or unauthorized conduct has occurred, any airman certificate or rating you hold may be revoked. You will also be prohibited from applying for or taking any test for a certificate or rating under 14 CFR part 61 for a period of 1 year.

Testing Procedures for Applicants Requesting Special Accommodations

An applicant with learning or reading disability may request approval from the Airman Testing Standards Branch (AFS-630) through the local Flight Standards District Office (FSDO) or International Field Office/International Field Unit (IFO/IFU) to take airman knowledge test using one of the three options listed below, in preferential order:

Option 1: Use current testing facilities and procedures whenever possible.

Option 2: Use a self-contained, electronic device which pronounces and displays typed-in words (e.g., the Franklin Speaking Wordmaster®) to facilitate the testing process.

Note: *The device should consist of an electronic thesaurus that audibly pronounces typed-in words and presents them on a display screen. The device should also have a built-in headphone jack in order to avoid disturbing others during testing.*

Option 3: Request the proctor's assistance in reading specific words or terms from the test questions and/or supplement book. To prevent compromising the testing process, the proctor must be an individual with no aviation background or expertise. The proctor may provide reading assistance only (i.e., no explanation of words or terms). When an applicant requests this option, the FSDO or IFO/IFU inspector must contact AFS-630 for assistance in selecting the test site and assisting the proctor. Before approving any option, the FSDO or IFO/IFU inspector must advise the applicant of the regulatory certification requirement to be able to read, write, speak, and understand the English language.

Appendix 3: Airman Knowledge Test Report

Immediately upon completion of the knowledge test, the applicant receives a printed Airman Knowledge Test Report (AKTR) documenting the score with the testing center's raised, embossed seal. The applicant must retain the original AKTR. The instructor must provide instruction in each area of deficiency and provide a logbook endorsement certifying that the applicant has demonstrated satisfactory knowledge in each area. When taking the practical test, the applicant must present the original AKTR to the evaluator, who is required to assess the noted areas of deficiency during the oral portion of the practical test.

An AKTR expires 24 calendar months after the month the applicant completes the knowledge test. If the AKTR expires before completion of the practical test, the applicant must retake the knowledge test.

To obtain a duplicate AKTR due to loss or destruction of the original, the applicant can send a signed request accompanied by a check or money order for \$12.00, payable to the FAA to:

Federal Aviation Administration
Airmen Certification Branch, AFS-760
P.O. Box 25082
Oklahoma City, OK 73125

To obtain a copy of the application form or a list of the information required, please see the [Airman Certification Branch \(AFS-760\) web page](#).

FAA Knowledge Test Question Coding

Each Task in the ACS includes an ACS code. This ACS code will soon be displayed on the AKTR to indicate what Task element was proven deficient on the knowledge test. Instructors can then provide remedial training in the deficient areas, and evaluators can re-test this element during the practical test.

The ACS coding consists of four elements. For example, this code is interpreted as follows:

IR.I.C.K4:

- IR** = Applicable ACS (Instrument Rating – Airplane)
- I** = Area of Operation (Preflight Preparation)
- C** = Task (Cross-Country Flight Planning)
- K4** = Task Element Knowledge 4 (Elements of an IFR flight plan.)

Knowledge test questions are linked to the ACS codes, which will soon replace the system of Learning Statement Codes (LSC). After this transition occurs, the Airman Knowledge Test Report (AKTR) will list an ACS code that correlates to a specific Task element for a given Area of Operation and Task. Remedial instruction and re-testing will be specific, targeted, and based on specified learning criteria. Similarly, a Notice of Disapproval for the practical test will use the ACS codes to identify the deficient Task elements.

The current knowledge test management system does not have the capability to print ACS codes. Until a new test management system is in place, the LSC (e.g., "PLT058") code will continue to be displayed on the AKTR. The LSC codes are linked to references leading to broad subject areas. By contrast, each ACS code is tied to a unique Task element in the ACS itself. Because of this fundamental difference, there is no one-to-one correlation between LSC codes and ACS codes.

Because all active knowledge test questions for the Instrument Rating Airplane (IRA) knowledge test have been aligned with the corresponding ACS, evaluators can continue to use LSC codes in conjunction with the ACS for the time being. The evaluator should look up the LSC code(s) on the applicant's AKTR in the Learning Statement Reference Guide. After noting the subject area(s), the evaluator can use the corresponding Area(s) of Operation/Task(s) in the ACS to narrow the scope of material for retesting, and to evaluate the applicant's understanding of that material in the context of the appropriate ACS Area(s) of Operation and Task(s).

Appendix 4: The Practical Test – Eligibility and Prerequisites

The prerequisite requirements and general eligibility for a practical test and the specific requirements for the original issuance of an instrument rating in the airplane can be found in 14 CFR part 61, sections 61.39 and 61.65, respectively.

If an applicant holds both single-engine and multiengine class ratings on a pilot certificate and takes the instrument rating practical test in a single-engine airplane, the certificate issued must bear the limitation “Multiengine Limited to VFR Only.” If the applicant takes the test in a multiengine airplane, the instrument privileges will be automatically conferred for the airplane single-engine rating.

Additional Instrument Rating Desired

If you hold an instrument rating in another category and adding Instrument – Airplane, you are required to complete the Task(s) indicated in the following table:

Area of Operation	Required Task(s)
I	None
II	A,C
III	None
IV	All
V	None
VI	All
VII	All ¹
VIII	All

Removal of the “Airplane Multiengine VFR Only” Limitation

The removal of the “Airplane Multiengine VFR Only” limitation, at the private pilot or commercial pilot certificate level, requires an applicant to satisfactorily perform the following Area of Operation and Tasks from the Instrument Rating– Airplane ACS in a multiengine airplane that has a manufacturer’s published V_{MC} speed.

VII. Emergency Operations

Task B: One Engine Inoperative during Straight-and-Level Flight and Turns (AMEL, AMES)

Task C: Instrument Approach and Landing with an Inoperative Engine (Simulated) (AMEL, AMES)

¹ TASK B and C are applicable *only* to *multiengine airplanes*.

Appendix 5: Practical Test Roles, Responsibilities, and Outcomes

Applicant Responsibilities

The applicant is responsible for mastering the established standards for knowledge, risk management, and skill elements in all Tasks appropriate to the certificate and rating sought. The applicant should use this ACS, its references, and the Applicant's Practical Test Checklist in this Appendix in preparation to take the practical test.

Instructor Responsibilities

The instructor is responsible for training the applicant to meet the established standards for knowledge, risk management, and skill elements in all Tasks appropriate to the certificate and rating sought. The instructor should use this ACS and its references as part of preparing the applicant to take the practical test and, if necessary, in retraining the applicant to proficiency in all subject(s) missed on the knowledge test.

Evaluator Responsibilities

An evaluator is:

- Aviation Safety Inspector (ASI);
- Pilot examiner (other than administrative pilot examiners);
- Training center evaluator (TCE);
- Chief instructor, assistant chief instructor or check instructor of pilot school holding examining authority; or
- Instrument Flight Instructor (CFII) conducting an instrument proficiency check (IPC).

The evaluator who conducts the practical test is responsible for determining that the applicant meets the established standards of aeronautical knowledge, skills (flight proficiency), and risk management for the Tasks in the appropriate ACS. This responsibility also includes verifying the experience requirements specified for a certificate or rating.

Prior to beginning the practical test, the evaluator must also determine that the applicant meets FAA Aviation English Language Proficiency Standard by verifying that he or she can understand ATC instructions and communicate in English at a level that is understandable to ATC and other pilots. The evaluator should use the procedures outlined in the AC 60-28, English Language Skill Standards required by 14 CFR parts 61, 63, and 65 (current version) when evaluating the applicant's ability to meet the standard.

The evaluator must develop a Plan of Action (POA), written in English, to conduct the practical test. It must include all of the required Areas of Operation and Tasks. The POA must include a scenario that evaluates as many of the required Areas of Operation and Tasks as possible. As the scenario unfolds during the test, the evaluator will introduce problems and emergencies that the applicant must manage. The evaluator has the discretion to modify the POA in order to accommodate unexpected situations as they arise. For example, the evaluator may elect to suspend and later resume a scenario in order to assess certain Tasks.

In the integrated ACS framework, the Areas of Operation contain Tasks that include "Knowledge" elements (such as K1), "risk management" elements (such as R1), and "skill" elements (such as S1). Knowledge and risk management elements are primarily evaluated during the knowledge testing phase of the airman certification process. The evaluator must assess the applicant on all skill elements for each Task included in each Area of Operation of the ACS, unless otherwise noted. The evaluator administering the practical test has the discretion to combine Tasks/elements as appropriate to testing scenarios.

The required minimum elements to include in the POA, unless otherwise noted, from each applicable Task are as follows:

- at least one knowledge element;
- at least one risk management element;
- all skill elements; and
- any Task elements in which the applicant was shown to be deficient on the knowledge test.

Note: *Task elements added to the POA on the basis of being listed on the AKTR may satisfy the other minimum Task element requirements. The missed items on the AKTR are not required to be added in addition to the minimum Task element requirements.*

There is no expectation for testing every knowledge element and risk management element in a Task, but the evaluator has discretion to sample as needed to ensure the applicant's mastery of that Task.

Unless otherwise noted in the Task, the evaluator must test each item in the skills section by asking the applicant to perform each one. As safety of flight conditions permit, the evaluator may use questions during flight to test knowledge and risk management elements not evident in the demonstrated skills. To the greatest extent practicable, evaluators must test the applicant's ability to apply and correlate information, and use rote questions only when they are appropriate for the material being tested. If the Task includes an element with sub-elements, the evaluator may choose the primary element and select at least one sub-element to satisfy the requirement that at least one knowledge element be selected. For example, if the evaluator chooses IR.I.B.K3, he or she must select a sub-element like IR.I.B.K3d to satisfy the requirement to select one knowledge element.

Possible Outcomes of the Test

There are three possible outcomes of the practical test: (1) Temporary Airman Certificate (satisfactory), (2) Notice of Disapproval (unsatisfactory), or (3) Letter of Discontinuance.

If the evaluator determines that a Task is incomplete, or the outcome is uncertain, the evaluator may require the applicant to repeat that Task, or portions of that Task. This provision does not mean that instruction, practice, or the repetition of an unsatisfactory Task is permitted during the practical test.

If the evaluator determines the applicant's skill and abilities are in doubt, the outcome is unsatisfactory and the evaluator must issue a Notice of Disapproval.

Satisfactory Performance

Satisfactory performance requires that the applicant:

- demonstrate the Tasks specified in the Areas of Operation for the certificate or rating sought within the established standards;
- demonstrate mastery of the aircraft by performing each Task successfully;
- demonstrate proficiency and competency in accordance with the approved standards;
- demonstrate sound judgment and exercise aeronautical decision-making/risk management; and
- demonstrate competence in crew resource management in aircraft certificated for more than one required pilot crew member, or single-pilot competence in an airplane that is certificated for single-pilot operations.

Satisfactory performance will result in the issuance of a temporary certificate.

Unsatisfactory Performance

If, in the judgment of the evaluator, the applicant does not meet the standards for any Task, the applicant fails the Task and associated Area of Operation. The test is unsatisfactory, and the evaluator issues a Notice of Disapproval.

When the evaluator issues a Notice of Disapproval, he or she must list the ACS code associated with the Area of Operation in which the application did not meet the standard. The Notice of Disapproval must also list the Area(s) of Operation not tested, and the number of practical test failures. If the applicant's inability to meet English language requirements contributed to the failure of a Task, the evaluator should note "English Proficiency" on the Notice of Disapproval.

The evaluator or the applicant may end the test if the applicant fails a Task. The evaluator may continue the test only with the consent of the applicant, and the applicant is entitled to credit only for those Areas of Operation and the associated Tasks satisfactorily performed. Though not required, the evaluator has discretion to reevaluate any Task, including those previously passed, during the retest.

Typical areas of unsatisfactory performance and grounds for disqualification include:

- Any action or lack of action by the applicant that requires corrective intervention by the evaluator to maintain safe flight.
- Failure to use proper and effective visual scanning techniques to clear the area before and while performing maneuvers.
- Consistently exceeding tolerances stated in the skill elements of the Task.

- Failure to take prompt corrective action when tolerances are exceeded.
- Failure to exercise risk management.

Discontinuance

When it is necessary to discontinue a practical test for reasons other than unsatisfactory performance (e.g., equipment failure, weather, illness), the evaluator must return all test paperwork to the applicant. The evaluator must prepare, sign, and issue a Letter of Discontinuance that lists those Areas of Operation the applicant successfully completed and the date the test must be completed. The evaluator should advise the applicant to present the Letter of Discontinuance to the evaluator when the practical test resumes in order to receive credit for the items successfully completed. The Letter of Discontinuance becomes part of the applicant's certification file.

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Practical Test Checklist (Applicant) Appointment with Evaluator

Evaluator's Name: _____

Location: _____

Date/Time: _____

Acceptable Aircraft

- Aircraft Documents:
 - Airworthiness Certificate
 - Registration Certificate
 - Operating Limitations
- Aircraft Maintenance Records:
 - Logbook Record of Airworthiness Inspections and AD Compliance
- Pilot's Operating Handbook, FAA-Approved Aircraft Flight Manual

Personal Equipment

- View-Limiting Device
- Current Aeronautical Charts (May be electronic)
- Computer and Plotter
- Flight Plan Form
- Flight Plan Form and Flight Logs (printed or electronic)
- Chart Supplements, Airport Diagrams and Appropriate Publications (regulations, AIM, etc.)

Personal Records

- Identification—Photo/Signature ID
- Pilot Certificate
- Current Medical Certificate
- Completed FAA Form 8710-1, Airman Certificate and/or Rating Application with Instructor's Signature or completed IACRA form
- Original Knowledge Test Report
- Pilot Logbook with appropriate Instructor Endorsements
- FAA Form 8060-5, Notice of Disapproval (if applicable)
- Letter of Discontinuance (if applicable)
- Approved School Graduation Certificate (if applicable)
- Evaluator's Fee (if applicable)

Instrument Proficiency Check

14 CFR part 61, section 61.57(d) sets forth the requirements for an instrument proficiency check (IPC). Instructors and evaluators conducting an IPC must ensure the pilot meets the standards established in this ACS. A representative number of Tasks must be selected to assure the competence of the applicant to operate in the IFR environment. As a minimum, the applicant must demonstrate the ability to perform the Tasks listed in the table below. The person giving the check should develop a scenario that incorporates as many required Tasks as practical to assess the pilot's ADM and risk management skills.

Guidance on how to conduct an IPC is found in Advisory Circular 61-98, *Currency Requirements and Guidance for the Flight Review and Instrument Proficiency Check*. You may obtain a copy at: <http://www.faa.gov>.

Area of Operation	IPC (Proficiency Check) ²
I	None
II	None
III	B
IV	B
V	A
VI	All
VII ³	B, C, D
VIII	All

² AATDs can be utilized for the majority of the IPC as specified in the Letter of Authorization issued for the device. However, the circling approach, the landing Task, and the multiengine airplane Tasks must be accomplished in an aircraft or FFS (Level B, C, or D). A BATD cannot be used for any part of the IPC.

³ Tasks B and C are applicable only to multiengine airplanes.

Appendix 6: Safety of Flight

General

Safety of flight must be the prime consideration at all times. The evaluator, applicant, and crew must be constantly alert for other traffic. If performing aspects of a given maneuver, such as emergency procedures, would jeopardize safety, the evaluator will ask the applicant to simulate that portion of the maneuver. The evaluator will assess the applicant's use of visual scanning and collision avoidance procedures throughout the entire test.

Stall and Spin Awareness

During flight training and testing, the applicant and the instructor or evaluator must always recognize and avoid operations that could lead to an inadvertent stall or spin.

Use of Checklists

Throughout the practical test, the applicant is evaluated on the use of an appropriate checklist.

Assessing proper checklist use depends upon the specific Task. In all cases, the evaluator should determine whether the applicant appropriately divides attention and uses proper visual scanning. In some situations, reading the actual checklist may be impractical or unsafe. In such cases, the evaluator should assess the applicant's performance of published or recommended immediate action "memory" items along with his or her review of the appropriate checklist once conditions permit.

In a single-pilot airplane, the applicant should demonstrate the crew resource management (CRM) principles described as single-pilot resource management (SRM). Proper use is dependent on the specific Task being evaluated. The situation may be such that the use of the checklist while accomplishing elements of an Objective would be either unsafe or impractical in a single-pilot operation. In this case, a review of the checklist after the elements have been accomplished is appropriate. Use of a checklist should also consider visual scanning and division of attention at all times.

Use of Distractions

Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. The evaluator should incorporate realistic distractions during the flight portion of the practical test to evaluate the pilot's situational awareness and ability to utilize proper control technique while dividing attention both inside and outside the flight deck.

Positive Exchange of Flight Controls

There must always be a clear understanding of who has control of the aircraft. Prior to flight, the pilots involved should conduct a briefing that includes reviewing the procedures for exchanging flight controls.

The FAA recommends a positive three-step process for exchanging flight controls between pilots:

- When one pilot seeks to have the other pilot take control of the aircraft, he or she will say, "You have the flight controls."
- The second pilot acknowledges immediately by saying, "I have the flight controls."
- The first pilot again says, "You have the flight controls," and visually confirms the exchange.

Pilots should follow this procedure during any exchange of flight controls, including any occurrence during the practical test. The FAA also recommends that both pilots use a visual check to verify that the exchange has occurred. There must never be any doubt as to who is flying the aircraft.

Aeronautical Decision-Making, Risk Management, Crew Resource Management and Single-Pilot Resource Management

Throughout the practical test, the evaluator must assess the applicant's ability to use sound aeronautical decision-making procedures in order to identify hazards and mitigate risk. The evaluator must accomplish this requirement by reference to the risk management elements of the given Task(s), and by developing scenarios that incorporate and combine Tasks appropriate to assessing the applicant's risk management in making safe aeronautical

decisions. For example, the evaluator may develop a scenario that incorporates weather decisions and performance planning.

In assessing the applicant's performance, the evaluator should take note of the applicant's use of CRM and, if appropriate, SRM. CRM/SRM is the set of competencies that includes situational awareness, communication skills, teamwork, task allocation, and decision-making within a comprehensive framework of standard operating procedures (SOP). SRM specifically refers to the management of all resources onboard the aircraft as well as outside resources available to the single pilot.

Deficiencies in CRM/SRM almost always contribute to the unsatisfactory performance of a Task. While evaluation of CRM/SRM may appear to be somewhat subjective, the evaluator should use the risk management elements of the given Task(s) to determine whether the applicant's performance of the Task(s) demonstrates both understanding and application of the associated risk management elements.

Multiengine Considerations

For multiengine practical tests conducted in the airplane, the evaluator must discuss with the applicant during the required preflight briefing the methods for simulating an engine failure in accordance with the aircraft manufacturer's recommended procedures.

Practical tests conducted in an FSTD can only be accomplished as part of an approved curriculum or training program. Any limitations on powerplant failure will be noted in that program.

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Advisory Circular (AC) 61-136A, *FAA Approval of Aviation Training Devices and Their Use for Training and Experience*, provides information and guidance for the required function, performance, and effective use of ATDs for pilot training and aeronautical experience (including currency). FAA issues a letter of authorization (LOA) to an ATD manufacturer approving an ATD as a basic aviation training device (BATD) or an advanced aviation training device (AATD). The LOA will be valid for a five year period with a specific expiration date and include the amount of credit a pilot may take for training and experience.

Aviation Training Device (ATD)—a training device, other than an FFS or FTD, that has been evaluated, qualified, and approved by the Administrator. In general, this includes a replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft cockpit. It includes the hardware and software necessary to represent a category and class of aircraft (or set of aircraft) operations in ground and flight conditions having the appropriate range of capabilities and systems installed in the device as described within the AC for the specific basic or advanced qualification level.

Basic Aviation Training Device (BATD)—provides an adequate training platform for both procedural and operational performance Tasks specific to instrument experience and the ground and flight training requirements for the Private Pilot Certificate and instrument rating per 14 CFR parts 61 and 141.

Advanced Aviation Training Device (AATD)—provides an adequate training platform for both procedural and operational performance Tasks specific to the ground and flight training requirements for the Private Pilot Certificate, Instrument Rating, Commercial Pilot Certificate, Airline Transport Pilot (ATP) Certificate, and Flight Instructor Certificate per 14 CFR parts 61 and 141. It also provides an adequate platform for Tasks required for instrument experience and the instrument proficiency check.

Note: ATDs cannot be used for practical tests, aircraft type specific training, or for an aircraft type rating; therefore the use of an ATD for the instrument – airplane rating practical test is not permitted. An AATD, however, may be used for some of the required Tasks of an instrument proficiency check as further explained in this appendix.

Credit for Time in an FSTD

14 CFR part 61, section 61.65 specifies the minimum aeronautical experience requirements for a person applying for an instrument rating. Paragraph (d) specifies the time requirements for an instrument-airplane rating, which includes specific experience requirements that must be completed in an airplane. Paragraph (h) of this section specifies the amount of credit a pilot can take for time in an FFS or FTD. For those that received training in programs outside of 14 CFR part 142, section 61.65(h)(2)⁶ applies. For those pilots that received training through a 14 CFR part 142 program, section 61.65(h)(1) applies.

Credit for Time in an ATD

14 CFR part 61, section 61.65 specifies the minimum aeronautical experience requirements for a person applying for an instrument rating. Paragraph (d) specifies the time requirements for an instrument-airplane rating, which includes specific experience requirements that must be completed in an airplane. Paragraph (i) specifies the maximum instrument time in an ATD a pilot may credit towards the instrument rating aeronautical experience requirements. Paragraph (j) specifies the maximum instrument time a pilot may credit in any combination of an FFS, FTD, and ATD.

In order to credit the time, the ATD must be FAA-approved and the instrument time must be provided by an authorized instructor. AC 61-136A, states the LOA for each approved ATD will indicate the credit allowances for pilot training and experience, as provided under 14 CFR parts 61 and 141. Time with an instructor in a BATD and an AATD may be credited towards the aeronautical experience requirements for the instrument-airplane rating as specified in the LOA for the device used. It is recommended that applicants who intend to take credit for time in a BATD or an AATD towards the aeronautical experience requirements for the instrument-airplane rating obtain a copy of the LOA for each device used so they have a record for how much credit may be taken. For additional information on the logging of ATD time reference AC 61-136A, see Appendix 4.

⁶ As part of program approval, 14 CFR part 141 training providers must also adhere to the requirements for permitted time in an FFS, FTD, or ATD per Appendix C to 14 CFR part 141.

that, whether accomplished in an airplane or FSTD, all Tasks and elements for each maneuver or procedure must have the same performance standards applied equally for determination of overall satisfactory performance.

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Appendix 9: References

This ACS is based on the following 14 CFR parts, FAA guidance documents, manufacturer's publications, and other documents.

Reference	Title
14 CFR part 61	Certification: Pilots, Flight Instructors, and Ground Instructors
14 CFR part 68	Requirements for Operating Certain Small Aircraft Without a Medical Certificate
14 CFR part 91	General Operating and Flight Rules
AC 00-6	Aviation Weather
AC 00-45	Aviation Weather Services
AC 60-28	English Language Skill Standards Required by 14 CFR parts 61, 63 and 65
AC 91-74	Pilot Guide: Flight in Icing Conditions
AC 91.21-1	Use of Portable Electronic Devices Aboard Aircraft
AFM	Airplane Flight Manual
AIM	Aeronautical Information Manual
FAA-H-8083-2	Risk Management Handbook
FAA-H-8083-3	Airplane Flying Handbook
FAA-H-8083-15	Instrument Flying Handbook
FAA-H-8083-16	Instrument Procedures Handbook
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
IAP	Instrument Approach Procedures
POH/AFM	Pilot's Operating Handbook/FAA-Approved Airplane Flight Manual
Other	Chart Supplements
	Navigation Charts
	NOTAMs

Note: Users should reference the current edition of the reference documents listed above. The current edition of all FAA publications can be found at www.faa.gov.

Appendix 10: Abbreviations and Acronyms

The following abbreviations and acronyms are used in the ACS.

Abb./Acronym	Definition
14 CFR	Title 14 of the Code of Federal Regulations
AATD	Advanced Aviation Training Device
AC	Advisory Circular
ACS	Airman Certification Standards
AD	Airworthiness Directive
ADF	Automatic Direction Finder
ADM	Aeronautical Decision-Making
AELP	Aviation English Language Proficiency
AFM	Airplane Flight Manual
AFS	Flight Standards Service
AGL	Above Ground Level
AIM	Aeronautical Information Manual
AKTR	Airman Knowledge Test Report
ALD	Available Landing Distance
AMEL	Airplane Multiengine Land
AMES	Airplane Multiengine Sea
AOA	Angle of Attack
AOO	Area of Operation
ASEL	Airplane Single-Engine Land
ASES	Airplane Single-Engine Sea
ASI	Aviation Safety Inspector
ATC	Air Traffic Control
ATD	Aviation Training Device
ATP	Airline Transport Pilot
BATD	Basic Aviation Training Device
CDI	Course Deviation Indicator
CFIT	Controlled Flight Into Terrain
CFR	Code of Federal Regulations
CG	Center of Gravity
CP	Completion Phase
CRM	Crew Resource Management
CTP	Certification Training Program
DA	Decision Altitude
DH	Decision Height
DME	Distance Measuring Equipment
DP	Departure Procedures
DPE	Designated Pilot Examiner
ELT	Emergency Locator Transmitter

Abb./Acronym	Definition
FAA	Federal Aviation Administration
FADEC	Full Authority Digital Engine Control
FFS	Full Flight Simulator
FMS	Flight Management System
FSB	Flight Standardization Board
FSDO	Flight Standards District Office
FSTD	Flight Simulation Training Device
FTD	Flight Training Device
GBAS	Ground Based Augmentation System
GBAS GLS	Ground Based Augmentation Landing System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HAT	Height Above Threshold (Touchdown)
HSI	Horizontal Situation Indicator
IA	Inspection Authorization
IAP	Instrument Approach Procedure
IFO	International Field Office
IFR	Instrument Flight Rules
IFU	International Field Unit
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
IPC	Instrument Rating Airplane <i>Canadian Conversion</i>
IPC	Instrument Proficiency Check
IR	Instrument Rating
IRA	Instrument Rating Airplane
KOEL	Kinds of Operation Equipment List
LAHSO	Land and Hold Short Operations
LDA	Localizer-Type Directional Aid
LOA	Letter of Authorization
LOC	ILS Localizer
LPV	Localizer Performance with Vertical Guidance
LSC	Learning Statement Codes
MAP	Missed Approach Point
MDA	Minimum Descent Altitude
MEL	Minimum Equipment List
MFD	Multi-functional Displays
NAS	National Airspace System
NOD	Notice of Disapproval
NOTAMs	Notices to Airmen
NSP	National Simulator Program
NTSB	National Transportation Safety Board

Abb./Acronym	Definition
NWS	National Weather System
PA	Private Airplane
PAR	Private Pilot Airplane
PAT	Private Pilot Airplane/Recreational Pilot – Transition
PCP	Private Pilot Canadian Conversion
PFD	Primary Flight Display
PIC	Pilot-in-Command
POA	Plan of Action
POH	Pilot's Operating Handbook
PTS	Practical Test Standards
QPS	Qualification Performance Standard
RAIM	Receiver Autonomous Integrity Monitoring
RMP	Risk Management Process
RNAV	Area Navigation
RNP	Required Navigation Performance
SAE	Specialty Aircraft Examiner
SFRA	Special Flight Rules Area
SIAP	Standard Instrument Approach Procedure
SMS	Safety Management System
SOP	Standard Operating Procedures
SRM	Single-Pilot Resource Management
SRM	Safety Risk Management
STAR	Standard Terminal Arrival
SUA	Special Use Airspace
TAF	Terminal Forecast
TAS	True Airspeed
TCH	Threshold Crossing Height
TEM	Threat and Error Management
TFR	Temporary Flight Restrictions
UTC	Coordinated Universal Time
V _A	Maneuvering speed
VDP	Visual Descent Point
V _{FE}	Maximum flap extended speed
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
V _{MC}	Minimum Control Speed with the Critical Engine Inoperative
V _{NE}	Never exceed speed
VOR	Very High Frequency Omnidirectional Range
V _s	Stall Speed
V _x	Best Angle of Climb Speed
V _y	Best Rate of Climb Speed

Abb./Acronym	Definition
V_{SSE}	Safe, intentional one-engine-inoperative speed. Originally known as safe single-engine speed
V_{XSE}	Best angle of climb speed with one engine inoperative
V_{YSE}	Best rate of climb speed with one engine inoperative
V_{SO}	Stalling Speed or the Minimum Steady Flight Speed in the Landing Configuration
WAAS	Wide Area Augmentation System

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