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U.S. Department
of Transportation

Federal Aviation
Administration

Flight Instructor for Powered-Lift Category Airman Certification Standards

Flight Standards Service
Washington, DC 20591

Foreword

The U.S. Department of Transportation, Federal Aviation Administration (FAA), Office of Safety Standards, Regulatory Support Division, Airman Testing Standards Branch, has published the Flight Instructor for Powered-Lift Category Airman Certification Standards (ACS) to communicate the aeronautical knowledge, risk management, and flight proficiency standards for the Flight Instructor Certificate in the powered-lift category.

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

Comments regarding this ACS may be emailed to afs630comments@faa.gov.

The FAA created FAA-G-ACS-2, Airman Certification Standards Companion Guide for Pilots, to provide guidance considered relevant and useful to the community. FAA-G-ACS-2 is available for download, in PDF format, from www.faa.gov.

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Introduction

Airman Certification Standards Concept

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

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

Use of the Term Flight Manual

Throughout this document, the term "flight manual" refers to the approved powered-lift aircraft flight manual.

Area of Operation I. Fundamentals of Instructing

Note: *The evaluator must select Task E, Task F, and at least one other Task for initial flight instructor applicants. During a practical test for an added flight instructor rating or flight instructor reinstatement, the evaluator has discretion to evaluate the applicant on Fundamentals of Instructing.*

Task A. Effects of Human Behavior and Communication on the Learning Process

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25

Objective: To determine the applicant understands human behavior and effective communication, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant understands and explains:
FI.I.A.K1	Elements of human behavior, including:
FI.I.A.K1a	a. Definitions of human behavior
FI.I.A.K1b	b. Instructor and learner relationship
FI.I.A.K1c	c. Motivation
FI.I.A.K1d	d. Human needs
FI.I.A.K1e	e. Defense mechanisms
FI.I.A.K2	Learner emotional reactions, including:
FI.I.A.K2a	a. Anxiety and stress
FI.I.A.K2b	b. Impatience
FI.I.A.K2c	c. Worry or lack of interest
FI.I.A.K2d	d. Physical discomfort, illness, fatigue, and dehydration
FI.I.A.K2e	e. Apathy due to inadequate instruction
FI.I.A.K3	Teaching the adult learner.
FI.I.A.K4	Effective communication, including:
FI.I.A.K4a	a. Basic elements of communication
FI.I.A.K4b	b. Barriers to effective communication
FI.I.A.K4c	c. Developing communication skills
Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
FI.I.A.R1	Recognizing and accommodating human behavior.
FI.I.A.R2	Barriers to communication.
Skills:	The applicant exhibits the skill to:
FI.I.A.S1	Give examples of how human behavior affects motivation and learning.
FI.I.A.S2	Describe what the instructor can do to deal with:
FI.I.A.S2a	a. Serious abnormal emotional behavior
FI.I.A.S2b	b. Defense mechanisms

FI.I.A.S3 Use effective communication in ground and flight instruction.

Task B. Learning Process

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25

Objective: To determine the applicant understands the learning process, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant understands and explains:
FI.I.B.K1	Definitions of learning.
FI.I.B.K2	Learning theory as it applies to ground and flight instruction, including:
FI.I.B.K2a	a. Behaviorism
FI.I.B.K2b	b. Cognitive Theory
FI.I.B.K3	Perceptions and insight.
FI.I.B.K4	Acquiring knowledge.
FI.I.B.K5	Laws of learning.
FI.I.B.K6	Domains of learning, including:
FI.I.B.K6a	a. Cognitive
FI.I.B.K6b	b. Affective
FI.I.B.K6c	c. Psychomotor
FI.I.B.K7	Characteristics of learning.
FI.I.B.K8	Scenario-based training (SBT).
FI.I.B.K9	Acquiring skill knowledge, including:
FI.I.B.K9a	a. Stages
FI.I.B.K9b	b. Knowledge of results
FI.I.B.K9c	c. How to develop skills
FI.I.B.K9d	d. Learning plateaus
FI.I.B.K10	Types of practice.
FI.I.B.K11	Evaluation versus critique.
FI.I.B.K12	Distractions, interruptions, fixation, and inattention.
FI.I.B.K13	Errors.
FI.I.B.K14	Memory, including:
FI.I.B.K14a	a. Sensory
FI.I.B.K14b	b. Short-Term Memory (STM) and Long-Term Memory (LTM)
FI.I.B.K14c	c. How usage affects memory
FI.I.B.K14d	d. Forgetting
FI.I.B.K15	Retention of learning.
FI.I.B.K16	Transfer of learning.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
FI.I.B.R1	Inadequate or incomplete instruction.
FI.I.B.R2	Lack of learner motivation.
FI.I.B.R3	Recognizing and correcting learner errors.

Skills:	The applicant exhibits the skill to:
FI.I.B.S1	Apply educational theories to ground and flight instruction.
FI.I.B.S2	Recognize and correct conditions that undermine the learning process.
FI.I.B.S3	Plan for and use techniques, including realistic distractions that teach flight students how to manage a workload.

Task C. Course Development, Lesson Plans, and Classroom Training Techniques

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25

Objective: To determine the applicant understands the teaching process, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant understands and explains:
FI.I.C.K1	Teaching, including:
FI.I.C.K1a	a. Process
FI.I.C.K1b	b. Essential skills
FI.I.C.K2	Course of training.
FI.I.C.K3	Preparation of a lesson, including:
FI.I.C.K3a	a. Training objectives and completion standards
FI.I.C.K3b	b. Performance-based objectives
FI.I.C.K3c	c. Importance of Airman Certification Standards (ACS) in aviation training curricula
FI.I.C.K3d	d. Decision-based objectives
FI.I.C.K4	Organization of material.
FI.I.C.K5	Training delivery methods, including:
FI.I.C.K5a	a. Lecture
FI.I.C.K5b	b. Discussion
FI.I.C.K5c	c. Guided discussion
FI.I.C.K5d	d. Cooperative or group learning
FI.I.C.K5e	e. Demonstration-performance
FI.I.C.K5f	f. Drill and practice
FI.I.C.K6	Electronic learning (e-Learning).
FI.I.C.K7	Instructional aids and training technologies, including:
FI.I.C.K7a	a. Characteristics of effective instructional aids
FI.I.C.K7b	b. Reasons for use
FI.I.C.K7c	c. Guidelines for use
FI.I.C.K7d	d. Types
FI.I.C.K8	Integrated flight instruction.
FI.I.C.K9	Problem-based instruction.
FI.I.C.K10	Planning instructional activity, including:
FI.I.C.K10a	a. Blocks of learning
FI.I.C.K10b	b. Training syllabus
FI.I.C.K10c	c. Lesson plans

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
FI.I.C.R1	Selection of teaching method.

Skills:	The applicant exhibits the skill to:
FI.I.C.S1	Prepare an instructional lesson plan using teaching methods and materials appropriate for Task and learner characteristics, including:
FI.I.C.S1a	a. Aeronautical knowledge ground lesson applicable for a classroom
FI.I.C.S1b	b. Maneuver introduction and ground lesson

Task D. Student Evaluation, Assessment, and Testing

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25

Objective: To determine the applicant understands evaluation and testing, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant understands and explains:
FI.I.D.K1	Purpose and characteristics of effective assessment.
FI.I.D.K2	Traditional assessments.
FI.I.D.K3	Authentic assessments, including:
FI.I.D.K3a	a. Learner-centered assessment
FI.I.D.K3b	b. Maneuver or procedure grades
FI.I.D.K3c	c. Assessing risk management skills
FI.I.D.K4	Choosing an effective assessment method.
FI.I.D.K5	Purposes and types of critiques.
FI.I.D.K6	Oral assessment, including:
FI.I.D.K6a	a. Characteristics of effective questions
FI.I.D.K6b	b. Types of questions to avoid
FI.I.D.K6c	c. Answering learner questions
FI.I.D.K7	Assessment of piloting ability.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
FI.I.D.R1	Delivering an assessment.

Skills:	The applicant exhibits the skill to:
FI.I.D.S1	Use appropriate methods and techniques to assess learner performance in ground or flight training.

Task E. Elements of Effective Teaching in a Professional Environment

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25

Objective: To determine the applicant understands effects of instructor behavior on effective teaching, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant understands and explains:
FI.I.E.K1	Aviation instructor responsibilities, including:
FI.I.E.K1a	a. Helping learners
FI.I.E.K1b	b. Providing adequate instruction
FI.I.E.K1c	c. Training to established standards of performance
FI.I.E.K1d	d. Emphasizing the positive
FI.I.E.K1e	e. Minimizing learner frustrations
FI.I.E.K2	Flight instructor responsibilities, including supervision and surveillance during training.
FI.I.E.K3	Flight instructor qualifications and professionalism.
FI.I.E.K4	Professional development.
FI.I.E.K5	Instructor ethics and conduct.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
FI.I.E.R1	Fulfilling instructor responsibilities.
FI.I.E.R2	Exhibiting professionalism.

Skills:	The applicant exhibits the skill to:
FI.I.E.S1	Deliver ground or flight instruction on an evaluator-assigned Task in a manner consistent with instructor responsibilities and professional characteristics as stated in K1 through K5.

Task F. Elements of Effective Teaching that Include Risk Management and Accident Prevention

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25

Objective: To determine the applicant understands teaching practical risk management, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant understands and explains:
FI.I.F.K1	Teaching risk identification, assessment, and mitigation.
FI.I.F.K2	Teaching risk management tools, including:
FI.I.F.K2a	a. Pilot/Aircraft/enVironment/External Pressures (PAVE) checklist
FI.I.F.K2b	b. Flight Risk Assessment Tools (FRATs)
FI.I.F.K3	When and how to introduce risk management.
FI.I.F.K4	Risk management teaching techniques by phase of instruction.
FI.I.F.K5	Managing risk during flight instruction, including:
FI.I.F.K5a	a. Common flight instruction risks
FI.I.F.K5b	b. Best practices
FI.I.F.K5c	c. Special considerations while teaching takeoffs and landings
FI.I.F.K6	Aeronautical Decision-Making (ADM) to include using Crew Resource Management (CRM) or Single-Pilot Resource Management (SRM), as appropriate.
Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
FI.I.F.R1	Hazards associated with providing flight instruction.
FI.I.F.R2	Obstacles to maintaining situational awareness during flight instruction.
FI.I.F.R3	Recognizing and managing hazards arising from human behavior, including hazardous attitudes.
Skills:	The applicant exhibits the skill to:
FI.I.F.S1	Use scenario-based training (SBT) to demonstrate, teach, and assess risk management and Aeronautical Decision-Making (ADM) skills in the context of a Task specified by the evaluator.
FI.I.F.S2	Identify, assess, and mitigate risks commonly associated with flight instruction by maintaining:
FI.I.F.S2a	a. Awareness and oversight of the learner's actions, with timely and appropriate supervision, intervention, or mitigation as needed
FI.I.F.S2b	b. Awareness of the learner's cognitive/physiological state, with timely action to mitigate anxiety, fatigue, or other obstruction to learning
FI.I.F.S2c	c. Overall situational awareness of the aircraft's dynamic state, its position in space, and vigilance for unexpected events or changing circumstances that occur in the environment
FI.I.F.S3	Model and teach safety practices, including maintaining:
FI.I.F.S3a	a. Collision avoidance while simultaneously providing instruction
FI.I.F.S3b	b. Avoidance of unnecessary distractions
FI.I.F.S3c	c. Coordinated flight
FI.I.F.S3d	d. Awareness of who is manipulating controls through positive exchange of flight controls

FI.I.F.S3e e. Continuous awareness of the aircraft's dynamic state and position in the NAS

Area of Operation II. Technical Subject Areas

Note: *The evaluator must select Tasks C, K, and at least one other Task from this Area of Operation.*

Task A. Human Factors

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands personal health, flight physiology, aeromedical and human factors, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.A.K1	Symptoms, recognition, causes, effects, and corrective actions associated with aeromedical and physiological issues, including:
IL.II.A.K1a	a. Hypoxia
IL.II.A.K1b	b. Hyperventilation
IL.II.A.K1c	c. Middle ear and sinus problems
IL.II.A.K1d	d. Spatial disorientation
IL.II.A.K1e	e. Motion sickness
IL.II.A.K1f	f. Carbon monoxide poisoning
IL.II.A.K1g	g. Stress
IL.II.A.K1h	h. Fatigue
IL.II.A.K1i	i. Dehydration and nutrition
IL.II.A.K1j	j. Hypothermia
IL.II.A.K1k	k. Optical illusions
IL.II.A.K1l	l. Dissolved nitrogen in the bloodstream after scuba dives
IL.II.A.K2	Regulations regarding use of alcohol and drugs.
IL.II.A.K3	Effects of alcohol, drugs, and over-the-counter medications.
IL.II.A.K4	Aeronautical Decision-Making (ADM) to include using Crew Resource Management (CRM) or Single-Pilot Resource Management (SRM), as appropriate.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.A.R1	Aeromedical and physiological issues.
IL.II.A.R2	Hazardous attitudes.
IL.II.A.R3	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.II.A.R4	Confirmation and expectation bias.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.A.S1	Associate the symptoms and effects for at least three of the conditions listed in K1a through K1l with the cause(s) and corrective action(s).
IL.II.A.S2	Perform self-assessment, including fitness for flight and personal minimums, for actual flight or a scenario given by the evaluator.

Task B. Visual Scanning and Collision Avoidance

References: AC 90-48; AIM; FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands visual scanning and collision avoidance, can apply that knowledge, manage associated risks, demonstrate pilot-in-command skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.B.K1	Environmental conditions that degrade vision.
IL.II.B.K2	Vestibular and visual illusions.
IL.II.B.K3	“See and Avoid” responsibilities.
IL.II.B.K4	Visual scanning procedure and the importance of peripheral vision.
IL.II.B.K5	Aircraft blind spots and clearing procedures.
IL.II.B.K6	Visual cues of an impending mid-air collision.
IL.II.B.K7	Situations that create the greatest collision risk.
IL.II.B.K8	Division of attention inside and outside the aircraft.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.B.R1	Distractions to visual scanning.
IL.II.B.R2	Relaxed intermediate focal distance.
IL.II.B.R3	High volume operational environments.
IL.II.B.R4	Collision reaction time.
IL.II.B.R5	Use of a safety pilot.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.B.S1	Effectively scan using short regularly spaced eye movements.
IL.II.B.S2	Scan around physical obstructions.
IL.II.B.S3	Use appropriate visual scanning techniques.
IL.II.B.S4	Use electronic traffic alert systems, if available.

Task C. Runway Incursion Avoidance

References: AC 91-73; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands runway incursion avoidance, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.II.C.K1	Runway incursion definition.
IL.II.C.K2	Taxi instructions/clearances.
IL.II.C.K3	The importance of recording taxi instructions and reviewing taxi routes on the airport diagram.
IL.II.C.K4	Airport markings, signs, and lights including the importance of hold lines associated with runways.
IL.II.C.K5	Appropriate flight deck activities during taxiing, including taxi route planning, briefing the location of Hot Spots, communicating and coordinating with ATC.
IL.II.C.K6	Communication and operational procedures at uncontrolled airports.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.II.C.R1	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.II.C.R2	Confirmation or expectation bias as related to taxi instructions.
IL.II.C.R3	Entering or crossing runways.
IL.II.C.R4	Night taxi operations.
IL.II.C.R5	Low visibility taxi operations.
IL.II.C.R6	Runway incursion after landing.
IL.II.C.R7	Operating on taxiways between parallel runways.

Skills: The applicant demonstrates how to:

IL.II.C.S1	Deliver instruction on the elements and techniques for runway incursion avoidance.

Task D. Principles of Flight

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands aerodynamics appropriate to the desired instructor certificate, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.D.K1	Airfoils, including terminology, definitions, and types.
IL.II.D.K2	Lift, weight, thrust, and drag.
IL.II.D.K3	Aircraft stability, maneuverability, and controllability.
IL.II.D.K4	Turning tendency (e.g., torque, p-factor, spiraling slipstream, and gyroscopic precession).
IL.II.D.K5	Forces acting on an aircraft.
IL.II.D.K6	Load factors in aircraft design.
IL.II.D.K7	Wingtip vortices and appropriate precautions.
IL.II.D.K8	Dissymmetry of lift.
IL.II.D.K9	Translational lift, including effective translational lift (ETL).
IL.II.D.K10	Pitch-up with side-slip.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.D.R1	The basic aerodynamic principles of flight.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.D.S1	Deliver instruction on principles of flight, including at least three of the elements listed in K1 through K10.

Task E. Flight Controls and Systems

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands the flight controls and systems on the aircraft provided for the flight test, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *If K1 is selected, the evaluator assesses the applicant's knowledge of at least three sub-elements.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.E.K1	Aircraft systems, including:
IL.II.E.K1a	a. Primary flight controls
IL.II.E.K1b	b. Secondary flight controls
IL.II.E.K1c	c. Powerplant(s) and means of producing thrust
IL.II.E.K1d	d. Landing gear
IL.II.E.K1e	e. Fuel, oil, and hydraulic
IL.II.E.K1f	f. Electrical
IL.II.E.K1g	g. Avionics
IL.II.E.K1h	h. Pitot-static, vacuum/pressure, and associated flight instruments
IL.II.E.K1i	i. Environmental
IL.II.E.K1j	j. Deicing and anti-icing
IL.II.E.K1k	k. Oxygen system
IL.II.E.K1l	l. Gearboxes, drive shafts, transmission systems, as applicable
IL.II.E.K2	Indications of and procedures for managing system abnormalities or failures.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.E.R1	Detection of system malfunctions or failures.
IL.II.E.R2	Management of a system failure.
IL.II.E.R3	Monitoring and management of automated systems.
IL.II.E.R4	Providing instruction in unfamiliar aircraft or operating with unfamiliar flight display systems and avionics.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.E.S1	Operate at least three of the systems listed in K1a through K1l appropriately.

Task F. Performance and Limitations

References: FAA-H-8083-1, FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands aircraft performance and limitations, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.F.K1	Elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance.
IL.II.F.K2	Factors affecting performance, including:
IL.II.F.K2a	a. Atmospheric conditions
IL.II.F.K2b	b. Pilot technique
IL.II.F.K2c	c. Aircraft configuration
IL.II.F.K2d	d. Airport, heliport, helipad, or unprepared surface environment
IL.II.F.K2e	e. Loading and weight and balance
IL.II.F.K3	Weight and balance terms, including: basic empty weight, maximum gross weight, arm, moment, reference datum, center of gravity (CG) and CG limits, and useful load.
IL.II.F.K4	Methods for computing CG.
IL.II.F.K5	Height/Velocity (H/V) diagram according to the flight manual.
IL.II.F.K6	Aerodynamics.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.F.R1	Use of performance charts, tables, and data.
IL.II.F.R2	Aircraft limitations.
IL.II.F.R3	Possible differences between calculated performance and actual performance.
IL.II.F.R4	Operations within “avoid areas” of the H/V diagram.
IL.II.F.R5	Other hazards specific to the powered-lift make and model.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.F.S1	Use of the appropriate manufacturer’s approved performance charts, tables, and data.
IL.II.F.S2	Compute the weight and balance, correct out-of-center of gravity loading errors and determine if the weight and balance remains within limits during all phases of flight and aircraft configurations.

Task G. National Airspace System

References: 14 CFR parts 71, 91, 93; AIM; FAA-H-8083-2, FAA-H-8083-9; VFR Navigation Charts

Objective: To determine the applicant understands the National Airspace System, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.G.K1	Airspace classes and associated requirements and limitations.
IL.II.G.K2	Chart symbols.
IL.II.G.K3	Special use airspace (SUA), special flight rules areas (SFRA), temporary flight restrictions (TFR), and other airspace areas.
IL.II.G.K4	Currency of publications.
IL.II.G.K5	Special visual flight rules (VFR) requirements.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.G.R1	Various classes and types of airspace.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.G.S1	Identify and comply with the requirements for basic VFR weather minimums and flying in particular classes of airspace.
IL.II.G.S2	Correctly identify airspace and operate in accordance with associated communication and equipment requirements.
IL.II.G.S3	Identify the requirements for operating in SUA or within a TFR. Identify and comply with special air traffic rules (SATR) and SFRA operations, if applicable.

Task H. Navigation Systems and Radar Services

References: AC 91-78; AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands navigation systems and radar services, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *The evaluator should reference the manufacturer's equipment supplement(s) as necessary for appropriate limitations, procedures, etc.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.H.K1	Ground-based navigation (identification, orientation, course determination, equipment, tests, and regulations, interference, appropriate use of navigation data, signal integrity).
IL.II.H.K2	Satellite-based navigation (e.g., equipment, regulations, authorized use of databases, and Receiver Autonomous Integrity Monitoring (RAIM)).
IL.II.H.K3	Radar assistance to visual flight rules (VFR) aircraft (e.g., operations, equipment, available services, traffic advisories).
IL.II.H.K4	Transponder (Mode(s) A, C, and S) and Automatic Dependent Surveillance-Broadcast (ADS-B).

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.H.R1	Management of automated navigation and autoflight systems.
IL.II.H.R2	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.II.H.R3	Limitations of the navigation system in use.
IL.II.H.R4	Loss of a navigation signal.
IL.II.H.R5	Use of an electronic flight bag (EFB), if used.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.H.S1	Use an airborne electronic navigation system.
IL.II.H.S2	Determine the aircraft's position using the navigation system.
IL.II.H.S3	Intercept and track a given course, radial, or bearing.
IL.II.H.S4	Recognize and describe the indication of station or waypoint passage.
IL.II.H.S5	Use proper communication procedures when utilizing radar services.
IL.II.H.S6	Maintain the appropriate altitude, ±100 feet and heading, ±10°.

Task I. Navigation and Cross-Country Flight Planning

References: 14 CFR part 91; AC 91.21-1; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; NOTAMs; Flight Manual; VFR Navigation Charts

Objective: To determine the applicant understands navigation and cross-country flight planning, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

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

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.II.I.K1	Route planning, including consideration of different classes and special use airspace (SUA) and selection of appropriate and available navigation/communication systems and facilities.
IL.II.I.K2	Altitude selection accounting for terrain and obstacles, glide distance of aircraft, visual flight rules (VFR) cruising altitudes, and effect of wind.
IL.II.I.K3	Plotting a course.
IL.II.I.K4	Power setting selection.
IL.II.I.K5	Calculating:
IL.II.I.K5a	a. Time, climb and descent rates, course, distance, heading, true airspeed, and groundspeed
IL.II.I.K5b	b. Estimated time of arrival, including conversion to universal coordinated time (UTC)
IL.II.I.K5c	c. Fuel requirements, including reserve
IL.II.I.K6	Elements of a VFR flight plan.
IL.II.I.K7	Correlate weather information to make a go/no-go decision.
IL.II.I.K8	Procedures for activating and closing a VFR flight plan.
IL.II.I.K9	Magnetic compass errors.
IL.II.I.K10	Pilotage and dead reckoning.
IL.II.I.K11	Planned calculations versus actual results and required corrections.
IL.II.I.K12	Diversion and lost procedures.
IL.II.I.K13	Inflight intercept procedures.
IL.II.I.K14	Use of an electronic flight bag (EFB), if used.
IL.II.I.K15	Chart symbols.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.II.I.R1	Pilot.
IL.II.I.R2	Aircraft.
IL.II.I.R3	Environment (e.g., weather, airports, airspace, terrain, obstacles).
IL.II.I.R4	External pressures.
IL.II.I.R5	Limitations of air traffic control (ATC) services.
IL.II.I.R6	Fuel planning.

Skills: The applicant demonstrates and simultaneously explains how to:

IL.II.I.S1	Prepare, present, and explain a cross-country flight plan assigned by the evaluator, including a risk analysis to the first fuel stop.
IL.II.I.S2	Apply pertinent information from appropriate and current aeronautical charts, Chart Supplements; Notices to Air Missions (NOTAMs) relative to airport, runway and taxiway closures; and other flight publications.
IL.II.I.S3	Create a navigation plan and simulate filing a VFR flight plan.
IL.II.I.S4	Recalculate fuel reserves based on a scenario provided by the evaluator.

Task J. 14 CFR and Publications

References: 14 CFR parts 1, 61, 91; 49 CFR part 830; AIM; Chart Supplements; FAA-H-8083-9, FAA-H-8083-25; Flight Manual

Objective: To determine the applicant understands the Code of Federal Regulations and other relevant publications, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.J.K1	14 CFR parts 1, 61, and 91.
IL.II.J.K2	49 CFR part 830.
IL.II.J.K3	Advisory Circulars, INFOs and SAFOs.
IL.II.J.K4	Airman Certification Standards or Practical Test Standards.
IL.II.J.K5	Flight manuals.
IL.II.J.K6	Aeronautical Information Manual (AIM).

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.J.R1	Use of expired charts, manuals, or publications without current updates.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.J.S1	Teach at least one of the elements listed in K1 through K6.

Task K. Endorsements and Logbook Entries

References: 14 CFR part 61; AC 61-65, FAA-H-8083-9

Objective: To determine the applicant understands logbook entries and endorsements, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.K.K1	Required logbook entries for instruction given.
IL.II.K.K2	Required student pilot pre-solo knowledge test, solo endorsements, and logbook entries.
IL.II.K.K3	Other required pilot logbook endorsements (e.g., Class B Airspace, Special Federal Aviation Regulation (SFAR)).
IL.II.K.K4	Preparation of a recommendation for a pilot practical test, including appropriate logbook entry and relevant certificate/rating application for:
IL.II.K.K4a	a. Initial pilot certification
IL.II.K.K4b	b. Additional pilot certification
IL.II.K.K4c	c. Additional aircraft qualification
IL.II.K.K5	Endorsement of a pilot logbook for the satisfactory completion of an FAA flight review.
IL.II.K.K6	Required flight instructor records.
IL.II.K.K7	Flight instructor renewal and reinstatement requirements.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IL.II.K.R1	Endorsements without appropriate limitations or expiration dates.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.K.S1	Describe and prepare logbook entries/endorsements required for at least two of the events specified in the elements or sub-elements of K1 through K5.

Task L. Night Operations

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-15, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands night operations, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.L.K1	Physiological aspects of vision related to night flying.
IL.II.L.K2	Lighting systems identifying airports/heliports/helipads/landing areas, runways, taxiways and obstructions, as well as pilot controlled lighting.
IL.II.L.K3	Required aircraft equipment and lighting for night operations.
IL.II.L.K4	Personal equipment essential for night flight.
IL.II.L.K5	Night orientation, navigation, chart reading techniques and methods for maintaining night vision effectiveness.
IL.II.L.K6	Use of instruments to verify the aircraft attitude at night.
IL.II.L.K7	Interpretation of traffic position and direction based solely on position lights.
IL.II.L.K8	Visual illusions at night.
IL.II.L.K9	Night taxi operations.
IL.II.L.K10	Appropriate use of automation, if applicable.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.L.R1	Inoperative equipment.
IL.II.L.R2	Weather considerations specific to night operations.
IL.II.L.R3	Collision hazards.
IL.II.L.R4	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.II.L.R5	Effect of visual illusions and night adaptation during all phases of night flying.
IL.II.L.R6	Runway incursion.
IL.II.L.R7	Night currency versus proficiency.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.L.S1	Teach at least one of the elements listed in K1 through K10.

Task M. High Altitude Operations - Supplemental Oxygen

References: 14 CFR part 91; AC 61-107; AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with flight at higher altitudes where supplemental oxygen is required or recommended, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.M.K1	Regulatory requirements for supplemental oxygen use by flight crew and passengers.
IL.II.M.K2	Physiological factors, including:
IL.II.M.K2a	a. Impairment
IL.II.M.K2b	b. Symptoms of hypoxia
IL.II.M.K2c	c. Time of useful consciousness (TUC)
IL.II.M.K3	Operational factors, including:
IL.II.M.K3a	a. Characteristics, limitations, and applicability of continuous flow, demand, and pressure-demand oxygen systems
IL.II.M.K3b	b. Differences between and identification of “aviator’s breathing oxygen” and other types of oxygen
IL.II.M.K3c	c. Precautions when using supplemental oxygen systems

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.M.R1	High altitude flight.
IL.II.M.R2	Use of supplemental oxygen.
IL.II.M.R3	Management of compressed gas containers.
IL.II.M.R4	Combustion hazards in an oxygen-rich environment.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.M.S1	Provide an adequate briefing on use of supplemental oxygen equipment.
IL.II.M.S2	Operate or simulate operation of the installed or portable oxygen equipment in the aircraft, if installed or available.
IL.II.M.S3	Determine the quantity of supplemental oxygen required in a scenario given by the evaluator.

Task N. High Altitude Operations - Pressurization

References: AC 61-107; AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands flight in pressurized aircraft at high altitudes, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.II.N.K1	Fundamental concepts of aircraft pressurization system, including failure modes.
IL.II.N.K2	Physiological factors, including:
IL.II.N.K2a	a. Impairment
IL.II.N.K2b	b. Symptoms of hypoxia
IL.II.N.K2c	c. Time of useful consciousness (TUC)
IL.II.N.K2d	d. Effects of rapid decompression on crew and passengers
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.II.N.R1	High altitude flight.
IL.II.N.R2	Malfunction of pressurization system, if equipment is installed.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.II.N.S1	Operate the pressurization system, if equipment is installed.
IL.II.N.S2	Respond appropriately to simulated pressurization malfunctions, if equipment is installed.

Area of Operation III. Preflight Preparation

Note: *The evaluator must select at least one Task from this Area of Operation.*

Task A. Pilot Qualifications

References: 14 CFR parts 61, 68, 91; AC 60-28, AC 68-1; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands pilot training and qualification requirements for different levels of pilot certificate including student pilot, private pilot, commercial pilot, and flight instructor; can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.III.A.K1	Certification, currency, and recordkeeping requirements, including training and logbook entries.
IL.III.A.K2	Privileges and limitations of pilot certificates and ratings at student pilot, private, commercial, and flight instructor levels.
IL.III.A.K3	Medical certificates: class, expiration, privileges, temporary disqualifications, and operations under BasicMed.
IL.III.A.K4	Documents pilots must possess to exercise privileges of the specified certificate(s) and rating(s).
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.III.A.R1	Flying unfamiliar aircraft or operating with unfamiliar flight display systems and avionics.
IL.III.A.R2	Proficiency versus currency.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.III.A.S1	Deliver instruction on at least two of the elements specified in K1 through K4.

Task B. Airworthiness Requirements

References: 14 CFR parts 21, 39, 43, 91; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands airworthiness requirements, including aircraft certificates, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.III.B.K1	General airworthiness requirements and compliance for aircraft, including:
IL.III.B.K1a	a. Location and expiration dates of required aircraft certificates
IL.III.B.K1b	b. Required inspections and aircraft logbook documentation
IL.III.B.K1c	c. Airworthiness Directives and Special Airworthiness Information Bulletins
IL.III.B.K1d	d. Purpose and procedure for obtaining a special flight permit
IL.III.B.K2	Pilot-performed preventive maintenance.
IL.III.B.K3	Equipment requirements for day and night VFR flight, including:
IL.III.B.K3a	a. Flying with inoperative equipment
IL.III.B.K3b	b. Using an approved Minimum Equipment List (MEL)
IL.III.B.K3c	c. Kinds of Operation Equipment List (KOL)
IL.III.B.K3d	d. Required discrepancy records or placards
IL.III.B.K4	Standard and special airworthiness certificates and their associated operational limitations.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.III.B.R1	Inoperative equipment discovered prior to flight.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.III.B.S1	Locate and describe aircraft airworthiness and registration information.
IL.III.B.S2	Determine the aircraft is airworthy in the scenario given by the evaluator.
IL.III.B.S3	Apply appropriate procedures for operating with inoperative equipment in a scenario given by the evaluator.

Task C. Weather Information

References: 14 CFR part 91; AC 00-6, AC 00-45, AC 00-54, AC 91-92; AIM; FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands weather information, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

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

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

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.III.C.K1	Sources of weather data (e.g., National Weather Service, Flight Service) for flight planning purposes.
IL.III.C.K2	Acceptable weather products and resources required for preflight planning, current and forecast weather for departure, en route, and arrival phases of flight such as:
IL.III.C.K2a	a. Aviation routine weather reports (METARs) and pilot reports (PIREPs)
IL.III.C.K2b	b. Terminal aerodrome forecasts (TAFs) and graphical forecasts for aviation (GFAs)
IL.III.C.K2c	c. Inflight weather advisories including Airman's Meteorological Information (AIRMET) and Significant Meteorological Information (SIGMET)
IL.III.C.K2d	d. Wind and temperature aloft forecast (FB)
IL.III.C.K2e	e. Surface analysis and weather depiction charts
IL.III.C.K2f	f. Significant weather prognostic charts
IL.III.C.K2g	g. Thunderstorm watches, warnings, and convective activity forecast charts
IL.III.C.K3	Meteorology applicable to the departure, en route, alternate, and destination under visual flight rules (VFR) in Visual Meteorological Conditions (VM*C), including expected climate and hazardous conditions such as:
IL.III.C.K3a	a. Atmospheric composition and stability
IL.III.C.K3b	b. Wind (e.g., windshear, mountain wave, factors affecting wind, etc.)
IL.III.C.K3c	c. Temperature and heat exchange
IL.III.C.K3d	d. Moisture/precipitation
IL.III.C.K3e	e. Weather system formation, including air masses and fronts
IL.III.C.K3f	f. Clouds
IL.III.C.K3g	g. Turbulence
IL.III.C.K3h	h. Thunderstorms and microbursts
IL.III.C.K3i	i. Icing and freezing level information
IL.III.C.K3j	j. Fog/mist
IL.III.C.K3k	k. Frost
IL.III.C.K3l	l. Obstructions to visibility (e.g., smoke, haze, volcanic ash, etc.)
IL.III.C.K4	Flight deck instrument displays of digital weather and aeronautical information.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:

IL.III.C.R3	Making the go/no-go and continue/divert decisions, including:
IL.III.C.R3a	a. Circumstances that would make diversion prudent
IL.III.C.R3b	b. Personal weather minimums
IL.III.C.R3c	c. Hazardous weather conditions, including known or forecast icing or turbulence aloft
IL.III.C.R2	Use and limitations of:
IL.III.C.R2a	a. Installed onboard weather equipment
IL.III.C.R2b	b. Aviation weather reports and forecasts
IL.III.C.R2c	c. Inflight weather resources

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.III.C.S1	Use available aviation weather resources to obtain an adequate weather briefing.
IL.III.C.S2	Analyze the implications of at least three of the conditions listed in K3a through K3l, using actual weather or weather conditions provided by the evaluator.
IL.III.C.S3	Correlate weather information to make a go/no-go decision.

Area of Operation IV. Preflight Lesson on a Maneuver to be Performed in Flight

Note: *The evaluator asks the applicant to present a preflight lesson on the selected maneuver as the lesson would be taught to a student and determines the outcome of this Task before the flight portion of the practical test.*

Task A. Maneuver Lesson

References: FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands the elements associated with a maneuver Task selected from Area of Operation VII (Hovering Maneuvers) through Area of Operation XV (Special Operations) and applies that knowledge when delivering ground instruction. Previously developed lesson plans from the instructor applicant's library may be used.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.IV.A.K1	Purpose of the maneuver.
IL.IV.A.K2	Elements of the maneuver and the associated common errors.
IL.IV.A.K3	Desired outcome(s), including completion standards.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.IV.A.R1	The selected maneuver Task.
Skills:	The applicant exhibits the skill to:
IL.IV.A.S1	Deliver instruction on the selected maneuver using a lesson plan, teaching methods, and teaching aids, as appropriate, that incorporate K1 through K3.

Area of Operation V. Preflight Procedures

Note: *The evaluator must select at least one Task from this Area of Operation.*

Task A. Preflight Assessment

References: AC 00-6; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands preflight assessment, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.V.A.K1	Pilot self-assessment.
IL.V.A.K2	Determining that the aircraft to be used is airworthy.
IL.V.A.K3	Aircraft preflight inspection, including:
IL.V.A.K3a	a. Which items should be inspected
IL.V.A.K3b	b. The reasons for checking each item
IL.V.A.K3c	c. How to detect possible defects
IL.V.A.K3d	d. The associated regulations
IL.V.A.K4	Environmental factors, including weather, terrain, route selection, and obstructions.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.V.A.R1	Pilot.
IL.V.A.R2	Aircraft.
IL.V.A.R3	Environment (e.g., weather, icing, airports/heliports/helipads/landing areas, airspace, terrain, obstacles).
IL.V.A.R4	External pressures.
IL.V.A.R5	Aviation security concerns.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.V.A.S1	Inspect the aircraft with reference to an appropriate checklist.
IL.V.A.S2	Verify the aircraft is in condition for safe flight and conforms to its type design.
IL.V.A.S3	Perform self-assessment.
IL.V.A.S4	Continue to assess the environment for safe flight.

Task B. Flight Deck Management

References: 14 CFR part 91; AC 120-71; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands flight deck management, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.V.B.K1	Passenger briefing requirements, including operation and required use of safety restraint systems.
IL.V.B.K2	Use of appropriate checklists.
IL.V.B.K3	Requirements for current and appropriate navigation data.
IL.V.B.K4	Securing items and cargo.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.V.B.R1	Use of systems or equipment, including automation and portable electronic devices.
IL.V.B.R2	Inoperative equipment.
IL.V.B.R3	Passenger distractions.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.V.B.S1	Secure all items in the aircraft.
IL.V.B.S2	Conduct an appropriate passenger briefing, including identifying the pilot-in-command (PIC), use of safety belts, shoulder harnesses, doors, sterile aircraft, passenger conduct and avoidance of rotor or air induction systems, powerplants, and other heat sources, and emergency procedures.
IL.V.B.S3	Properly program and manage the aircraft's automation, as applicable.
IL.V.B.S4	Appropriately manage risks by utilizing ADM, including SRM/CRM.

Task C. Powerplant Starting

References: FAA-H-8083-2,FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands powerplant starting procedures, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.V.C.K1	Starting under various conditions.
IL.V.C.K2	Starting procedures, including the use of external power if applicable.
IL.V.C.K3	Limitations associated with starting.
IL.V.C.K4	Conditions leading to and procedures for an aborted start.
Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IL.V.C.R1	Use of external power unit.
IL.V.C.R2	Limitations during starting.
IL.V.C.R3	Other hazards specific to the powered-lift make and model.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.V.C.S1	Position the aircraft properly considering structures, other aircraft, wind, and the safety of nearby persons and property.
IL.V.C.S2	Complete the appropriate checklist(s).
IL.V.C.S3	Position the primary flight controls, including the thrust vector, for the prevailing environmental conditions.
IL.V.C.S4	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

Task D. Ground Taxiing

References: AC 91-73; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands ground taxi operations in a wheel-type aircraft, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.V.D.K1	Current airport aeronautical references and information resources such as the Chart Supplement, airport diagram, and Notices to Air Missions (NOTAMs).
IL.V.D.K2	Taxi instructions/clearances.
IL.V.D.K3	Airport/heliport/helipad/landing area, signs, markings, and lighting.
IL.V.D.K4	Visual indicators for wind.
IL.V.D.K5	Aircraft lighting, as appropriate.
IL.V.D.K6	Procedures for:
IL.V.D.K6a	a. Appropriate flight deck activities prior to taxi, including route planning and identifying the location of Hot Spots
IL.V.D.K6b	b. Aircraft configuration
IL.V.D.K6c	c. Radio communications at towered and non-towered airports/heliports/helipads/landing areas
IL.V.D.K6d	d. Entering or crossing runways
IL.V.D.K6e	e. Night taxi operations
IL.V.D.K6f	f. Taxi limitations
IL.V.D.K7	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.V.D.R1	Activities and distractions.
IL.V.D.R2	Confirmation or expectation bias as related to taxi instructions.
IL.V.D.R3	A taxi route or departure runway change.
IL.V.D.R4	Speed during taxi and turns.
IL.V.D.R5	Appropriate thrust vector and brake use.
IL.V.D.R6	Airframe and rotor clearances during taxi.
IL.V.D.R7	Runway incursion.
IL.V.D.R8	Other hazards specific to the powered-lift make and model.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.V.D.S1	Receive and correctly read back clearances/instructions, if applicable.
IL.V.D.S2	Use an appropriate airport/heliport diagram or taxi chart, if published.
IL.V.D.S3	Position the flight controls and configure the aircraft for the existing wind conditions.

IL.V.D.S4	Complete the appropriate checklist(s).
IL.V.D.S5	Comply with airport/heliport/helipad/landing area taxiway markings, signals, and air traffic control (ATC) clearances and instructions.
IL.V.D.S6	Position the aircraft relative to hold lines or a specified point.
IL.V.D.S7	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.V.D.S8	Maintain positive control of the aircraft during ground operations by controlling direction and speed without excessive use of brakes.
IL.V.D.S9	Analyze and correct common errors related to this Task.

Task E. Before Takeoff Check

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands before takeoff checks, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.V.E.K1	Purpose of before takeoff checklist items, including:
IL.V.E.K1a	a. Reasons for checking each item
IL.V.E.K1b	b. Detecting malfunctions
IL.V.E.K1c	c. Configuring the aircraft as recommended by the manufacturer

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IL.V.E.R1	Division of attention while conducting before takeoff checks.
IL.V.E.R2	Unexpected runway changes.
IL.V.E.R3	Unexpected or unclear clearances from ATC.
IL.V.E.R4	Wake turbulence.
IL.V.E.R5	Downwash.
IL.V.E.R6	Potential powerplant failure during takeoff or other malfunction considering operational factors such as aircraft characteristics, runway/takeoff path length, surface conditions, environmental conditions, and obstructions.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.V.E.S1	Review takeoff performance.
IL.V.E.S2	Select the appropriate takeoff profile for aircraft and environmental conditions.
IL.V.E.S3	Complete the appropriate checklist(s).
IL.V.E.S4	Properly position the aircraft considering other aircraft, vessels, and wind.
IL.V.E.S5	Divide attention inside and outside the aircraft.
IL.V.E.S6	Verify that powerplant parameters and aircraft configuration are suitable for the takeoff profile.
IL.V.E.S7	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

Area of Operation VI. Airport and Heliport Operations

Task A. Runway/Taxiway/Heliport/Helipad Signs, Markings, and Lighting

References: 14 CFR part 91; AIM; FAA-H-8083-25, FAA-H-8083-9, FAA-H-8083-33

Objective: To determine the applicant understands airport/runway/ taxiway/heliport/helipad signs, markings, and lighting, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VI.A.K1	Airport runway, heliport, helipad, taxiway signs, markings, and lighting.
IL.VI.A.K2	Airport movement area.
IL.VI.A.K3	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VI.A.R1	Interpretation of signs, markings, or lighting.
IL.VI.A.R2	Landing site dimensions and limitations.
IL.VI.A.R3	Conflict with aircraft, vehicles, and persons.
IL.VI.A.R4	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.VI.A.R5	Powered-lift configuration, including the effect of thrust on other aircraft.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VI.A.S1	Comply with airport/heliport/helipad signs, markings, and lighting encountered, as applicable to the aircraft provided for the practical test.
IL.VI.A.S2	Analyze and correct common errors related to this Task.

Task B. Communications, Light Signals, and Runway Lighting Systems

References: 14 CFR part 91; AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands communications and ATC light signals, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VI.B.K1	How to obtain appropriate radio frequencies.
IL.VI.B.K2	Proper radio communication procedures and air traffic control (ATC) phraseology.
IL.VI.B.K3	ATC light signal recognition.
IL.VI.B.K4	Appropriate use of transponder(s).
IL.VI.B.K5	Lost communication procedures.
IL.VI.B.K6	Equipment issues that could cause loss of communication.
IL.VI.B.K7	Radar assistance.
IL.VI.B.K8	Runway Status Lighting Systems.
IL.VI.B.K9	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VI.B.R1	Communication.
IL.VI.B.R2	Deciding if and when to declare an emergency.
IL.VI.B.R3	Use of non-standard phraseology.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VI.B.S1	Select and activate appropriate frequencies.
IL.VI.B.S2	Transmit using standard phraseology and procedures as specified in the aeronautical information manual (AIM) and Pilot/Controller Glossary.
IL.VI.B.S3	Acknowledge radio communications and comply with ATC instructions or as directed by the evaluator.
IL.VI.B.S4	Analyze and correct common errors related to this Task.

Task C. Traffic Patterns

References: 14 CFR part 91; AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-25, FAA-H-8083-33

Objective: To determine the applicant understands traffic patterns, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VI.C.K1	Towered and nontowered airport/heliport/helipad/landing area operations and restrictions.
IL.VI.C.K2	Runway selection and traffic pattern parameters for the current conditions.
IL.VI.C.K3	Right-of-way rules.
IL.VI.C.K4	Use of automated weather and airport/heliport information.
IL.VI.C.K5	Aircraft configuration and selection for the traffic pattern in use.
IL.VI.C.K6	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VI.C.R1	Collision hazards.
IL.VI.C.R2	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.VI.C.R3	Windshear and wake turbulence.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VI.C.S1	Identify and interpret airport/heliport/helipad/landing area runways, taxiways, markings, signs, and lighting.
IL.VI.C.S2	Comply with recommended traffic pattern procedures.
IL.VI.C.S3	Correct for wind drift to maintain the proper ground track.
IL.VI.C.S4	Maintain orientation with the runway/landing area in use, as applicable.
IL.VI.C.S5	Maintain traffic pattern altitude, ±100 feet, and the appropriate airspeed, ±10 knots.
IL.VI.C.S6	Maintain situational awareness and proper spacing from other aircraft in the traffic pattern.
IL.VI.C.S7	Position the primary flight controls, including the thrust vector, for the prevailing environmental conditions.
IL.VI.C.S8	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VI.C.S9	Analyze and correct common errors related to this Task.

Area of Operation VII. Hovering Maneuvers

Task A. Vertical Takeoff and Landing

References: 14 CFR part 91; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands vertical takeoff and landing from a hover, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VII.A.K1	Elements related to a vertical takeoff to a hover and landing from a hover.
IL.VII.A.K2	Appropriate aircraft configuration for a stationary hover.
IL.VII.A.K3	Effect of wind on flight control inputs.
IL.VII.A.K4	Ground effect.
IL.VII.A.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VII.A.R1	Obstacle and hazard avoidance.
IL.VII.A.R2	Dynamic rollover.
IL.VII.A.R3	Powerplant failure during hover.
IL.VII.A.R4	Downwash.
IL.VII.A.R5	Ground resonance.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VII.A.S1	Complete the appropriate checklist(s).
IL.VII.A.S2	Comply with ATC or evaluator instructions and make radio calls as appropriate.
IL.VII.A.S3	Position the primary flight controls, including the thrust vector, for the prevailing environmental conditions.
IL.VII.A.S4	Ascend to and maintain recommended hovering altitude, and descend from recommended hovering altitude in headwind, crosswind, and tailwind conditions, without drift.
IL.VII.A.S5	Maintain recommended hovering altitude, ±1/2 of that altitude within 10 feet of the surface, if above 10 feet, ±5 feet.
IL.VII.A.S6	Maintain position within ±2 feet of a designated point.
IL.VII.A.S7	Descend vertically to within 2 feet of the designated touchdown point.
IL.VII.A.S8	Maintain headings ±10°, as specified by the evaluator.
IL.VII.A.S9	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VII.A.S10	Analyze and correct common errors related to this Task.

Task B. Hover Taxi

References: AC 91-73; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands hover taxi operations, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VII.B.K1	Current airport aeronautical references and information resources such as the Chart Supplement, airport diagram, and Notices to Air Missions (NOTAMs).
IL.VII.B.K2	Hover taxi instructions, clearances, and limitations.
IL.VII.B.K3	Airport/heliport/helipad/landing area, signs, markings, and lighting.
IL.VII.B.K4	Visual indicators for wind.
IL.VII.B.K5	Aircraft lighting, as appropriate.
IL.VII.B.K6	Procedures for:
IL.VII.B.K6a	a. Pilot activities during taxiing
IL.VII.B.K6b	b. Safe hover taxi at towered and non-towered airports/heliports/helipads/landing areas
IL.VII.B.K6c	c. Entering or crossing runways
IL.VII.B.K7	Aircraft configuration.
IL.VII.B.K8	Aircraft operating limitations.
IL.VII.B.K9	Common errors related to this Task.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IL.VII.B.R1	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.VII.B.R2	Reduced visibility or night taxi operations.
IL.VII.B.R3	Powerplant(s) failure during hover taxi.
IL.VII.B.R4	Other aircraft and hazards.
IL.VII.B.R5	Hazardous effects of downwash.
IL.VII.B.R6	Aircraft configuration.
IL.VII.B.R7	Height/Velocity (H/V) considerations.
IL.VII.B.R9	Crosswind limitations.
IL.VII.B.R10	Other hazards specific to the powered-lift make and model.
IL.VII.B.R11	Runway incursion.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VII.B.S1	Complete the appropriate checklist(s).
IL.VII.B.S2	Receive and correctly read back clearances/instructions, if applicable.
IL.VII.B.S3	Use an airport diagram or taxi chart during taxi, if published, and maintain situational awareness.

IL.VII.B.S4	Comply with airport/heliport taxiway markings, signals, and signs.
IL.VII.B.S5	Position the primary flight controls, including the thrust vector, for the prevailing environmental conditions.
IL.VII.B.S6	Hover taxi over specified ground references, demonstrating forward, sideward, and rearward hovering and hovering turns.
IL.VII.B.S7	Maintain recommended hovering altitude, ±1/2 of that altitude within 10 feet of the surface, if above 10 feet, ±5 feet.
IL.VII.B.S8	Make 90°, 180°, and 360° pivoting turns, stopping within 10° of specified headings.
IL.VII.B.S9	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VII.B.S10	Analyze and correct common errors related to this Task.

Task C. Air Taxi

References: AC 91-73; AIM; Chart Supplements; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands air taxi operations, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VII.C.K1	Current airport aeronautical references and information resources such as the Chart Supplement, airport diagram, and Notices to Air Missions (NOTAMs).
IL.VII.C.K2	Air taxi instructions, clearances, and limitations.
IL.VII.C.K3	Aircraft configuration.
IL.VII.C.K4	Airport/heliport/helipad/landing area, signs, markings, and lighting.
IL.VII.C.K5	Visual indicators for wind.
IL.VII.C.K6	Aircraft lighting, as appropriate.
IL.VII.C.K7	Procedures for:
IL.VII.C.K7a	a. Pilot activities during taxiing
IL.VII.C.K7b	b. Safe air taxi at towered and non-towered airports/heliports/helipads/landing areas
IL.VII.C.K7c	c. Overflying of runways
IL.VII.C.K8	Aircraft operating limitations.
IL.VII.C.K9	Height/Velocity (H/V) considerations.
IL.VII.C.K10	Appropriate height and speed for air taxi.
IL.VII.C.K11	Common errors related to this Task.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IL.VII.C.R1	Activities and distractions.
IL.VII.C.R2	Reduced visibility or night taxi operations.
IL.VII.C.R3	H/V diagram performance in case of powerplant failure.
IL.VII.C.R4	Other aircraft and hazards.
IL.VII.C.R5	Runway incursion.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VII.C.S1	Complete the appropriate checklist(s).
IL.VII.C.S2	Use an airport diagram or taxi chart during taxi, if published, and maintain situational awareness.
IL.VII.C.S3	Select a safe airspeed and altitude.
IL.VII.C.S4	Maintain an appropriate aircraft configuration throughout the maneuver.
IL.VII.C.S5	Maintain specified altitude, ±10 feet.
IL.VII.C.S6	Air taxi from one point to another under various wind conditions.

IL.VII.C.S7	Maintain the aircraft within operating limits throughout the maneuver.
IL.VII.C.S8	Comply with airport/heliport/helipad/landing area markings, lights, signs, and ATC instructions.
IL.VII.C.S9	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VII.C.S10	Analyze and correct common errors related to this Task.

Area of Operation VIII. Takeoffs, Landings, and Go-Arounds

Note: *The evaluator must assess at least Tasks A, B, D, E, G, H, and one additional Task.*

Task A. Normal Takeoff and Climb from a Hover

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands takeoff and climb from a hover, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *If a crosswind condition does not exist, the applicant's knowledge of crosswind elements must be evaluated through oral testing.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VIII.A.K1	Effects of atmospheric conditions, including wind, on takeoff and climb performance.
IL.VIII.A.K2	Recommended takeoff and climb profiles.
IL.VIII.A.K3	Aircraft configuration.
IL.VIII.A.K4	Factors affecting the profile of the height/velocity (H/V) diagram.
IL.VIII.A.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VIII.A.R1	Selection of helipad/deck, runway, or departure point based on aircraft performance and limitations, available distance, and wind.
IL.VIII.A.R2	Effects of:
IL.VIII.A.R2a	a. Crosswind
IL.VIII.A.R2b	b. Windshear
IL.VIII.A.R2c	c. Tailwind
IL.VIII.A.R2d	d. Wake turbulence
IL.VIII.A.R2e	e. Runway/departure point surface/condition
IL.VIII.A.R2f	f. Aircraft weight
IL.VIII.A.R3	Abnormal operations including:
IL.VIII.A.R3a	a. Rejected takeoff
IL.VIII.A.R3b	b. Powerplant failure in hover/takeoff/climb phase of flight
IL.VIII.A.R4	Collision hazards.
IL.VIII.A.R5	Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
IL.VIII.A.R6	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.VIII.A.R7	Runway incursion.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VIII.A.S1	Complete the appropriate checklist(s).
IL.VIII.A.S2	Make radio calls as appropriate.

IL.VIII.A.S3	Verify assigned/correct runway, if at an airport.
IL.VIII.A.S4	Determine wind direction with or without visible wind direction indicators.
IL.VIII.A.S5	Position the flight controls and configure the aircraft for the existing wind conditions.
IL.VIII.A.S6	Clear the area, ground or hover taxi into takeoff position and hover the aircraft above the departure point, aligned with the departure path.
IL.VIII.A.S7	Confirm takeoff power and instrument indications prior to forward movement.
IL.VIII.A.S8	Takeoff and accelerate to the manufacturer's recommended speed.
IL.VIII.A.S9	After takeoff, establish and maintain a positive rate of climb and configure aircraft, as appropriate.
IL.VIII.A.S10	Maintain the aircraft within operating limits throughout the maneuver.
IL.VIII.A.S11	Maintain V_Y ±5 knots to a safe maneuvering altitude.
IL.VIII.A.S12	Maintain directional control and proper wind-drift correction throughout takeoff and climb.
IL.VIII.A.S13	Comply with noise abatement procedures, as applicable.
IL.VIII.A.S14	Analyze and correct common errors related to this Task.

Task B. Rolling Takeoff and Climb

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands rolling takeoff with wheel-type landing gear, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *If a crosswind condition does not exist, the applicant's knowledge of crosswind elements must be evaluated through oral testing.*

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.VIII.B.K1 Elements related to a rolling takeoff and the purpose of the maneuver.

IL.VIII.B.K2 Aircraft configurations.

IL.VIII.B.K3 Effects of wind, weight, temperature, and density altitude.

IL.VIII.B.K4 Translational lift.

IL.VIII.B.K5 Takeoff and climb performance and the height velocity (H/V) diagram.

IL.VIII.B.K6 Aircraft performance and limitations.

IL.VIII.B.K7 Common errors related to this Task.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.VIII.B.R1 Collision hazards.

IL.VIII.B.R2 Powerplant failure during rolling takeoff and climb out.

IL.VIII.B.R3 Aircraft configuration.

IL.VIII.B.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.

IL.VIII.B.R5 Effects of:

IL.VIII.B.R5a a. Crosswind

IL.VIII.B.R5b b. Windshear

IL.VIII.B.R5c c. Tailwind

IL.VIII.B.R5d d. Wake turbulence

IL.VIII.B.R5e e. Runway/departure point surface/condition

IL.VIII.B.R5f f. Aircraft weight

IL.VIII.B.R6 Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).

Skills: The applicant demonstrates and simultaneously explains how to:

IL.VIII.B.S1 Comply with air traffic control (ATC) or evaluator instructions and make radio calls as appropriate.

IL.VIII.B.S2 Complete the appropriate checklist(s).

IL.VIII.B.S3 Configure the aircraft correctly regarding environmental conditions and aircraft loading.

IL.VIII.B.S4 Maintain the aircraft within operating limits throughout the maneuver.

IL.VIII.B.S5 Maintain proper ground track with crosswind correction, if necessary.

IL.VIII.B.S6 Maintain a positive rate of climb.

IL.VIII.B.S7 Transition to recommended climb airspeed ±5 knots.

IL.VIII.B.S8 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

IL.VIII.B.S9 Analyze and correct common errors related to this Task.

Task C. Maximum Performance Takeoff and Climb

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands maximum performance takeoff and climb, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VIII.C.K1	Situations where this maneuver is appropriate.
IL.VIII.C.K2	Effects of atmospheric conditions, including wind and temperature, on takeoff and climb performance.
IL.VIII.C.K3	Factors affecting the profile of the height/velocity (H/V) diagram.
IL.VIII.C.K4	Appropriate aircraft configuration, takeoff, and climb profiles.
IL.VIII.C.K5	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VIII.C.R1	Selection of takeoff path based on aircraft performance and limitations, available distance, and wind.
IL.VIII.C.R2	Effects of:
IL.VIII.C.R2a	a. Crosswind
IL.VIII.C.R2b	b. Windshear
IL.VIII.C.R2c	c. Tailwind
IL.VIII.C.R2d	d. Low level turbulence
IL.VIII.C.R2e	e. Surface conditions
IL.VIII.C.R3	Abnormal operations including:
IL.VIII.C.R3a	a. Rejected takeoff
IL.VIII.C.R3b	b. Powerplant failure in takeoff/climb phase of flight
IL.VIII.C.R4	Collision hazards.
IL.VIII.C.R5	Low altitude maneuvering, including controlled flight into terrain (CFIT).
IL.VIII.C.R6	Distractions, task prioritization, loss of situational awareness, or disorientation.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VIII.C.S1	Complete the appropriate checklist(s).
IL.VIII.C.S2	Make radio calls as appropriate.
IL.VIII.C.S3	Determine wind direction with or without visible wind direction indicators.
IL.VIII.C.S4	Position the flight controls and configure the aircraft for the existing wind conditions.
IL.VIII.C.S5	Clear the area, taxi into takeoff position utilizing maximum available takeoff area and align the aircraft on the takeoff path.
IL.VIII.C.S6	Confirm takeoff power and proper powerplant and flight instrument indications prior to takeoff.
IL.VIII.C.S7	Establish and maintain the most efficient lift-off attitude/configuration for obstacle clearance.

IL.VIII.C.S8 Maintain the recommended airspeed and aircraft configuration until the obstacle is cleared.

IL.VIII.C.S9 After clearing the obstacle, establish pitch attitude and aircraft configuration for V_Y and accelerate to and maintain V_Y ±5 knots during the climb.

IL.VIII.C.S10 Reconfigure the aircraft after a positive rate of climb has been verified or in accordance with the aircraft manufacturer's guidance.

IL.VIII.C.S11 Maintain directional control and proper wind-drift correction throughout takeoff and climb.

IL.VIII.C.S12 Comply with noise abatement procedures.

IL.VIII.C.S13 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

IL.VIII.C.S14 Analyze and correct common errors related to this Task.

Task D. Normal Approach to a Hover

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands normal approach profile to a hover, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VIII.D.K1	Types of approaches and applicability.
IL.VIII.D.K2	Performance data and the height velocity (H/V) diagram.
IL.VIII.D.K3	Effects of atmospheric conditions, including wind and density altitude, on approach and hover performance.
IL.VIII.D.K4	Wind correction techniques on approach and hover.
IL.VIII.D.K5	Aircraft configurations for the approach and hover.
IL.VIII.D.K6	Aircraft performance and limitations.
IL.VIII.D.K7	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VIII.D.R1	Selection of runway/helipad/touchdown point based on aircraft performance and limitations, available distance, and wind.
IL.VIII.D.R2	Effects of:
IL.VIII.D.R2a	a. Crosswind
IL.VIII.D.R2b	b. Windshear
IL.VIII.D.R2c	c. Tailwind
IL.VIII.D.R2d	d. Wake turbulence
IL.VIII.D.R2e	e. Vortex ring state (VRS)
IL.VIII.D.R2f	f. Runway/arrival point surface/condition
IL.VIII.D.R3	Situations including:
IL.VIII.D.R3a	a. Rejected landing and go-around
IL.VIII.D.R3b	b. Powerplant failure during the approach
IL.VIII.D.R4	Collision hazards.
IL.VIII.D.R5	Flat light conditions.
IL.VIII.D.R6	Distractions, task prioritization, loss of situational awareness, or disorientation.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VIII.D.S1	Complete the appropriate checklist(s).
IL.VIII.D.S2	Comply with air traffic control (ATC) or evaluator instructions and make radio calls as appropriate.
IL.VIII.D.S3	Use the appropriate techniques and aircraft configurations through all stages of the approach.
IL.VIII.D.S4	Consider the wind conditions, landing surface, and obstructions and select a suitable hover point.

IL.VIII.D.S5	Maintain appropriate ground track with crosswind correction throughout the approach.
IL.VIII.D.S6	Fly a stabilized approach.
IL.VIII.D.S7	Arrive over the arrival point at a stabilized hover ±2 feet.
IL.VIII.D.S8	Execute a timely go-around for any condition that may result in an unsafe approach or landing.
IL.VIII.D.S9	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VIII.D.S10	Analyze and correct common errors related to this Task.

Task E. Normal Approach and Landing

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands normal approach and landing, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *If a crosswind condition does not exist, the applicant's knowledge of crosswind elements must be evaluated through oral testing.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VIII.E.K1	Effects of atmospheric conditions, including wind, on approach speed and angle.
IL.VIII.E.K2	Atmospheric factors affecting performance.
IL.VIII.E.K3	Use of proper conversion angle for transition to landing.
IL.VIII.E.K4	Factors affecting the profile of the height/velocity (H/V) diagram.
IL.VIII.E.K5	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VIII.E.R1	Selection of runway or takeoff path based on aircraft performance and limitations, available distance, and wind.
IL.VIII.E.R2	Effects of:
IL.VIII.E.R2a	a. Crosswind
IL.VIII.E.R2b	b. Windshear
IL.VIII.E.R2c	c. Tailwind
IL.VIII.E.R2d	d. Wake turbulence
IL.VIII.E.R2e	e. Runway/heliport/helipad surface, condition, and length
IL.VIII.E.R3	Situations including:
IL.VIII.E.R3a	a. Rejected landing and go-around
IL.VIII.E.R3b	b. Powerplant failure during the approach
IL.VIII.E.R4	Collision hazards.
IL.VIII.E.R5	Distractions, task prioritization, loss of situational awareness, or disorientation.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VIII.E.S1	Complete the appropriate checklist(s).
IL.VIII.E.S2	Comply with noise abatement procedures.
IL.VIII.E.S3	Make radio calls as appropriate.
IL.VIII.E.S4	Verify assigned/correct runway/landing point if at an airport.
IL.VIII.E.S5	Determine wind direction with or without visible wind direction indicators.
IL.VIII.E.S6	Maintain proper ground track with crosswind correction, if necessary.
IL.VIII.E.S7	Maintain a stabilized approach profile.

IL.VIII.E.S8	Use manufacturer's recommended technique and remain within airspeed range allowed for each configuration change.
IL.VIII.E.S9	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VIII.E.S10	Analyze and correct common errors related to this Task.

Task F. Steep Approach and Landing

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands steep approaches to an in-ground effect (IGE) hover or to the surface, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

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

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VIII.F.K1	A stabilized steep approach.
IL.VIII.F.K2	Approach techniques and applicability.
IL.VIII.F.K3	Performance data and the height velocity (H/V) diagram.
IL.VIII.F.K4	Effects of atmospheric conditions on approach and landing performance.
IL.VIII.F.K5	Wind correction techniques.
IL.VIII.F.K6	Aircraft configuration.
IL.VIII.F.K7	Aircraft performance and limitations.
IL.VIII.F.K8	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VIII.F.R1	Selection of the approach path and landing area.
IL.VIII.F.R2	Effects of.
IL.VIII.F.R2a	a. Crosswind
IL.VIII.F.R2b	b. Windshear
IL.VIII.F.R2c	c. Tailwind
IL.VIII.F.R2d	d. Wake turbulence
IL.VIII.F.R2e	e. Vortex ring state (VRS)
IL.VIII.F.R2f	f. Landing point condition
IL.VIII.F.R3	Planning for.
IL.VIII.F.R3a	a. Rejected landing and go-around
IL.VIII.F.R3b	b. Powerplant failure during the approach
IL.VIII.F.R4	Landing in an area or in conditions where a takeoff/climb may not be possible.
IL.VIII.F.R5	Degraded Visual Environment (DVE) and flat light conditions.
IL.VIII.F.R6	Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VIII.F.S1	Complete the appropriate checklist(s).
IL.VIII.F.S2	Position the flight controls, including the thrust vector, for the prevailing environmental conditions.

IL.VIII.F.S3	Maintain awareness of aircraft performance, limitations, and relative position throughout the maneuver.
IL.VIII.F.S4	Arrive over the touchdown point on the surface ±5 feet from intended landing point or, at the discretion of the evaluator, at a stabilized hover ±5 feet height.
IL.VIII.F.S5	Maintain proper ground track with crosswind correction, if necessary.
IL.VIII.F.S6	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VIII.F.S7	Analyze and correct common errors related to this Task.

Task G. Running/Roll-On Landing

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands shallow approach and running/roll-on landing, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VIII.G.K1	H/V diagram, if applicable.
IL.VIII.G.K2	Aircraft performance and limitations.
IL.VIII.G.K3	Aircraft configuration.
IL.VIII.G.K4	Effects of atmospheric conditions, including wind, on approach and landing performance.
IL.VIII.G.K5	Wind correction techniques on approach and landing.
IL.VIII.G.K6	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VIII.G.R1	Situations including:
IL.VIII.G.R1a	a. Powerplant failure during approach
IL.VIII.G.R1b	b. Rejected landing
IL.VIII.G.R2	Effects of:
IL.VIII.G.R2a	a. Crosswind
IL.VIII.G.R2b	b. Windshear
IL.VIII.G.R2c	c. Tailwind
IL.VIII.G.R2d	d. Wake turbulence
IL.VIII.G.R2e	e. Runway surface/condition
IL.VIII.G.R3	Collision hazards.
IL.VIII.G.R4	Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
IL.VIII.G.R5	Distractions, task prioritization, loss of situational awareness, or disorientation.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VIII.G.S1	Coordinate with crew, if applicable, and complete the appropriate checklist(s), prior to takeoff.
IL.VIII.G.S2	Ensure the aircraft is correctly configured for the landing.
IL.VIII.G.S3	Comply with air traffic control (ATC) or evaluator instructions and make radio calls as appropriate.
IL.VIII.G.S4	Maintain a ground track that ensures the desired traffic pattern flown takes into consideration obstructions and air traffic control (ATC) or evaluator instructions.
IL.VIII.G.S5	Ensure the aircraft is aligned with the correct/assigned runway or landing surface.
IL.VIII.G.S6	Consider the wind conditions, aircraft performance, landing surface, obstructions, and select a suitable touchdown point.
IL.VIII.G.S7	Maintain crosswind correction and directional control throughout the approach and landing.

IL.VIII.G.S8 Make smooth, timely, and correct control application during round out and touchdown.

IL.VIII.G.S9 Touch down at the appropriate speed, aircraft configuration and pitch attitude.

IL.VIII.G.S10 On touchdown, maintain proper ground track.

IL.VIII.G.S11 After touchdown, reconfigure the aircraft for surface/hover taxi.

IL.VIII.G.S12 Execute a timely go-around for any condition that may result in an unsafe approach or landing.

IL.VIII.G.S13 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

IL.VIII.G.S14 Analyze and correct common errors related to this Task.

Task H. Go-Around/Rejected Landing

References: AIM; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands go-around/rejected landing with emphasis on factors that contribute to landing conditions that may require a go-around, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.VIII.H.K1	Situations and considerations on approach that could require a go-around/rejected landing.
IL.VIII.H.K2	Effects of atmospheric conditions on a go-around or rejected landing.
IL.VIII.H.K3	Aircraft configuration changes and techniques for the go-around.
IL.VIII.H.K4	Go-around/rejected landing procedures, the importance of a timely decision, and appropriate airspeeds for the maneuver.
IL.VIII.H.K5	Wind correction techniques.
IL.VIII.H.K6	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.VIII.H.R1	Recognition of the need for a go-around/rejected landing.
IL.VIII.H.R2	Aircraft performance.
IL.VIII.H.R3	Application of power.
IL.VIII.H.R4	Aircraft configuration.
IL.VIII.H.R5	Collision hazards.
IL.VIII.H.R6	Low altitude maneuvering, including stall or controlled flight into terrain (CFIT).
IL.VIII.H.R7	Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.VIII.H.S1	Make a timely decision to go-around/reject the landing.
IL.VIII.H.S2	Apply the appropriate power setting for the flight condition and establish an aircraft configuration necessary to obtain the desired performance.
IL.VIII.H.S3	Establish a positive rate of climb and the appropriate airspeed ±10 knots.
IL.VIII.H.S4	Configure the aircraft, as appropriate.
IL.VIII.H.S5	Maintain the ground track, heading, or course appropriate for the conditions, or as specified by air traffic control (ATC) or the evaluator.
IL.VIII.H.S6	Notify/coordinate with air traffic control (ATC) or evaluator instructions as required.
IL.VIII.H.S7	Complete the appropriate checklist(s).
IL.VIII.H.S8	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.VIII.H.S9	Analyze and correct common errors related to this Task.

Area of Operation IX. Fundamentals of Flight

Note: *The evaluator must select at least one Task from this Area of Operation.*

Task A. Straight-and-Level Flight

References: FAA-H-8083-9, FAA-H-8083-33

Objective: To determine the applicant understands straight-and-level flight, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.IX.A.K1	Basic elements of the aircraft and aerodynamics that affect the ability to maintain straight-and-level flight.
IL.IX.A.K2	Flight control and trim use, if applicable.
IL.IX.A.K3	The pilot's visual references when performing the maneuver.
IL.IX.A.K4	Integrated flight instruction.
IL.IX.A.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.IX.A.R1	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.IX.A.R2	Collision hazards.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.IX.A.S1	Establish and maintain straight-and-level flight.
IL.IX.A.S2	Analyze and correct common errors related to this Task.

Task B. Level Turns

References: FAA-H-8083-9, FAA-H-8083-33

Objective: To determine the applicant understands level turns, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.IX.B.K1	Purpose of and procedures for level turns.
IL.IX.B.K2	Flight control and trim use, if applicable.
IL.IX.B.K3	The pilot's visual references when performing the maneuver.
IL.IX.B.K4	Integrated flight instruction.
IL.IX.B.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.IX.B.R1	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.IX.B.R2	Collision hazards.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.IX.B.S1	Establish, maintain, and roll out of a level turn.
IL.IX.B.S2	Analyze and correct common errors related to this Task.

Task C. Straight Climbs and Climbing Turns

References: FAA-H-8083-9, FAA-H-8083-33

Objective: To determine the applicant understands straight climbs and climbing turns, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.IX.C.K1	Purpose of and procedures for straight climbs and climbing turns.
IL.IX.C.K2	Flight control and trim use, if applicable.
IL.IX.C.K3	The pilot's visual references when performing the maneuver.
IL.IX.C.K4	Integrated flight instruction.
IL.IX.C.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.IX.C.R1	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.IX.C.R2	Collision hazards.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.IX.C.S1	Establish, maintain, and level off from climbs and climbing turns.
IL.IX.C.S2	Analyze and correct common errors related to this Task.

Task D. Straight Descents and Descending Turns

References: FAA-H-8083-9, FAA-H-8083-33

Objective: To determine the applicant understands straight descents and descending turns, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.IX.D.K1	Purpose of and procedures for straight descents and descending turns.
IL.IX.D.K2	Flight control and trim use, if applicable.
IL.IX.D.K3	The pilot's visual references when performing the maneuver.
IL.IX.D.K4	Integrated flight instruction.
IL.IX.D.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.IX.D.R1	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.IX.D.R2	Collision hazards.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.IX.D.S1	Establish, maintain, and level off from straight descents and descending turns.
IL.IX.D.S2	Analyze and correct common errors related to this Task.

Area of Operation X. Performance Maneuvers

Task A. Rapid Deceleration/Quick Stop

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands rapid deceleration/quick stop, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.X.A.K1	Purpose of the maneuver.
IL.X.A.K2	Aircraft transmission and powerplant limitations.
IL.X.A.K3	Airspeed limitations.
IL.X.A.K4	Aircraft maximum rate deceleration rate and technique.
IL.X.A.K5	Height velocity (H/V) awareness.
IL.X.A.K6	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.X.A.R1	Gaining or losing altitude.
IL.X.A.R2	Excessive pitch attitudes.
IL.X.A.R3	Effects of wind.
IL.X.A.R4	Airframe and airspeed limitations.
IL.X.A.R5	Collision hazards.
IL.X.A.R6	Dividing attention between aircraft control and orientation.
IL.X.A.R7	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.X.A.R8	Uncoordinated flight.
IL.X.A.R9	Vortex ring state (VRS).

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.X.A.S1	Complete the appropriate checklist(s).
IL.X.A.S2	Clear the area.
IL.X.A.S3	Maintain heading throughout the maneuver, ±5°.
IL.X.A.S4	Perform a maximum performance deceleration as directed by the evaluator.
IL.X.A.S5	Select an appropriate power setting and thrust vector to allow deceleration at maximum rate.
IL.X.A.S6	Maintain coordinated flight throughout the maneuver.
IL.X.A.S7	Analyze and correct common errors related to this Task.

Task B. Inflight Transition/Conversion During Straight-and-Level Flight

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands transitioning from a vertical takeoff and landing (VTOL) configuration to wing-borne (cruise) configuration, and return to VTOL configuration and can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.X.B.K1	Procedures for changing aircraft configuration.
IL.X.B.K2	Aerodynamic effects of changing aircraft configuration.
IL.X.B.K3	Flight control operation when transitioning from VTOL configuration to wing-borne (cruise) configuration and converting to VTOL configuration while in straight-and-level flight.
IL.X.B.K4	Aircraft performance and limitation charts.
IL.X.B.K5	Factors related to weight and balance and center of gravity (CG) envelopes.
IL.X.B.K6	Common errors related to this Task.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.X.B.R1	Aircraft performance limitations.
IL.X.B.R2	Powerplant failure during transition/conversion.
IL.X.B.R3	Aerodynamic stall.
IL.X.B.R4	Effects of gross weight and CG.
IL.X.B.R5	Rapid configuration or thrust vector changes.
IL.X.B.R6	Altitude variation/vertical speed.
IL.X.B.R7	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.X.B.R8	Other hazards specific to the powered-lift make and model.

Skills: The applicant demonstrates and simultaneously explains how to:

IL.X.B.S1	Transition the aircraft from VTOL configuration to wing-borne (cruise) configuration during straight-and-level flight.
IL.X.B.S2	Convert the aircraft from wing-borne (cruise) configuration to VTOL configuration during straight-and-level flight.
IL.X.B.S3	Utilize proper control technique throughout the maneuver.
IL.X.B.S4	Maintain awareness of aircraft performance, limitations, and relative position throughout the maneuver.
IL.X.B.S5	Maintain altitude ±100 feet and specified heading ±10° throughout the operation. Achieve and maintain targeted airspeed ±10 knots.
IL.X.B.S6	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.X.B.S7	Use the appropriate checklist, if applicable.
IL.X.B.S8	Analyze and correct common errors related to this Task.

Task C. Steep Turns

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands steep turns, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.X.C.K1	Purpose of and procedures for steep turns.
IL.X.C.K2	Pilot sensations and control forces.
IL.X.C.K3	Aerodynamics associated with steep turns, including:
IL.X.C.K3a	a. Maintaining coordinated flight
IL.X.C.K3b	b. Overbanking tendencies
IL.X.C.K3c	c. Maneuvering speed, including the impact of weight changes
IL.X.C.K3d	d. Load factor and accelerated stalls
IL.X.C.K3e	e. Rate and radius of turn
IL.X.C.K4	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.X.C.R1	Dividing attention between aircraft control and orientation.
IL.X.C.R2	Collision hazards.
IL.X.C.R3	Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
IL.X.C.R4	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.X.C.R5	Uncoordinated flight.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.X.C.S1	Clear the area.
IL.X.C.S2	Establish the manufacturer's recommended airspeed; or if one is not available, an airspeed not to exceed maneuvering speed (VA).
IL.X.C.S3	Roll into a coordinated 360° steep turn as selected by the evaluator and according to the aircraft's operating limitations.
IL.X.C.S4	Perform the maneuver in the opposite direction.
IL.X.C.S5	Maintain the entry altitude ±100 feet, airspeed ±10 knots, bank ±5°, and roll out on the entry heading ±10°.
IL.X.C.S6	Analyze and correct common errors related to this Task.

Area of Operation XI. Ground Reference Maneuvers

Task A. Ground Reference Maneuvers

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands ground reference maneuvers, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *The evaluator selects at least one ground reference maneuver for the applicant to demonstrate.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XI.A.K1	Purpose of and procedures for ground reference maneuvers.
IL.XI.A.K2	Effects of wind on ground track and relation to a ground reference.
IL.XI.A.K3	Effects of bank angle and groundspeed on rate and radius of turn.
IL.XI.A.K4	Relationship of rectangular course to airport traffic pattern.
IL.XI.A.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XI.A.R1	Division of attention between aircraft control and orientation.
IL.XI.A.R2	Collision hazards.
IL.XI.A.R3	Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
IL.XI.A.R4	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.XI.A.R5	Uncoordinated flight.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XI.A.S1	Clear the area.
IL.XI.A.S2	Select a suitable ground reference area, line, or point as appropriate.
IL.XI.A.S3	Plan the maneuver:
IL.XI.A.S3a	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
IL.XI.A.S3b	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
IL.XI.A.S3c	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
IL.XI.A.S4	Apply adequate wind-drift correction during straight and turning flight to maintain a constant ground track around a rectangular reference area, or to maintain a constant radius turn on each side of a selected reference line or point.
IL.XI.A.S5	If performing S-Turns, reverse the turn directly over the selected reference line; if performing turns around a point, complete turns in either direction, as specified by the evaluator.
IL.XI.A.S6	Divide attention between aircraft control, traffic avoidance and the ground track while maintaining coordinated flight.
IL.XI.A.S7	Maintain altitude ±100 feet; maintain airspeed ±10 knots.

IL.XI.A.S8 Analyze and correct common errors related to this Task.

Area of Operation XII. Slow Flight and Stalls

Task A. Maneuvering During Slow Flight (Wing-Borne (Cruise) Configuration)

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands maneuvering during slow flight in cruise configuration, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XII.A.K1	Purpose of and procedures for proper slow flight.
IL.XII.A.K2	Aerodynamics associated with slow flight in various aircraft configurations, including the relationship between angle of attack, airspeed, load factor, power setting, aircraft weight and center of gravity, aircraft attitude, and yaw effects.
IL.XII.A.K3	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XII.A.R1	Inadvertent slow flight and flight with a stall warning, which could lead to loss of control.
IL.XII.A.R2	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
IL.XII.A.R3	Uncoordinated flight.
IL.XII.A.R4	Effect of environmental elements on aircraft performance (e.g., turbulence, microbursts, and high density altitude).
IL.XII.A.R5	Collision hazards.
IL.XII.A.R6	Distractions, task prioritization, loss of situational awareness, or disorientation.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XII.A.S1	Clear the area.
IL.XII.A.S2	Select an entry altitude that allows the Task to be completed no lower than 3,000 feet above ground level (AGL).
IL.XII.A.S3	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 a stall warning (e.g., aircraft buffet, stall horn, etc.).
IL.XII.A.S4	Accomplish coordinated straight-and-level flight, turns, climbs, and descents with the aircraft configured as specified by the evaluator without a stall warning (e.g., aircraft buffet, stall horn, etc.).
IL.XII.A.S5	Maintain the specified altitude, ±50 feet; specified heading, ±10°; airspeed, +5/-0 knots; and specified angle of bank, ±5°.
IL.XII.A.S6	Analyze and correct common errors related to this Task.

Task B. Power-Off Stalls

References: AC 61-67; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands power-off stalls, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XII.B.K1	Purpose of and procedures for power-off stalls.
IL.XII.B.K2	Aerodynamics associated with stalls in various aircraft configurations, including the relationship between angle of attack, airspeed, load factor, power setting, aircraft weight and center of gravity, aircraft attitude, and yaw effects.
IL.XII.B.K3	Stall characteristics as they relate to aircraft design, and recognition impending stall and full stall indications using sight, sound, or feel.
IL.XII.B.K4	Factors and situations that can lead to a power-off stall and actions that can be taken to prevent it.
IL.XII.B.K5	Fundamentals of stall recovery.
IL.XII.B.K6	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XII.B.R1	Factors and situations that could lead to an inadvertent power-off stall, spin, and loss of control.
IL.XII.B.R2	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
IL.XII.B.R3	Stall warning(s) during normal operations.
IL.XII.B.R4	Stall recovery procedure.
IL.XII.B.R5	Secondary and accelerated stalls.
IL.XII.B.R6	Effect of environmental elements on aircraft performance related to power-off stalls (e.g., turbulence, microbursts, and high-density altitude).
IL.XII.B.R7	Collision hazards.
IL.XII.B.R8	Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XII.B.S1	Clear the area.
IL.XII.B.S2	Select an entry altitude that allows the Task to be completed no lower than 3,000 feet AGL or as recommended by the manufacturer, whichever is higher.
IL.XII.B.S3	Configure the aircraft in the approach or landing configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
IL.XII.B.S4	Establish a stabilized descent.
IL.XII.B.S5	Transition smoothly from the approach or landing attitude to a pitch attitude that induces a stall.
IL.XII.B.S6	Maintain a specified heading, ±10° if in straight flight; maintain a specified angle of bank not to exceed 20°, ±5°, if in turning flight, until an impending or full stall occurs, as specified by the evaluator.

IL.XII.B.S7	Acknowledge the cues at the first indication of a stall (e.g., aircraft buffet, stall horn, etc.).
IL.XII.B.S8	Recover at the first indication of a stall or after a full stall has occurred, as specified by the evaluator.
IL.XII.B.S9	Configure the aircraft as recommended by the manufacturer and accelerate to V_X or V_Y.
IL.XII.B.S10	Return to the altitude, heading, and airspeed specified by the evaluator.
IL.XII.B.S11	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.XII.B.S12	Analyze and correct common errors related to this Task.

Task C. Power-On Stalls

References: AC 61-67; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands power-on stalls, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XII.C.K1	Purpose of and procedures for power-on stalls.
IL.XII.C.K2	Aerodynamics associated with stalls in various aircraft configurations, including the relationship between angle of attack, airspeed, load factor, power setting, aircraft weight and center of gravity, aircraft attitude, and yaw effects.
IL.XII.C.K3	Stall characteristics as they relate to aircraft design, and recognition impending stall and full stall indications using sight, sound, or feel.
IL.XII.C.K4	Factors and situations that can lead to a power-on stall and actions that can be taken to prevent it.
IL.XII.C.K5	Fundamentals of stall recovery.
IL.XII.C.K6	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XII.C.R1	Factors and situations that could lead to an inadvertent power-on stall, spin, and loss of control.
IL.XII.C.R2	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
IL.XII.C.R3	Pitch attitude limitations.
IL.XII.C.R4	Stall warning(s) during normal operations.
IL.XII.C.R5	Stall recovery procedure.
IL.XII.C.R6	Secondary stalls and accelerated stalls.
IL.XII.C.R7	Effect of environmental elements on aircraft performance related to power-on stalls (e.g., turbulence, microbursts, and high-density altitude).
IL.XII.C.R8	Collision hazards.
IL.XII.C.R9	Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XII.C.S1	Clear the area.
IL.XII.C.S2	Select an entry altitude that allows the Task to be completed no lower than 3,000 feet AGL or as recommended by the manufacturer, whichever is higher.
IL.XII.C.S3	Establish the takeoff, departure, or cruise configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
IL.XII.C.S4	Transition smoothly from the takeoff or departure attitude to the pitch attitude that would induce a stall.
IL.XII.C.S5	Maintain a specified heading ±10° if in straight flight; maintain a specified angle of bank not to exceed 20°, ±10° if in turning flight, until an impending or full stall is reached, as specified by the evaluator.

IL.XII.C.S6	Acknowledge the cues at the first indication of a stall (e.g., aircraft buffet, stall horn, etc.).
IL.XII.C.S7	Recover at the first indication of a stall or after a full stall has occurred, as specified by the evaluator.
IL.XII.C.S8	Configure the aircraft as recommended by the manufacturer and accelerate to V_X or V_Y.
IL.XII.C.S9	Return to the altitude, heading, and airspeed specified by the evaluator.
IL.XII.C.S10	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.XII.C.S11	Analyze and correct common errors related to this Task.

Task D. Accelerated Stalls (Cruise Configuration)

References: AC 61-67; FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands accelerated stalls (power-on and power-off), can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XII.D.K1	Purpose of and procedures for accelerated stalls.
IL.XII.D.K2	Aerodynamics associated with stalls in various aircraft configurations, including the relationship between angle of attack, airspeed, load factor, power setting, aircraft weight and center of gravity, aircraft attitude, and yaw effects.
IL.XII.D.K3	Stall characteristics as they relate to aircraft design, and recognition impending stall and full stall indications using sight, sound, or feel.
IL.XII.D.K4	Factors leading to an accelerated stall and preventive actions.
IL.XII.D.K5	Fundamentals of stall recovery.
IL.XII.D.K6	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XII.D.R1	Factors and situations that could lead to an inadvertent accelerated stall, spin, and loss of control.
IL.XII.D.R2	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
IL.XII.D.R3	Stall warning(s) during normal operations.
IL.XII.D.R4	Stall recovery procedure.
IL.XII.D.R5	Secondary stalls and accelerated stalls.
IL.XII.D.R6	Effect of environmental elements on aircraft performance related to power-on stalls (e.g., turbulence, microbursts, and high-density altitude).
IL.XII.D.R7	Collision hazards.
IL.XII.D.R8	Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XII.D.S1	Clear the area.
IL.XII.D.S2	Select an entry altitude that allows the Task to be completed no lower than 3,000 feet AGL or as recommended by the manufacturer, whichever is higher.
IL.XII.D.S3	Establish the takeoff, departure, or cruise configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
IL.XII.D.S4	Set power as assigned by the evaluator.
IL.XII.D.S5	Establish and maintain a coordinated turn in a 45° bank (or as limited by the manufacturer), increasing elevator back pressure smoothly and firmly until an impending stall is reached.
IL.XII.D.S6	Acknowledge the cues at the first indication of a stall (e.g., aircraft buffet, stall horn, etc.).

IL.XII.D.S7	Recover at the first indication of a stall.
IL.XII.D.S8	Configure the aircraft as recommended by the manufacturer and accelerate to V_X or V_Y.
IL.XII.D.S9	Return to the altitude, heading, and airspeed specified by the evaluator.
IL.XII.D.S10	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.XII.D.S11	Analyze and correct common errors related to this Task.

Area of Operation XIII. Basic Instrument Maneuvers

Note: *The evaluator must select at least one Task from this Area of Operation.*

Task A. Straight-and-Level Flight

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-15, FAA-H-8083-16, FAA-H-8083-33

Objective: To determine the applicant understands attitude instrument flying during straight-and-level flight, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction, solely by reference to instruments.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIII.A.K1	Flight instruments as they relate to:
IL.XIII.A.K1a	a. Instrument limitations and potential errors
IL.XIII.A.K1b	b. Indication of the aircraft attitude
IL.XIII.A.K1c	c. Function and operation
IL.XIII.A.K1d	d. Proper instrument cross-check techniques
IL.XIII.A.K2	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIII.A.R1	Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.
IL.XIII.A.R2	When to seek assistance or declare an emergency in a deteriorating situation.
IL.XIII.A.R3	Collision hazards.
IL.XIII.A.R4	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.XIII.A.R5	Fixation and omission.
IL.XIII.A.R6	Instrument Interpretation.
IL.XIII.A.R7	Control application solely by reference to instruments.
IL.XIII.A.R8	Trimming the aircraft.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIII.A.S1	Maintain straight-and-level flight using proper instrument cross-check and interpretation, and coordinated control application.
IL.XIII.A.S2	Maintain altitude ±100 feet, heading ±10°, and airspeed ±10 knots.
IL.XIII.A.S3	Analyze and correct common errors related to this Task.

Task B. Constant Airspeed Climbs

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-15, FAA-H-8083-16, FAA-H-8083-33

Objective: To determine the applicant understands attitude instrument flying during constant airspeed climbs, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction, solely by reference to instruments.

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.XIII.B.K1 Flight instruments as they relate to:

IL.XIII.B.K1a a. Instrument limitations and potential errors

IL.XIII.B.K1b b. Indication of the aircraft attitude

IL.XIII.B.K1c c. Function and operation

IL.XIII.B.K1d d. Proper instrument cross-check techniques

IL.XIII.B.K2 Common errors related to this Task.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.XIII.B.R1 Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.

IL.XIII.B.R2 When to seek assistance or declare an emergency in a deteriorating situation.

IL.XIII.B.R3 Collision hazards.

IL.XIII.B.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.

IL.XIII.B.R5 Fixation and omission.

IL.XIII.B.R6 Instrument Interpretation.

IL.XIII.B.R7 Control application solely by reference to instruments.

IL.XIII.B.R8 Trimming the aircraft.

Skills: The applicant demonstrates and simultaneously explains how to:

IL.XIII.B.S1 Transition to the climb pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated flight control application.

IL.XIII.B.S2 Climb at a constant airspeed to specific altitudes in straight flight and turns.

IL.XIII.B.S3 Level off at the assigned altitude and maintain altitude ±100 feet, heading ±10°, and airspeed ±10 knots.

IL.XIII.B.S4 Analyze and correct common errors related to this Task.

Task C. Constant Airspeed Descents

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-15, FAA-H-8083-16, FAA-H-8083-33

Objective: To determine the applicant understands attitude instrument flying during constant airspeed descents, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction, solely by reference to instruments.

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.XIII.C.K1 Flight instruments as they relate to:

IL.XIII.C.K1a a. Instrument limitations and potential errors

IL.XIII.C.K1b b. Indication of the aircraft attitude

IL.XIII.C.K1c c. Function and operation

IL.XIII.C.K1d d. Proper instrument cross-check techniques

IL.XIII.C.K2 Common errors related to this Task.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.XIII.C.R1 Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.

IL.XIII.C.R2 When to seek assistance or declare an emergency in a deteriorating situation.

IL.XIII.C.R3 Collision hazards.

IL.XIII.C.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.

IL.XIII.C.R5 Fixation and omission.

IL.XIII.C.R6 Instrument Interpretation.

IL.XIII.C.R7 Control application solely by reference to instruments.

IL.XIII.C.R8 Trimming the aircraft.

Skills: The applicant demonstrates and simultaneously explains how to:

IL.XIII.C.S1 Transition to the descent pitch attitude and power setting on an assigned heading using proper instrument cross-check and interpretation, and coordinated flight control application.

IL.XIII.C.S2 Descend at a constant airspeed to specific altitudes in straight flight and turns.

IL.XIII.C.S3 Level off at the assigned altitude and maintain altitude ±100 feet, heading ±10°, and airspeed ±10 knots.

IL.XIII.C.S4 Analyze and correct common errors related to this Task.

Task D. Turns to Headings

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-15, FAA-H-8083-16, FAA-H-8083-33

Objective: To determine the applicant understands attitude instrument flying during turns to headings, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction, solely by reference to instruments.

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.XIII.D.K1 Flight instruments as they relate to:

IL.XIII.D.K1a a. Instrument limitations and potential errors

IL.XIII.D.K1b b. Indication of the aircraft attitude

IL.XIII.D.K1c c. Function and operation

IL.XIII.D.K1d d. Proper instrument cross-check techniques

IL.XIII.D.K2 Common errors related to this Task.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.XIII.D.R1 Instrument flying hazards, including failure to maintain visual flight rules (VFR), spatial disorientation, loss of control, fatigue, stress, and emergency off airport landings.

IL.XIII.D.R2 When to seek assistance or declare an emergency in a deteriorating situation.

IL.XIII.D.R3 Collision hazards.

IL.XIII.D.R4 Distractions, task prioritization, loss of situational awareness, or disorientation.

IL.XIII.D.R5 Fixation and omission.

IL.XIII.D.R6 Instrument Interpretation.

IL.XIII.D.R7 Control application solely by reference to instruments.

IL.XIII.D.R8 Trimming the aircraft.

Skills: The applicant demonstrates and simultaneously explains how to:

IL.XIII.D.S1 Turns to headings, maintain altitude ±100 feet, maintain a standard rate turn, roll out on the assigned heading ±10°, and maintain airspeed ±10 knots.

IL.XIII.D.S2 Analyze and correct common errors related to this Task.

Area of Operation XIV. Emergency Operations

Task A. Powerplant(s) Failure (Simulated) during Takeoff in Thrust-Borne Flight

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands indications and pilot actions after powerplant(s) failure during takeoff while the aircraft is predominantly in thrust borne flight in a multi-powerplant aircraft, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Note: *The task outcome can be vertical or rolling depending on aircraft capabilities, configuration, and flight manual procedures.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.A.K1	Aircraft performance and limitations, (e.g., height velocity (H/V) diagram information).
IL.XIV.A.K2	Factors involved in determining a valid go/no-go decision.
IL.XIV.A.K3	Recognition of powerplant(s) failure.
IL.XIV.A.K4	Pilot actions required on recognition of powerplant(s) failure, including checklist memory items.
IL.XIV.A.K5	Aircraft configuration for landing with powerplant(s) failure.
IL.XIV.A.K6	Causes of asymmetric thrust conditions and appropriate responses.
IL.XIV.A.K7	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIV.A.R1	Powerplant(s) failure.
IL.XIV.A.R2	Identification of powerplant(s) failure conditions.
IL.XIV.A.R3	Pilot reaction to powerplant(s) failure conditions.
IL.XIV.A.R4	Aircraft configuration.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.A.S1	Recognize that a powerplant(s) failure has occurred.
IL.XIV.A.S2	Use flight controls in the proper combination and aircraft configuration as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
IL.XIV.A.S3	Maintain the operating powerplant(s) within acceptable operating limits.
IL.XIV.A.S4	Land the aircraft, as appropriate to the scenario presented by the evaluator.
IL.XIV.A.S5	Complete the appropriate checklist(s).
IL.XIV.A.S6	Make radio calls as appropriate.
IL.XIV.A.S7	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.XIV.A.S8	Analyze and correct common errors related to this Task.

Task B. Powerplant(s) Failure (Simulated) during Takeoff While in Semi-Wing-Borne Flight

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with indications and pilot actions after powerplant(s) failure during takeoff in a multi-powerplant aircraft while in semi-wing-borne flight and provide effective instruction.

Note: *This can be initiated during the takeoff roll in wheeled aircraft or during the transition to wing borne flight following a vertical takeoff.*

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.XIV.B.K1 The procedures used during a powerplant(s) failure on takeoff, the appropriate reference airspeeds, and the specific pilot actions required.

IL.XIV.B.K2 Operational considerations to include: aircraft performance (e.g., sideslip, bank angle, etc.), takeoff warning systems, runway length, surface conditions, density altitude, wake turbulence, environmental conditions, obstructions, and other related factors that could adversely affect safety.

IL.XIV.B.K3 Common errors related to this Task.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.XIV.B.R1 Powerplant(s) failure.

IL.XIV.B.R2 Reaction to the loss of power from one or more powerplants.

IL.XIV.B.R3 Deceleration in a space-limited environment.

IL.XIV.B.R4 Windshear.

IL.XIV.B.R5 Dividing attention inside and outside the aircraft.

IL.XIV.B.R6 Runway incursion.

IL.XIV.B.R7 Distractions, task prioritization, loss of situational awareness, or disorientation.

IL.XIV.B.R8 Abnormal operations, including planning for.

IL.XIV.B.R8a a. Rejected takeoff

IL.XIV.B.R8b b. Powerplant failure in takeoff/climb phase of flight

IL.XIV.B.R9 Energy management.

Skills: The applicant demonstrates and simultaneously explains how to:

IL.XIV.B.S1 Recognize that a powerplant failure has occurred while performing a rolling takeoff.

IL.XIV.B.S2 Input the appropriate flight control(s) and configure the aircraft for maximum deceleration.

IL.XIV.B.S3 Maintain the operating powerplant(s) within acceptable operating limits.

IL.XIV.B.S4 Apply braking as appropriate.

IL.XIV.B.S5 Refer to the checklist to ensure that the emergency procedure was followed correctly.

IL.XIV.B.S6 Make radio calls as appropriate.

IL.XIV.B.S7 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

IL.XIV.B.S8 Analyze and correct common errors related to this Task.

Task C. Inflight Powerplant(s) Failure and Restart in Multi-Powerplant Aircraft

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with inflight powerplant(s) failure in a multi-powerplant aircraft and provide effective instruction.

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.C.K1	Flight characteristics and controllability associated with maneuvering the aircraft with powerplant(s) inoperative, including the importance of drag reduction and appropriate aircraft configuration.
IL.XIV.C.K2	Aircraft/powerplant limitations.
IL.XIV.C.K3	Powerplant restart procedures and conditions where a restart attempt is appropriate.
IL.XIV.C.K4	Causes of asymmetric thrust conditions and appropriate responses.
IL.XIV.C.K5	Common errors related to this Task.

Risk Management:	The applicant is able to identify, assess, and mitigate risk associated with:
IL.XIV.C.R1	Potential powerplant(s) failure during flight.
IL.XIV.C.R2	Following checklist procedures for a powerplant(s) failure or a powerplant(s) restart.
IL.XIV.C.R3	Identifying the powerplant(s) that failed.
IL.XIV.C.R4	Collision hazards.
IL.XIV.C.R5	Aircraft configuration.
IL.XIV.C.R6	Factors and situations that could lead to loss of control with an inflight powerplant(s) failure.
IL.XIV.C.R7	Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.C.S1	Recognize and correctly identify powerplant(s) failure, complete memory items (if applicable), and maintain positive aircraft control.
IL.XIV.C.S2	Coordinate with crew, if applicable, and complete the appropriate emergency procedures and checklist(s) for powerplant shutdown.
IL.XIV.C.S3	Use flight controls and configure the aircraft in the proper combination as recommended by the manufacturer, or as required, to maintain best performance, and trim as required.
IL.XIV.C.S4	Determine the cause for the powerplant(s) failure and if a restart is a viable option.
IL.XIV.C.S5	Maintain the operating powerplant(s) within acceptable operating limits.
IL.XIV.C.S6	Maintain the airspeed ±10 knots, the specified heading ±10°, and altitude ±100 feet as specified by the evaluator and within the aircraft's capability.
IL.XIV.C.S7	Consider a powerplant restart and, if appropriate, demonstrate the powerplant restart procedures in accordance with the manufacturer or operator specified procedures and checklists.
IL.XIV.C.S8	Select the nearest suitable airport or landing area.
IL.XIV.C.S9	Communicate with air traffic control (ATC) and the evaluator, as appropriate for the situation.

IL.XIV.C.S10 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

IL.XIV.C.S11 Analyze and correct common errors related to this Task.

Task D. Vortex Ring State (VRS) Avoidance

References: FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands Vortex Ring State (VRS) avoidance, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *Evaluator assesses this Task orally only.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.D.K1	Elements of vortex ring state.
IL.XIV.D.K2	Effects of wind, weight, temperature, and density altitude.
IL.XIV.D.K3	Requirements for the formation of VRS.
IL.XIV.D.K4	Aircraft systems that aid the pilot in avoiding VRS, if applicable.
IL.XIV.D.K5	Aerodynamics and indications of VRS.
IL.XIV.D.K6	Flight scenarios under which VRS can occur.
IL.XIV.D.K7	Asymmetric VRS, if applicable.
IL.XIV.D.K8	Effective recovery techniques.
IL.XIV.D.K9	Control inputs and configuration changes to recover from VRS.
IL.XIV.D.K10	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIV.D.R1	Conditions for entering VRS.
IL.XIV.D.R2	Pilot recognition and response to VRS.
IL.XIV.D.R3	Loss of control.
IL.XIV.D.R4	Collision hazards.
IL.XIV.D.R5	Distractions, task prioritization, loss of situational awareness, or disorientation.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.D.S1	[Intentionally left blank].

Task E. Approach and Landing with Powerplant(s) Failure (Simulated)

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands approach and landing with simulated powerplant(s) failure, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight and Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations for information related to this Task.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.E.K1	Elements of approach and landing with powerplant(s) failure.
IL.XIV.E.K2	Effects of atmospheric conditions on emergency approach and landing.
IL.XIV.E.K3	A stabilized approach, including energy management concepts.
IL.XIV.E.K4	Air traffic control (ATC) services to aircraft in distress.
IL.XIV.E.K5	Appropriate approach and landing profiles and aircraft configurations.
IL.XIV.E.K6	Causes of asymmetric thrust conditions and appropriate responses.
IL.XIV.E.K7	Go-around/rejected landing procedures with a powerplant failure.
IL.XIV.E.K8	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIV.E.R1	Consideration of altitude, wind, terrain, obstructions, and available landing area.
IL.XIV.E.R2	Planning and following a flightpath to the selected landing area.
IL.XIV.E.R3	Collision hazards.
IL.XIV.E.R4	Flight control input(s).
IL.XIV.E.R5	Low altitude maneuvering, including stall, spin, or controlled flight into terrain (CFIT).
IL.XIV.E.R6	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.XIV.E.R7	Go-around/rejected landing.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.E.S1	Maintain the operating powerplant(s) within limits.
IL.XIV.E.S2	Maintain, prior to beginning the final approach segment, the recommended flight profile with altitude ±100 feet, airspeed, ±10 knots, heading ±5°, and maintains track.
IL.XIV.E.S3	Use flight controls in the proper combination and aircraft configuration as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
IL.XIV.E.S4	Select a suitable landing area considering altitude, wind, terrain and obstructions.
IL.XIV.E.S5	Plan and follow a flightpath to the selected landing area considering altitude, wind, terrain, and obstructions.
IL.XIV.E.S6	Maintain directional control and appropriate crosswind correction throughout the approach and landing.

IL.XIV.E.S7 Complete the appropriate checklist(s).

IL.XIV.E.S8 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

IL.XIV.E.S9 Analyze and correct common errors related to this Task.

Task F. Emergency Descent

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands emergency descent, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *See Appendix 2: Safety of Flight.*

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.F.K1	Purpose of and procedures for emergency descent.
IL.XIV.F.K2	Situations that would require an emergency descent (e.g., depressurization, smoke, or fire).
IL.XIV.F.K3	Airspeed, including airspeed limitations.
IL.XIV.F.K4	Immediate action items and emergency procedures.
IL.XIV.F.K5	Aircraft performance and limitations.
IL.XIV.F.K6	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIV.F.R1	Altitude, wind, terrain, obstructions, gliding distance, and available landing distance considerations.
IL.XIV.F.R2	Collision hazards.
IL.XIV.F.R3	Flight control input(s) and aircraft configuration.
IL.XIV.F.R4	Distractions, task prioritization, loss of situational awareness, or disorientation.
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.F.S1	Clear the area.
IL.XIV.F.S2	Establish and maintain the appropriate airspeed and configuration appropriate to the scenario specified by the evaluator and as covered in the manufacturer's flight manual for the emergency descent.
IL.XIV.F.S3	Maintain orientation, divide attention appropriately, and plan and execute a smooth recovery.
IL.XIV.F.S4	Use bank angles between 30° and 45° to maintain positive load factors during the descent.
IL.XIV.F.S5	Maintain appropriate airspeed, +0/-10 knots, and level off at specified altitude, ±100 feet.
IL.XIV.F.S6	Make radio calls as appropriate.
IL.XIV.F.S7	Complete the appropriate checklist(s).
IL.XIV.F.S8	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.XIV.F.S9	Analyze and correct common errors related to this Task.

Task G. Emergency Equipment and Survival Gear

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands emergency equipment and survival gear, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.G.K1	Emergency Locator Transmitter (ELT) operations, limitations, and testing requirements.
IL.XIV.G.K2	Fire extinguisher operations and limitations.
IL.XIV.G.K3	Emergency equipment and survival gear needed for:
IL.XIV.G.K3a	a. Climate extremes (hot/cold)
IL.XIV.G.K3b	b. Mountainous terrain
IL.XIV.G.K3c	c. Overwater operations
IL.XIV.G.K4	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIV.G.R1	Survival gear (water, clothing, shelter) for 48 to 72 hours.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.G.S1	Identify appropriate equipment and personal gear.
IL.XIV.G.S2	Brief passengers on proper use of on-board emergency equipment and survival gear.
IL.XIV.G.S3	Analyze and correct common errors related to this Task.

Task H. Systems and Equipment Malfunctions

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands system and equipment malfunctions appropriate to the aircraft provided for the practical test, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.H.K1	Causes of partial or complete power loss related to the specific type of powerplant(s).
IL.XIV.H.K2	System and equipment malfunctions specific to the aircraft, including:
IL.XIV.H.K2a	a. Electrical malfunction
IL.XIV.H.K2b	b. Vacuum/pressure and associated flight instrument malfunctions
IL.XIV.H.K2c	c. Pitot-static system malfunction
IL.XIV.H.K2d	d. Electronic flight deck display malfunction
IL.XIV.H.K2e	e. Landing gear or flap malfunction
IL.XIV.H.K2f	f. Inoperative trim
IL.XIV.H.K3	Smoke/fire/powerplant compartment fire.
IL.XIV.H.K4	Any other system specific to the aircraft (e.g., supplemental oxygen, deicing).
IL.XIV.H.K5	Inadvertent door or window opening.
IL.XIV.H.K6	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIV.H.R1	Startle response.
IL.XIV.H.R2	Checklist usage for a system or equipment malfunction.
IL.XIV.H.R3	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.XIV.H.R4	Undesired aircraft state.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.H.S1	Determine appropriate action for simulated emergencies specified by the evaluator, from at least three of the elements or sub-elements listed in K1 through K5.
IL.XIV.H.S2	Complete the appropriate checklist(s).
IL.XIV.H.S3	Analyze and correct common errors related to this Task.

Task I. Dynamic Rollover

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands dynamic rollover, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Note: *Evaluator assesses this Task orally only.*

Knowledge: The applicant demonstrates instructional knowledge by describing and explaining:

IL.XIV.I.K1 Elements related to dynamic rollover.

IL.XIV.I.K2 Interactions between thrust, crosswind, slope, lateral CG, aircraft weight, and flight controls in contributing to dynamic rollover.

IL.XIV.I.K3 Preventive flight technique and recovery during flight operations, including slope operations.

IL.XIV.I.K4 Aircraft slope limitations.

IL.XIV.I.K5 Common errors related to this Task.

Risk Management: The applicant explains and teaches how to identify and manage risk associated with:

IL.XIV.I.R1 Surface condition conducive to dynamic rollover.

IL.XIV.I.R2 Landing gear proximity to the surface.

IL.XIV.I.R3 Flight control inputs during takeoff or landing.

IL.XIV.I.R4 Sideward hover.

IL.XIV.I.R5 Critical rollover angle and rolling moment.

IL.XIV.I.R6 Translating tendency.

Skills: The applicant demonstrates and simultaneously explains how to:

IL.XIV.I.S1 [Intentionally left blank].

Task J. Recovery from Unusual Flight Attitudes

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands attitude instrument flying while recovering from unusual attitudes, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction, solely by reference to instruments.

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

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XIV.J.K1	Prevention of unusual attitudes, including flight causal, physiological, and environmental factors, and system and equipment failures.
IL.XIV.J.K2	Procedures for recovery from unusual attitudes in flight.
IL.XIV.J.K3	Procedures available to safely regain visual meteorological conditions (VMC) after flight into inadvertent instrument meteorological conditions (IIMC) or unintended instrument meteorological conditions (UIMC).
IL.XIV.J.K4	Appropriate use of automation, if applicable.
IL.XIV.J.K5	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XIV.J.R1	Situations that could lead to loss of control in-flight (LOC-I) or unusual attitudes in-flight (e.g., stress, task saturation, inadequate instrument scan distractions, and spatial disorientation).
IL.XIV.J.R2	Assessment of the unusual attitude.
IL.XIV.J.R3	Control input errors, inducing undesired aircraft attitudes.
IL.XIV.J.R4	Collision hazards.
IL.XIV.J.R5	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.XIV.J.R6	Interpreting flight instruments.
IL.XIV.J.R7	Operating envelope considerations.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XIV.J.S1	Use proper instrument cross-check and interpretation to identify an unusual attitude (including both nose-high and nose-low) in flight, and apply the appropriate flight control, power input, and aircraft configuration in the correct sequence, to return to a stabilized level flight attitude.
IL.XIV.J.S2	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.XIV.J.S3	Analyze and correct common errors related to this Task.

Area of Operation XV. Special Operations

Task A. Confined Area Operations

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands confined area operation, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XV.A.K1	Effects of wind, weight, temperature, and density altitude.
IL.XV.A.K2	Situations when a confined area approach and landing is recommended and factors related to landing performance including H/V diagram information.
IL.XV.A.K3	High and low reconnaissance, including takeoff and departure planning.
IL.XV.A.K4	Power requirements versus power available for the departure or arrival profile(s).
IL.XV.A.K5	Common errors related to this Task.
Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XV.A.R1	Selection of approach path, termination point and departure path based on aircraft performance and limitations, wind, and availability of alternate sites.
IL.XV.A.R2	Effects of:
IL.XV.A.R2a	a. Wind Direction
IL.XV.A.R2b	b. Windshear
IL.XV.A.R2c	c. Turbulence
IL.XV.A.R3	H/V diagram information.
IL.XV.A.R4	Go-around.
IL.XV.A.R5	Forced landing during the maneuver.
IL.XV.A.R6	Landing surface.
IL.XV.A.R7	Dynamic rollover.
IL.XV.A.R8	Ground resonance.
IL.XV.A.R9	Collision hazards.
IL.XV.A.R10	Vortex ring state (VRS).
IL.XV.A.R11	Aircraft limitations.
IL.XV.A.R12	Low altitude maneuvering.
IL.XV.A.R13	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.XV.A.R14	Power requirements versus power available for the departure or arrival profile(s).
Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XV.A.S1	Complete the appropriate checklist(s).

IL.XV.A.S2	Make radio calls as appropriate.
IL.XV.A.S3	Confirm power available meets or exceeds the power required for the selected departure or arrival profile(s).
IL.XV.A.S4	Determine wind direction with or without visible wind direction indicators.
IL.XV.A.S5	Accomplish a proper high and low reconnaissance of the confined landing area.
IL.XV.A.S6	Select a suitable approach path, termination point, and departure path.
IL.XV.A.S7	Track the selected approach path at an acceptable approach angle and rate of closure to the termination point.
IL.XV.A.S8	Continually evaluate the suitability of the confined landing area and termination point.
IL.XV.A.S9	Maintain powerplant and thrust output within normal limits.
IL.XV.A.S10	Execute a timely go-around if the approach cannot be made within the tolerances specified above or for any other condition that may result in an unsafe approach or landing.
IL.XV.A.S11	Accomplish a proper ground reconnaissance.
IL.XV.A.S12	Terminate in a hover or on the surface, as appropriate.
IL.XV.A.S13	Conduct a takeoff and departure using the appropriate technique and aircraft configuration.
IL.XV.A.S14	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.
IL.XV.A.S15	Analyze and correct common errors related to this Task.

Task B. Slope Operations

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands slope operations, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

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

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XV.B.K1	Elements related to slope operations.
IL.XV.B.K2	Factors used for selecting an appropriate slope.
IL.XV.B.K3	Effect of wind on slope operations.
IL.XV.B.K4	Dynamic rollover considerations during slope operations and preventive/recovery techniques.
IL.XV.B.K5	Aircraft configuration and slope limitations.
IL.XV.B.K7	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XV.B.R1	Aircraft configuration.
IL.XV.B.R2	Operations on a slope.
IL.XV.B.R3	Conditions leading to dynamic rollover.
IL.XV.B.R4	Flight control limits.
IL.XV.B.R5	Surface conditions.
IL.XV.B.R6	Embarking or disembarking passengers.
IL.XV.B.R7	Exceeding the manufacturer's slope limitations.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XV.B.S1	Select a suitable slope.
IL.XV.B.S2	Complete the appropriate checklist(s).
IL.XV.B.S3	Position the primary flight controls, including the thrust vector, for the prevailing environmental conditions.
IL.XV.B.S4	Maintain heading and ground position, and prevent movement of aircraft on slope.
IL.XV.B.S5	Recognize if slope is too steep and abandon the operation prior to reaching flight control limits.
IL.XV.B.S6	Make a smooth positive descent to touch the upslope landing gear on the sloping surface.
IL.XV.B.S7	Neutralize controls after landing.
IL.XV.B.S8	Make a smooth transition from the slope to a stabilized hover parallel to the slope.
IL.XV.B.S9	Properly move away from the slope.
IL.XV.B.S10	Maintain positive control of aircraft throughout the maneuver.
IL.XV.B.S11	Use controls while lowering the downslope landing gear to touchdown.

IL.XV.B.S12 Maintain specified headings throughout the operation, ±5°.

IL.XV.B.S13 Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.

IL.XV.B.S14 Analyze and correct common errors related to this Task.

Task C. Pinnacle Operations

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands pinnacle operations, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XV.C.K1	Elements of pinnacle/platform operations.
IL.XV.C.K2	Effects of wind, weight, temperature, and density altitude.
IL.XV.C.K3	Suitable takeoff point and departure flight path during climb.
IL.XV.C.K4	Situations when a pinnacle/platform approach, landing and takeoff is recommended and factors related to aircraft performance.
IL.XV.C.K5	Power requirements versus power available for the departure or arrival profile(s).
IL.XV.C.K6	Elements of a high and low reconnaissance.
IL.XV.C.K7	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XV.C.R1	Selection of approach path, termination point and departure path based on aircraft performance and limitations, and wind.
IL.XV.C.R2	Effects of:
IL.XV.C.R2a	a. Wind Direction
IL.XV.C.R2b	b. Windshear
IL.XV.C.R2c	c. Turbulence
IL.XV.C.R3	H/V diagram information.
IL.XV.C.R4	Go-around.
IL.XV.C.R5	Powerplant failure during approach/landing phase of flight.
IL.XV.C.R6	Collision hazards.
IL.XV.C.R7	Vortex ring state (VRS).
IL.XV.C.R8	Landing surface.
IL.XV.C.R9	Dynamic rollover.
IL.XV.C.R10	Ground resonance.
IL.XV.C.R11	Aircraft limitations.
IL.XV.C.R12	Low altitude maneuvering.
IL.XV.C.R13	Distractions, task prioritization, loss of situational awareness, or disorientation.
IL.XV.C.R14	Passenger exposure to thrust or exhaust.
IL.XV.C.R15	Forced landing.
IL.XV.C.R16	Power requirements versus power available for the departure or arrival profile(s).

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XV.C.S1	Complete the appropriate checklist(s).
IL.XV.C.S2	Confirm power available meets or exceeds the power required for the selected departure or arrival profile(s).
IL.XV.C.S3	Make radio calls as appropriate.
IL.XV.C.S4	Accomplish high and low reconnaissance.
IL.XV.C.S5	Determine wind direction with or without visible wind direction indicators.
IL.XV.C.S6	Select a suitable approach path, termination point, and departure path.
IL.XV.C.S7	Select an approach path considering wind direction.
IL.XV.C.S8	Track the selected approach path at an acceptable approach angle and rate of closure to the termination point.
IL.XV.C.S9	Maintain powerplant and thrust output within normal limits.
IL.XV.C.S10	Execute a timely go-around if the approach cannot be made within the tolerances specified above or for any other condition that may result in an unsafe approach or landing.
IL.XV.C.S11	Accomplish a proper ground reconnaissance.
IL.XV.C.S12	Terminate in a hover or on the surface, as appropriate.
IL.XV.C.S13	Select a suitable takeoff point, and consider factors affecting takeoff and climb performance under various conditions.
IL.XV.C.S14	Analyze and correct common errors related to this Task.

Area of Operation XVI. Postflight Procedures

Task A. After Landing, Parking, and Securing

References: FAA-H-8083-2, FAA-H-8083-9, FAA-H-8083-33; Flight Manual

Objective: To determine the applicant understands after landing, parking, and securing procedures, can apply that knowledge, manage associated risks, demonstrate appropriate skills, and provide effective instruction.

Knowledge:	The applicant demonstrates instructional knowledge by describing and explaining:
IL.XVI.A.K1	Parking, shutdown, securing, and postflight inspection.
IL.XVI.A.K2	Documenting in-flight/postflight discrepancies.
IL.XVI.A.K3	Common errors related to this Task.

Risk Management:	The applicant explains and teaches how to identify and manage risk associated with:
IL.XVI.A.R1	Activities and distractions.
IL.XVI.A.R2	Airport/heliport specific security procedures.
IL.XVI.A.R3	Disembark passengers safely and monitor passenger movement while on the ramp.

Skills:	The applicant demonstrates and simultaneously explains how to:
IL.XVI.A.S1	Minimize any hazardous effects of thrust/downwash during hover, if applicable.
IL.XVI.A.S2	Park in an appropriate area, considering the safety of nearby persons and property.
IL.XVI.A.S3	Complete the appropriate checklist(s).
IL.XVI.A.S4	Conduct a postflight inspection and document discrepancies and servicing requirements, if any.
IL.XVI.A.S5	Secure the aircraft.
IL.XVI.A.S6	Analyze and correct common errors related to this Task.

Appendix 1: Practical Test Roles, Responsibilities, and Outcomes

Eligibility Requirements for a Flight Instructor Certificate

The prerequisite requirements and general eligibility for a practical test and the specific requirements for the issuance of a Flight Instructor Certificate in the powered-lift category can be found in 14 CFR part 61, sections 61.39(a) and 61.183.

For an initial flight instructor certificate or when adding the powered-lift category to an existing flight instructor certificate, applicants must pass the knowledge test listed in the following table as a prerequisite for the practical test.

Test Code	Test Name	Number of Questions	Age	Allotted Time	Passing Score
FOI*	Fundamentals of Instructing	50	16	1.5	70
FIP	Flight Instructor - Powered-Lift	100	16	2.5	70
IPA	Flight Instructor - Powered-Lift (Added Rating)	25	16	1.0	70

*The FOI knowledge test applies unless the applicant meets the criteria listed in 14 CFR part 61, section 61.183(e).

Use of the ACS During a Practical Test

The practical test is conducted in accordance with the ACS and FAA regulations that are current as of the date of the test.

The Areas of Operation in this ACS align with the Areas of Operation found in 14 CFR part 61, section 61.187(b). Each Area of Operation includes Tasks appropriate to that Area of Operation. Each Task contains an Objective stating what the applicant must know, consider, and/or do. The ACS then lists the aeronautical knowledge, risk management, and skill elements relevant to the specific Task, along with the conditions and standards for acceptable performance. The ACS uses Notes to emphasize special considerations.

During the ground and flight portion of the practical test, the FAA expects evaluators to assess the applicant's mastery of the topic in accordance with the level of learning most appropriate for the specified Task. The oral questioning will continue throughout the entire practical test. 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 knowledge, risk management, flight proficiency, and operational skill in accordance with the ACS.

The elements within each Task in this ACS are coded according to a scheme that includes four components. For example, FI.I.C.K2:

FI = Applicable ACS

I = Area of Operation

C = Task

K2 = Task element (in this example, Knowledge 2)

There is no requirement for an evaluator to test every knowledge and risk management element in a Task; rather the evaluator has discretion to sample as needed to ensure the applicant's mastery of that Task. The required minimum elements to be tested from each applicable Task include:

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

The Airman Knowledge Test Report (AKTR) lists ACS codes that correlate to a specific Task element for a given Area of Operation for any incorrect responses on the knowledge test.

Knowledge and risk management elements are primarily evaluated during the knowledge testing phase of the airman certification process. The evaluator administering the practical test has the discretion to combine Tasks/elements as appropriate to testing scenarios.

Unless otherwise noted in the Task, the evaluator must test each item in the skills section by observing the applicant perform each one. As safety of flight conditions permit, the evaluator should use questions during flight to test knowledge and risk management elements not evident in the demonstrated skills. To the greatest extent practicable, evaluators should test the applicant's ability to apply and correlate information and use rote questions only when they are appropriate for the material being tested.

If the Task includes a knowledge or risk element with sub-elements, the evaluator may choose the primary element and select at least one sub-element to satisfy the requirement. Selection of the sub-element satisfies the requirement for one element unless otherwise noted.

For example, an evaluator who chooses FI.I.F.K2 may select a sub-element such as FI.I.F.K2b to satisfy the requirement to select one knowledge element.

The References for each Task indicate the source material for Task elements. For example, in the Task element "Acceptable weather products and resources required for preflight planning, current and forecast weather for departure, en route, and arrival phases of flight such as:" (IL.III.C.K2), the applicant should be prepared for questions on any weather product presented in the references for that Task.

The FAA encourages applicants and instructors to use the ACS when preparing for the airman knowledge tests and practical tests. Evaluators must conduct the practical test in accordance with the current ACS and FAA regulations pursuant to 14 CFR part 61, section 61.43. If an applicant is entitled to credit for Areas of Operation previously passed as indicated on a Notice of Disapproval of Application or Letter of Discontinuance, evaluators shall use the ACS currently in effect on the date of the test.

The ground 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 applicant must pass the ground portion of the practical test before beginning the flight portion. The oral questioning will continue throughout the entire practical test.

Instructor Responsibilities

The instructor trains and qualifies the applicant to meet the established standards for knowledge, risk management, and skill elements in all Tasks appropriate to the certificate and rating sought. The instructor should use this ACS and its references when preparing the applicant to take the practical test and when retraining the applicant to proficiency in any subject(s) missed on the knowledge test.

Evaluator Responsibilities

An evaluator is:

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

The evaluator who conducts the practical test determines whether the applicant meets the established standards of aeronautical knowledge, risk management, and skills for the Tasks in the appropriate ACS. This responsibility also includes verifying the experience requirements specified for a certificate or rating.

The evaluator must determine that the applicant meets FAA Aviation English Language Standard (AELS). An applicant for an FAA certificate or rating must be able to communicate in English in a discernible and understandable manner with air traffic control (ATC), pilots, and others involved in preparing an aircraft for flight and operating an aircraft in flight. This communication may or may not involve radio communications. An applicant for an FAA certificate issued in accordance with 14 CFR parts 61, 63, 65, or 107 who cannot hear or speak due to a medical deficiency may be eligible for an FAA certificate with specific operational limitations. For additional information, reference AC 60-28, FAA English Language Standard for an FAA Certificate issued under 14 CFR Parts 61, 63, 65, and 107, as amended.

If the applicant's ability to meet the FAA AELS comes into question before starting the practical test, the evaluator will not begin the practical test. An evaluator who is not an ASI will check the box, Referred to FSO for Aviation English Language Standard Determination, located on the bottom of page 2 of the applicant's FAA Form 8710-1, Airman Certificate and/or Rating Application, or FAA Form 8710-11, Airman Certificate and/or Rating Application - Sport Pilot, as applicable. The evaluator will refer the applicant to the appropriate Flight Standards Office (FSO).

If the applicant's ability to meet the FAA AELS comes into question after the practical test begins, an evaluator who is not

an ASI will discontinue the practical test and check the box, Referred to FSO for Aviation English Language Standard Determination, on the application. The evaluator will also issue FAA Form 8060-5, Notice of Disapproval of Application, with the comment “Does Not Demonstrate FAA AELS” in addition to any unsatisfactory Task(s). The evaluator will refer the applicant to the appropriate FSO. ASIs conducting the practical test may assess an applicant’s English language proficiency in accordance with FAA Order 8900.1.

In either case, the evaluator must complete and submit the application file through normal application procedures and notify the appropriate FSO of the referral.

The evaluator must develop a plan of action (POA) and administer each practical test in English that includes all required Areas of Operation and Tasks. The POA must include scenario(s) that evaluate as many of the required Areas of Operation and Tasks as possible. As the scenario(s) unfolds during the test, the evaluator will introduce problems and emergencies that test the applicant’s ability. The evaluator has the discretion to modify the POA in order to accommodate unexpected situations as they arise. For example, the evaluator may elect to suspend and later resume a scenario in order to assess certain Tasks.

The evaluator conducting the practical test must determine that the applicant meets acceptable standards of teaching ability in the selected Tasks. The evaluator makes this determination by confirming the applicant’s:

- Ability to apply the fundamentals of instructing;
- Knowledge of and ability to teach the subject matter, procedures, and maneuvers covered in the Tasks;
- Ability to perform the Tasks at the level of a commercial pilot while giving effective flight instruction; and
- Ability to analyze and correct common errors related to the procedures and maneuvers covered in the Tasks.
- During the flight portion of the practical test, the evaluator may act as a student during selected maneuvers. This gives the evaluator an opportunity to evaluate the flight instructor applicant’s ability to analyze and correct simulated common errors related to these maneuvers.

Possible Outcomes of the Test

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

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

Satisfactory Performance

Refer to 14 CFR part 61, section 61.43, for satisfactory performance requirements.

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

Unsatisfactory Performance

If, in the judgment of the evaluator, the applicant does not meet the standards for any Task, the applicant fails the Task and associated Area of Operation and the evaluator issues a Notice of Disapproval of Application. The evaluator lists the Area(s) of Operation in which the applicant did not meet the standard, any Area(s) of Operation not tested, and the number of practical test failures. The evaluator should also list the Tasks failed or Tasks not tested within any unsatisfactory or partially completed Area(s) of Operation. 14 CFR part 61, section 61.43(c)-(f) provides additional unsatisfactory performance requirements and parameters.

Typical areas of unsatisfactory performance and grounds for disqualification include:

- Any action or lack of action by the applicant that requires corrective intervention by the evaluator to maintain safe flight.
- Failure to use proper and effective visual scanning techniques to clear the area before and while performing maneuvers.
- Consistently exceeding tolerances stated in the skill elements of the Task.
- Failure to take prompt corrective action when tolerances are exceeded.
- Failure to exercise risk management.
- Failure to provide effective instruction while demonstrating a procedure or maneuver.

The evaluator or the applicant may end the test if the applicant fails a Task. The evaluator may continue the test only with the consent of the applicant. The applicant receives credit only for those Areas of Operation and the associated Tasks performed satisfactorily.

Letter of Discontinuance

Refer to 14 CFR part 61, section 61.43(e)(2) for conditions to issue a Letter of Discontinuance.

If discontinuing a practical test for reasons other than unsatisfactory performance (e.g., equipment failure, weather, illness), the evaluator must return all test paperwork to the applicant. The evaluator must prepare, sign, and issue a Letter of Discontinuance that lists those Areas of Operation the applicant successfully completed and the time period remaining to complete the test to receive credit for previously completed Areas of Operation. 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.

Time Limit and Credit after a Discontinued Practical Test

Refer to 14 CFR part 61, sections 61.39(f) and 61.43(f) after issuance of a Letter of Discontinuance or Notice of Disapproval of Application.

Additional Rating Task Table

For an applicant who holds a Flight Instructor Certificate and seeks an additional Powered-Lift category at the Flight Instructor level, the evaluator must evaluate that applicant in the Areas of Operation and Tasks listed in the Additional Rating Task Table. The evaluator may 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 the flight instructor level, and the ratings table indicates different Task requirements, the least restrictive entry applies. For example, if an asterisk (*), and “None” are indicated for one Area of Operation, the “None” entry applies. If the table indicates “B” and “B, C” the “B” entry applies.

Addition of a Powered-Lift Rating to an existing Flight Instructor Certificate

The following table indicates the required Tasks for each Area of Operation tested in accordance with this ACS.

	Instructor Rating(s) Held							
Area of Operation	**ASE**	**AME**	**RH**	**RG**	**Glider**	**IA**	**IH**	**IP**
I	None	None	None	None	None	None	None	None
II	*	*	*	*	*	*	*	*
III	B	B	B	B	B	*	*	*
IV	None	None	None	None	None	None	None	None
V	*	*	*	*	*	*	*	*
VI	A	A	C	C	C	*	*	*
VII	*	*	*	*	*	*	*	*
VIII	*	*	*	*	*	*	*	*
IX	*	*	*	*	*	*	*	*
X	*	*	*	*	*	*	*	*
XI	None	None	*	*	*	*	*	*
XII	*	*	*	*	*	*	*	*
XIII	*	*	*	*	*	*	*	None
XIV	*	*	*	*	*	*	*	*
XV	*	*	*	*	*	*	*	*
XVI	*	*	*	*	*	*	*	*

Note: *An asterisk directs the evaluator to follow the selection requirements for the Area of Operation and Tasks in the body of this ACS.*

Flight Instructor Renewal/Reinstatement

In accordance with 14 CFR part 61, section 61.199(a), the renewal or reinstatement of one rating on a Flight Instructor Certificate renews or reinstates all privileges existing on the certificate.

Renewal & Reinstatement of a Flight Instructor

Required Area of Operation	Required Tasks
I	**
II	C,K, and 1 other Task
III	1 Task
IV	1 Task
V	1 Task
VI	None
VII	1 Task
VIII	2 Takeoffs & 2 Landings
IX	None
X	1 Task
XI	1 Task
XII	1 Task
XIII	None
XIV	2 Tasks
XV	1 Task
XVI	1 Task

Note: *A double asterisk directs the evaluator to consider the period of inactivity. The evaluator may test FOI Tasks for any reinstatement.*

Appendix 2: Safety of Flight

General

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

Stall, Spin, Angle of Attack Awareness

An applicant, instructor, and evaluator must avoid operations that lead to inadvertent high angle of attack flight that may lead to loss of control, when thrust-borne-lift is insufficient for wing-borne flight.

Use of Checklists

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

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

In a single-pilot aircraft, the applicant should demonstrate the crew resource management (CRM) principles described as single-pilot resource management (SRM). Proper use depends on the specific Task being evaluated. If the use of the checklist while accomplishing elements of an Objective would be either unsafe or impractical in a single-pilot operation, the applicant should review the checklist after accomplishing the elements.

Positive Exchange of Flight Controls

A clear understanding of who has control of the aircraft must exist. 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, they will say, "You have the flight controls."
- The second pilot acknowledges immediately by saying, "I have the flight controls."
- The first pilot again says, "You have the flight controls," and visually confirms the exchange.

Pilots should follow this procedure during any exchange of flight controls, including any occurrence during the practical test. The FAA also recommends that both pilots use a visual check to verify that the exchange has occurred. Doubt as to who is flying the aircraft should not occur.

Use of Distractions

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

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

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

In assessing the applicant's performance, the evaluator should take note of the applicant's use of CRM and, if appropriate,

SRM. CRM/SRM is the set of competencies that includes situational awareness, communication skills, teamwork, task allocation, and decision-making within a comprehensive framework of standard operating procedures (SOP). SRM specifically refers to the management of all resources onboard the aircraft, as well as outside resources available to the single pilot.

If an applicant fails to use aeronautical decision-making (ADM), including SRM/CRM, as applicable in any Task, the evaluator will note that Task as failed. The evaluator will also include the ADM Skill element from the Flight Deck Management Task on the Notice of Disapproval of Application.

Multi-Powerplant Considerations

During the required preflight briefing for practical tests conducted in a multi-powerplant powered-lift aircraft, the evaluator and applicant must discuss the methods for simulating powerplant(s) failure including:

- Who will initiate the simulated powerplant(s) failure;
- The technique used to simulate the powerplant(s) failure; and
- Who will perform the power recovery procedure.

The evaluator must not simulate a powerplant(s) failure during takeoff while in semi-wing-borne flight until attaining an altitude of at least 400 feet AGL and a minimum safe speed in accordance with the approved flight manual.

The evaluator must select an entry altitude that will allow the powerplant(s) failure and restart demonstration Task to be completed no lower than 3,000 feet AGL, unless a higher altitude is required by the flight manual. At altitudes lower than 3,000 feet AGL, powerplant(s) failure should be simulated in accordance with the flight manual.

For safety reasons, when the practical test is conducted in an aircraft and a powerplant(s) shutdown is required, the applicant demonstrates or teaches these Tasks only under conditions and at a position and altitude where it is possible to make a safe landing on a suitable landing surface if there is difficulty restarting the powerplant(s). If it is not possible to restart the powerplant(s) while airborne, the applicant and the evaluator shall treat the situation as an emergency.

Appendix 3: Aircraft, Equipment, and Operational Requirements & Limitations

Aircraft Requirements & Limitations

If the aircraft has inoperative equipment and can be operated in accordance with 14 CFR part 91, section 91.213, it must be determined if any inoperative instruments or equipment are required to complete the practical test. The inoperative equipment must not interfere with practical test requirements.

Equipment Requirements & Limitations

The aircraft must meet the requirements as outlined in 14 CFR part 61, section 61.45.

To assist in management of the aircraft during the practical test, the applicant is expected to demonstrate automation management skills by utilizing installed, available, or airborne equipment such as autopilot, avionics and systems displays, and/or a flight management system (FMS). The evaluator is expected to test the applicant's knowledge of the systems that are available or installed and operative during both the ground and flight portions of the practical test. If the applicant has trained using a portable electronic flight bag (EFB) to display charts and data and wishes to use the EFB during the practical test, the applicant is expected to demonstrate appropriate knowledge, risk management, and skill appropriate to its use.

If the practical test involves maneuvering the aircraft solely by reference to instruments, the applicant is required by 14 CFR part 61, section 61.45(d)(2) to provide an appropriate view limiting device acceptable to the Administrator. The applicant and the evaluator should establish a procedure as to when and how this device should be donned and removed and brief this procedure before the flight. This device must prevent the applicant from having visual reference outside the aircraft, but it must not restrict the evaluator's ability to see and avoid other traffic. The use of the device does not apply to specific elements within a Task when there is a requirement for visual references.

Use of Flight Simulation Training Devices (FSTD)

Applicants for a pilot certificate or rating can accomplish all or part of a practical test or proficiency check in an FSTD qualified under 14 CFR part 60, which includes full flight simulators (FSS) or flight training devices (FTD), only when conducted within an FAA-approved training program provided by an operator utilizing a part 119 air carrier or commercial operator certificate or an operator that holds a part 141 or 142 air agency certificate. Each operational rule part identifies additional requirements for the approval and use of FSTDs in an FAA-approved training program. Reference part 61, section 61.64(a)(2).

Credit for Pilot Time in an FSTD

14 CFR part 61 and part 141 specify the minimum experience requirements for each certificate or rating sought. 14 CFR part 61 and the appendices to part 141 specify the maximum amount of FFS or FTD flight training time an applicant can apply toward those experience requirements.

Use of Aviation Training Devices (ATD)

Applicants for a pilot certificate or rating cannot use an ATD to accomplish a practical test, a 14 CFR part 61, section 61.58 proficiency check, or the flight portion of a 14 CFR part 61, section 61.57 flight review. An ATD is defined in 14 CFR part 61, section 61.1.

The FAA's General Aviation and Commercial Division evaluates and approves ATDs as permitted under 14 CFR part 61, section 61.4(c) and FAA Order 8900.1. Each ATD is then issued an FAA letter of authorization (LOA) that is valid for 60 calendar months. The LOA for each ATD lists the pilot time credit allowances and associated limitations.

The Pilot Training and Certification Group public website provides a list of the FAA-approved ATDs and the associated manufacturer.

Credit for Pilot Time in an ATD

14 CFR part 61 and part 141 specify the minimum experience requirements for each certificate or rating sought. 14 CFR part 61 and the appendices to part 141 specify the maximum amount of ATD flight training time an applicant can apply toward those experience requirements. The LOA for each FAA-approved ATD lists the pilot time credit allowances and the associated limitations.

Evaluators must request an applicant to provide a copy of the manufacturer's LOA when using ATD flight training time credit

to meet the minimum experience requirements for an airman pilot certificate, rating, or privilege.

Operational Requirements, Limitations, & Task Information

VIII. Takeoffs, Landings, and Go-Arounds

Task F. Steep Approach and Landing

Demonstration of a steep approach and landing may vary with each powered-lift make and model. The maximum angle to be used for any steep approach must be conducted in accordance with the approved flight manual.

XII. Slow Flight and Stalls

Some stall Tasks allow for demonstration or teaching of full stalls. With the exception of Task D - Accelerated Stall (where the recovery occurs at the first indication), the evaluator has discretion to ask for recovery at the first indication of a stall or after a full stall occurs. Applicants should train and prepare to demonstrate or teach full stalls where appropriate; however, the applicant and the evaluator must review this area of operation during the preflight briefing.

Task A. Maneuvering During Slow Flight (Wing-Borne (Cruise) Configuration)

Evaluation criteria for this Task should recognize that environmental factors (e.g., turbulence) may result in a momentary activation of stall warning indicators, such as the stall horn. If the applicant recognizes the stall warning indication and promptly makes an appropriate correction, a momentary activation does not constitute unsatisfactory performance on this Task. As with other Tasks, unsatisfactory performance would arise from an applicant's continual deviation from the standard, lack of correction, and/or lack of recognition.

Task B. Power-Off Stalls

Power-Off Stalls shall be conducted in accordance with the manufacturer's flight manual. Evaluation criteria for a recovery from an approach to stall should not mandate a predetermined value for altitude loss and should not mandate maintaining altitude during recovery. Proper evaluation criteria should consider the multitude of external and internal variables that affect the recovery. The applicant shall select an entry altitude that will allow a recover no lower than 3,000 feet AGL.

Task C. Power-On Stalls

Power-On Stalls shall be conducted in accordance with the manufacturer's flight manual. If allowed by the manufacturer, the power setting may be reduced below the ACS guidelines power setting to prevent excessively high pitch attitudes greater than 30° nose up, or the manufacturer's aircraft limitation in the flight manual. Evaluation criteria for a recovery from an approach to stall should not mandate a predetermined value for altitude loss and should not mandate maintaining altitude during recovery. Proper evaluation criteria should consider the multitude of external and internal variables that affect the recovery. The applicant shall recover at an altitude no lower than 3,000 feet AGL.

Task D. Accelerated Stalls (Cruise Configuration)

Pilots must set power for airspeed at or below the design maneuvering speed (VA) for the powered-lift aircraft. A successful recovery occurs at the first indication of a stall. Delaying application of power until the powered-lift aircraft reaches a wings level altitude, attains a safe speed, and responds normally to control inputs is acceptable.

XIV. Emergency Operations

Task A. Powerplant(s) Failure (Simulated) during Takeoff in Thrust-Borne Flight

Powerplant(s) Failure (Simulated) during Takeoff in Thrust-Borne Flight must be accomplished in-ground effect, approximately 15-20 knots and prior to reaching 50 percent of the available takeoff distance. The evaluator and applicant must ensure a safe landing area is available and free of obstructions.

Task B. Powerplant(s) Failure (Simulated) during Takeoff While in Semi-Wing-Borne Flight

The evaluator must not simulate a powerplant(s) failure during takeoff while in semi-wing-borne flight until attaining an altitude of at least 400 feet AGL and a minimum safe speed in accordance with the approved flight manual.

Task C. Inflight Powerplant(s) Failure and Restart in Multi-Powerplant Aircraft

Refer to Appendix 2: Safety of Flight, Multi-Powerplant Considerations, for additional information concerning required aircraft capabilities as they relate to this Task.

When conducted in an FSTD, powerplant(s) failure or shutdown may be performed in conjunction with any Task and at locations and altitudes at the discretion of the evaluator.

Task E. Approach and Landing with Powerplant(s) Failure (Simulated)

The applicant must demonstrate at least one landing with a simulated powerplant(s) failure, in accordance with the approved flight manual.

Task J. Recovery from Unusual Flight Attitudes

The evaluator shall conduct a preflight briefing with the applicant regarding recovery. Any intervention by the evaluator to prevent the aircraft from exceeding any operating limitation or entering an unsafe flight condition shall be disqualifying and the Task is unsatisfactory.

XV. Special Operations

Task B. Slope Operations

Demonstration of parallel slope operations must be conducted in accordance with the powered-lift manufacturer's flight manual.

If no slope limitations are published for the aircraft being used, parallel slope operations of approximately 5-10 degrees may be demonstrated. Landings with the aircraft facing downhill or uphill will not be tested during the practical test. A thorough review of the intended slope operations area must be conducted to ensure clearance from hazards.