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U.S. Department
of Transportation

**Federal Aviation
Administration**

PRIVATE PILOT – AIRPLANE

Airman Certification Standards

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FLIGHT STANDARDS SERVICE
Washington, DC 20591

ACKNOWLEDGMENTS

The U.S. Department of Transportation, Federal Aviation Administration (FAA), Airman Testing Standards Branch, AFS-630, P.O. Box 25082, Oklahoma City, OK 73125 developed this Airman Certification Standards (ACS) document with the assistance of the aviation community. The FAA gratefully acknowledges the valuable support from the many individuals and organizations who contributed their time and expertise to assist in this endeavor.

AVAILABILITY

This ACS is available for download from www.faa.gov. Please send comments regarding this document to AFS630comments@faa.gov.

FOREWORD

The Federal Aviation Administration (FAA) has published the Private Pilot—Airplane Airman Certification Standards (ACS) document to communicate the aeronautical knowledge, flight proficiency, and risk management standards for private pilot certification in the airplane category, single-engine land and sea; and multiengine land and sea classes. This ACS incorporates and supersedes the previous Practical Test Standards (PTS).

The FAA views the ACS as the foundation of its transition to a more integrated and systematic approach to airman certification. The ACS is part of the safety management system (SMS) framework that the FAA uses to mitigate risks associated with airman certification training and testing. Specifically, the ACS, associated guidance, and test item bank question components of the airman certification system are constructed around the four functional components of an SMS:

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

In this connection, the FAA gratefully acknowledges and deeply appreciates the many hours that aviation training experts throughout the industry have contributed to the development of this ACS, along with the associated guidance and a more systematic approach to knowledge test question development. This kind of collaboration, a hallmark of a robust safety culture, strengthens and enhances aviation safety at every level of the airman certification system.

John S. Duncan
Acting Director, Flight Standards Service

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INTRODUCTION

Airman Certification Standards Concept

The goal of the airman certification process is to ensure the applicant possesses the knowledge and skill as well as the ability to manage the risks of flight in order to act as pilot in command consistent with the privileges of the certificate or rating being exercised. In fulfilling its responsibilities for the airman certification process, the Federal Aviation Administration (FAA) Flight Standards Service (AFS) plans, develops, and maintains materials related to airman certification training and testing.

Historically, these materials have included several components. The FAA knowledge test measures mastery of the aeronautical knowledge areas listed in Title 14 of the Code of Federal Regulations (14 CFR) part 61. The Practical Test Standards (PTS) defined the acceptable parameters of flight proficiency in the Areas of Operation listed in 14 CFR part 61. FAA handbooks (FAA H-8083-XX series), computer testing supplements (FAA-CT-8080-XX series), and other materials provide guidance to applicants, instructors, and evaluators on aeronautical knowledge, flight proficiency, and risk management.

The FAA recognizes that safe operations in today's complex National Airspace System (NAS) require a more systematic integration of aeronautical knowledge, flight proficiency standards, and risk management. The FAA further recognizes the need to more clearly calibrate knowledge, skills, and risk management according to the level of the certificate or rating. To that end, the FAA drew upon the expertise of organizations and individuals across the aviation and training community to develop the Airman Certification Standards (ACS). The ACS incorporates and supersedes the PTS.

Based on aeronautical knowledge and flight proficiency standards specified in 14 CFR part 61, the ACS integrates the knowledge, skills, and risk management abilities necessary for the safe conduct of each Task. In keeping with this integrated and systematic approach, the knowledge, skills, and risk management sections of each Task stipulate that the applicant must demonstrate understanding of each specific item. The applicant demonstrates this understanding by passing the knowledge exam and practical test.

Throughout this process, the FAA expects evaluators to assess the applicant's mastery of the topic in accordance with the level of learning (i.e., rote, understanding, application, or correlation) most appropriate for the specified Task. For some topics, the evaluator will ask the applicant to describe or explain. For other items, the evaluator will assess the applicant's understanding by providing a scenario that requires the applicant to appropriately apply and/or correlate knowledge, experience, and information to the circumstances of the given scenario. The flight portion of the practical test requires the applicant to demonstrate flight proficiency, operational skill, and risk management in accordance with the ACS.

NOTE: As used in this ACS, an evaluator is any person authorized to conduct airman testing (e.g., an FAA aviation safety inspector, designated pilot examiner, or other individual authorized to conduct a practical test).

Using the ACS

The ACS consists of ***Areas of Operation,*** arranged in a logical sequence that begin with Preflight Preparation and end with Postflight Procedures. Each Area of Operation includes ***Tasks*** appropriate to that Area of Operation. Each Task begins with an ***Objective*** stating what the applicant should know and/or do. The ACS then lists the aeronautical knowledge, skills, and risk management elements relevant to the specific Task, along with the conditions and standards for acceptable performance. The ACS uses ***Notes*** to emphasize special considerations. The ACS uses the terms "will" and "must" to convey directive (mandatory) information. The terms "should" and "may" denote items that are recommended but not required.

The abbreviation(s) within parentheses immediately following a Task refer to the category and/or class aircraft appropriate to that Task. The meaning of each abbreviation is as follows.

ASEL: Airplane – Single Engine Land
ASES: Airplane – Single-Engine Sea
AMEL: Airplane – Multi Engine Land
AMES: Airplane – Multi Engine Sea

NOTE: When administering a test based on this ACS, the Tasks appropriate to the class airplane (ASEL, ASES, AMEL, or AMES) used for the test must be included in the plan of action. The absence of a class indicates the Task is for all classes.

Each Task in the ACS is coded according to a scheme that includes up to four elements. For example:

PA.XI.A.K1:

PA = Applicable ACS (Private Pilot – Airplane)
XI = Area of Operation (Night Operation)
A = Task (Night Preparation)
K1 = Knowledge Task Element 1 (Physiological aspects of night flying as it relates to vision)

Knowledge test questions are mapped to the ACS codes, which replace the previous system of “Learning Statement Codes.” Because the airman knowledge test report 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 element(s).

Applicants for a combined private pilot certificate with instrument rating, in accordance with 14 CFR 61.65 (a) and (g), must pass all areas designated in the Private Pilot ACS and the Instrument Rating ACS. Examiners need not duplicate tasks. For example, only one preflight demonstration would be required; however, the Preflight Task from the Instrument Rating ACS may be more extensive than the Preflight Task from the Private Pilot ACS to ensure readiness for Instrument Flight Rules (IFR) flight.

A combined checkride should be treated as one practical test, requiring only one application and resulting in only one temporary certificate, disapproval notice, or letter of discontinuance, as applicable. Failure of any task will result in a failure of the entire test and application. Therefore, even if the deficient maneuver was instrument related and the performance of all Visual Flight Rule VFR tasks was determined to be satisfactory, the applicant will receive a notice of disapproval.

The applicant must pass the knowledge test before taking the practical test. The practical test is conducted in accordance with the ACS that is current as of the date of the test. Further, the applicant must pass the oral portion of the practical test before beginning the flight portion. The oral portion of the practical test allows the evaluator to determine whether the applicant is sufficiently prepared to advance to the flight portion of the practical test. 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 must also assess at least one Knowledge element and one Risk Management element in each Area of Operation, focusing on any task element(s) the applicant missed on the knowledge exam. The evaluator administering the practical test has the discretion to combine tasks/elements as appropriate to testing scenarios.

The FAA encourages applicants and instructors to use the ACS to measure progress during training, and as a reference to ensure the applicant is adequately prepared for the knowledge and practical tests. The FAA will revise the ACS as circumstances require.

AIRPLANE—SINGLE ENGINE, MULTI ENGINE LAND AND SEA AREAS OF OPERATION

I. Preflight Preparation

Task	***A. Pilot Qualifications***	
Reference	14 CFR parts 1, 61, 71, 91; FAA-H-8083-2, FAA-H-8083-23, FAA-H-8083-25	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with airman and medical certificates including privileges, limitations, currency, and operating as pilot-in-command as a private pilot.	
Knowledge	The applicant demonstrates understanding of:	
	1. Currency, regulatory compliance, privileges and limitations.	PA.I.A.K1
	2. Location of airman documents and identification required when exercising private pilot privileges.	PA.I.A.K2
	3. Inspection of certificate.	PA.I.A.K3
	4. Pilot logbook/record-keeping.	PA.I.A.K4
	5. Compensation.	PA.I.A.K5
	6. Towing.	PA.I.A.K6
	7. Category and Class.	PA.I.A.K7
	8. Endorsements.	PA.I.A.K8
	9. Medical Certificates: class, expiration, privileges, temporary disqualifications.	PA.I.A.K9
	10. Drugs, alcohol regulatory restrictions that affect the pilot's ability to operate safely.	PA.I.A.K10
Skills	The applicant demonstrates the ability to apply requirements to act as PIC under Visual Flight Rules (VFR) in a scenario given by the evaluator.	PA.I.A.S1
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Distinguishing proficiency vs. currency.	PA.I.A.R1
	2. Setting personal minimums.	PA.I.A.R2
	3. Maintaining fitness to fly.	PA.I.A.R3
	4. Flying unfamiliar aircraft.	PA.I.A.R4
	5. Flying with unfamiliar flight display systems or unfamiliar avionics.	PA.I.A.R5

Task	***B. Airworthiness Requirements***	
Reference	14 CFR parts 39, 43, 91; FAA-H-8083-2, FAA-H-8083-25	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with airworthiness requirements, including aircraft certificates.	
Knowledge	The applicant demonstrates understanding of:	
	1. General airworthiness requirements and compliance for airplanes.	PA.I.B.K1
	a. Certificate location and expiration dates	PA.I.B.K1a
	b. Required inspections	PA.I.B.K1b
	c. Inspection requirements	PA.I.B.K1c
	2. Individuals who can perform maintenance on the aircraft, including A&P and IA roles in aircraft maintenance and inspections.	PA.I.B.K2
	3. Pilot-performed preventive maintenance.	PA.I.B.K3
	4. Equipment requirements for day and night flight including flying with inoperative equipment (approved Minimum Equipment List (MEL), Kinds of Operation Equipment List (KOEL), required equipment for Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) flight, required equipment, placards).	PA.I.B.K4
	5. Proving airworthiness (specifics of the aircraft–compliance with Airworthiness Directives or applicability of Safety Bulletins).	PA.I.B.K5
	6. Obtaining a special flight permit.	PA.I.B.K6
	7. Experimental aircraft airworthiness.	PA.I.B.K7
	8. Equipment malfunctions.	PA.I.B.K8
Skills	The applicant demonstrates the ability to:	
	1. Locate aircraft airworthiness information.	PA.I.B.S1
	2. Determine the aircraft is airworthy in a scenario given by the evaluator.	PA.I.B.S2
	3. Explain conditions where flight can be made with inoperative equipment.	PA.I.B.S3
	4. Explain requirements for obtaining and flying with a Special Flight Permit.	PA.I.B.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Inoperative equipment.	PA.I.B.R1
	2. Equipment failure during flight.	PA.I.B.R2
	3. Discrepancy records or placards.	PA.I.B.R3

Task	***C. Weather Information***	
Reference	14 CFR part 91; AC 00-6, AC 00-45, FAA-H-8083-25; AIM; Sectional Aeronautical Charts	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with weather information for a flight under VFR.	
Knowledge	The applicant demonstrates understanding of:	
	1. Acceptable sources of weather data for flight planning purposes.	PA.I.C.K1
	2. Weather products required for preflight planning and enroute operations.	PA.I.C.K2
	3. Current and forecast weather for departure, arrival, enroute phases of flight.	PA.I.C.K3
	4. Meteorology applicable to local, departure, enroute, alternate, and destination of VFR flight in Visual Meteorological Conditions (VMC) to include expected climate and hazardous conditions such as:	PA.I.C.K4
	a. Atmospheric composition and stability	PA.I.C.K4a
	b. Wind	PA.I.C.K4b
	c. Temperature	PA.I.C.K4c
	d. Moisture	PA.I.C.K4d
	e. Weather system formation, including air masses and fronts	PA.I.C.K4e
	f. Clouds	PA.I.C.K4f
	g. Turbulence	PA.I.C.K4g
	h. Thunderstorms	PA.I.C.K4h
	i. Wind shear	PA.I.C.K4i
	j. Icing	PA.I.C.K4j
	k. Fog	PA.I.C.K4k
	l. Frost	PA.I.C.K4l
	5. Enroute weather resources.	PA.I.C.K5
	6. Cockpit Displays of Digital Weather and Aeronautical Information.	PA.I.C.K6
Skills	The applicant demonstrates the ability to:	
	1. Use available aviation weather resources to obtain an adequate weather briefing.	PA.I.C.S1
	2. Correlate weather information to determine alternate requirements.	PA.I.C.S2
	3. Correlate available weather information to make a competent go/no-go or diversion decision.	PA.I.C.S3
	4. Update/interpret weather in flight.	PA.I.C.S4
	5. Evaluate environmental conditions using valid and reliable information sources to be able to make a competent go/no-go or diversion decision.	PA.I.C.S5
	6. Given a scenario where it would be appropriate, divert.	PA.I.C.S6
	7. Use cockpit displays of digital weather and aeronautical information, as applicable.	PA.I.C.S7
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Factors involved in making a valid go/no-go decision.	PA.I.C.R1
	2. Dynamic weather affecting flight.	
	3. Limitations of weather equipment.	PA.I.C.R2
	4. Limitations of aviation weather reports and forecasts.	PA.I.C.R3
	5. Limitations of inflight aviation weather resources.	PA.I.C.R4
	6. Identification of alternate airports along the intended route of flight and circumstances that would make diversion prudent.	PA.I.C.R5
	7. Identification of weather conditions that may increase or reduce risk for the planned flight.	
	8. Establishing personal weather minimums based on the parameters of the flight (ceilings, visibility, cross-wind component, etc.), and determining when existing and/or forecast weather conditions exceed these minimums.	PA.I.C.R6

Task	***D. Cross-Country Flight Planning***	
Reference	14 CFR part 91; FAA-H-8083-2, FAA-H-8083-25; Navigation Charts; A/FD; AIM; NOTAMs; Sectional Aeronautical Charts	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with cross-country flights and VFR flight planning.	
Knowledge	The applicant demonstrates understanding of:	
	1. Route planning, including consideration of special use airspace.	PA.I.D.K1
	2. Applying universal coordinated time (UTC) to flight planning.	PA.I.D.K2
	3. Converting and calculating time relative to time zones and ETA.	PA.I.D.K3
	4. Calculating time, rate, course, distance, heading, TAS and ground speed, course.	PA.I.D.K4
	5. Fuel planning.	PA.I.D.K5
	6. Altitude selection accounting for terrain and obstacles, glide distance of aircraft, hemispherical rules, and effect of wind.	PA.I.D.K6
	7. Conditions conducive to icing.	PA.I.D.K7
	8. Symbology found on VFR charts.	PA.I.D.K8
	9. Elements of a VFR flight plan.	PA.I.D.K9
	10. Procedures for activating a VFR flight plan in controlled and non-controlled airspace.	PA.I.D.K10
Skills	The applicant demonstrates the ability to:	
	1. Prepare a cross-country flight plan assigned by the evaluator including a risk analysis.	PA.I.D.S1
	2. Transfer knowledge used for one region to another region (given local climate, terrain, etc.).	PA.I.D.S2
	3. Update fuel planning/manage fuel.	PA.I.D.S3
	4. Select appropriate routes, altitudes, and checkpoints.	PA.I.D.S4
	5. Recalculate fuel reserves based on a scenario provided by the evaluator.	PA.I.D.S5
	6. Create and file a VFR flight plan.	PA.I.D.S6
	7. Interpret departure, enroute, arrival route with reference to proper charts.	PA.I.D.S7
	8. Explain or demonstrate diversion to alternate.	PA.I.D.S8
	9. Applies pertinent information from A/FD; NOTAMs relative to airport, runway and taxiway closures; and other flight publications.	PA.I.D.S9
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. The pilot.	PA.I.D.R1
	2. The aircraft.	PA.I.D.R2
	3. The environment.	PA.I.D.R3
	4. External pressures.	PA.I.D.R4
	5. Lack of appropriate training when flight is planned in an area different from the pilot's local area, such as in mountains, high density airspace, or Alaska.	PA.I.D.R5
	6. Tendency to complete the flight in spite of adverse change in conditions.	PA.I.D.R6
	7. Appropriate VFR altitudes for the direction of flight.	PA.I.D.R7
	8. Limitations of ATC services.	PA.I.D.R8
	9. Conservative fuel reserves.	PA.I.D.R9
	10. A route overflying significant environmental influences, such mountains, and large bodies of water.	PA.I.D.R10
	11. Flight in areas unsuitable for landing or below personal minimums.	PA.I.D.R11

Task	***E. National Airspace System***	
Reference	14 CFR parts 71, 91, 93; FAA-H-8083-2; Navigation Charts; AIM; Sectional Aeronautical Charts; Airport/Facility Directory	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with the National Airspace System operating under VFR as a private pilot.	
Knowledge	The applicant demonstrates understanding of:	
	1. Types of airspace/airspace classes.	PA.I.E.K1
	2. Charting symbology.	PA.I.E.K2
	3. Requirements for flying in different classes of airspace.	PA.I.E.K3
	4. Special use, special flight rules areas, and other airspace areas.	PA.I.E.K4
	5. Temporary flight restrictions.	PA.I.E.K5
	6. Aircraft speed limitations in various classes of airspace.	PA.I.E.K6
Skills	The applicant demonstrates the ability to:	
	1. Determine the requirements for flying in particular classes of airspace.	PA.I.E.S1
	2. Determine the requirements for flying in special use airspace, and special flight rule airspace.	PA.I.E.S2
	3. Properly identify airspace and operate accordingly with regards to communication and equipment requirements.	PA.I.E.S3
	4. Applies pertinent operations and requirements to account for special use airspace (SUA), temporary flight rules (TFR), and Special Flight Rule Areas (SFRA).	PA.I.E.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Various classes of airspace.	PA.I.E.R1
	2. Maintaining VFR at night underneath airspace.	PA.I.E.R2
	3. Special use airspace.	PA.I.E.R3
	4. Compliance with or avoidance of specific enroute airspace.	PA.I.E.R4

Task	***F. Performance and Limitations***	
Reference	FAA-H-8083-1, FAA-H-8083-2, FAA-H-8083-25; POH/AFM; Sectional Aeronautical Charts; 14 CFR Part 1 Definitions and Abbreviations.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with operating an aircraft safely within the parameters of its performance capabilities and limitations.	
Knowledge	The applicant demonstrates understanding of:	
	1. Elements related to performance and limitations (takeoff and landing, crosswind, tailwind and headwind, density altitude, glide performance, weight and balance, climb, cruise, descent, powerplant considerations) by explaining the use of charts, tables, and data to determine performance.	PA.I.F.K1
	2. Factors affecting performance to include atmospheric conditions, pilot technique, aircraft condition, and airport environment.	PA.I.F.K2
	3. Effects of loading on performance.	PA.I.F.K3
	4. Effects of exceeding weight and balance limits.	PA.I.F.K4
	5. Effects of weight and balance changes over the course of the flight.	
	6. Aerodynamics.	PA.I.F.K5
Skills	The applicant demonstrates the ability to:	
	1. Given scenario, compute weight and balance, including practical techniques to resolve out-of-limits calculations.	PA.I.F.S1
	2. Use aircraft manufacturer's approved performance charts, tables, and data.	PA.I.F.S2
	3. Evaluate takeoff and landing performance based on the values calculated.	PA.I.F.S3
	4. Evaluate environmental conditions.	PA.I.F.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Performance charts.	PA.I.F.R1
	2. Limitations.	PA.I.F.R2
	3. Variations in flight performance resulting from weight and balance changes during flight.	PA.I.F.R3
	4. Published aircraft performance data as it relates to expected performance.	PA.I.F.R4

Task	***G. Operation of Systems***	
Reference	FAA-H-8083-2, 3 , FAA-H-8083-23, FAA-H-8083-25; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with the safe operation of systems on the airplane provided for the flight test.	
Knowledge	The applicant demonstrates understanding of:	
	1. Major components of the systems:	PA.I.G.K1
	a. Primary flight controls and trim	PA.I.G.K1a
	b. Flaps, leading edge devices, and spoilers	PA.I.G.K1b
	c. Powerplant and propeller (basic engine knowledge)	PA.I.G.K1c
	d. Landing gear	PA.I.G.K1d
	e. Fuel, oil, and hydraulic	PA.I.G.K1e
	f. Electrical	PA.I.G.K1f
	g. Avionics	PA.I.G.K1g
	h. Pitot-static, vacuum/pressure and associated flight instruments	PA.I.G.K1h
	i. Environmental	PA.I.G.K1i
	j. Deicing and anti-icing	PA.I.G.K1j
	k. Water rudders (ASES, AMES)	PA.I.G.K1k
	2. Normal operation of systems.	PA.I.G.K2
	3. Common mistakes made by pilots (operator error).	PA.I.G.K3
	4. Abnormal operation of systems (recognition of system failures/malfunctions).	PA.I.G.K4
	5. Systems interaction and pilot monitoring of automated systems.	PA.I.G.K5
Skills	The applicant demonstrates the ability to:	
	1. Explain operation of systems/operate systems.	PA.I.G.S1
	2. Use checklist procedures.	PA.I.G.S2
	3. Use immediate action items during emergency operations, as applicable.	PA.I.G.S3
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Handling a failure properly.	PA.I.G.R1
	2. Troubleshooting system failures/malfunctions.	PA.I.G.R2
	3. Pilot error, including improperly operating the system that creates failure or problem.	PA.I.G.R3
	4. Determining and/or declaring an emergency.	PA.I.G.R4
	5. Identifying system failures and recognizing problems as they develop.	PA.I.G.R5
	6. Outside/environmental factors affecting the systems, including improper fueling, carburetor ice, extremely cold temperatures, vapor lock.	PA.I.G.R6

Task	***H. Human Factors***	
Reference	FAA-H-8083-2, FAA-H-8083-25; AIM; 14 CFR Part 91	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with personal health, flight physiology and human factors, as it relates to safety of flight.	
Knowledge	The applicant demonstrates understanding of:	
	1. The symptoms, recognition, causes, effects, and corrective actions associated with:	PA.I.H.K1
	a. hypoxia	PA.I.H.K1a
	b. hyperventilation	PA.I.H.K1b
	c. middle ear and sinus problems	PA.I.H.K1c
	d. spatial disorientation	PA.I.H.K1d
	e. motion sickness	PA.I.H.K1e
	f. carbon monoxide poisoning	PA.I.H.K1f
	g. stress and fatigue	PA.I.H.K1g
	h. dehydration and nutrition	PA.I.H.K1h
	i. hypothermia	PA.I.H.K1i
	2. The effects of alcohol, drugs, and over-the-counter medications, and associated regulations.	PA.I.H.K2
	3. The effects of dissolved nitrogen in the bloodstream following scuba dives upon a pilot or passenger in flight.	PA.I.H.K3
	4. Aeronautical decision-making as affected by hazardous attitudes.	PA.I.H.K4
	5. Vision (including optical illusion, environmental impacts, day/night, haze, sloping runways).	PA.I.H.K5
	6. Collision avoidance, scanning, obstacle and wire strike avoidance).	PA.I.H.K6
	7. Human factors: vestibular illusions, spatial disorientation, especially involving distractions, and interaction with charts and avionics equipment.	PA.I.H.K7
Skills	The applicant demonstrates the ability to:	
	1. Perform self-assessment including whether the pilot is fit for flight.	PA.I.H.S1
	2. Show sound decision-making and judgment (based on reality of circumstances).	PA.I.H.S2
	3. Perform Safety Risk Management (SRM) tasks: Aeronautical Decision Making (ADM), risk management, automation management, task management, situational awareness, and avoidance of Controlled Flight into Terrain (CFIT).	PA.I.H.S3
	4. Account for environmental impacts/visual cues at the airport, as well as at one airport vs. a different airport.	PA.I.H.S4
	5. Establish personal limitations.	PA.I.H.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Impact of environmental factors on medication's physiological effects.	PA.I.H.R1
	2. Personal risk factors and the conflict between being goal oriented and adhering to personal limitations.	PA.I.H.R2
	3. Optical illusions, including awareness of, ability to anticipate, and limiting their effects.	PA.I.H.R3
	4. Circumstances of the flight (day/night, hot/cold) that affect the pilot's physiology.	PA.I.H.R4
	5. Inadvertent continued VFR flight into Instrument Meteorological Conditions (IMC).	PA.I.H.R5
	6. Hazardous attitudes.	PA.I.H.R6

Task	***I. Water and Seaplane Characteristics, Seaplane Bases, Maritime Rules, and Aids to Marine Navigation (ASES, AMES)***	
Reference	FAA-H-8083-2, 3; FAA-H-8083-23, 25; AIM; USCG Navigation Rules, International-Inland; POH/AFM; A/FD; 14 CFR Part 91	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with water and seaplane characteristics, seaplane bases, maritime rules, and aids to marine navigation.	
Knowledge	The applicant demonstrates understanding of:	
	1. The characteristics of a water surface as affected by features, such as:	PA.I.I.K1
	a. size and location	PA.I.I.K1a
	b. protected and unprotected areas	PA.I.I.K1b
	c. surface wind	PA.I.I.K1c
	d. direction and strength of water current	PA.I.I.K1d
	e. floating and partially submerged debris	PA.I.I.K1e
	f. sandbars, islands, and shoals	PA.I.I.K1f
	g. vessel traffic and wakes	PA.I.I.K1g
	h. other features peculiar to the area	PA.I.I.K1h
	2. Float and hull construction, and their effect on seaplane performance.	PA.I.I.K2
	3. Causes of porpoising and skipping, and the pilot action required to prevent or correct these occurrences.	PA.I.I.K3
	4. How to locate and identify seaplane bases on charts or in directories.	PA.I.I.K4
	5. Operating restrictions at various bases.	PA.I.I.K5
	6. Right-of-way, steering, and sailing rules pertinent to seaplane operation.	PA.I.I.K6
	7. Marine navigation aids, such as buoys, beacons, lights, and sound signals.	PA.I.I.K7
Skills	The applicant demonstrates the ability to:	
	1. Assess the water surface characteristics for the proposed flight.	PA.I.I.S1
	2. Locate and identify seaplane bases for the region.	PA.I.I.S2
	3. Identify restrictions at local bases.	PA.I.I.S3
	4. Perform correct right-of-way, steering, and sailing operations.	PA.I.I.S4
	5. Identify marine navigation aids in the local region.	PA.I.I.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Local conditions.	PA.I.I.R1
	2. Impact of marine traffic.	PA.I.I.R2

Task	***J. Principles of Flight – Engine Inoperative (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; FAA-P-8740-19, POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with the elements related to engine inoperative principles of flight.	
Knowledge	The applicant demonstrates understanding of:	
	1. The "critical engine."	PA.I.J.K1
	2. The effects of density altitude on the V_{MC} demonstration.	PA.I.J.K2
	3. The effects of airplane weight and center of gravity (CG) on control.	PA.I.J.K3
	4. Relationship of V_{MC} to stall speed.	PA.I.J.K4
	5. Reasons for loss of directional control.	PA.I.J.K5
	6. Indications of loss of directional control.	PA.I.J.K6
	7. Importance of maintaining the proper pitch and bank attitude, and the proper coordination of controls.	PA.I.J.K7
	8. Loss of directional control recovery procedure.	PA.I.J.K8
	9. Engine failure during takeoff including planning, decisions, and single-engine operations.	PA.I.J.K9
Skills	The applicant demonstrates the ability to:	
	1. Properly plan for engine failure during takeoff, climb, enroute, on approach and immediately before landing.	PA.I.J.S1
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Single-engine operations.	PA.I.J.R1

II. Preflight Procedures

Task	***A. Preflight Assessment***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23; POH/AFM; 14 CFR Part 91	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with preparing for safe flight accounting for pilot, aircraft, environment, and external factors.	
Knowledge	The applicant demonstrates understanding of:	
	1. Pilot self-assessment.	PA.II.A.K1
	2. The process to determine if the aircraft is appropriate for the mission by considering load, range, equipment and aircraft capability.	PA.II.A.K2
	3. Aircraft preflight inspection including which items must be inspected, the reasons for checking each item, and how to detect possible defects, and the associated regulations.	PA.II.A.K3
	4. Environmental factors including weather and flight plan (terrain, route selection, and obstructions).	PA.II.A.K4
	5. External pressures.	PA.II.A.K5
Skills	The applicant demonstrates the ability to:	
	1. Make proper use of the checklists, and systematically identify and manage pilot-related risks and personal minimums associated with the flight.	PA.II.A.S1
	2. Inspect the airplane with reference to an appropriate checklist.	PA.II.A.S2
	3. Verify the airplane is airworthy and in condition for safe flight.	PA.II.A.S3
	4. Assess the factors related to the environment (weather, airports, terrain, and airspace).	PA.II.A.S4
	5. Given the requirements of the flight (load, distance, altitude, time constraints) determine if the aircraft is capable of making the flight.	PA.II.A.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Environmental factors.	PA.II.A.R1
	2. External pressures.	PA.II.A.R2
	3. Pilot-related factors.	PA.II.A.R3
	4. Aircraft-related factors.	PA.II.A.R4
	5. Aviation security concerns.	PA.II.A.R5

Task	***B. Cockpit Management***	
Reference	FAA-H-8083-2, FAA-H-8083-3; AC 91-21.1; POH/AFM; 14 CFR Part 91.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with safe cockpit management practices.	
Knowledge	The applicant demonstrates understanding of:	
	1. Pilot and passenger restraint and safety system rules and operational considerations.	PA.II.B.K1
	2. Oxygen use regulations, system operational guidelines, and system checks, if applicable.	PA.II.B.K2
	3. Passenger briefing requirements and appropriate information.	PA.II.B.K3
	4. PIC responsibility to have available material for the flight as planned.	PA.II.B.K4
	5. Purpose of a checklist.	PA.II.B.K5
Skills	The applicant demonstrates the ability to:	
	1. Ensure all loose items in the cockpit and cabin are secured.	PA.II.B.S1
	2. Organize, access, and determine suitability of material, equipment, and technology in an efficient manner.	PA.II.B.S2
	3. Brief occupants on the use of safety belts, shoulder harnesses, doors, sterile cockpit, flight control freedom of movement, and emergency procedures.	PA.II.B.S3
	4. Properly program the navigational equipment available to the pilot on that particular aircraft.	PA.II.B.S4
	5. Brief and execute positive exchange of flight controls and PIC responsibility.	PA.II.B.S5
	6. Identify who is PIC.	PA.II.B.S6
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Positive exchange of the flight controls.	PA.II.B.R1
	2. Use of portable electronic devices.	PA.II.B.R2
	3. Ensuring technology is an asset and not a distraction.	PA.II.B.R3
	4. Recognizing when technology is not appropriate.	PA.II.B.R4
	5. The impact of reported discrepancies.	PA.II.B.R5
	6. Passenger behavior that could negatively affect safety.	PA.II.B.R6

Task	***C. Engine Starting***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; AC 91-13, AC 91-55; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with recommended engine starting procedures including proper airplane positioning.	
Knowledge	The applicant demonstrates understanding of:	
	1. Options for starting with a weak or depleted battery.	PA.II.C.K1
	2. Starting under various atmospheric conditions.	PA.II.C.K2
	3. Starting procedures for carbureted, fuel injected, diesel, Full Authority Digital Engine Control (FADEC), or turbine engines, as applicable.	PA.II.C.K3
	4. Equipment limitations (starter cycles).	PA.II.C.K4
	5. Proper positioning of the airplane.	PA.II.C.K5
Skills	The applicant demonstrates the ability to:	
	1. Position the airplane properly considering structures, other aircraft, and the safety of nearby persons and property.	PA.II.C.S1
	2. Utilize the checklist as appropriate during engine start.	PA.II.C.S2
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Propeller safety and awareness to include passenger briefing.	PA.II.C.R1
	2. Hand propping safety.	PA.II.C.R2
	3. Abnormal start.	PA.II.C.R3
	4. Hot and cold weather operation.	PA.II.C.R4
	5. Electrical system failure following aircraft engine starts.	PA.II.C.R5
	6. Engine fires related to over-priming/cold weather starting.	PA.II.C.R6

Task	***D. Taxiing (ASEL, AMEL)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25 (Appendix 1); POH/AFM; AC 91-73, AC 150/5340-18; A/FD	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with safe taxi operations, including runway incursion avoidance.	
Knowledge	The applicant demonstrates understanding of:	
	1. Positioning aircraft controls for wind.	PA.II.D.K1
	2. Airport markings (including hold short lines), signs, and lights.	PA.II.D.K2
	3. Aircraft lighting.	PA.II.D.K3
	4. Towered and non-towered airport operations.	PA.II.D.K4
	5. Visual indicators for wind.	PA.II.D.K5
	6. Airport information resources (A/FD, airport diagram).	PA.II.D.K6
	7. Good cockpit discipline during taxi, including maintaining a sterile cockpit, proper speed, separation between other aircraft and vehicles, and communication procedures.	PA.II.D.K7
	8. Procedures for appropriate cockpit activities during taxiing including taxi route planning, briefing the location of HOT SPOTS, communicating and coordinating with ATC.	PA.II.D.K8
	9. Rules for entering or crossing runways.	PA.II.D.K9
	10. Procedures unique to night operations.	PA.II.D.K10
	11. Hazards of low visibility operations.	PA.II.D.K11
	12. Proper engine management including leaning, per manufacturer's recommendations.	PA.II.D.K12
Skills	The applicant demonstrates the ability to:	
	1. Perform a brake check immediately after the airplane begins moving.	PA.II.D.S1
	2. Position the flight controls properly for the existing wind conditions.	PA.II.D.S2
	3. Control direction and speed without excessive use of brakes.	PA.II.D.S3
	4. Exhibit procedures for steering, maneuvering, maintaining taxiway/runway alignment, and situational awareness to avoid runway incursions.	PA.II.D.S4
	5. Exhibit proper positioning of the aircraft relative to hold lines.	PA.II.D.S5
	6. Exhibit procedures to ensure clearances/instructions are received, recorded, and read back correctly.	PA.II.D.S6
	7. Exhibit situational awareness and taxi procedures in the event the aircraft is on a taxiway that is between parallel runways.	PA.II.D.S7
	8. Use an airport diagram or taxi chart during taxi.	PA.II.D.S8
	9. Comply with airport/taxiway markings, signals, ATC clearances and instructions.	PA.II.D.S9
	10. Eliminate pilot distractions to avoid other aircraft or vehicles and hazards.	PA.II.D.S10
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Distractions during aircraft taxi.	PA.II.D.R1
	2. Proper workload management.	PA.II.D.R2
	3. Confirmation or expectation bias as related to taxi instructions.	PA.II.D.R3
	4. Taxi instructions/clearances.	PA.II.D.R4
	5. Resource management.	PA.II.D.R5

Task	***E. Taxiing and Sailing (ASES, AMES)***	
Reference	FAA-H-8083-2; FAA-H-8083-23, FAA-H-8083-25; POH/AFM; AC 91-73, AC 150/5340-18; A/FD	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with safe taxiing and sailing operations, including runway incursion avoidance.	
Knowledge	The applicant demonstrates understanding of:	
	1. Positioning aircraft controls for wind, water and sailing procedures, including the use of flaps, doors, water rudder, and power so as to follow the desired course while sailing.	PA.II.E.K1
	2. Airport markings (including hold short lines), signs, and lights.	PA.II.E.K2
	3. Aircraft lighting.	PA.II.E.K3
	4. Towered and non-towered airport operations.	PA.II.E.K4
	5. Visual indicators for wind.	PA.II.E.K5
	6. Airport information resources (A/FD, airport diagram).	PA.II.E.K6
	7. Good cockpit discipline during taxi and sailing, including maintaining a sterile cockpit, proper speed, separation between other aircraft and vehicles, communication procedures.	PA.II.E.K7
	8. Procedures for appropriate cockpit activities during taxiing and sailing including taxi route planning, briefing the location of HOT SPOTS, communicating and coordinating with ATC.	PA.II.E.K8
	9. Rules for entering or crossing runways.	PA.II.E.K9
	10. Procedures unique to night operations.	PA.II.E.K10
	11. Hazards of low visibility operations, other aircraft and vessels.	PA.II.E.K11
	12. Proper engine management including leaning, per manufacturer's recommendations.	PA.II.E.K12
	13. Requesting progressive taxi instructions if there is any doubt on understanding or ability to comply with a taxi clearance.	PA.II.E.K13
	14. Proper technique for the conditions, including idle, plow or step taxi, preventing and correcting for porpoising and skipping.	PA.II.E.K14
Skills	The applicant demonstrates the ability to:	
	1. Perform a brake check immediately after the airplane begins moving.	PA.II.E.S1
	2. Position the flight controls, flaps, doors, water rudder, and power correctly for the existing wind, water and sailing conditions and to prevent and correct for porpoising and skipping.	PA.II.E.S2
	3. Uses the appropriate idle, plow, or step taxi technique.	PA.II.E.S3
	4. Exhibit procedures for steering, maneuvering, maintaining taxiway, runway position, and situational awareness to avoid runway incursions.	PA.II.E.S4
	5. Plan and follows the most favorable course while taxiing or sailing, considering wind, water current, water conditions, and maritime regulations, as appropriate.	PA.II.E.S5
	6. Exhibit procedures to ensure clearances/instructions are received, recorded, and read back correctly.	PA.II.E.S6
	7. Exhibit situational awareness and taxi procedures in the event the aircraft is on a taxiway that is between parallel runways.	PA.II.E.S7
	8. Uses an Airport Diagram during taxi.	PA.II.E.S8
	9. Comply with airport/taxiway markings, signals, ATC clearances and instructions.	PA.II.E.S9
	10. Utilize procedures for eliminating pilot distractions to avoid other aircraft or vehicles and hazards.	PA.II.E.S10

Task continued on next page.

Task	*E. Taxiing and Sailing (ASES, AMES)*	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Distractions during aircraft taxi.	PA.II.E.R1
	2. Proper workload management.	PA.II.E.R2
	3. Confirmation or expectation bias as related to taxi instructions.	PA.II.E.R3
	4. Recording taxi instructions/clearances.	PA.II.E.R4
	5. Resource management.	PA.II.E.R5
	6. Porpoising and skipping.	PA.II.E.R6
	7. Avoiding other aircraft, vessels, and hazards while on the water.	PA.II.E.R7

Task	***F. Before Takeoff Check***	
Reference	FAAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23; POH/AFM; 14 CFR Part 91.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with the before takeoff check, including the reasons for checking each item, detecting malfunctions, and ensuring the airplane is in safe operating condition as recommended by the manufacturer.	
Knowledge	The applicant demonstrates understanding of:	
	1. Purpose of the runup.	PA.II.F.K1
	2. Aircraft performance given expected conditions.	PA.II.F.K2
	3. Purpose of a checklist.	PA.II.F.K3
	4. Wake turbulence avoidance.	PA.II.F.K4
	5. Emergency locator transmitter (ELT).	PA.II.F.K5
Skills	The applicant demonstrates the ability to:	
	1. Position the airplane properly considering other aircraft, vessels, and wind.	PA.II.F.S1
	2. Divide attention between inside and outside the cockpit.	PA.II.F.S2
	3. Ensure that powerplant and instrumentation are suitable for runup and takeoff.	PA.II.F.S3
	4. Accomplish the before takeoff checklist and departure briefing.	PA.II.F.S4
	5. Review takeoff performance, such as airspeeds, takeoff distance, departure, and emergency procedures.	PA.II.F.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Division of attention and scanning.	PA.II.F.R1
	2. Different than expected runway.	PA.II.F.R2
	3. Positive exchange of flight controls.	PA.II.F.R3
	4. Wake turbulence and vessel avoidance.	PA.II.F.R4
	5. Automation management.	PA.II.F.R5

III. Airport and Seaplane Base Operations

Task	***A. Communications and Light Gun Signals***	
Reference	14 CFR part 91; FAA-H-8083-2, FAA-H-8083-25; AIM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with normal and emergency radio communications and ATC light signals to conduct radio communications safely while operating the aircraft.	
Knowledge	The applicant demonstrates understanding of:	
	1. How to obtain proper radio frequencies.	PA.III.A.K1
	2. Standard communication procedures and ATC standard phraseology.	PA.III.A.K2
	3. ATC light signal recognition.	PA.III.A.K3
	4. Communication procedures.	PA.III.A.K4
	5. Transponders.	PA.III.A.K5
	6. Radar assistance.	PA.III.A.K6
	7. Lost communication procedures.	PA.III.A.K7
	8. Use of automated weather and airport information.	PA.III.A.K8
Skills	The applicant demonstrates the ability to:	
	1. Select appropriate frequencies.	PA.III.A.S1
	2. Transmit using standard phraseology and procedures.	PA.III.A.S2
	3. Acknowledge radio communications and comply with instructions.	PA.III.A.S3
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Human factors associated with communication.	PA.III.A.R1
	2. Human factors associated with declaring an emergency.	PA.III.A.R2
	3. Equipment issues that could cause loss of communication.	PA.III.A.R3
	4. Automation management.	PA.III.A.R4
	5. Single pilot and/or crew resource management.	

Task	***B. Traffic Patterns***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; AC 90-66; AIM; 14 CFR Part 91; Sectional Aeronautical Charts.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with safe operations in and around the airport traffic patterns.	
Knowledge	The applicant demonstrates understanding of:	
	1. Towered and non-towered airport operations and runway selection.	PA.III.B.K1
	2. Airport markings, lighting, wind indicators.	PA.III.B.K2
	3. Collision avoidance.	PA.III.B.K3
	4. Right-of-way rules.	PA.III.B.K4
	5. Wake turbulence recognition and resolution.	PA.III.B.K5
	6. Wind shear avoidance.	PA.III.B.K6
	7. Runway incursion avoidance.	PA.III.B.K7
	8. Use of automated weather and airport information.	PA.III.B.K8
	9. Use of radio for proper communications.	PA.III.B.K9
	10. Parachuting operations.	PA.III.B.K10
	11. Approach and landing considerations for different types of aircraft.	PA.III.B.K11
Skills	The applicant demonstrates the ability to:	
	1. Properly identify and interpret airport/seaplane base runways, taxiways, markings, and lighting.	PA.III.B.S1
	2. Comply with proper traffic pattern procedures.	PA.III.B.S2
	3. Maintain proper spacing from other aircraft.	PA.III.B.S3
	4. Correct for wind drift to maintain the proper ground track.	PA.III.B.S4
	5. Maintain orientation with the runway/landing area in use.	PA.III.B.S5
	6. Maintain traffic pattern altitude, ±100 feet, and the appropriate airspeed, ±10 knots.	PA.III.B.S6
	7. Maintain an awareness of the position of other aircraft in the pattern.	PA.III.B.S7
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.III.B.R1
	2. Scanning.	PA.III.B.R2
	3. Wake turbulence.	PA.III.B.R3
	4. Situational awareness.	PA.III.B.R4
	5. Aircraft separation.	PA.III.B.R5
	6. Operating considerations of various aircraft types.	PA.III.B.R6
	7. Go-around or rejected takeoff, if appropriate.	PA.III.B.R7

IV. Takeoffs, Landings, and Go-Arounds

Task	***A. Normal Takeoff and Climb***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a normal takeoff, climb operations, and rejected takeoff procedures. **NOTE:** If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.	
Knowledge	The applicant demonstrates understanding of:	
	1. Takeoff distance.	PA.IV.A.K1
	2. Takeoff power.	PA.IV.A.K2
	3. Atmospheric conditions.	PA.IV.A.K3
	4. Minimum safe altitude.	PA.IV.A.K4
	5. Headwind, tailwind, crosswind component.	PA.IV.A.K5
	6. Application of V_X or V_Y and variations with altitude.	PA.IV.A.K6
	7. Emergency procedures during takeoff and climb.	PA.IV.A.K7
Skills	The applicant demonstrates the ability to:	
	1. Verify ATC clearance and no aircraft is on final before crossing the Hold Line.	PA.IV.A.S1
	2. Verify aircraft is on the assigned/correct runway.	PA.IV.A.S2
	3. Ascertain wind direction with or without visible wind direction indicators.	PA.IV.A.S3
	4. Determining if crosswind component exceeds pilot ability or is beyond aircraft manufacture limitations.	PA.IV.A.S4
	5. Position the flight controls for the existing wind conditions.	PA.IV.A.S5
	6. Clear the area; taxi into the takeoff position and align the airplane on the runway center/takeoff path.	PA.IV.A.S6
	7. Confirm takeoff power, and proper engine and flight instrument indications prior to rotation. (ASEL, AMEL); Retracts the water rudders, as appropriate, confirm takeoff power, and proper engine instrument indications prior to rotation, establishes and maintains the most efficient planning/lift-off attitude, and corrects for porpoising and skipping (ASES, AMES).	PA.IV.A.S7
	8. Rotate and lift off at the recommended airspeed and accelerates to V_Y (or other speeds as appropriate for transport aircraft).	PA.IV.A.S8
	9. Establish a pitch attitude that will maintain V_Y +10/-5 knots (or other speeds as appropriate for transport aircraft).	PA.IV.A.S9
	10. Retract the landing gear and flaps in accordance with manufacturer's guidance or good operating practice.	PA.IV.A.S10
	11. Maintain takeoff power and V_Y +10/-5 knots to a safe maneuvering altitude.	PA.IV.A.S11
	12. Maintain directional control and proper wind-drift correction throughout the takeoff and climb.	PA.IV.A.S12
	13. Comply with noise abatement and published departure procedures.	PA.IV.A.S13
	14. Complete the appropriate checklist.	PA.IV.A.S14
	15. Comply with manufacturer's recommended emergency procedures relating to the takeoff sequence.	PA.IV.A.S15

Task continued on next page.

Task	***A. Normal Takeoff and Climb***	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of runway based on wind, pilot capability, and aircraft limitations	PA.IV.A.R1
	2. Determining if crosswind component exceeds pilot ability or aircraft capability.	PA.IV.A.R2
	3. Windshear.	PA.IV.A.R3
	4. Tailwind.	PA.IV.A.R4
	5. Wake turbulence.	PA.IV.A.R5
	6. Go/no go decision making.	PA.IV.A.R6
	7. Task management.	PA.IV.A.R7
	8. Low-altitude maneuvering.	PA.IV.A.R8
	9. Wire strikes.	PA.IV.A.R9
	10. Situational awareness of obstacles on departure path.	PA.IV.A.R10
	11. Recognition of need for rejected takeoff and predetermines takeoff abort point.	PA.IV.A.R11
	12. Handling engine failure during takeoff and climb.	PA.IV.A.R12
	13. Criticality of takeoff distance available.	PA.IV.A.R13
	14. Plans for engine failure after takeoff.	PA.IV.A.R14
	15. Sterile cockpit environment.	PA.IV.A.R15

Task	***B. Normal Approach and Landing***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23, FAA-H-8083-25; POH/AFM; AIM.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a normal approach and landing with emphasis on proper use and coordination of flight controls. **NOTE:** If a crosswind condition does not exist, the applicant's knowledge of crosswind elements shall be evaluated through oral testing.	
Knowledge	The applicant demonstrates understanding of:	
	1. Available landing distance.	PA.IV.B.K1
	2. Stabilized approach.	PA.IV.B.K2
	3. Energy management.	PA.IV.B.K3
	4. Atmospheric conditions.	PA.IV.B.K4
	5. Headwind, tailwind, crosswind component.	PA.IV.B.K5
	6. Emergency procedures during approach and landing.	PA.IV.B.K6
	7. Land and hold short operations (LAHSO) or option to refuse LAHSO restriction.	PA.IV.B.K7
Skills	The applicant demonstrates the ability to:	
	1. Ensure the aircraft is on the correct/assigned runway.	PA.IV.B.S1
	2. Scan the landing runway/areas and adjoining areas for possible wildlife, vehicular or other aircraft to avoid collision.	PA.IV.B.S2
	3. Complete the appropriate checklist.	PA.IV.B.S3
	4. Consider the wind conditions, landing surface, obstructions, and selects a suitable touchdown point prior to the 1000 foot distance markers (if available), or within the first 1/3 of the runway length.	PA.IV.B.S4
	5. Establish the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.	PA.IV.B.S5
	6. Maintain a stabilized approach and recommended airspeed, or in its absence, not more than 1.3 V_{SO}, with wind gust factor applied +10/-5 knots, or as recommended for the aircraft type and gust velocity.	PA.IV.B.S6
	7. Make smooth, timely, and correct control application during the round out and touchdown (ASEL, AMEL); Make smooth, timely, and correct control application during the round out and touchdown to contact the water at the proper pitch attitude (ASES, AMES).	PA.IV.B.S7
	8. Touch down smoothly at a speed that provides little or no aerodynamic lift.	PA.IV.B.S8
	9. Touch down within the available runway, within 400 feet beyond a specified point with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.	PA.IV.B.S9
	10. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IV.B.S10
	11. Execute a timely go-around decision when the approach cannot be made within the tolerances specified above or for any other condition that that may result in an unsafe approach or landing.	PA.IV.B.S11
	12. Utilize after landing runway incursion avoidance procedures.	PA.IV.B.S12

Task continued on next page.

Task	***B. Normal Approach and Landing***	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of runway based on wind, pilot capability and aircraft limitations—including possible necessity of selecting a runway at a different airport.	PA.IV.B.R1
	2. Determining whether crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.B.R2
	3. Windshear.	PA.IV.B.R3
	4. Tailwind.	PA.IV.B.R4
	5. Wake turbulence.	PA.IV.B.R5
	6. Task management.	PA.IV.B.R6
	7. Low altitude maneuvering.	PA.IV.B.R7
	8. Wire strikes.	PA.IV.B.R8
	9. Collision avoidance.	PA.IV.B.R9
	10. Right-of-way.	PA.IV.B.R10
	11. Situational awareness of obstacles on approach and departure paths.	PA.IV.B.R11
	12. Recognition of need for go-around/rejected landing.	PA.IV.B.R12
	13. Stall/spin awareness.	PA.IV.B.R13
	14. Land and hold short operations.	PA.IV.B.R14
	15. Sterile cockpit.	PA.IV.B.R15

Task	***C. Soft-Field Takeoff and Climb (ASEL)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a soft-field takeoff, climb operations, and rejected takeoff procedures.	
Knowledge	The applicant demonstrates understanding of:	
	1. Importance of weight transfer from wheels to wings.	PA.IV.C.K1
	2. Awareness of additional turning-factor induced turning tendencies.	PA.IV.C.K2
	3. Effects of aircraft configuration.	PA.IV.C.K3
	4. Effects of runway surface.	PA.IV.C.K4
	5. Takeoff distance.	PA.IV.C.K5
	6. Takeoff power.	PA.IV.C.K6
	7. Wind conditions and effects.	PA.IV.C.K7
	8. Density altitude.	PA.IV.C.K8
	9. Headwind, tailwind, crosswind component.	PA.IV.C.K9
	10. Application of V_X or V_Y.	PA.IV.C.K10
	11. Emergency procedures during takeoff and climb.	PA.IV.C.K11
	12. Hazards of other than hard surfaced runway.	PA.IV.C.K12
Skills	The applicant demonstrates the ability to:	
	1. Verify ATC clearance and no aircraft is on final before crossing the Hold Line.	PA.IV.S.S1
	2. Ensure the aircraft is properly configured.	PA.IV.C.S2
	3. Ensure the aircraft is on the correct takeoff runway.	PA.IV.C.S3
	4. Ascertain wind direction with or without visible wind direction indicators.	PA.IV.C.S4
	5. Calculate the crosswind component and determine if it is above his or her ability or that of the aircraft's capability.	PA.IV.C.S5
	6. Position the flight controls for the existing wind conditions.	PA.IV.C.S6
	7. Clear the area; taxi into the takeoff position and align the airplane on the runway center without stopping while advancing the throttle smoothly to takeoff power.	PA.IV.C.S7
	8. Confirm takeoff power, and proper engine and flight instrument indications prior to rotation.	PA.IV.C.S8
	9. Establish and maintain a pitch attitude that will transfer the weight of the airplane from the wheels to the wings as rapidly as possible.	PA.IV.C.S9
	10. Lift off at the lowest possible airspeed consistent with safety and remains in ground effect while accelerating to V_X or V_Y, as appropriate.	PA.IV.C.S10
	11. Establish a pitch attitude for V_X or V_Y, as appropriate, and maintain selected airspeed +10/-5 knots during the climb.	PA.IV.C.S11
	12. Retract landing gear and flaps after a positive rate of climb has been verified or in accordance with aircraft manufacturer's guidance.	PA.IV.C.S12
	13. Maintain takeoff power and V_X or V_Y +10/-5 knots to a safe maneuvering altitude.	PA.IV.C.S13
	14. Maintain directional control and proper wind-drift correction throughout the takeoff and climb.	PA.IV.C.S14
	15. Comply with noise abatement and published departure procedures.	PA.IV.C.S15
	16. Complete the appropriate checklist.	PA.IV.C.S16
	17. Comply with manufacturer's recommended emergency procedures relating to the takeoff sequence.	PA.IV.C.S17

Task continued on next page.

Task	*C. Soft-Field Takeoff and Climb (ASEL)*	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of runway based on wind, pilot capability, and aircraft limitations.	PA.IV.C.R1
	2. Determining whether crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.C.R2
	3. Operating from other than hard-surfaced runway.	PA.IV.C.R3
	4. Windshear.	PA.IV.C.R4
	5. Tailwind.	PA.IV.C.R5
	6. Wake turbulence.	PA.IV.C.R6
	7. Go/no go decision making.	PA.IV.C.R7
	8. Task management.	PA.IV.C.R8
	9. Low-altitude maneuvering.	PA.IV.C.R9
	10. Wire strikes.	PA.IV.C.R10
	11. Minimum safe altitude for climb.	PA.IV.C.R11
	12. Situational awareness of obstacles on departure path.	PA.IV.C.R12
	13. Possible need for rejected takeoff and identification of takeoff abort point.	PA.IV.C.R13
	14. Handling engine failure during takeoff and climb.	PA.IV.C.R14
	15. Determining when a soft-field takeoff technique is required.	PA.IV.C.R15
	16. Takeoff distance available.	PA.IV.C.R16
	17. Engine failure after takeoff.	PA.IV.C.R17
	18. Sterile cockpit.	PA.IV.C.R18

Task	***D. Soft-Field Approach and Landing (ASEL)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a soft-field approach and landing with emphasis on proper use and coordination of flight controls.	
Knowledge	The applicant demonstrates understanding of:	
	1. Landing distance.	PA.IV.D.K1
	2. Hazards of other than hard surfaced runway.	PA.IV.D.K2
	3. Stabilized approach.	PA.IV.D.K3
	4. Energy management.	PA.IV.D.K4
	5. Wind conditions and effects.	PA.IV.D.K5
	6. Density altitude.	PA.IV.D.K6
	7. Headwind, tailwind, crosswind component.	PA.IV.D.K7
	8. Emergency procedures during approach and landing.	PA.IV.D.K8
Skills	The applicant demonstrates the ability to:	
	1. Ensure the aircraft is on the correct/assigned runway.	PA.IV.D.S1
	2. Scan the landing runway and adjoining areas for possible wildlife, vehicular or other aircraft to avoid collision.	PA.IV.D.S2
	3. Complete the appropriate checklist.	PA.IV.D.S3
	4. Consider the wind conditions, landing surface, obstructions, and selects a suitable touchdown point.	PA.IV.D.S4
	5. Establish the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.	PA.IV.D.S5
	6. Maintain a stabilized approach and recommended airspeed, or in its absence, not more than 1.3 V_{SO}, with wind gust factor applied,+10/-5knots.	PA.IV.D.S6
	7. Make smooth, timely, and correct control application during the round out and touchdown and, for tricycle gear airplanes, keep the nose wheel off the surface until loss of elevator effectiveness.	PA.IV.D.S7
	8. Touch down softly with minimum sink rate and no drift, with the airplane's longitudinal axis aligned in the runway center.	PA.IV.D.S8
	9. Maintain full up elevator during rollout and exit the "soft" area at a speed that would preclude sinking into the surface.	PA.IV.D.S9
	10. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IV.D.S10
	11. Execute a timely go-around decision when the approach cannot be made within the tolerances specified above or for any other condition that that may result in an unsafe approach or landing.	PA.IV.D.S11
	12. Maintain proper position of the flight controls and sufficient speed to taxi on the soft surface.	PA.IV.D.S12

Task continued on next page.

Task	*D. Soft-Field Approach and Landing (ASEL)*	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of runway based on wind, pilot capability and aircraft limitations—including possible necessity of selecting a runway at a different airport.	PA.IV.D.R1
	2. Determining if crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.D.R2
	3. Operating from other than hard-surfaced runway.	PA.IV.D.R3
	4. Losing elevator control, sinking into the soft surface, or striking the prop if moving too slowly.	
	5. Windshear avoidance.	PA.IV.D.R4
	6. Tailwind.	PA.IV.D.R5
	7. Wake turbulence.	PA.IV.D.R6
	8. Task management.	PA.IV.D.R7
	9. Low-altitude maneuvering.	PA.IV.D.R8
	10. Wire strikes.	PA.IV.D.R9
	11. Collision avoidance.	PA.IV.D.R10
	12. Right-of-way.	PA.IV.D.R11
	13. Situational awareness of obstacles on approach and departure paths.	PA.IV.D.R12
	14. Recognition of need for go-around/rejected landing.	PA.IV.D.R13
	15. Stall/spin awareness.	PA.IV.D.R14
	16. Performing a soft-field landing without the use of power in power failure situation.	PA.IV.D.R15
	17. Sterile cockpit.	PA.IV.D.R16

Task	***E. Short-Field Takeoff and Maximum Performance Climb (ASEL, AMEL)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a short-field takeoff, maximum performance climb operations, and rejected takeoff procedures.	
Knowledge	The applicant demonstrates understanding of:	
	1. Effects of aircraft configuration.	PA.IV.E.K1
	2. Effects of runway surface.	PA.IV.E.K2
	3. Takeoff distance.	PA.IV.E.K3
	4. Takeoff power.	PA.IV.E.K4
	5. Obstruction clearance.	PA.IV.E.K5
	6. Wind conditions and effects.	PA.IV.E.K6
	7. Minimum safe altitude.	PA.IV.E.K7
	8. Density altitude.	PA.IV.E.K8
	9. Headwind, tailwind, crosswind component.	PA.IV.E.K9
	10. Application of V_X or V_Y.	PA.IV.E.K10
	11. Emergency procedures during takeoff and climb.	PA.IV.E.K11
Skills	The applicant demonstrates the ability to:	
	1. Verify proper aircraft configuration.	PA.IV.E.S1
	2. Verify ATC clearance and ensure that no conflicting traffic before crossing the Hold Line.	PA.IV.E.S2
	3. Ensure the aircraft is on the correct takeoff runway.	PA.IV.E.S3
	4. Ascertain wind direction with or without visible wind direction indicators.	PA.IV.E.S4
	5. Determining if crosswind component exceeds pilot ability or is beyond aircraft manufacturer's limitations.	PA.IV.E.S5
	6. Position the flight controls for the existing wind conditions.	PA.IV.E.S6
	7. Clear the area; taxi into takeoff position utilizing maximum available takeoff area and align the airplane on the runway center line.	PA.IV.E.S7
	8. Apply brakes (if appropriate), while configuring aircraft power setting to achieve maximum performance.	PA.IV.E.S8
	9. Confirm takeoff power prior to brake release and proper engine and flight instrument indications prior to rotation.	PA.IV.E.S9
	10. Rotate and lift off at the recommended airspeed, and accelerate to the recommended obstacle clearance airspeed or V_X.	PA.IV.E.S10
	11. Establish a pitch attitude that will maintain the recommended obstacle clearance airspeed, or V_X, +10/-5 knots, until the obstacle is cleared, or until the airplane is 50 feet above the surface.	PA.IV.E.S11
	12. After clearing the obstacle, establish the pitch attitude for V_Y, accelerate to V_Y, and maintain V_Y, +10/-5 knots, during the climb.	PA.IV.E.S12
	13. Retract landing gear and flaps after a positive rate of climb has been verified or in accordance with aircraft manufacturer's guidance.	PA.IV.E.S13
	14. Maintain takeoff power and V_X or V_Y +10/-5 knots to a safe maneuvering altitude.	PA.IV.E.S14
	15. Maintain directional control and proper wind-drift correction throughout the takeoff and climb.	PA.IV.E.S15
	16. Comply with noise abatement and published departure procedures.	PA.IV.E.S16
	17. Complete the appropriate checklist.	PA.IV.E.S17
	18. Comply with manufacturer's recommended emergency procedures relating to the takeoff sequence.	PA.IV.E.S18

Task continued on next page.

Task	*E. Short-Field Takeoff and Maximum Performance Climb (ASEL, AMEL)*	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of runway based on wind, pilot capability, and aircraft limitations.	PA.IV.E.R1
	2. Determining if crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.E.R2
	3. Operating from other than hard-surfaced runway.	PA.IV.E.R3
	4. Obstruction clearance, climb attitude, and stall awareness.	PA.IV.E.R4
	5. Windshear.	PA.IV.E.R5
	6. Tailwind.	PA.IV.E.R6
	7. Wake turbulence.	PA.IV.E.R7
	8. Go/no-go decision making.	PA.IV.E.R8
	9. Task management.	PA.IV.E.R9
	10. Low-altitude maneuvering.	PA.IV.E.R10
	11. Wire strikes.	PA.IV.E.R11
	12. Minimum safe altitude for climb.	PA.IV.E.R12
	13. Situational awareness of obstacles on departure and arrival paths.	PA.IV.E.R13
	14. Recognition of need for rejected takeoff and identification of takeoff abort point.	PA.IV.E.R14
	15. Strategies for handling engine failure during takeoff and climb, including recognition that climb at V_X (vs. V_{XSE}) may result in loss of directional control if an engine fails.	PA.IV.E.R15
	16. Criticality of takeoff distance available.	PA.IV.E.R16
	17. Possibility of engine failure after takeoff.	PA.IV.E.R17
	18. Sterile cockpit.	PA.IV.E.R18

Task	***F. Short-Field Approach and Landing (ASEL, AMEL)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a short-field approach and landing with emphasis on proper use and coordination of flight controls.	
Knowledge	The applicant demonstrates understanding of:	
	1. Landing distance.	PA.IV.F.K1
	2. Hazards of other than hard-surfaced runways.	PA.IV.F.K2
	3. Obstruction clearance.	PA.IV.F.K3
	4. Stabilized approach.	PA.IV.F.K4
	5. Energy management.	PA.IV.F.K5
	6. Wind conditions and effects.	PA.IV.F.K6
	7. Density altitude.	PA.IV.F.K7
	8. Headwind, tailwind, crosswind component.	PA.IV.F.K8
	9. Emergency procedures during approach and landing.	PA.IV.F.K9
	10. Land and hold short operations.	PA.IV.F.K10
Skills	The applicant demonstrates the ability to:	
	1. Ensure the aircraft is on the correct/assigned runway.	PA.IV.F.S1
	2. Scan the landing runway and adjoining areas for possible wildlife, vehicular traffic or other aircraft to avoid collision.	PA.IV.F.S2
	3. Complete the appropriate checklist.	PA.IV.F.S3
	4. Consider the wind conditions, landing surface, obstructions, and select a suitable touchdown point.	PA.IV.F.S4
	5. Establish the recommended approach and landing configuration and airspeed, and adjust pitch attitude and power as required.	PA.IV.F.S5
	6. Maintain a stabilized approach and recommended airspeed, or in its absence, not more than 1.3 V_{SO}, with wind gust factor applied,+10/-5knots.	PA.IV.F.S6
	7. Make smooth, timely, and correct control application during the round out and touchdown.	PA.IV.F.S7
	8. Touch down smoothly at manufacturer's recommended airspeed.	PA.IV.F.S8
	9. Touch down within the available runway, at or within 200 feet beyond a specified point, threshold markings or runway numbers, with no side drift, minimum float, and with the airplane's longitudinal axis aligned with and over the runway center line.	PA.IV.F.S9
	10. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IV.F.S10
	11. Execute a timely go-around decision when the approach cannot be made within the tolerances specified above or for any other condition that that may result in an unsafe approach or landing.	PA.IV.F.S11
	12. Apply brakes as necessary, to stop in the shortest distance consistent with safety.	PA.IV.F.S12

Task continued on next page.

Task	*F. Short-Field Approach and Landing (ASEL, AMEL)*	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of runway based on wind, pilot capability and aircraft limitations—including possible necessity of selecting a runway at a different airport.	PA.IV.F.R1
	2. Determining whether crosswind component exceeds pilot ability or is beyond aircraft manufacture limitations.	PA.IV.F.R2
	3. Other than hard surfaced runway.	PA.IV.F.R3
	4. Obstruction clearance.	PA.IV.F.R4
	5. Windshear.	PA.IV.F.R5
	6. Tailwind.	PA.IV.F.R6
	7. Wake turbulence.	PA.IV.F.R7
	8. Task management.	PA.IV.F.R8
	9. Low-altitude maneuvering.	PA.IV.F.R9
	10. Wire strikes.	PA.IV.F.R10
	11. Collision avoidance.	PA.IV.F.R11
	12. Right-of-way.	PA.IV.F.R12
	13. Situational awareness of obstacles on approach and departure paths.	PA.IV.F.R13
	14. Recognition of need for go-around/rejected landing.	PA.IV.F.R14
	15. Stall/spin awareness.	PA.IV.F.R15
	16. Land and hold short operations.	PA.IV.F.R16
	17. Sterile cockpit.	PA.IV.F.R17

Task	***G. Confined Area Takeoff and Maximum Performance Climb (ASES, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a confined area takeoff, maximum performance climb operations, and rejected takeoff procedures.	
Knowledge	The applicant demonstrates understanding of:	
	1. Effects of aircraft configuration.	PA.IV.G.K1
	2. Effects of water surface.	PA.IV.G.K2
	3. Takeoff distance.	PA.IV.G.K3
	4. Takeoff power.	PA.IV.G.K4
	5. Obstruction clearance.	PA.IV.G.K5
	6. Wind conditions and effects.	PA.IV.G.K6
	7. Minimum safe altitude.	PA.IV.G.K7
	8. Density altitude.	PA.IV.G.K8
	9. Headwind, tailwind, crosswind component.	PA.IV.G.K9
	10. Application of 150- or V_Y.	PA.IV.G.K10
	11. Emergency procedures during takeoff and climb.	PA.IV.G.K11
Skills	The applicant demonstrates the ability to:	
	1. Verify proper aircraft configuration.	PA.IV.G.S1
	2. Verify ATC clearance and ensure that no aircraft is on final before crossing the Hold Line.	PA.IV.G.S2
	3. Ensure the aircraft is on the correct takeoff center path.	PA.IV.G.S3
	4. Ascertain wind direction with or without visible wind direction indicators.	PA.IV.G.S4
	5. Determine if crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.G.S5
	6. Position the flight controls for the existing wind conditions.	PA.IV.G.S6
	7. Clear the area and select an appropriate takeoff path for the existing conditions; taxi into takeoff position utilizing maximum available takeoff area and align the airplane on the takeoff path.	PA.IV.G.S7
	8. Configure aircraft power to achieve maximum performance and confirm takeoff power and proper engine and flight instrument indications prior to rotation.	PA.IV.G.S8
	9. Establish and maintain the most efficient planning/lift-off attitude and correct for porpoising and skipping.	PA.IV.G.S9
	10. Rotate and lift off at the recommended airspeed, and accelerate to the recommended obstacle clearance airspeed or V_X.	PA.IV.G.S10
	11. Establish a pitch attitude that will maintain the recommended obstacle clearance airspeed, or V_X, +10/-5 knots, until the obstacle is cleared, or until the airplane is 50 feet above the surface.	PA.IV.G.S11
	12. After clearing the obstacle, establish the pitch attitude for V_Y, accelerate to V_Y, and maintain V_Y, +10/-5 knots, during the climb.	PA.IV.G.S12
	13. Retract flaps after a positive rate of climb has been verified or in accordance with aircraft manufacturer's guidance.	PA.IV.G.S13
	14. Maintain takeoff power and V_X or V_Y +10/-5 knots to a safe maneuvering altitude.	PA.IV.G.S14
	15. Maintain directional control and proper wind-drift correction throughout the takeoff and climb.	PA.IV.G.S15
	16. Comply with noise abatement and published departure procedures.	PA.IV.G.S16
	17. Complete the appropriate checklist.	PA.IV.G.S17
	18. Comply with manufacturer's recommended emergency procedures relating to the takeoff sequence.	PA.IV.G.S18

Task continued on next page.

Task	*G. Confined Area Takeoff and Maximum Performance Climb (ASES, AMES)*	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of appropriate takeoff path based on wind, pilot capability, and aircraft limitations.	PA.IV.G.R1
	2. Determining if crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.G.R2
	3. Water conditions.	PA.IV.G.R3
	4. Obstruction clearance.	PA.IV.G.R4
	5. Obstruction clearance, climb attitude, and stall awareness.	PA.IV.G.R5
	6. Windshear.	PA.IV.G.R6
	7. Tailwind.	PA.IV.G.R7
	8. Wake turbulence.	PA.IV.G.R8
	9. Go/no-go decision making.	PA.IV.G.R9
	10. Task management.	PA.IV.G.R10
	11. Low-altitude maneuvering.	PA.IV.G.R11
	12. Wire strikes.	PA.IV.G.R12
	13. Minimum safe altitude for climb.	PA.IV.G.R13
	14. Situational awareness of obstacles on departure and arrival paths.	PA.IV.G.R14
	15. Recognition of need for rejected takeoff and predetermines takeoff abort point.	PA.IV.G.R15
	16. Handling engine failure during takeoff and climb.	PA.IV.G.R16
	17. Criticality of takeoff distance available.	PA.IV.G.R17
	18. Plans for engine failure after takeoff.	PA.IV.G.R18
	19. Sterile cockpit.	PA.IV.G.R19
	20. Confirming of gear retraction in amphibious aircraft.	PA.IV.G.R20

Task	***H. Confined Area Approach and Landing (ASES, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a confined area approach and landing with emphasis on proper use and coordination of flight controls.	
Knowledge	The applicant demonstrates understanding of:	
	1. Landing distance.	PA.IV.H.K1
	2. Hazards of a confined area.	PA.IV.H.K2
	3. Obstruction clearance.	PA.IV.H.K3
	4. Stabilized approach.	PA.IV.H.K4
	5. Energy management.	PA.IV.H.K5
	6. Wind conditions and effects.	PA.IV.H.K6
	7. Density altitude.	PA.IV.H.K7
	8. Headwind, tailwind, crosswind component.	PA.IV.H.K8
	9. Emergency procedures during approach and landing.	PA.IV.H.K9
	10. Land and hold short operations.	PA.IV.H.K10
Skills	The applicant demonstrates the ability to:	
	1. Ensure the aircraft is on the correct/assigned runway and adequately survey the intended landing area.	PA.IV.H.S1
	2. Scan the landing area and adjoining areas for possible wildlife, vehicular or other aircraft to avoid collision.	PA.IV.H.S2
	3. Complete the appropriate checklist.	PA.IV.H.S3
	4. Consider the wind conditions, landing surface, obstructions, and select the proper landing path.	PA.IV.H.S4
	5. Establish the recommended approach and landing configuration and airspeed, and adjust pitch attitude and power as required.	PA.IV.H.S5
	6. Maintain a stabilized approach and recommended airspeed, or in its absence, not more than 1.3 V_{SO}, with wind gust factor applied,+10/-5knots.	PA.IV.H.S6
	7. Make smooth, timely, and correct control application during the round out and touchdown.	PA.IV.H.S7
	8. Contact the water at the minimum safe airspeed with the proper pitch attitude for the surface conditions.	PA.IV.H.S8
	9. Touch down within the available water landing area, at or within 200 feet beyond a specified point, with no side drift, minimum float, and with the airplane's longitudinal axis aligned with and over the landing center area.	PA.IV.H.S9
	10. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IV.H.S10
	11. Execute a timely go-around decision when the approach cannot be made within the tolerances specified above or for any other condition that that may result in an unsafe approach or landing.	PA.IV.H.S11
	12. Apply elevator control as necessary, to stop in the shortest distance consistent with safety.	PA.IV.H.S12

Task continued on next page.

Task	***H. Confined Area Approach and Landing (ASES, AMES)***	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of landing area based on wind, pilot capability and aircraft limitations—considering possibility of selecting an area at a different location.	PA.IV.H.R1
	2. Determining whether crosswind component exceeds pilot ability or is beyond aircraft manufacture limitations	PA.IV.H.R2
	3. Water conditions.	PA.IV.H.R3
	4. Obstruction clearance, climb attitude, and stall awareness.	PA.IV.H.R4
	5. Windshear.	PA.IV.H.R5
	6. Tailwind.	PA.IV.H.R6
	7. Wake turbulence.	PA.IV.H.R7
	8. Task management.	PA.IV.H.R8
	9. Low-altitude maneuvering.	PA.IV.H.R9
	10. Wire strikes.	PA.IV.H.R10
	11. Collision avoidance.	PA.IV.H.R11
	12. Right-of-way.	PA.IV.H.R12
	13. Situational awareness of obstacles on approach and departure paths.	PA.IV.H.R13
	14. Recognition of need for go-around/rejected landing.	PA.IV.D.R14
	15. Stall/spin awareness.	PA.IV.H.R15
	16. Land and hold short operations.	PA.IV.H.R16
	17. Sterile cockpit.	PA.IV.H.R17

Task	***I. Glassy Water Takeoff and Climb (ASES, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a glassy water takeoff and climb. **NOTE:** If a glassy water condition does not exist, the applicant shall be evaluated by simulating the Task.	
Knowledge	The applicant demonstrates understanding of:	
	1. Water effects on operations.	PA.IV.I.K1
	2. Effects of glassy water on acceleration and lift-off.	PA.IV.I.K2
	3. When and why to use the glassy water takeoff and climb technique.	PA.IV.I.K3
Skills	The applicant demonstrates the ability to:	
	1. Position the flight controls and flaps for the existing conditions.	PA.IV.I.S1
	2. Clear the area; select an appropriate takeoff path considering surface hazards and/or vessels and surface conditions.	PA.IV.I.S2
	3. Retract the water rudders as appropriate; advance the throttle smoothly to takeoff power.	PA.IV.I.S3
	4. Establish and maintain an appropriate planning attitude, directional control, and correct for porpoising, skipping, and increase in water drag.	PA.IV.I.S4
	5. Utilize appropriate techniques to lift seaplane from the water considering surface conditions.	PA.IV.I.S5
	6. Establish proper attitude/airspeed, and accelerate to V_Y +10/-5 knots during the climb.	PA.IV.I.S6
	7. Retract flaps after a positive rate of climb has been verified or in accordance with aircraft manufacturer's guidance.	PA.IV.I.S7
	8. Maintain takeoff power V_Y +10/-5 to a safe maneuvering altitude.	PA.IV.I.S8
	9. Maintain directional control and proper wind-drift correction throughout takeoff and climb.	PA.IV.I.S9
	10. Complete the appropriate checklist.	PA.IV.I.S10
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of appropriate takeoff path based on wind, pilot capability, and aircraft limitations.	PA.IV.I.R1
	2. Determining whether crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.I.R2
	3. Water conditions.	PA.IV.I.R3
	4. Obstruction clearance.	PA.IV.I.R4
	5. Obstruction clearance climb attitude and stall awareness.	PA.IV.I.R5
	6. Windshear.	PA.IV.I.R6
	7. Tailwind.	PA.IV.I.R7
	8. Wake turbulence.	PA.IV.I.R8
	9. Go/no-go decision making.	PA.IV.I.R9
	10. Task management.	PA.IV.I.R10
	11. Low-altitude maneuvering.	PA.IV.I.R11
	12. Wire strikes.	PA.IV.I.R12
	13. Minimum safe altitude for climb.	PA.IV.I.R13
	14. Situational awareness of obstacles on departure and arrival paths.	PA.IV.I.R14
	15. Recognition of need for rejected takeoff and predetermines takeoff abort point.	PA.IV.I.R15
	16. Strategies for handling engine failure during takeoff and climb.	PA.IV.I.R16
	17. Criticality of takeoff distance available.	PA.IV.I.R17
	18. Plans for engine failure after takeoff.	PA.IV.I.R18
	19. Sterile cockpit.	PA.IV.I.R19
	20. Confirmation of gear retraction in amphibious aircraft.	PA.IV.I.R20

Task	***J. Glassy Water Approach and Landing (ASES, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a glassy water approach and landing. **NOTE:** If a glassy water condition does not exist, the applicant shall be evaluated by simulating the Task.	
Knowledge	The applicant demonstrates understanding of:	
	1. When and why glassy water techniques are used.	PA.IV.J.K1
	2. How a glassy water approach and landing is executed.	PA.IV.J.K2
	3. Landing distance.	PA.IV.J.K3
	4. Stabilized approach.	PA.IV.J.K4
	5. Energy management.	PA.IV.J.K5
	6. Wind conditions and effects.	PA.IV.J.K6
	7. Density altitude.	PA.IV.J.K7
	8. Headwind, tailwind, crosswind component.	PA.IV.J.K8
	9. Emergency procedures during approach and landing.	PA.IV.J.K9
Skills	The applicant demonstrates the ability to:	
	1. Adequately survey the intended landing area.	PA.IV.J.S1
	2. Consider the wind conditions, water depth, hazards, surrounding terrain, and other watercraft.	PA.IV.J.S2
	3. Select the most suitable approach path and touchdown area.	PA.IV.J.S3
	4. Establish the recommended approach and landing configuration and airspeed, and adjust pitch attitude and power as required.	PA.IV.J.S4
	5. Maintain a stabilized approach and the recommended approach airspeed, +10/-5 knots and maintain a touchdown pitch attitude and descent rate from the last altitude reference until touchdown.	PA.IV.J.S5
	6. Make smooth, timely, and correct power and control adjustments to maintain proper pitch attitude and rate of descent to touchdown.	PA.IV.J.S6
	7. Contact the water in the proper pitch attitude, and slow to idle taxi speed.	PA.IV.J.S7
	8. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IV.J.S8
	9. Complete the appropriate checklist.	PA.IV.J.S9
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Performing a go-around/rejected landing.	PA.IV.J.R1
	2. Importance of landing in direction of momentum, with wheels pointed forward on touchdown.	PA.IV.J.R2
	3. Stall/spin awareness.	PA.IV.J.R3
	4. Windshear.	PA.IV.J.R4
	5. Tailwind.	PA.IV.J.R5
	6. Wake turbulence.	PA.IV.J.R6
	7. Task management.	PA.IV.J.R7
	8. Low-altitude maneuvering.	PA.IV.J.R8
	9. Wire strikes.	PA.IV.J.R9
	10. Collision avoidance.	PA.IV.J.R10
	11. Right-of-way.	PA.IV.J.R11
	12. Situational awareness of obstacles on approach and departure paths.	PA.IV.J.R12
	13. Sterile cockpit.	PA.IV.J.R13

Task	***K. Rough Water Takeoff and Climb (ASES, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a rough water takeoff and climb. **NOTE:** If a rough water condition does not exist, the applicant shall be evaluated by simulating the Task.	
Knowledge	The applicant demonstrates understanding of:	
	1. Water effects on operations.	PA.IV.K.K1
	2. Effects of rough water on acceleration and lift-off.	PA.IV.K.K2
	3. When and why to use the rough water takeoff and climb technique.	PA.IV.K.K3
Skills	The applicant demonstrates the ability to:	
	1. Position the flight controls and flaps for the existing conditions.	PA.IV.K.S1
	2. Clear the area; select an appropriate takeoff path considering surface hazards and/or vessels and surface conditions.	PA.IV.K.S2
	3. Retract the water rudders as appropriate; advance the throttle smoothly to takeoff power.	PA.IV.K.S3
	4. Establish and maintain an appropriate planning attitude, directional control, and correct for porpoising, skipping, and increase in water drag.	PA.IV.K.S4
	5. Lift off at minimum airspeed and accelerate to V_Y, +10/-5 knots before leaving ground effect.	PA.IV.K.S5
	6. Retract flaps after a positive rate of climb has been verified or in accordance with aircraft manufacturer's guidance.	PA.IV.K.S6
	7. Maintain takeoff power V_Y +10/-5 to a safe maneuvering altitude.	PA.IV.K.S7
	8. Maintain directional control and proper wind-drift correction throughout takeoff and climb.	PA.IV.K.S8
	9. Complete the appropriate checklist.	PA.IV.K.S9
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of appropriate takeoff path based on wind, pilot capability, and aircraft limitations.	PA.IV.K.R1
	2. Determining whether crosswind component exceeds pilot ability or is beyond aircraft manufacturer limitations.	PA.IV.K.R2
	3. Water conditions.	PA.IV.K.R3
	4. Obstruction clearance.	PA.IV.K.R4
	5. Obstruction clearance climb attitude and stall awareness.	PA.IV.K.R5
	6. Windshear.	PA.IV.K.R6
	7. Tailwind.	PA.IV.K.R7
	8. Wake turbulence.	PA.IV.K.R8
	9. Go/no-go decision making.	PA.IV.K.R9
	10. Task management.	PA.IV.K.R10
	11. Low-altitude maneuvering.	PA.IV.K.R11
	12. Wire strikes.	PA.IV.K.R12
	13. Minimum safe altitude for climb.	PA.IV.K.R13
	14. Situational awareness of obstacles on departure and arrival paths.	PA.IV.K.R14
	15. Recognition of need for rejected takeoff and identification of takeoff abort point.	PA.IV.K.R15
	16. Handling engine failure during takeoff and climb.	PA.IV.K.R16
	17. Criticality of takeoff distance available.	PA.IV.K.R17
	18. Possibility of engine failure after takeoff.	PA.IV.K.R18
	19. Sterile cockpit.	PA.IV.K.R19
	20. Confirmation of gear retraction in amphibious aircraft.	PA.IV.K.R20

Task	***L. Rough Water Approach and Landing (ASES, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a rough water approach and landing. **NOTE:** If a rough water condition does not exist, the applicant shall be evaluated by simulating the Task.	
Knowledge	The applicant demonstrates understanding of:	
	1. When and why rough water techniques are used.	PA.IV.L.K1
	2. How a rough water approach and landing is executed.	PA.IV.L.K2
	3. Landing distance.	PA.IV.L.K3
	4. Stabilized approach.	PA.IV.L.K4
	5. Energy management.	PA.IV.L.K5
	6. Wind conditions and effects.	PA.IV.L.K6
	7. Density altitude.	PA.IV.L.K7
	8. Headwind, tailwind, crosswind component.	PA.IV.L.K8
	9. Emergency procedures during approach and landing.	PA.IV.L.K9
Skills	The applicant demonstrates the ability to:	
	1. Adequately survey the intended landing area.	PA.IV.L.S1
	2. Consider the wind conditions, water depth, hazards, surrounding terrain, and other watercraft.	PA.IV.L.S2
	3. Select the most suitable approach path and touchdown area.	PA.IV.L.S3
	4. Establish the recommended approach and landing configuration and airspeed, and adjust pitch attitude and power as required.	PA.IV.L.S4
	5. Maintain a stabilized approach and the recommended approach airspeed, or in its absence not more than 1.3 Vso +10/-5 knots with wind gust factor applied.	PA.IV.L.S5
	6. Make smooth, timely, and correct power and control adjustments to maintain proper pitch attitude and rate of descent to touchdown.	PA.IV.L.S6
	7. Contact the water in the proper pitch attitude, considering the type of rough water.	PA.IV.L.S7
	8. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IV.L.S8
	9. Complete the appropriate checklist.	PA.IV.L.S9
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Performing a go-around/rejected landing.	PA.IV.L.R1
	2. Importance of landing in direction of momentum, with wheels pointed forward on touchdown.	PA.IV.L.R2
	3. Stall/spin awareness.	PA.IV.L.R3
	4. Windshear.	PA.IV.L.R4
	5. Tailwind.	PA.IV.L.R5
	6. Wake turbulence.	PA.IV.L.R6
	7. Task management.	PA.IV.L.R7
	8. Low-altitude maneuvering.	PA.IV.L.R8
	9. Wire strikes.	PA.IV.L.R9
	10. Collision avoidance.	PA.IV.L.R10
	11. Right-of-way.	PA.IV.L.R11
	12. Situational awareness of obstacles on approach and departure paths.	PA.IV.L.R12
	13. Sterile cockpit.	PA.IV.L.R13

Task	***M. Forward Slip to a Landing (ASEL, ASES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a forward slip to a landing.	
Knowledge	The applicant demonstrates understanding of:	
	1. When and why forward slips are used and differences between side and forward slips.	PA.IV.M.K1
	2. How forward slips are executed.	PA.IV.M.K2
	3. Landing distance.	PA.IV.M.K3
	4. Stabilized approach.	PA.IV.M.K4
	5. Energy management.	PA.IV.M.K5
	6. Effects of forward slips changing indicated airspeed vs. true airspeed.	PA.IV.M.K6
	7. Wind conditions and effects.	PA.IV.M.K7
	8. Density altitude.	PA.IV.M.K8
	9. Headwind, tailwind, crosswind component.	PA.IV.M.K9
	10. Emergency procedures during approach and landing.	PA.IV.M.K10
	11. Land and hold short operations.	PA.IV.M.K11
Skills	The applicant demonstrates the ability to:	
	1. Select runway based on wind and pilot capability and aircraft limitations.	PA.IV.M.S1
	2. Determine if crosswind component is above his or her ability or that of the aircraft's capability.	PA.IV.M.S2
	3. Select touchdown point.	PA.IV.M.S3
	4. Establish the slipping attitude at the point from which a landing can be made using the recommended approach and landing configuration and airspeed; adjust pitch attitude as required.	PA.IV.M.S4
	5. Maintain a ground track aligned with the runway centerline and an airspeed, which results in minimum float during the round out.	PA.IV.M.S5
	6. Make smooth, timely, and correct control application during the recovery from the slip, the round out, and the touchdown.	PA.IV.M.S6
	7. Touch down within 400 feet beyond a specified point with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.	PA.IV.M.S7
	8. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IV.M.S8
	9. Complete the appropriate checklist.	PA.IV.M.S9
	10. Execute a timely go-around decision when the approach cannot be made within the tolerances specified above.	PA.IV.M.S10

Task continued on next page.

Task	***M. Forward Slip to a Landing (ASEL, ASES)***	
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Performing a go-around/rejected landing.	PA.IV.M.R1
	2. Importance of landing in direction of momentum, with wheels pointed forward on touchdown.	PA.IV.M.R2
	3. Correlating any cross wind effects with direction of forward slip and transition to side slip for landing.	PA.IV.M.R3
	4. Stall/spin awareness.	PA.IV.M.R4
	5. Windshear.	PA.IV.M.R5
	6. Land and hold short operations.	PA.IV.M.R6
	7. Tailwind.	PA.IV.M.R7
	8. Wake turbulence.	PA.IV.M.R8
	9. Task management.	PA.IV.M.R9
	10. Low altitude maneuvering.	PA.IV.M.R10
	11. Wire strikes.	PA.IV.M.R11
	12. Collision avoidance.	PA.IV.M.R12
	13. Right-of-way.	PA.IV.M.R13
	14. Situational awareness of obstacles on approach and departure paths.	PA.IV.M.R14
	15. Forward slip operations, including fuel flowage, tail stalls with flaps, and airspeed control.	PA.IV.M.R15
	16. Sterile cockpit.	PA.IV.M.R16

Task	***N. Go-Around/Rejected Landing***	
Reference	FAA-H-8083-3, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a go-around/rejected landing with emphasis on factors that contribute to landing conditions that may require a go-around.	
Knowledge	The applicant demonstrates understanding of:	
	1. Landing distance.	PA.IV.N.K1
	2. Stabilized approach.	PA.IV.N.K2
	3. Energy management.	PA.IV.N.K3
	4. Wind conditions and effects.	PA.IV.N.K4
	5. Headwind, tailwind, crosswind component.	PA.IV.N.KI5
	6. Emergency procedures during approach and landing.	PA.IV.N.K6
	7. Communication procedures.	PA.IV.N.K7
Skills	The applicant demonstrates the ability to:	
	1. Make a timely decision to discontinue the approach to landing.	PA.IV.N.S1
	2. Applies takeoff power immediately and transitions to climb pitch attitude for V_X or V_Y as appropriate +10/-5 knots	PA.IV.N.S2
	3. Retract the landing gear in accordance with manufacturer's guidance.	PA.IV.N.S3
	4. Maneuver to the side of the runway/landing area when necessary to clear and avoid conflicting traffic.	PA.IV.N.S4
	5. Maintain takeoff power V_Y +10/-5 to a safe maneuvering altitude.	PA.IV.N.S5
	6. Maintain directional control and proper wind-drift correction throughout the climb.	PA.IV.N.S6
	7. Complete the appropriate checklist.	PA.IV.N.S7
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Timeliness for making and executing decision.	PA.IV.N.R1
	2. Task management.	PA.IV.N.R2
	3. Low altitude maneuvering.	PA.IV.N.R3
	4. Slow flight.	PA.IV.N.R4
	5. Wire strikes.	PA.IV.N.R5
	6. Collision avoidance.	PA.IV.N.R6
	7. Right-of-way.	PA.IV.N.R7
	8. Situational awareness of obstacles on approach and departure paths.	PA.IV.N.R8
	9. Spin awareness.	PA.IV.N.R9
	10. Elevator trim stalls.	PA.IV.N.R10
	11. Pilot changing mind regarding the go-around decision.	PA.IV.N.R11
	12. Sterile cockpit.	PA.IV.N.R12

V. Performance Maneuvers

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

Task	***B. Ground Reference Maneuvers***	
Reference	14 CFR part 61, 91; FAA-H-8083-2, FAA-H-8083-3; FAA-H-8083-25	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with ground reference maneuvering which may include a rectangular course, S-turns, or turns around a point.	
Knowledge	The applicant demonstrates understanding of:	
	1. Effects of wind on ground track and relation to a ground reference point.	PA.V.B.K1
	2. Effect of bank angle and groundspeed on rate and radius of turn.	PA.V.B.K2
	3. Entry/exit requirements of maneuver.	PA.V.B.K3
	4. Relation of maneuver to airport traffic pattern.	PA.V.B.K4
	5. Emergency landing considerations during conduct of the maneuver, including entry and exit.	PA.V.B.K5
	6. Correlation of S-Turns as one option to increase separation from other aircraft.	PA.V.B.K6
Skills	The applicant demonstrates the ability to:	
	1. Clear area of terrain, obstacles, possible airspace incursion and other aircraft.	PA.V.B.S1
	2. Select a suitable ground reference.	PA.V.B.S2
	3. Identify a suitable emergency landing area.	PA.V.B.S3
	4. Plan the maneuver:	PA.V.B.S4
	a. Rectangular course: enter a left or right pattern, 600 to 1,000 feet Above Ground Level (AGL) at an appropriate distance from the selected reference area, 45° to the downwind leg.	PA.V.B.S4a
	b. S-turns: enter perpendicular to the selected reference line, 600 to 1,000 feet AGL at an appropriate distance from the selected reference area.	PA.V.B.S4b
	c. Turns Around a Point: enter at an appropriate distance from the reference point, 600 to 1,000 feet AGL at an appropriate distance from the selected reference area.	PA.V.B.S4c
	5. Apply adequate wind-drift correction during straight-and turning flight to maintain a constant ground track if around a rectangular reference area or to track a constant radius turn on each side of the selected reference line.	PA.V.B.S5
	6. If performing a pattern such as s-turns, reverse the turn directly over the selected reference line; if performing turns around a point, complete turns in either direction around the selected reference point.	PA.V.B.S6
	7. Divide attention between airplane control, traffic avoidance and the ground track while maintaining coordinated flight.	PA.V.B.S7
	8. Maintain altitude, ±100 feet; maintains airspeed, ±10 knots.	PA.V.B.S8
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.V.B.R1
	2. CFIT avoidance.	PA.V.B.R2
	3. Task management.	PA.V.B.R3
	4. Wire strike avoidance.	PA.V.B.R4
	5. Airmanship as exhibited by positive aircraft control.	PA.V.B.R5
	6. Selecting a suitable landing area.	PA.V.B.R6

VI. Navigation

Task	***A. Pilotage and Dead Reckoning***	
Reference	14 CFR part 61; FAA-H-8083-2, FAA-H-8083-25; Navigation Charts; Sectional Aeronautical Charts.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with pilotage and dead reckoning.	
Knowledge	The applicant demonstrates understanding of:	
	1. Navigation process selection.	PA.VI.A.K1
	2. Determining heading, speed, and course.	PA.VI.A.K2
	3. Estimating time, speed, and distance.	PA.VI.A.K3
	4. True airspeed and density altitude.	PA.VI.A.K4
	5. Wind correction angle.	PA.VI.A.K5
	6. Checkpoint selection.	PA.VI.A.K6
	7. Planned vs. actual flight plan calculations and required corrections.	PA.VI.A.K7
	8. Topography.	PA.VI.A.K8
	9. Plotting a course.	PA.VI.A.K9
	10. Magnetic compass errors.	PA.VI.A.K10
	11. Route selection.	PA.VI.A.K11
	12. Altitude selection.	PA.VI.A.K12
	13. Power setting selection.	PA.VI.A.K13
Skills	The applicant demonstrates the ability to:	
	1. Prepare a document or electronic equivalent to be used in flight for comparisons with planned fuel usages and times over waypoints while dead reckoning.	PA.VI.A.S1
	2. Follow the preplanned course by reference to landmarks.	PA.VI.A.S2
	3. Identify landmarks by relating surface features to chart symbols.	PA.VI.A.S3
	4. Navigate by means of pre-computed headings, groundspeeds, and elapsed time.	PA.VI.A.S4
	5. Demonstrate use of magnetic direction indicator in navigation, to include turns to headings.	PA.VI.A.S5
	6. Correct for and record the differences between preflight groundspeed, fuel consumption, and heading calculations and those determined en route.	PA.VI.A.S6
	7. Verify the airplane's position within 3 nautical miles of the flight-planned route.	PA.VI.A.S7
	8. Arrive at the en route checkpoints within 5 minutes of the initial or revised ETA and provide a destination estimate.	PA.VI.A.S8
	9. Maintain the selected altitude, ±200 feet and headings, ±15°.	PA.VI.A.S9
	10. Determine compass heading based on wind, magnetic variation, and deviation.	PA.VI.A.S10
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. CFIT risk avoidance plan.	PA.VI.A.R1
	2. Avoiding/recovering from misidentification of landmarks.	PA.VI.A.R2
	3. Bracketing strategy.	PA.VI.A.R3
	4. Selecting an alternate.	PA.VI.A.R4
	5. Situational awareness.	PA.VI.A.R5
	6. Task management.	PA.VI.A.R6
	7. Actual vs. planned fuel consumption.	PA.VI.A.R7
	8. Exit strategies.	PA.VI.A.R8
	9. Preflight pilot/operation risk assessment and planning.	PA.VI.A.R9

Task	*A. Pilotage and Dead Reckoning*	
	10. Determining the impact of corrected groundspeed, time enroute and fuel consumption on the overall safety of flight to destination.	PA.VI.A.R10

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

Task	***C. Diversion***	
Reference	FAA-H-8083-2, FAA-H-8083-25; AIM; Navigation Charts; 14 CFR part 91.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with diversion.	
Knowledge	The applicant demonstrates understanding of:	
	1. Selecting divert destination.	PA.VI.C.K1
	2. Deviating from ATC instructions and/or the flight plan.	PA.VI.C.K2
Skills	The applicant demonstrates the ability to:	
	1. Select an appropriate diversion airport and route.	PA.VI.C.S1
	2. Make an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the divert airport.	PA.VI.C.S2
	3. Maintain the appropriate altitude, ±200 feet and heading, ±15°.	PA.VI.C.S3
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Selection of appropriate airport.	PA.VI.C.R1
	2. Timely decision to divert.	PA.VI.C.R2
	3. Improving situation by diversion.	PA.VI.C.R3
	4. Maintaining airmanship during diversion.	PA.VI.C.R4
	5. Collision avoidance.	PA.VI.C.R5
	6. CFIT avoidance.	PA.VI.C.R6
	7. Task management.	PA.VI.C.R7
	8. Situational awareness.	PA.VI.C.R8
	9. Crew resource management (CRM), utilizing all available resources (automation, ATC, cockpit planning aids).	PA.VI.C.R9

Task	***D. Lost Procedures***	
Reference	FAA-H-8083-2, FAA-H-8083-25; AIM; Navigation Charts	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with lost procedures and taking appropriate steps to achieve a satisfactory outcome if lost.	
Knowledge	The applicant demonstrates understanding of:	
	1. Understands value of recording time at waypoints.	PA.VI.D.K1
	2. Assistance available if lost (radar services, communication procedures).	PA.VI.D.K2
	3. Responsibility and authority of PIC.	PA.VI.D.K3
	4. Deviation from ATC instructions.	PA.VII.D.K4
	5. Declaring an emergency.	PA.VI.D.K5
Skills	The applicant demonstrates the ability to:	
	1. Select an appropriate course of action.	PA.VI.D.S1
	2. Maintain an appropriate heading and climbs, if necessary.	PA.VI.D.S2
	3. Identify prominent landmarks.	PA.VI.D.S3
	4. Use navigation systems/facilities and/or contacts an ATC facility for assistance, as appropriate.	PA.VI.D.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Recording times over waypoints.	PA.VI.D.R1
	2. Task management.	PA.VI.D.R2
	3. Situational awareness.	PA.VI.D.R3
	4. CFIT avoidance.	PA.VI.D.R4
	5. Collision avoidance.	PA.VI.D.R5
	6. Recognizing a deteriorating situation and seeking assistance.	PA.VI.D.R6
	7. Declaring an emergency.	PA.VI.D.R7

VII. Slow Flight and Stalls

Task	***A. Maneuvering During Slow Flight***	
Reference	FAA-H-8083-2, FAA-H-8083-3; FAA-H-8083-25; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with maneuvering during slow flight.	
Knowledge	The applicant demonstrates understanding of:	
	1. Maneuver relative to a real-life portion of a flight.	PA.VII.A.K1
	2. Relationship between angle of attack (AOA), airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.	PA.VII.A.K2
	3. Importance of reliance on aircraft performance indications (aircraft buffet) instead of artificial warning systems (stall horn).	PA.VII.A.K3
	4. The difference between angle of attack and aircraft attitude during all flight conditions and how it relates to aircraft performance.	PA.VII.A.K4
	5. How environmental elements affect aircraft performance.	PA.VII.A.K5
	6. Importance of the 1,500 foot AGL (SEL) or 3,000 foot AGL (MEL) minimum altitude.	PA.VII.A.K6
Skills	The applicant demonstrates the ability to:	
	1. Select an entry altitude that will allow the task to be completed no lower than 1,500 feet AGL (ASEL, ASES) ***OR*** 3,000 feet AGL (AMEL, AMES).	PA.VII.A.S1
	2. Establish and maintain an airspeed at which any further increase in angle of attack, increase in load factor, or reduction in power, would result in an immediate stall.	PA.VII.A.S2
	3. Accomplish coordinated straight-and-level flight, turns, climbs, and descents with landing gear and flap configurations specified by the evaluator.	PA.VII.A.S3
	4. Divide attention between airplane control, traffic avoidance and orientation.	PA.VII.A.S4
	5. Maintain the specified altitude, ±100 feet; specified heading, ±10°; airspeed, +10/-0 knots; and specified angle of bank, ±10°.	PA.VII.A.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Relationship between angle of attack, airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.	PA.VII.A.R1
	2. Reliance on aircraft performance indications, such as aircraft buffet instead of artificial warning systems such as a stall horn.	PA.VII.A.R2
	3. The effect of environmental elements on aircraft performance.	PA.VII.A.R3

Task	***B. Power-Off Stalls***	
Reference	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with power-off stalls.	
Knowledge	The applicant demonstrates understanding of:	
	1. Importance of the 1,500 (SEL) or 3,000 (MEL) foot AGL minimum altitude.	PA.VII.B.K1
	2. Relating the maneuver to a real-life portion of a flight.	PA.VII.B.K2
	3. Components of a stabilized descent.	PA.VII.B.K3
	4. Approach to stall indications.	PA.VII.B.K4
	5. Full stall indications.	PA.VII.B.K5
	6. Determining which aircraft inputs are required to meet heading or bank angle requirements.	PA.VII.B.K6
	7. Determining the most efficient stall recovery procedure.	PA.VII.B.K7
	8. Importance of establishing the correct aircraft configuration during the recovery process and the consequences of failing to do so.	PA.VII.B.K8
	9. Aerodynamics associated with stalls and spins in various aircraft configurations and attitudes.	PA.VII.B.K9
	10. Circumstances that can lead to an inadvertent stall or spin.	PA.VII.B.K10
Skills	The applicant demonstrates the ability to:	
	1. Select an entry altitude that will allow the task to be completed no lower than 1,500 feet AGL (ASEL, ASES) ***OR*** 3,000 feet AGL (AMEL, AMES).	PA.VII.B.S1
	2. Establish a stabilized descent in the approach or landing configuration, as specified by the evaluator.	PA.VII.B.S2
	3. Transition smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.	PA.VII.B.S3
	4. Maintain a specified heading, ±10°, if in straight flight; maintain a specified angle of bank not to exceed 20°, ±10°; if in turning flight, while inducing the stall.	PA.VII.B.S4
	5. Recognize and recover promptly after a full stall has occurred.	PA.VII.B.S5
	6. Retract the flaps to the recommended setting; retract the landing gear, if retractable, after a positive rate of climb is established.	PA.VII.B.S6
	7. Execute stall recovery in accordance with procedures set forth in the POH.	PA.VII.B.S7
	8. Accelerates to V_X or V_Y speed before the final flap retraction; returns to the altitude, heading and airspeed specified by the examiner.	PA.VII.B.S8
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Dynamic aerodynamic relationship between angle of attack, airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.	PA.VII.B.R1
	2. Reliance on aircraft performance indications such as aircraft buffet instead of artificial warning systems such as a stall horn.	PA.VII.B.R2
	3. The effect of environmental elements on aircraft performance.	PA.VII.B.R3
	4. Required actions for aircraft maximum performance and the consequences of failing to implement these actions.	PA.VII.B.R4

Task	***C. Power-On Stalls***	
Reference	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with power-on stalls. **NOTE:** In some high performance airplanes, the power setting may have to be reduced below the practical test standards guideline power setting to prevent excessively high pitch attitudes (greater than 30° nose up).	
Knowledge	The applicant demonstrates understanding of:	
	1. Importance of the 1,500 (SEL) or 3,000 (MEL) foot AGL minimum altitude.	PA.VII.C.K1
	2. Relating the maneuver to a real-life portion of a flight.	PA.VII.C.K2
	3. Rationale for power setting variances.	PA.VII.C.K3
	4. Approach to stall indications.	PA.VII.C.K4
	5. Full stall indications.	PA.VII.C.K5
	6. Determining which aircraft inputs are required to meet heading or bank angle requirements.	PA.VII.C.K6
	7. Determining the most efficient stall recovery procedure.	PA.VII.C.K7
	8. Importance of establishing the correct aircraft configuration during the recovery process and the consequences of failing to do so.	PA.VII.C.K8
	9. Aerodynamics associated with stalls and spins in various aircraft configurations and attitudes.	PA.VII.C.K9
	10. Circumstances that can lead to an inadvertent stall or spin.	PA.VII.C.K10
	11. Circumstances that can lead to an accelerated stall.	PA.VII.C.K11
Skills	The applicant demonstrates the ability to:	
	1. Select an entry altitude that will allow the task to be completed no lower than 1,500 feet AGL (ASEL, ASES) ***OR*** 3,000 feet AGL (AMEL, AMES).	PA.VII.C.S1
	2. Establish the takeoff, departure, or cruise configuration as specified by the evaluator.	PA.VII.C.S2
	3. Set power (as assigned by evaluator) to no less than 65 percent available power.	PA.VII.C.S3
	4. Transition smoothly from the takeoff or departure attitude to the pitch attitude that will induce a stall.	PA.VII.C.S4
	5. Maintain a specified heading, ±10°, if in straight flight; maintain a specified angle of bank not to exceed 20°, ±10°, if in turning flight, while inducing the stall.	PA.VII.C.S5
	6. Recognize and recover promptly after a fully developed stall occurs.	PA.VII.C.S6
	7. Retract the flaps to the recommended setting; retract the landing gear if retractable, after a positive rate of climb is established.	PA.VII.C.S7
	8. Accelerate to V_X or V_Y speed before the final flap retraction; return to the altitude, heading, and airspeed specified by the evaluator.	PA.VII.C.S8
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Dynamic aerodynamic relationship between angle of attack, airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.	PA.VII.C.R1
	2. Reliance on aircraft performance indications such as aircraft buffet instead of artificial warning systems such as a stall horn.	PA.VII.C.R2
	3. The effect of environmental elements on aircraft performance.	PA.VII.C.R3
	4. Required actions for aircraft maximum performance and the consequences of failing to implement these actions.	PA.VII.C.R4
	5. Avoiding accelerated stalls.	PA.VII.C.R5

Task	***D. Spin Awareness***	
Reference	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with spins, flight situations where unintentional spins may occur and procedures for recovery from unintentional spins.	
Knowledge	The applicant demonstrates understanding of:	
	1. Aerodynamics associated with stalls and spins in various aircraft configurations and attitudes.	PA.VII.D.K1
	2. Circumstances that can lead to an inadvertent stall or spin.	PA.VII.D.K2
	3. Different spin types, causes, recovery strategies.	PA.VII.D.K3
Skills	The applicant demonstrates the ability to:	
	1. Assess and avoid situations where unintentional spins may occur.	PA.VII.D.S1
	2. Explain procedures for recovery from unintentional spins.	PA.VII.D.S2
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Dynamic aerodynamic relationship between angle of attack, airspeed, load factor, aircraft configuration, aircraft weight, and aircraft attitude.	PA.VII.D.R1
	2. Reliance on aircraft performance indications such as aircraft buffet instead of artificial warning systems such as stall horn.	PA.VII.D.R2
	3. The effect of environmental elements on aircraft performance.	PA.VII.D.R3
	4. Required actions for aircraft maximum performance and the consequences of failing to implement these actions.	PA.VII.D.R4
	5. Uncoordinated flight.	PA.VII.D.R5
	6. Hazards associated with the improper application of flight control inputs during the spin recovery.	PA.VII.D.R6

VIII. Basic Instrument Maneuvers

Task	***A. Straight-and-Level Flight***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with attitude instrument flying during straight-and-level flight.	
Knowledge	The applicant demonstrates understanding of:	
	1. Flight instrument function and operation.	PA.VIII.A.K1
	2. Flight instrument sensitivity, limitations, and potential errors in unusual attitudes.	PA.VIII.A.K2
	3. Flight instrument correlation (pitch instruments/bank instruments).	PA.VIII.A.K3
	4. Aerodynamic factors related to maintaining straight-and-level flight.	PA.VIII.A.K4
	5. Vestibular illusions (leans) and spatial disorientation.	PA.VIII.A.K5
	6. Appropriate pitch, bank, and power settings for airplane being flown.	PA.VIII.A.K6
Skills	The applicant demonstrates the ability to:	
	1. Control the aircraft solely by reference to instruments.	PA.VIII.A.S1
	2. Perform an instrument scan and instrument cross-check.	PA.VIII.A.S2
	3. Perform coordinated, smooth control application to correct for altitude, heading, airspeed, and bank deviations during straight-and-level flight.	PA.VIII.A.S3
	4. Maintain altitude ±200 feet, heading ±20°, and airspeed ±10 knots.	PA.VIII.A.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Maintaining proficiency in flight by reference to instruments.	PA.VIII.A.R1
	2. Good cockpit management.	PA.VIII.A.R2
	3. Awareness of the direction for nearest VMC.	PA.VIII.A.R3
	4. Avoiding continuing flight into IMC or any conditions outside of personal minimums.	PA.VIII.A.R4
	5. Awareness of the potential risks of losing situational awareness during low visibility and/or instrument conditions.	PA.VIII.A.R5

Task	***B. Constant Airspeed Climbs***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15; 14 CFR part 91.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with attitude instrument flying during constant airspeed climbs.	
Knowledge	The applicant demonstrates understanding of:	
	1. Flight instrument function and operation.	PA.VIII.B.K1
	2. Flight instrument sensitivity, limitations, and potential errors in unusual attitudes.	PA.VIII.B.K2
	3. Flight instrument correlation (pitch instruments/bank instruments).	PA.VIII.B.K3
	4. Vestibular illusions (leans) and spatial disorientation.	PA.VIII.B.K5
	5. Aerodynamic factors related to establishing and maintaining a constant airspeed climb, making turns while climbing, and then returning to level flight.	
	6. Appropriate pitch, bank, and power settings for airplane being flown.	PA.VIII.B.K6
Skills	The applicant demonstrates the ability to:	
	1. Control the aircraft solely by reference to instruments.	PA.VIII.B.S1
	2. Perform an instrument scan and instrument cross-check.	PA.VIII.B.S2
	3. Establish the climb configuration specified by the evaluator.	PA.VIII.B.S3
	4. Perform coordinated, smooth control application to correct for airspeed, heading and bank deviations during climb and then for level off.	PA.VIII.B.S4
	5. Perform appropriate trimming to relieve control pressures.	PA.VIII.B.S5
	6. Level off at the assigned altitude and maintain altitude ±200 feet, heading ±20°, and airspeed ±10 knots.	PA.VIII.B.S6
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Maintaining proficiency in flight by reference to instruments.	PA.VIII.B.R1
	2. Good cockpit management.	PA.VIII.B.R2
	3. Awareness of the direction for nearest VMC.	PA.VIII.B.R3
	4. Descending straight and turning level under emergency instrument conditions.	PA.VIII.B.R4
	5. Avoiding continuing flight into IMC or any conditions outside of personal minimums.	PA.VIII.B.R5
	6. Awareness of the potential risks of losing situational awareness during low visibility and/or instrument conditions.	PA.VIII.B.R6

Task	***C. Constant Airspeed Descents***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with attitude instrument flying during constant airspeed descents.	
Knowledge	The applicant demonstrates understanding of:	
	1. Flight instrument function and operation.	PA.VIII.C.K1
	2. Flight instrument sensitivity, limitations, and potential errors in unusual attitudes.	PA.VIII.C.K2
	3. Flight instrument correlation (pitch instruments/bank instruments).	PA.VIII.C.K3
	4. Vestibular illusions (leans) and spatial disorientation.	PA.VIII.C.K4
	5. Aerodynamic factors related to establishing and maintaining a constant airspeed descent, making turns while descending, and then returning to level flight.	PA.VIII.C.K5
	6. Appropriate pitch, power and bank settings for airplane being flown.	PA.VIII.C.K6
Skills	The applicant demonstrates the ability to:	
	1. Control the aircraft solely by reference to instruments.	PA.VIII.C.S1
	2. Perform an instrument scan and instrument cross-check.	PA.VIII.C.S2
	3. Establish the descent configuration specified by the evaluator.	PA.VIII.C.S3
	4. Perform coordinated, smooth control application to correct for airspeed, heading and bank deviations during descent and then for level off.	PA.VIII.C.S4
	5. Perform appropriate trimming to relieve control pressures.	PA.VIII.C.S5
	6. Level off at the assigned altitude and maintain altitude ±200 feet, heading ±20°, and airspeed ±10 knots.	PA.VIII.C.S6
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Maintaining proficiency in flight by reference to instruments.	PA.VIII.C.R1
	2. Good cockpit management.	PA.VIII.C.R2
	3. Awareness of the direction for nearest VMC.	PA.VIII.C.R3
	4. Descending straight and turning level under emergency instrument conditions.	
	5. Avoiding continuing flight into IMC or any conditions outside of personal minimums.	PA.VIII.C.R4
	6. Awareness of the potential risks of losing situational awareness during low visibility and/or instrument conditions.	PA.VIII.C.R5

Task	***D. Turns to Headings***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15; 14 CFR part 91.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with attitude instrument flying during turns to headings.	
Knowledge	The applicant demonstrates understanding of:	
	1. Flight instrument function and operation.	PA.VIII.D.K1
	2. Flight instrument sensitivity, limitations, and potential errors in unusual attitudes.	PA.VIII.D.K2
	3. Flight instrument correlation (pitch instruments/bank instruments).	PA.VIII.D.K3
	4. Vestibular illusions (leans) and spatial disorientation.	PA.VIII.D.K4
	5. Aerodynamic factors related to establishing turns while maintaining level flight.	PA.VIII.D.K5
	6. Appropriate pitch, power and bank settings for airplane being flown.	PA.VIII.D.K6
Skills	The applicant demonstrates the ability to:	
	1. Control the aircraft solely by reference to instruments.	PA.VIII.D.S1
	2. Perform an instrument scan and instrument cross-check.	PA.VIII.D.S2
	3. Perform coordinated, smooth control application to establish a standard-rate turn and to correct for altitude and bank deviations and rollout on specified heading.	PA.VIII.D.S3
	4. Perform appropriate trimming to relieve control pressures.	PA.VIII.D.S4
	5. Maintains altitude, ±200 feet; maintain a standard rate turn and rolls out on the assigned heading, ±10°; maintains airspeed, ±10 knots.	PA.VIII.D.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Maintaining proficiency in flight by reference to instruments.	PA.VIII.D.R1
	2. Good cockpit management.	PA.VIII.D.R2
	3. Awareness of the direction for nearest VMC.	PA.VIII.D.R3
	4. Descending straight and turning level under emergency instrument conditions.	PA.VIII.D.R4
	5. Benefits of conducting straight-descents and level-turns when controlling flight by reference to instruments.	PA.VIII.D.R5
	6. Avoiding continuing flight into IMC or any conditions outside of personal minimums.	PA.VIII.D.R6
	7. Awareness of the potential risks of losing situational awareness during low visibility and/or instrument conditions.	PA.VIII.D.R7

Task	***E. Recovery from Unusual Flight Attitudes***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with attitude instrument flying during unusual attitudes.	
Knowledge	The applicant demonstrates understanding of:	
	1. Flight instrument function and operation.	PA.VIII.E.K1
	2. Flight instrument sensitivity, limitations, and potential errors in unusual attitudes.	PA.VIII.E.K2
	3. Flight instrument correlation (pitch instruments/bank instruments).	PA.VIII.E.K3
	4. Vestibular illusions (leans) and spatial disorientation.	PA.VIII.E.K4
	5. Aerodynamic factors related to unusual pitch and bank attitudes and returning to level flight.	PA.VIII.E.K5
	6. Appropriate pitch, power and bank settings for airplane being flown.	PA.VIII.E.K6
	7. Hazards of inappropriate control response.	PA.VIII.E.K7
Skills	The applicant demonstrates the ability to:	
	1. Perform timely recognition of the nature of the unusual attitude.	PA.VIII.E.S1
	2. Perform correct, coordinated, and smooth control application to resolve unusual pitch and bank attitudes while staying within the airplane's limitations and flight parameters	PA.VIII.E.S2
	3. Perform appropriate trimming to relieve control pressures.	PA.VIII.E.S3
	4. When level, maintain altitude ±200 feet, heading ±20°, and airspeed ±10 knots.	PA.VIII.E.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Maintaining proficiency in flight by reference to instruments.	PA.VIII.E.R1
	2. Good cockpit management.	PA.VIII.E.R2
	3. Awareness of the direction for nearest VMC.	PA.VIII.E.R3
	4. Descending straight and turning level under emergency instrument conditions.	PA.VIII.E.R4
	5. Correlating the relationship between recovery techniques and load factor.	PA.VIII.E.R5

Task	***F. Radio Communications, Navigation Systems/Facilities, and Radar Services***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-15, FAA-H-8083-25	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with radio communications, navigation systems/facilities, and radar services available for use during flight solely by reference to instruments.	
Knowledge	The applicant demonstrates understanding of:	
	1. Flight instrument function and operation.	PA.VIII.F.K1
	2. Flight instrument sensitivity, limitations and potential errors in unusual attitudes.	PA.VIII.F.K2
	3. Flight instrument correlation (pitch instruments/bank instruments).	PA.VIII.F.K3
	4. How to determine the minimum safe altitude for location.	PA.VIII.F.K4
	5. Radio communications equipment and procedures.	PA.VIII.F.K5
	6. Air traffic control facilities and services.	PA.VIII.F.K6
	7. Installed navigation equipment function and displays.	PA.VIII.F.K7
	8. Vestibular illusions, spatial disorientation, especially involving distractions, and interaction with charts and avionics equipment.	PA.VIII.F.K8
	9. Appropriate pitch, bank and power settings for airplane being flown.	PA.VIII.F.K9
Skills	The applicant demonstrates the ability to:	
	1. Maintain controlled flight while selecting proper communications frequencies and setting up navigation equipment to select desired course.	PA.VIII.F.S1
	2. Maintain aircraft control while complying with ATC instructions.	PA.VIII.F.S2
	3. Maintain aircraft control while navigating using radio aids.	PA.VIII.F.S3
	4. Maintain altitude ±200 feet, heading ±20°, and airspeed ±10 knots.	PA.VIII.F.S4
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Maintaining proficiency in flight by reference to instruments.	PA.VIII.F.R1
	2. Good cockpit management.	PA.VIII.F.R2
	3. Awareness of the direction for nearest VMC.	PA.VIII.F.R3
	4. Climbing or descending straight and turning level under emergency instrument conditions.	PA.VIII.F.R4

IX. Emergency Operations

NOTE (AMEL, AMES): Examiners shall select an entry altitude that will allow the single engine demonstrations task to be completed no lower than 3,000 feet AGL or the manufacturer's recommended altitude, whichever is higher. At altitudes lower than 3,000 feet AGL, engine failure shall be simulated by reducing throttle to idle and then establishing zero thrust.

Task	***A. Emergency Descent***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with an emergency descent.	
Knowledge	The applicant demonstrates understanding of:	
	1. Glide speed, distance.	PA.IX.A.K1
	2. Stabilized approach.	PA.IX.A.K2
	3. Energy management.	PA.IX.A.K3
	4. Wind conditions and effects.	PA.IX.A.K4
	5. Situations, such as depressurization, cockpit smoke and/or fire that require an emergency descent.	PA.IX.A.K5
	6. Emergency procedures.	PA.IX.A.K6
	7. Communications.	PA.IX.A.K7
	8. Regulations pertaining to emergencies safe altitudes.	PA.IX.A.K8
	9. ATC clearance deviations.	PA.IX.A.K9
	10. ELTs and/or other emergency locating devices.	PA.IX.A.K10
	11. Radar assistance to VFR aircraft.	PA.IX.A.K11
	12. Transponder.	PA.IX.A.K12
Skills	The applicant demonstrates the ability to:	
	1. Analyze the situation and select an appropriate course of action.	PA.IX.A.S1
	2. Establish and maintain the appropriate airspeed and configuration for the emergency descent.	PA.IX.A.S2
	3. Exhibit orientation, division of attention and proper planning.	PA.IX.A.S3
	4. Maintain positive load factors during the descent.	PA.IX.A.S4
	5. Follow the appropriate checklist.	PA.IX.A.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Wind.	PA.IX.A.R1
	2. Selecting a suitable landing area.	PA.IX.A.R2
	3. Planning and following a flight pattern to the selected landing area considering altitude, wind, terrain, and obstructions.	PA.IX.A.R3
	4. Task management.	PA.IX.A.R4
	5. Low-altitude maneuvering.	PA.IX.A.R5
	6. Obstacle and wire strike avoidance.	PA.IX.A.R6
	7. Collision avoidance.	PA.IX.A.R7
	8. Right-of-way.	PA.IX.A.R8
	9. Situational awareness.	PA.IX.A.R9
	10. Stall/spin awareness.	PA.IX.A.R10
	11. Difference between best glide speed (L/D) and minimum sink speed, and when each one is appropriate.	PA.IX.A.R11

Task	***B. Emergency Approach and Landing (Simulated) (ASEL, ASES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with emergency approach and landing procedures.	
Knowledge	The applicant demonstrates understanding of:	
	1. Glide speed, distance.	PA.IX.B.K1
	2. Landing distance.	PA.IX.B.K2
	3. Hazards of other than hard surfaced runway.	PA.IX.B.K3
	4. Stabilized approach.	PA.IX.B.K4
	5. Energy management.	PA.IX.B.K5
	6. Wind conditions and effects.	PA.IX.B.K6
	7. Density altitude.	PA.IX.B.K7
	8. Headwind, tailwind, crosswind component.	PA.IX.B.K8
	9. Emergency procedures.	PA.IX.B.K9
	10. Communications.	PA.IX.B.K10
	11. Regulations pertaining to emergencies safe altitudes.	PA.IX.B.K11
	12. ATC clearance deviations.	PA.IX.B.K12
	13. Minimum fuel.	PA.IX.B.K13
	14. Selecting a landing location.	PA.IX.B.K14
	15. ELTs.	PA.IX.B.K15
	16. Radar assistance to VFR aircraft.	PA.IX.B.K16
	17. Transponder.	PA.IX.B.K17
Skills	The applicant demonstrates the ability to:	
	1. Analyze the situation and select an appropriate course of action.	PA.IX.B.S1
	2. Establish and maintain the recommended best-glide airspeed, ±10 knots.	PA.IX.B.S2
	3. Plan and follow a flight pattern to the selected landing area considering altitude, wind, terrain, and obstructions that would allow a safe landing.	PA.IX.B.S3
	4. Prepare for landing, or go-around, as specified by the evaluator.	PA.IX.B.S4
	5. Completes the appropriate checklist.	PA.IX.B.S5
	6. Makes appropriate radio calls.	PA.IX.B.S6
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Accounting for wind.	PA.IX.B.R1
	2. Selecting a suitable landing area.	PA.IX.B.R2
	3. Planning and following a flight pattern to the selected landing area considering altitude, wind, terrain, and obstructions.	PA.IX.B.R3
	4. Task management.	PA.IX.B.R4
	5. Low altitude maneuvering.	PA.IX.B.R5
	6. Managing startle response.	PA.IX.B.R6
	7. Wire strike avoidance.	PA.IX.B.R7
	8. Collision avoidance.	PA.IX.B.R8
	9. Right-of-way.	PA.IX.B.R9
	10. Situational awareness of obstacles on approach and departure paths.	PA.IX.B.R10
	11. Stall/Spin Awareness.	PA.IX.B.R11

Task	***C. Systems and Equipment Malfunction***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with system and equipment malfunctions appropriate to the airplane provided for the practical test and analyzing the situation and take appropriate action for simulated emergencies.	
Knowledge	The applicant demonstrates understanding of:	.
	1. Elements related to system and equipment malfunctions appropriate to the airplane, including the following—	PA.IX.C.K1
	a. partial or complete power loss.	PA.IX.C.K1a
	b. engine roughness or overheat.	PA.IX.C.K1b
	c. carburetor or induction icing.	PA.IX.C.K1c
	d. loss of oil pressure.	PA.IX.C.K1d
	e. fuel starvation.	PA.IX.C.K1e
	f. electrical malfunction.	PA.IX.C.K1f
	g. vacuum/pressure, and associated flight instruments malfunction.	PA.IX.C.K1g
	h. pitot/static system malfunction.	PA.IX.C.K1h
	i. landing gear or flap malfunction.	PA.IX.C.K1i
	j. inoperative trim.	PA.IX.C.K1j
	k. inadvertent door or window opening.	PA.IX.C.K1k
	l. structural icing	PA.IX.C.K1l
	m. smoke/fire/engine compartment fire.	PA.IX.C.K1m
	n. any other emergency appropriate to the airplane.	PA.IX.C.K1n
	2. Supplemental oxygen.	PA.IX.C.K2
	3. Load factors.	PA.IX.C.K3
	4. High drag versus low drag.	PA.IX.C.K4
Skills	The applicant demonstrates the ability to:	
	1. Analyze the situation and take appropriate action for simulated emergencies appropriate to the airplane provided for at least three of the system and equipment malfunctions listed in the knowledge elements.	PA.IX.C.S1
	2. Completes appropriate checklist or procedure.	PA.IX.C.S2
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Avoiding hazardous attitudes.	PA.IX.C.R1
	2. Preflight inspections.	PA.IX.C.R2
	3. Maintenance.	PA.IX.C.R3
	4. Checklist usage.	PA.IX.C.R4
	5. Recognizing situations, such as depressurization (if applicable), cockpit smoke, and/or fire that require an emergency descent.	PA.IX.C.R5
	6. Orientation, division of attention, and proper planning.	PA.IX.C.R6
	7. Energy management.	PA.IX.C.R7

Task	***D. Emergency Equipment and Survival Gear***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with emergency equipment, personal, and survival gear appropriate to the airplane and environment encountered during flight and identifying appropriate equipment that should be onboard the airplane.	
Knowledge	The applicant demonstrates understanding of:	
	1. Emergency equipment.	PA.IX.D.K1
	2. Climate extremes (hot/cold).	PA.IX.D.K2
	3. Mountainous terrain.	PA.IX.D.K3
	4. Overwater operations.	PA.IX.D.K4
	5. Gear to meet basic physical needs until rescue.	PA.IX.D.K5
	6. ELT operation, limitations and testing requirements.	PA.IX.D.K6
Skills	The applicant demonstrates the ability to:	
	1. Identify appropriate equipment that should be onboard the airplane.	PA.IX.D.S1
	2. Identify appropriate personal gear to meet physical needs until rescue.	PA.IX.D.S2
	3. Brief the proper use of the fire extinguisher, if installed.	PA.IX.D.S3
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Meeting basic needs (water, clothing, shelter) for 48 to 72 hours until search and rescue is made.	PA.IX.D.R1
	2. Survival techniques, to include being located by search and rescue.	PA.IX.D.R2

Task	***E. Engine Failure During Takeoff Before V_{MC} (Simulated) (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-19; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with an engine failure during takeoff before V_{MC}. **NOTE:** Engine failure (simulated) shall be accomplished before reaching 50 percent of the calculated V_{MC}.	
Knowledge	The applicant demonstrates understanding of:	
	1. V_{MC}.	PA.IX.E.K1
	2. Runway distances.	PA.IX.E.K2
Skills	The applicant demonstrates the ability to:	
	1. Close the throttles smoothly and promptly when simulated engine failure occurs.	PA.IX.E.S1
	2. Maintain directional control and apply brakes, as necessary.	PA.IX.E.S2
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Emergency planning and communications.	PA.IX.E.R1
	2. Task management.	PA.IX.E.R2
	3. Low-altitude maneuvering.	PA.IX.E.R3
	4. Wire strike avoidance.	PA.IX.E.R4
	5. Collision avoidance.	PA.IX.E.R5
	6. Right-of-way.	PA.IX.E.R6
	7. Situational awareness of obstacles on approach and departure paths.	PA.IX.E.R7
	8. Stall/Spin Awareness.	PA.IX.E.R8

Task	***F. Engine Failure After Lift-Off (Simulated) (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-19; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with an engine failure after lift-off. **NOTE:** Simulated engine failure of the most critical engine shall be demonstrated after lift-off. However, the failure of an engine shall not be simulated until attaining at least V_{SSE}/V_{XSE}/V_{YSE} and at an altitude not lower than 400 feet AGL.	
Knowledge	The applicant demonstrates understanding of:	
	1. V_{MC}.	PA.IX.F.K1
	2. Runway distances.	PA.IX.F.K2
	3. Drag reduction.	PA.IX.F.K3
	4. How to identify the inoperative engine.	PA.IX.F.K4
	5. Aircraft configuration for best performance during single-engine operations.	PA.IX.F.K5
	6. Feathering and zero-thrust procedures.	PA.IX.F.K6
Skills	The applicant demonstrates the ability to:	
	1. Recognize a simulated engine failure promptly, maintain control and utilize appropriate emergency procedures.	PA.IX.F.S1
	2. Reduce drag, identify and verify the inoperative engine after simulated engine failure.	PA.IX.F.S2
	3. Simulate feathering the propeller on the inoperative engine. Evaluator shall then establish a zero-thrust on the inoperative engine.	PA.IX.F.S3
	4. Establish V_{YSE}; if obstructions are present, establish V_{XSE} or V_{MC} +5 knots, whichever is greater, until obstructions are cleared. Then transition to V_{YSE}.	PA.IX.F.S4
	5. Bank toward the operating engine as required for best performance.	PA.IX.F.S5
	6. Monitor operating engine and make adjustments as necessary.	PA.IX.F.S6
	7. Recognize the airplane's performance capabilities. If a climb is not possible at V_{YSE}, maintain V_{YSE} and return to the departure airport for landing, or initiate an approach to the most suitable landing area available.	PA.IX.F.S7
	8. Simulate securing the inoperative engine.	PA.IX.F.S8
	9. Maintain heading +10 degrees, and airspeed ±5 knots.	PA.IX.F.S9
	10. Complete appropriate emergency checklist.	PA.IX.F.S10
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Emergency planning and communications.	PA.IX.F.R1
	2. Task management.	PA.IX.F.R2
	3. Low altitude maneuvering.	PA.IX.F.R3
	4. Wire strike avoidance.	PA.IX.F.R4
	5. Collision avoidance.	PA.IX.F.R5
	6. Right-of-way.	PA.IX.F.R6
	7. Situational awareness of obstacles on approach and departure paths.	PA.IX.F.R7
	8. Stall/spin Awareness.	PA.IX.F.R8

Task	***G. Approach and Landing with an Inoperative Engine (Simulated) (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-19; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with an approach and landing with an engine inoperative, including engine failure on final approach.	
Knowledge	The applicant demonstrates understanding of:	
	1. V_{MC}.	PA.IX.G.K1
	2. Runway distances.	PA.IX.G.K2
	3. Drag reduction.	PA.IX.G.K3
	4. How to identify the inoperative engine.	PA.IX.G.K4
	5. Aircraft configuration for best performance during single-engine operations.	PA.IX.G.K5
	6. Feathering and zero-thrust procedures.	PA.IX.G.K6
Skills	The applicant demonstrates the ability to:	
	1. Recognize engine failure and take appropriate action, maintain control, and utilize manufacturer's recommended emergency procedures.	PA.IX.G.S1
	2. Bank toward the operating engine, as required, for best performance.	PA.IX.G.S2
	3. Monitor the operating engine and make adjustments as necessary.	PA.IX.G.S3
	4. Maintain the manufacturer's recommended approach airspeed +10/-5, and landing configuration with a stabilized approach, until landing is assured.	PA.IX.G.S4
	5. Make smooth, timely, and correct control applications, during round out and touchdown.	PA.IX.G.S5
	6. Touch down on the first one-third of available runway, with no drift and the airplane's longitudinal axis aligned with and over the runway center path.	PA.IX.G.S6
	7. Maintain crosswind correction and directional control throughout the approach and landing sequence.	PA.IX.G.S7
	8. Complete appropriate checklists.	PA.IX.G.S8
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Accounting for wind.	PA.IX.G.R1
	2. Selecting a suitable landing area.	PA.IX.G.R2
	3. Planning and following a flight pattern to the selected landing area considering altitude, wind, terrain, and obstructions.	PA.IX.G.R3
	4. Task management.	PA.IX.G.R4
	5. Low-altitude maneuvering.	PA.IX.G.R5
	6. Wire strike avoidance.	PA.IX.G.R6
	7. Collision avoidance.	PA.IX.G.R7
	8. Right-of-way.	PA.IX.G.R8
	9. Situational awareness of obstacles on approach and departure paths.	PA.IX.G.R9
	10. Stall/spin Awareness.	PA.IX.G.R10

X. Multiengine Operations

NOTE: If the applicant does not hold an instrument rating airplane, Tasks C and D do not need to be accomplished. All other Tasks need to be completed.

Task	***A. Maneuvering with One Engine Inoperative (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-P-8740-19; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with one engine inoperative. **NOTE:** The feathering of one propeller shall be demonstrated in flight, unless the manufacturer prohibits the intentional feathering of the propellers during flight. The maneuvers shall be performed at altitudes above 3,000 feet AGL or the manufacturer's recommended altitude, whichever is higher, and positions where safe landings on established airports can be readily accomplished. In the event a propeller cannot be unfeathered during the practical test, it shall be treated as an emergency.	
Knowledge	The applicant demonstrates understanding of:	
	1. V_{MC}.	PA.X.A.K1
	2. Drag reduction.	PA.X.A.K2
	3. How to identify the inoperative engine.	PA.X.A.K3
	4. Aircraft configuration for best performance during single-engine operations.	PA.X.A.K4
	5. Feathering and zero-thrust procedures.	PA.X.A.K5
Skills	The applicant demonstrates the ability to:	
	1. Recognize engine failure and maintain control.	PA.X.A.S1
	2. Set the engine controls, reduce drag, identify and verify the inoperative engine, and feather appropriate propeller.	PA.X.A.S2
	3. Establish and maintain a bank toward the operating engine as required for best performance in straight and level flight.	PA.X.A.S3
	4. Follow the manufacturer's prescribed checklists to verify procedures for securing the inoperative engine.	PA.X.A.S4
	5. Monitor the operating engine and make necessary adjustments.	PA.X.A.S5
	6. Demonstrate coordinated flight with one engine inoperative (propeller feathered).	PA.X.A.S6
	7. Restart the inoperative engine using appropriate manufacturer's restart procedures.	PA.X.A.S7
	8. Maintain altitude ±100 feet or minimum sink as appropriate and heading ±10 degrees.	PA.X.A.S8
	9. Complete the appropriate checklist.	PA.X.A.S9
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.X.A.R1
	2. CFIT avoidance.	PA.X.A.R2
	3. Task management.	PA.X.A.R3
	4. Wire strike avoidance.	PA.X.A.R4
	5. Situational awareness.	PA.X.A.R5

Task	***B. V_{MC} Demonstration (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-P-8740-19; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with a V_{MC} demonstration. **NOTE:** An applicant seeking an airplane-multiengine land rating, "Limited to Center Thrust," is not required to be evaluated on this Task. **NOTE:** Airplane with normally aspirated engines will lose power as altitude increases because of the reduced density of the air entering the induction system of the engine. This loss of power will result in a V_{MC} lower than the stall speed at higher altitudes. Therefore, recovery should be made at the first indication of loss of directional control, stall warning, or buffet. Do not perform this maneuver by increasing the pitch attitude to a high angle with both engines operating and then reducing power on the critical engine. This technique is hazardous and may result in loss of airplane control.	
Knowledge	The applicant demonstrates understanding of:	
	1. V_{MC} and factors affecting V_{MC}.	PA.X.B.K1
	2. Cause of loss of directional controls at airspeeds less than V_{MC}.	PA.X.B.K2
	3. Safe recovery procedures.	PA.X.B.K3
Skills	The applicant demonstrates the ability to:	
	1. Configure the airplane in accordance with the manufacturer's recommendation, in the absence of the manufacturer's recommendations, then at VSSE/VYSE, as appropriate.	PA.X.B.S1
	a. Landing gear retracted.	PA.X.B.S1a
	b. Flaps set for takeoff.	PA.X.B.S1b
	c. Cowl flaps set for takeoff.	PA.X.B.S1c
	d. Trim set for takeoff.	PA.X.B.S1d
	e. Propellers set for high RPM.	PA.X.B.S1e
	f. Power on critical engine reduce to idle.	PA.X.B.S1f
	g. Power on operating engine set to takeoff or maximum available power.	PA.X.B.S1g
	2. Establish a single-engine climb attitude with the airspeed at approximately 10 knots above V_{SSE}.	PA.X.B.S2
	3. Establish a bank toward the operating engine, as required for best performance and controllability.	PA.X.B.S3
	4. Increase the pitch attitude slowly to reduce the airspeed at approximately 1 knot per second while applying rudder pressure to maintain directional control until full rudder is applied.	PA.X.B.S4
	5. Recognize indications of loss of directional control, stall warning, or buffet.	PA.X.B.S5
	6. Recover promptly by simultaneously reducing power sufficiently on the operating engine while decreasing the angle of attack as necessary to regain airspeed and directional control. Recovery SHOULD NOT be attempted by increasing the power on the simulated failed engine.	PA.X.B.S6
	7. Recover within 20 degrees of the entry heading.	PA.X.B.S7
	8. Advance power smoothly on operating engine and accelerate to V_{SSE}/V_{YSE}, as appropriate, +10/-5 knots, during the recovery.	PA.X.B.S8
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.X.B.R1
	2. CFIT avoidance.	PA.X.B.R2
	3. Task management.	PA.X.B.R3
	4. Wire strike avoidance.	PA.X.B.R4
	5. Situational awareness.	PA.X.B.R5

Task	***C. Engine Failure During Flight (by reference to instruments) (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-P-8740-19; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with instrument flight with one engine inoperative.	
Knowledge	The applicant demonstrates understanding of:	
	1. Instrument procedures used with one engine inoperative.	PA.X.C.K1
Skills	The applicant demonstrates the ability to:	
	1. Recognize engine failure, set the engine controls, reduce drag, identify and verify the inoperative engine, and feather appropriate engine propeller.	PA.X.C.S1
	2. Establish and maintain a bank toward the operating engine as required for best performance in straight-and-level.	PA.X.C.S2
	3. Follow the prescribed checklists to verify procedures for securing the inoperative engine.	PA.X.C.S3
	4. Monitor the operating engine and make necessary adjustments.	PA.X.C.S4
	5. Demonstrate coordinated flight with one engine inoperative.	PA.X.C.S5
	6. Maintain altitude ±100 feet, or minimum sink as appropriate and heading ±10 degrees bank, bank ±5 degrees, and levels off from climbs and descents within ±100 feet.	PA.X.C.S6
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.X.C.R1
	2. CFIT avoidance.	PA.X.C.R2
	3. Task management.	PA.X.C.R3
	4. Wire strike avoidance.	PA.X.C.R4
	5. Situational awareness.	PA.X.C.R5

Task	***D. Instrument Approach and Landing with an Inoperative Engine (Simulated) by Reference to Instruments (AMEL, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-P-8740-19; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with executing a published instrument approach with one engine inoperative.	
Knowledge	The applicant demonstrates understanding of:	
	1. Instrument approach procedures used with one engine inoperative.	PA.X.D.K1
Skills	The applicant demonstrates the ability to:	
	1. Recognize engine failure, set the engine controls, reduce drag, identify and verify the inoperative engine, and feather appropriate engine propeller.	PA.X.D.S1
	2. Establish and maintain a bank toward the operating engine, as required for best performance in straight-and-level flight.	PA.X.D.S2
	3. Follow the manufacturer's prescribed checklists to verify procedures for securing the inoperative engine.	PA.X.D.S3
	4. Monitor the operating engine and make necessary adjustments.	PA.X.D.S4
	5. Request and receive an actual or a simulated ATC clearance for an instrument approach.	PA.X.D.S5
	6. Follow the actual or a simulated ATC clearance for an instrument approach.	PA.X.D.S6
	7. Maintain altitude within 100 feet, the airspeed within ±10 knots if within the aircraft's capability, and heading +-10 degrees.	PA.X.D.S7
	8. Establish a rate of descent that will ensure arrival at the MDA or DH/DA, with the airplane in a position from which a descent to a landing, on the intended runway can be made, either straight in or circling as appropriate.	PA.X.D.S8
	9. On final approach segment, no more than three-quarter-scale deflection of the CDI/glide slope indicator. For RMI or Automatic Direction Finder (ADF) indicators, within 10 degrees of the course.	PA.X.D.S9
	10. Avoid loss of aircraft control, or attempted flight contrary to the engine-inoperative operating limitations of the aircraft.	PA.X.D.S10
	11. Comply with the published criteria for the aircraft approach category when circling.	PA.X.D.S11
	12. Complete landing and appropriate manufacturer's checklists.	PA.X.D.S12
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.X.D.R1
	2. CFIT avoidance.	PA.X.D.R2
	3. Task management.	PA.X.D.R3
	4. Wire strike avoidance.	PA.X.D.R4
	5. Situational awareness.	PA.X.D.R5

XI. Night Operation

Task	***A. Night Preparation***	
Reference	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; AIM; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with night operations.	
Knowledge	The applicant demonstrates understanding of:	
	1. Physiological aspects of night flying as it relates to vision.	PA.XI.A.K1
	2. Lighting systems identifying airports, runways, taxiways and obstructions, as well as pilot controlled lighting.	PA.XI.A.K2
	3. Airplane equipment requirements for night operations.	PA.XI.A.K3
	4. Airplane lighting systems – type, interpretation in flight, when to use what.	PA.XI.A.K4
	5. Personal equipment essential for night flight.	PA.XI.A.K5
	6. Night orientation, navigation, and chart reading techniques.	PA.XI.A.K6
	7. Safety precautions and emergencies unique to night flying.	PA.XI.A.K7
	8. Somatogravic illusion and black hole approach illusion.	PA.XI.A.K8
	9. Disorientation experienced in unusual attitudes at night.	PA.XI.A.K9
	10. Visual scanning techniques during night operations.	PA.XI.A.K10
	11. Hazards of inadvertent IMC.	PA.XI.A.K11
Skills	**NOTE:** Not generally evaluated in flight. If the practical test is conducted at night, all ACS tasks are evaluated in that environment, thus there is no need for explicit task elements to exist here.	N/A
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Collision avoidance.	PA.XI.A.R1
	2. CFIT avoidance.	PA.XI.A.R2
	3. Task management.	PA.XI.A.R3
	4. Wire strike avoidance.	PA.XI.A.R4
	5. Situational awareness.	PA.XI.A.R5
	6. Environmental considerations at night (e.g., IMC; terrain (roads))	PA.XI.A.R6
	7. Maintaining VFR at night underneath airspace.	PA.XI.A.R7

XII. Postflight Procedures

Task	***A. Parking and Securing (ASEL, AMEL)***	
Reference	FAA-H-8083-2, FAA-H-8083-3; POH/AFM; 49 CFR 830.	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with after landing, parking, and securing procedures.	
Knowledge	The applicant demonstrates understanding of:	
	1. Positioning aircraft controls for wind.	PA.XII.A.K1
	2. Familiarity with airport markings (including hold short lines), signs, and lights.	PA.XII.A.K2
	3. Aircraft lighting.	PA.XII.A.K3
	4. Towered and non-towered airport operations.	PA.XII.A.K4
	5. Visual indicators for wind.	PA.XII.A.K5
	6. Airport information resources (A/FD, airport diagram).	PA.XII.A.K6
	7. Good cockpit discipline during taxi.	PA.XII.A.K7
	8. Appropriate taxi speeds.	PA.XII.A.K8
	9. Exhibiting procedures for appropriate cockpit activities during taxiing including taxi route planning, briefing the location of HOT SPOTS, communicating and coordinating with ATC.	PA.XII.A.K9
	10. Procedures unique to night operations.	PA.XII.A.K10
	11. Hazards of low visibility operations.	PA.XII.A.K11
	12. Importance of documenting any in-flight/post-flight discrepancies.	PA.XII.A.K12
	13. National Transportation Safety Board (NTSB) accident/incident reporting.	PA.XII.A.K13
Skills	The applicant demonstrates the ability to:	
	1. Utilize after landing runway incursion avoidance procedures after landing.	PA.XII.A.S1
	2. Park in an appropriate area, considering the safety of nearby persons and property.	PA.XII.A.S2
	3. Plan the taxi route to the ramp.	PA.XII.A.S3
	4. Follow the appropriate procedure for engine shutdown.	PA.XII.A.S4
	5. Complete the After Landing checklist after the airplane is stopped.	PA.XII.A.S5
	6. Complete the Engine Shutdown Checklist.	PA.XII.A.S6
	7. Disembark passengers safely and remain aware of passenger movement while on the ramp area.	PA.XII.A.S7
	8. Record aircraft discrepancies and notes for possible service needs before next flight.	PA.XII.A.S8
	9. Conduct an appropriate post flight inspection, secure the aircraft.	PA.XII.A.S9
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Distractions during aircraft taxi and parking.	PA.XII.A.R1
	2. Proximity of other aircraft/vehicles/people when operating on airport surfaces.	PA.XII.A.R2
	3. Propeller safety.	PA.XII.A.R3
	4. Proper workload management.	PA.XII.A.R4
	5. Confirmation or expectation bias.	PA.XII.A.R5
	6. Automation management.	PA.XII.A.R6
	7. Airport security.	PA.XII.A.R7

Task	***B. Seaplane Post-Landing Procedures (ASES, AMES)***	
Reference	FAA-H-8083-2, FAA-H-8083-23; POH/AFM	
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with anchoring, docking, mooring, and ramping/beaching. **NOTE:** The examiner shall select at least one after-landing procedure (anchoring, docking and mooring, or ramping/beaching).	
Knowledge	The applicant demonstrates understanding of:	
	1. Mooring.	PA.XII.B.K1
	2. Docking.	PA.XII.B.K2
	3. Anchoring.	PA.XII.B.K3
	4. Ramping/beaching.	PA.XII.B.K4
	5. Post-landing procedures.	PA.XII.B.K5
Skills	The applicant demonstrates the ability to:	
	1. Select a suitable area for anchoring, considering seaplane movement, water depth, tide, wind, and weather changes.	PA.XII.B.S1
	2. Use an adequate number of anchors and lines of sufficient strength and length to ensure the seaplane's security.	PA.XII.B.S2
	3. Approach the dock or mooring buoy in the proper direction considering speed, hazards, wind, and water current.	PA.XII.B.S3
	4. Approach the ramp/beach considering persons and property, in the proper attitude and direction, at a safe speed, considering water depth, tide, current, and wind.	PA.XII.B.S4
	5. Ensure seaplane security in a manner that will protect it from the harmful effect of wind, waves, and changes in water level.	PA.XII.B.S5
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:	
	1. Distractions during aircraft taxi and parking.	PA.XII.B.R1
	2. Proximity of other aircraft/vehicles/people when operating on airport surfaces.	PA.XII.B.R2
	3. Propeller safety.	PA.XII.B.R3
	4. Proper workload management.	PA.XII.B.R4
	5. Confirmation or expectation bias.	PA.XII.B.R5
	6. Automation Management.	PA.XII.B.R6
	7. Airport security.	PA.XII.B.R7
	8. Water and environmental impacts on securing a seaplane.	PA.XII.B.R8

APPENDIX 1: THE KNOWLEDGE TEST

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

Knowledge Test Description

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.

Test Code	Test Name	Number of Questions	Allotted Time	Passing Score
PAR	Private Pilot Airplane	60	2.5	70%
PAT	Private Pilot Airplane/Recreational Pilot – Transition	30	1.5	70%
PCP	Private Pilot Canadian Conversion	40	2.0	70%

Eligibility Requirements

For information concerning eligibility for Private Pilot certification, please refer to:

- Medical Certificates: Requirement and Duration: 14 CFR 61.23
- Knowledge Test: Prerequisites and Passing Grades: 14 CFR 61.35
- Eligibility: 14 CFR 61.83; 14 CFR 61.96; 14 CFR 61.103

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.

Test Authorization

In order to take the Private Pilot knowledge test, you must provide proper identification. To verify your eligibility to take the test, you must also provide one of the following:

- Graduation certificate issued by a Federal Aviation Administration (FAA) certificated pilot school (14 CFR 61.71), or a
- Written statement or logbook endorsement from an authorized instructor certifying that the applicant completed an applicable ground training or home study course and is prepared for the knowledge test (14 CFR 61.35, 61.96(b)(3) or 61.103(d)(2)).

Acceptable forms of authorization for PCP only:

- Confirmation of Verification Letter issued by the Airmen Certification Branch (AFS-760).

Acceptable forms of retest authorization for ALL Private Pilot tests:

- Original failed, passing, or expired Airman Knowledge Test Report, provided the applicant still has the test report in his or her possession.

  NOTE: If the applicant no longer possesses the original test report, he or she may present an 'expired test/credit' letter issued by AFS-760.

- 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.

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).

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

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

1. Carefully read the instructions provided with the test.
2. Answer each question in accordance with the latest regulations and guidance publications.
3. Read each question carefully before looking at the answer options. You should clearly understand the problem before trying to solve it.
4. After formulating a response, determine which answer option corresponds with your answer. The answer you choose should completely solve the problem.
5. Remember that only one answer is complete and correct. The other possible answers are either incomplete or erroneous.
6. 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.
7. When solving a calculation problem, be sure to read all the associated notes.
8. 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.

FAA Knowledge Test Question Coding

Each task in the Airman Certification Standard includes an Airman Certification Standards (ACS) code. This ACS code is displayed on the airman test report to indicate what task element was proven deficient on the Knowledge Exam. Instructors can then provide remedial training in the deficient areas and evaluators can re-test this element during the practical exam.

The ACS coding consists of 4 elements. For example: this code is deciphered as follows: **PA.XI.A.1**

PA.XI.A.K1:

PA = Applicable ACS (Private Pilot – Airplane)
X = Area of Operation (Night Operation)
A = Task (Night Preparation)
K1 = Knowledge Task Element 1 (Physiological aspects of night flying as it relates to vision)

Every question is correlated to a specific ACS task/element. This coding methodology will be useful to all involved with airman certification—the applicant, the evaluator, and the flight instructor. It indicates what test subjects (tasks) were satisfactorily passed and what tasks need to be reviewed prior to the practical test.

Testing Procedures for Applicants Requesting Special Accommodations

An applicant with a learning or reading disability may request approval from AFS-630 through the local Flight Standards District Office (FSDO) or International Field Office/International Field Unit (IFO/IFU) to take an 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 the Airman Testing Standards Branch (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.

Cheating or Other Unauthorized Conduct

Computer testing centers must follow strict security procedures to avoid test compromise in accordance with FAA Order 8080.6 (as amended), Conduct of Airman Knowledge Tests. Testing centers will terminate a test any time the test proctor suspects an occurrence of cheating.

The FAA will conduct an investigation of the incident. If the investigation determines that cheating or unauthorized conduct occurred, any airman certificate or rating the applicant holds may be revoked. In addition, the applicant may be prohibited from applying for or taking any test for a certificate or rating under 14 CFR part 61 for a period of one year.

Airman Knowledge Test Report

Immediately upon completion of the knowledge test, the applicant receives a printed Airman Knowledge Test Report documenting the score with the testing center's raised, embossed seal. The applicant must retain the original Airman Knowledge Test Report. 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 Airman Knowledge Test Report to the evaluator, who is required to assess the noted areas of deficiency during the oral portion of the practical test.

An Airman Knowledge Test Report expires 24-calendar months from the month the applicant completes the knowledge test. If the Airman Knowledge Test Report expires before completion of the practical test, the applicant must retake the knowledge test.

To obtain a duplicate Airman Knowledge Test Report due to loss or destruction of the original, the applicant can send a signed request accompanied by a check or money order for $1.00, payable to the FAA to:

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

APPENDIX 2: THE PRACTICAL TEST

The evaluator must conduct the practical test in accordance with this ACS. The evaluator must assess the applicant on the Skill elements of all Tasks in each Area of Operation of the ACS unless otherwise noted. The evaluator should also assess at least one Knowledge element and one Risk Management element in each Area of Operation, with special focus on any task element(s) the applicant missed on the knowledge exam.

NOTE: The applicant must pass the knowledge test before taking the practical test, and the applicant must pass the oral portion of the practical test before beginning the flight portion.

For an applicant who holds at least a private pilot certificate and seeks an additional airplane category and/or class rating at the private pilot level, the examiner shall evaluate that applicant in the Areas of Operation and Tasks listed in the Additional Rating Task Table. Please note, however, that the evaluator has the discretion to evaluate the applicant's competence in the remaining Areas of Operation and Tasks.

If the applicant holds two or more category or class ratings at least at the private level, and the ratings table indicates differing required Tasks, the "least restrictive" entry applies. For example, if "ALL" and "NONE" are indicated for one Area of Operation, the "NONE" entry applies. If "B" and "B, C" are indicated, the "B" entry applies.

Conduct of the Practical Test

The evaluator must develop a written Plan of Action to conduct the practical test, which includes all required Areas of Operation and Tasks. The Plan of Action will 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 examiner will interject problems and emergencies the applicant must manage.

The evaluator has the discretion and flexibility to change the Plan of Action in order to accommodate unexpected situations as they arise. The evaluator will evaluate any selected Task in its entirety. The evaluator may elect to suspend a scenario and then resume the scenario in order to assess certain tasks.

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.

Use of Checklists

Throughout the practical test, the applicant is evaluated on the use of an approved manufacturer's checklist or equivalent.

NOTE: If there is no published manufacturer's checklist, the applicant may use the appropriate FAA handbook or equivalent 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.

Use of Distractions

Research and accident analysis indicate that pilot distraction during critical phases of flight is a factor in many accidents. The evaluator will cause realistic distractions during the flight portion of the practical test in order to evaluate the applicant's ability to use and maintain proper control technique while dividing attention both inside and/or outside the cockpit.

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."

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.

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.

Possible Outcomes of the Practical Test

There are three possible outcomes of the practical test: (1) satisfactory, (2) unsatisfactory, or (3) discontinuance.

Satisfactory

Satisfactory performance requires the applicant:

- Perform the Tasks specified in the Areas of Operation for the certificate or rating sought within the approved 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;
- Demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.

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

NOTE: The tolerances listed in the ACS represent the performance expected in good flying conditions.

Unsatisfactory

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 examiner issues a Notice of Disapproval. When the examiner issues a Notice of Disapproval, he or she shall list the Area of Operation in which the applicant 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.

The examiner or the applicant may end the test if the applicant fails a Task. The examiner may continue the test only with the consent of the applicant, and the applicant is entitled to credit for only those Areas of Operation and the associated Tasks performed satisfactorily. Though not required, the examiner 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 examiner 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

  NOTE: If a performance standard is not definitively established for a Task element it should not be used as the basis for a judgment of unsatisfactory. Instead, perceived deficiencies in areas without specific performance parameters should be provided as feedback to the applicant's instructor(s) and/or flight school(s) to focus more on those areas in the future. In addition, the perceived deficiencies should be highlighted during the practical exam debrief to encourage the applicant to work on attempting to further incorporate those skills into their airmanship.

Discontinuance

When it is necessary to discontinue a practical test for reasons other than unsatisfactory performance (e.g., equipment failure, weather, illness), the evaluator returns all the 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 time remaining to complete the test. 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.

Prerequisites for the Test

In accordance with 14 CFR part 61, an applicant for the Private Pilot Practical Test must:

- Be at least Be at least 17 years of age for a rating in other than a glider or balloon (be at least 16 years of age for a rating in a glider or balloon);
- Be able to read, speak, write, and understand the English language as detailed in AC 60-28;
- Have passed the appropriate private pilot knowledge test since the beginning of the 24th month before the month in which he or she takes the practical test;
- Have satisfactorily accomplished the required training and obtained the prescribed aeronautical experience;
- Possess at least a current third class medical certification or, when a military pilot of the U.S. Armed Forces, show and present evidence of an up-to-date medical examination by the U.S. Armed Forces authorizing pilot status;
- Have an endorsement from an authorized instructor certifying that the applicant has received and logged training time within two (2) calendar months preceding the date of application in preparation for the practical test, and is prepared for the practical test;
- Receive and log ground training from an authorized instructor or complete a home-study course on the aeronautical knowledge areas of 14 CFR part 61.105 paragraph (b) that apply to the aircraft category and class rating sought; and
- Have an endorsement certifying that the applicant has demonstrated satisfactory knowledge of the subject areas in which the applicant was deficient on the airman knowledge test (not required for power aircraft to non-power aircraft or power aircraft to power aircraft for additional category or class rating).

Aircraft and Equipment Required for the Practical Test

The Private Pilot—Airplane applicant is required by 14 CFR 61.45 to provide an airworthy, certificated aircraft for use during the practical test. This section states that the aircraft must:

- Be of U.S., foreign, or military registry of the same category, class, and type, if applicable, for the certificate and/or rating for which the applicant is applying;
- Have fully functioning dual controls, except as provided for in 14 CFR 61.45(c) and (e); and
- Be capable of performing all Areas of Operation appropriate to the rating sought and have no operating limitations which prohibit its use in any of the Areas of Operation required for the practical test.

Instructor Responsibilities

Instructors are responsible for training the applicant to acceptable standards in knowledge, skills, and risk management elements/procedures in all the Tasks, even if the applicant is simply adding an additional Private pilot certificate.

Evaluator Responsibilities

The evaluator who conducts the practical test is responsible for determining the applicant meets the acceptable standards of aeronautical knowledge, skills, and risk management for each Task in the appropriate ACS.

The evaluator must test at least one item in each of the Knowledge and Risk Management elements for every Task, emphasizing the topics (if any) the applicant missed on the Knowledge Test. The evaluator must test each item in the Skills elements unless otherwise noted in the Task.

Applicants must complete the oral portion of the practical test before the flight portion; however, oral questioning will continue throughout the flight. To the greatest extent practicable, evaluators shall test the applicant's ability to apply and correlate information, and only use rote questions when appropriate for the material being tested.

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. The FAA made this provision in the interest of fairness, but it does not mean that instruction, practice, or the repetition of an unsatisfactory task is permitted during the practical test.

On multiengine practical tests, where the failure of the most critical engine after liftoff is required, the examiner must give consideration to local atmospheric conditions, terrain, and type of aircraft used. However, the failure of an engine shall not be simulated until attaining at least $V_{SSE}/V_{XSE}/V_{YSE}$ and at an altitude not lower than 400 feet AGL.

During simulated engine failures on multiengine practical tests, the examiner shall set zero thrust after the applicant has simulated feathering the propeller. The examiner shall require the applicant to demonstrate at least one landing with a simulated-feathered propeller with the engine set to zero thrust. The feathering of one propeller shall be demonstrated in flight, unless the manufacturer prohibits the intentional feathering of the propellers during flight.

The evaluator will assess the applicant's use of visual scanning and collision avoidance procedures throughout the entire test.

APPENDIX 3: ADDITIONAL RATING TASK TABLES

Addition of an Airplane Single-Engine Land Rating to an existing Private Pilot Certificate
Required Tasks are indicated by either the Task letter(s) that apply(s) or an indication that all or none of the Tasks must be tested based on the notes in each Area of Operation.

PRIVATE PILOT RATING(S) HELD								
AREAS OF OPERATION	**ASES**	**AMEL**	**AMES**	**RH**	**RG**	**Glider**	**Balloon**	**Airship**
I	F,G	F,G	F,G	F,G	F,G	F,G	F,G	F,G
II	D	D	D	A,C,D, F	A,D,F	ALL	ALL	ALL
III	B	NONE	B	B	NONE	B	B	B
IV	A,B,C, D,E,F	A,B,C, D,E,F	A,B,C, D,E,F	A,B,C, D,E,F, M,N	A,B,C, D,E,F, M,N	A,B,C, D,E,F, M,N	A,B,C, D,E,F, M,N	A,B,C, D,E,F, M,N
V	NONE	NONE	NONE	ALL	A	ALL	ALL	ALL
VI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	NONE
VII	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL
VIII	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL
IX	A,B,C	A,B,C	A,B,C	A, B, C, D	A, B, C, D	A, B, C, D	A, B, C, D	A, B, C, D
X	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
XI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	ALL
XII	A	NONE	A	A	A	A	A	A

Addition of an Airplane Single-Engine Sea Rating to an existing Private Pilot Certificate

Required Tasks are indicated by either the Task letter(s) that apply(s) or an indication that all or none of the Tasks must be tested based on the notes in each Area of Operation.

PRIVATE PILOT RATING(S) HELD								
AREAS OF OPERATION	**ASEL**	**AMEL**	**AMES**	**RH**	**RG**	**Glider**	**Balloon**	**Airship**
I	F,G,I	F,G	F,G,,I	F,G,I	F,G,I	F,G,I	F,G,I	F,G,I
II	E	E	E	ALL	A,B,E, F	ALL	ALL	ALL
III	B	B	NONE	B	B	B	B	B
IV	A,B,G, H,J,K,L	A,B,G, H,I,J,K,L	A,B,G, H,I,J,K,L	A,B,G, H,I,J,K,L, M,N	A,B,G, H,I,J,K,L, M,N	A,B,G, H,I,J,K,L, M,N	A,B,G, H,I,J,K,L, M,N	A,B,G, H,I,J,K,L, M,N
V	NONE	NONE	NONE	ALL	A	ALL	ALL	ALL
VI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	NONE
VII	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL
VIII	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL
IX	A, B	A, B	A, B	A, B, C, D	A, B, C, D	A, B, C, D	A, B, C, D	A, B, C, D
X	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
XI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	ALL
XII	B	NONE	B	B	B	B	B	B

Addition of an Airplane Multiengine Land Rating to an existing Private Pilot Certificate

Required Tasks are indicated by either the Task letter(s) that apply(s) or an indication that all or none of the Tasks must be tested based on the notes in each Area of Operation.

PRIVATE PILOT RATING(S) HELD								
AREAS OF OPERATION	**ASEL**	**ASES**	**AMES**	**RH**	**RG**	**Glider**	**Balloon**	**Airship**
I	F,G,J	F,G,J	F,G	F,G,J	F,G,J	F,G,J	F,G,J	F,G,J
II	ALL	ALL	D	ALL	ALL	ALL	ALL	ALL
III	NONE	B	B	B	NONE	B	B	B
IV	A,B,C,D	A,B,C,D	A,B,C,D	A,B,C,D,N	A,B,C,D,N	A,B,C,D,N	A,B,C,D,N	A,B,C,D,N
V	A	A	NONE	ALL	A	ALL	ALL	ALL
VI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	NONE
VII	ALL	ALL	NONE	ALL	ALL	ALL	ALL	ALL
VIII	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL
IX	A,C,D,E,F	A,C,D,E,F	D, F, G	A,C,D, E,F,G	A,C,D, E,F,G	A,C,D, E,F,G	A,C,D, E,F,G	A,C,D, E,F,G
X	ALL	ALL	NONE	ALL	ALL	ALL	ALL	ALL
XI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	ALL
XII	NONE	A	A	A	A	A	A	A

Addition of an Airplane Multiengine Sea Rating to an existing Private Pilot Certificate

Required Tasks are indicated by either the Task letter(s) that apply(s) or an indication that all or none of the Tasks must be tested based on the notes in each Area of Operation

PRIVATE PILOT RATING(S) HELD								
AREAS OF OPERATION	**AMEL**	**ASEL**	**ASES**	**RH**	**RG**	**Glider**	**Balloon**	**Airship**
I	F,G,I	F,G,I,J	F,G,J	F,G,I,J	F,G,I,J	F,G,I,J	F,G,I,J	F,G,I,J
II	E	ALL	ALL	ALL	ALL	ALL	ALL	ALL
III	B	B	NONE	B	B	B	B	B
IV	A,B,G, H,J,K,L	A,B,G, H,I,J,K,L	A,B,G, H,I,J,K,L	ALL	ALL	ALL	ALL	ALL
V	NONE	A	A	ALL	A	ALL	ALL	ALL
VI	NONE	NONE	NONE	ALL	NONE	ALL	ALL	ALL
VII	NONE	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VIII	NONE	NONE	NONE	ALL	ALL	ALL	ALL	ALL
IX	C, D,E,F	A,C,D, E,F,G	B,C,D, E,F,G	A,C,D, E,F,G	A,C,D, E,F,G	A,C,D, E,F,G	A,C,D, E,F,G	A,C,D, E,F,G
X	NONE	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XI	NONE	NONE	NONE	NONE	NONE	ALL	ALL	ALL
XII	B	B	NONE	ALL	B	ALL	ALL	ALL

APPENDIX 4: PRACTICAL TEST CHECKLIST

Applicant's Practical Test Checklist

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 (Printed or Electronic)
- ☐ Computer and Plotter
- ☐ Flight Plan Form
- ☐ Flight Plan Form and Flight Logs (printed or electronic)
- ☐ Airport/Facility Directory, Airport Diagrams and Appropriate Publications
- ☐ Current AIM

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
- ☐ 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)

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APPENDIX 5: REFERENCES

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

14 CFR part 39	Airworthiness Directives
14 CFR part 43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration
14 CFR part 61	Certification: Pilots, Flight Instructors, and Ground Instructors
14 CFR part 71	Designation of Class A, B, C, D and E Airspace Areas; Air Traffic Service Rotes; and Reporting Points
14 CFR part 91	General Operating and Flight Rules
14 CFR part 93	Special Air Traffic 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 61-67	Stall and Spin Awareness Training
AC 90-66	Recommended Standard Traffic Patterns and Practices for Aeronautical Operations at Airports Without Operating Control Towers
AC 91-13	Cold Weather Operation of Aircraft
AC 91-21.1	Use of Portable Electronic Devices Aboard Aircraft
AC 91-55	Reduction of Electrical System Failures Following Aircraft Engine Starting
AC 91-73	Part 91 and 135 Single-Pilot Procedures During Taxi Operations
AC 150/5340-18	Standards for Airport Sign Systems
A/FD	Airport Facility Directory
AIM	Aeronautical Information Manual
FAA-H-8083-1	Aircraft Weight and Balance Handbook
FAA-H-8083-2	Risk Management Handbook
FAA-H-8083-3	Airplane Flying Handbook
FAA-H-8083-6	Advanced Avionics Handbook
FAA-H-8083-15	Instrument Flying Handbook
FAA-H-8083-23	Seaplane, Skiplane, and Float/Ski Equipped Helicopter Operations Handbook
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
FAA-P-8740-19	Flying Light Twins Safely
NOTAMs	Notices to Airmen
POH/AFM	Pilot's Operating Handbook/FAA-Approved Airplane Flight Manual
Other	Navigation Charts
	Navigation Equipment Manual
	USCG Navigation Rules, International-Inland

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.

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APPENDIX 6: ABBREVIATIONS AND ACRONYMS

The following abbreviations and acronyms are used in this ACS.

14 CFR	Title 14 of the Code of Federal Regulations
AC	Advisory Circular
ACS	Airman Certification Standards
ADF	Automatic Direction Finder
ADM	Aeronautical Decision-Making
A/FD	Airport/Facility Directory
AFM	Airplane Flight Manual
AFS	Flight Standards Service
AGL	Above Ground Level
AIM	Aeronautical Information Manual
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
ATC	Air Traffic Control
CFIT	Controlled Flight Into Terrain
CG	Center of Gravity
ELT	Emergency Locator Transmitter
FAA	Federal Aviation Administration
FADEC	Full Authority Digital Engine Control
FSDO	Flight Standards District Office
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
IFO	International Field Office
IFR	Instrument Flight Rules
IFU	International Field Unit
IMC	Instrument Meteorological Conditions
KOEL	Kinds of Operation Equipment List
LAHSO	Land and Hold Short Operations
NAS	National Airspace System
NOTAMs	Notices to Airmen
NTSB	National Transportation Safety Board
PAR	Private Pilot Airplane
PAT	Private Pilot Airplane/Recreational Pilot – Transition
PCP	Private Pilot Canadian Conversion
POH	Pilot's Operating Handbook

PTS	Practical Test Standards
RAIM	Receiver Autonomous Integrity Monitoring
SFRA	Special Flight Rules Area
SRM	Safety Risk Management
SMS	Safety Management System
SUA	Special Use Airspace
TFR	Temporary Flight Restrictions
USCG	United States Coast Guard
UTC	Coordinated Universal Time
VFR	Visual Flight Rules
V_X	Best Angle of Climb Speed
V_Y	Best Rate of Climb Speed
V_{MC}	Minimum control speed with critical engine inoperative
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_{SO}	Stalling Speed or the Minimum Steady Flight Speed in the Landing Configuration
VMC	Visual Meteorological Conditions