Aerostar Flight Training Syllabus Tasks

Selections from FAA Commercial Pilot ACS – Instrument Pilot ACS

Task	*A. Normal Takeoff and Climb*
References	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23; POH/AFM; AIM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with a normal takeoff, climb operations, and rejected takeoff procedures. ***Note:*** *If a crosswind condition does not exist, the applicant's knowledge of crosswind elements must be evaluated through oral testing.*
Knowledge	The applicant demonstrates understanding of:
	Effects of atmospheric conditions, including wind, on takeoff and climb performance.
	V_X and V_Y.
	Appropriate airplane configuration.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Selection of runway based on pilot capability, airplane performance and limitations, available distance, and wind.
	Effects of:
	a. Crosswind
	b. Windshear
	c. Tailwind
	d. Wake turbulence
	e. Runway surface/condition
	Abnormal operations, to include planning for:
	a. Rejected takeoff
	b. Engine failure in takeoff/climb phase of flight
	Collision hazards, to include aircraft, terrain, obstacles, wires, vehicles, vessels, persons, and wildlife.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Complete the appropriate checklist.
	Make radio calls as appropriate.
	Verify assigned/correct runway.
	Ascertain wind direction with or without visible wind direction indicators.
	Position the flight controls for the existing wind.
	Clear the area; taxi into takeoff position and align the airplane on the runway centerline (ASEL, AMEL) or takeoff path (ASES, AMES).
	Confirm takeoff power and proper engine and flight instrument indications prior to rotation (ASEL, AMEL).
	Avoid excessive water spray on the propeller(s) (ASES, AMES).
	Rotate and lift off at the recommended airspeed and accelerate to V_Y.
	Retract the water rudders, as appropriate, establish and maintain the most efficient planing/liftoff attitude, and correct for porpoising and skipping (ASES, AMES).
	Establish a pitch attitude to maintain the manufacturer's recommended speed or V_Y, ±5 knots.
	Configure the airplane in accordance with manufacturer's guidance.
	Maintain V_Y ±5 knots to a safe maneuvering altitude.
	Maintain directional control and proper wind-drift correction throughout takeoff and climb.
	Comply with noise abatement procedures.

Task	*B. Normal Approach and Landing*
References	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-23; POH/AFM; AIM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with a normal approach and landing with emphasis on proper use and coordination of flight controls. ***Note:*** *If a crosswind condition does not exist, the applicant's knowledge of crosswind elements must be evaluated through oral testing.*
Knowledge	The applicant demonstrates understanding of:
	A stabilized approach, to include energy management concepts.
	Effects of atmospheric conditions, including wind, on approach and landing performance.
	Wind correction techniques on approach and landing.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Selection of runway or approach path and touchdown area based on pilot capability, airplane performance and limitations, available distance, and wind.
	Effects of:
	a. Crosswind
	b. Windshear
	c. Tailwind
	d. Wake turbulence
	e. Runway surface/condition
	Planning for:
	a. Go-around and rejected landing
	b. Land and hold short operations (LAHSO)
	Collision hazards, to include aircraft, terrain, obstacles, wires, vehicles, vessels, persons, and wildlife.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, incorrect airport surface approach and landing, or improper task management.
Skills	The applicant demonstrates the ability to:
	Complete the appropriate checklist.
	Make radio calls as appropriate.
	Ensure the airplane is aligned with the correct/assigned runway or landing surface.
	Scan the runway or landing surface and adjoining area for traffic and obstructions.
	Select and aim for a suitable touchdown point considering the wind, landing surface, and obstructions.
	Establish the recommended approach and landing configuration and airspeed, and adjust pitch attitude and power as required to maintain a stabilized approach.
	Maintain manufacturer's published approach airspeed or in its absence not more than 1.3 V_{SO}, ±5 knots with gust factor applied.
	Maintain directional control and appropriate crosswind correction throughout the approach and landing.
	Make smooth, timely, and correct control application during round out and touchdown.
	Touch down at a proper pitch attitude, within 200 feet beyond or on the specified point, with no side drift, and with the airplane's longitudinal axis aligned with and over the runway center/landing path.
	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.
	Utilize runway incursion avoidance procedures.

Task	E. Short-Field Takeoff and Maximum Performance Climb *(ASEL, AMEL)*
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM; AIM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with a short-field takeoff, maximum performance climb operations, and rejected takeoff procedures.
Knowledge	The applicant demonstrates understanding of:
	Effects of atmospheric conditions, including wind, on takeoff and climb performance.
	V_X and V_Y.
	Appropriate airplane configuration.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Selection of runway based on pilot capability, airplane performance and limitations, available distance, and wind.
	Effects of:
	a. Crosswind
	b. Windshear
	c. Tailwind
	d. Wake turbulence
	e. Runway surface/condition
	Abnormal operations, to include planning for:
	a. Rejected takeoff
	b. Engine failure in takeoff/climb phase of flight
	Collision hazards, to include aircraft, terrain, obstacles, wires, vehicles, persons, and wildlife.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Complete the appropriate checklist.
	Make radio calls as appropriate.
	Verify assigned/correct runway.
	Ascertain wind direction with or without visible wind direction indicators.
	Position the flight controls for the existing wind.
	Clear the area, taxi into takeoff position and align the airplane on the runway centerline utilizing maximum available takeoff area.
	Apply brakes while setting engine power to achieve maximum performance.
	Confirm takeoff power prior to brake release and verify proper engine and flight instrument indications prior to rotation.
	Rotate and lift off at the recommended airspeed and accelerate to the recommended obstacle clearance airspeed or V_X, ±5 knots.
	Establish a pitch attitude that will maintain the recommended obstacle clearance airspeed or V_X, ±5 knots until the obstacle is cleared or until the airplane is 50 feet above the surface.
	Establish a pitch attitude for V_Y and accelerate to V_Y ±5 knots after clearing the obstacle or at 50 feet AGL if simulating an obstacle.
	Configure the airplane in accordance with the manufacturer's guidance after a positive rate of climb has been verified.
	Maintain V_Y ±5 knots to a safe maneuvering altitude.
	Maintain directional control and proper wind-drift correction throughout takeoff and climb.
	Comply with noise abatement procedures.

Task	F. Short-Field Approach and Landing *(ASEL, AMEL)*
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM; AIM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with a short-field approach and landing with emphasis on proper use and coordination of flight controls.
Knowledge	The applicant demonstrates understanding of:
	A stabilized approach, to include energy management concepts.
	Effects of atmospheric conditions, including wind, on approach and landing performance.
	Wind correction techniques on approach and landing.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Selection of runway based on pilot capability, airplane performance and limitations, available distance, and wind.
	Effects of:
	a. Crosswind
	b. Windshear
	c. Tailwind
	d. Wake turbulence
	e. Runway surface/condition
	Planning for:
	a. Go-around and rejected landing
	b. Land and hold short operations (LAHSO)
	Collision hazards, to include aircraft, terrain, obstacles, wires, vehicles, persons, and wildlife.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Complete the appropriate checklist.
	Make radio calls as appropriate.
	Ensure the airplane is aligned with the correct/assigned runway.
	Scan the landing runway and adjoining area for traffic and obstructions.
	Select and aim for a suitable touchdown point considering the wind, landing surface, and obstructions.
	Establish the recommended approach and landing configuration and airspeed, and adjust pitch attitude and power as required to maintain a stabilized approach.
	Maintain manufacturer's published approach airspeed or in its absence not more than 1.3 V_{SO}, ±5 knots with wind gust factor applied.
	Maintain directional control and appropriate crosswind correction throughout the approach and landing.
	Make smooth, timely, and correct control application during the round out and touchdown.
	Touch down at a proper pitch attitude within 100 feet beyond or on the specified point, threshold markings, or runway numbers, with no side drift, minimum float, and with the airplane's longitudinal axis aligned with and over runway centerline.
	Use manufacturer's recommended procedures for airplane configuration and braking.
	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.
	Utilize runway incursion avoidance procedures.

Task	N. Go-Around/Rejected Landing
References	FAA-H-8083-3, FAA-H-8083-23; POH/AFM; AIM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with a go-around/rejected landing with emphasis on factors that contribute to landing conditions that may require a go-around.
Knowledge	The applicant demonstrates understanding of:
	A stabilized approach, to include energy management concepts.
	Effects of atmospheric conditions, including wind and density altitude on a go-around or rejected landing.
	Wind correction techniques on takeoff/departure and approach/landing.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Delayed recognition of the need for a go-around/rejected landing.
	Delayed performance of a go-around at low altitude.
	Improper application of power.
	Improper airplane configuration.
	Collision hazards, to include aircraft, terrain, obstacles, wires, vehicles, vessels, persons, and wildlife.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Complete the appropriate checklist.
	Make radio calls as appropriate.
	Make a timely decision to discontinue the approach to landing.
	Apply takeoff power immediately and transition to climb pitch attitude for V_X or V_Y as appropriate ±5 knots.
	Configure the airplane after a positive rate of climb has been verified or in accordance with airplane manufacturer's instructions.
	Maneuver to the side of the runway/landing area when necessary to clear and avoid conflicting traffic.
	Maintain V_Y ±5 knots to a safe maneuvering altitude.
	Maintain directional control and proper wind-drift correction throughout the climb.

Task	*A. Steep Turns*
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with steep turns. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Purpose of steep turns.
	Aerodynamics associated with steep turns, to include:
	a. Coordinated and uncoordinated flight
	b. Overbanking tendencies
	c. Maneuvering speed, including the impact of weight changes
	d. Load factor and accelerated stalls
	e. Rate and radius of turn
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to divide attention between airplane control and orientation.
	Collision hazards, to include aircraft and terrain.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, improper task management, loss of situational awareness, or disorientation.
	Failure to maintain coordinated flight.
Skills	The applicant demonstrates the ability to:
	Clear the area.
	Establish the manufacturer's recommended airspeed; or if one is not available, an airspeed not to exceed V_A.
	Roll into a coordinated 360° steep turn with approximately a 50° bank.
	Perform the Task in the opposite direction.
	Maintain the entry altitude ±100 feet, airspeed ±10 knots, bank ±5°, and roll out on the entry heading ±10°.

Task	*A. Maneuvering During Slow Flight*
References	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with maneuvering during slow flight. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Aerodynamics associated with slow flight in various airplane configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Inadvertent slow flight and flight with a stall warning, which could lead to loss of control.
	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
	Failure to maintain coordinated flight.
	Effect of environmental elements on airplane performance (e.g., turbulence, microbursts, and high-density altitude).
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Clear the area.
	Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) **or** 3,000 feet AGL (AMEL, AMES).
	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., airplane buffet, stall horn, etc.).
	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., airplane buffet, stall horn, etc.).
	Maintain the specified altitude, ±50 feet; specified heading, ±10°; airspeed, +5/-0 knots; and specified angle of bank, ±5°.

Task	*B. Power-Off Stalls*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with power-off stalls. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Aerodynamics associated with stalls in various airplane configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
	Stall characteristics (i.e., airplane design) and impending stall and full stall indications (i.e., how to recognize by sight, sound, or feel).
	Factors and situations that can lead to a power-off stall and actions that can be taken to prevent it.
	Fundamentals of stall recovery.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Factors and situations that could lead to an inadvertent power-off stall, spin, and loss of control.
	Range and limitations of stall warning indicators (e.g., airplane buffet, stall horn, etc.).
	Failure to recognize and recover at the stall warning during normal operations.
	Improper stall recovery procedure.
	Secondary stalls, accelerated stalls, and cross-control stalls.
	Effect of environmental elements on airplane performance related to power-off stalls (e.g., turbulence, microbursts, and high-density altitude).
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Clear the area.
	Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
	Configure the airplane in the approach or landing configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
	Establish a stabilized descent.
	Transition smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.
	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.
	Acknowledge the cues at the first indication of a stall (e.g., airplane buffet, stall horn, etc.).
	Recover at the first indication of a stall or after a full stall has occurred, as specified by the evaluator.
	Configure the airplane as recommended by the manufacturer, and accelerate to V_X or V_Y.
	Return to the altitude, heading, and airspeed specified by the evaluator.

Task	*C. Power-On Stalls*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with power-on stalls. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Aerodynamics associated with stalls in various airplane configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
	Stall characteristics (i.e., airplane design) and impending stall and full stall indications (i.e., how to recognize by sight, sound, or feel).
	Factors and situations that can lead to a power-on stall and actions that can be taken to prevent it.
	Fundamentals of stall recovery.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Factors and situations that could lead to an inadvertent power-on stall, spin, and loss of control.
	Range and limitations of stall warning indicators (e.g., airplane buffet, stall horn, etc.).
	Failure to recognize and recover at the stall warning during normal operations.
	Improper stall recovery procedure.
	Secondary stalls, accelerated stalls, elevator trim stalls, and cross-control stalls.
	Effect of environmental elements on airplane performance related to power-on stalls (e.g., turbulence, microbursts, and high-density altitude).
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Clear the area.
	Select an entry altitude that will allow the Task to be completed no lower than 1,500 feet AGL (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
	Establish the takeoff, departure, or cruise configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
	Set power (as assigned by the evaluator) to no less than 65 percent power.
	Transition smoothly from the takeoff or departure attitude to the pitch attitude that will induce a stall.
	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.
	Acknowledge the cues at the first indication of a stall (e.g., airplane buffet, stall horn, etc.).
	Recover at the first indication of a stall or after a full stall has occurred, as specified by the evaluator.
	Configure the airplane as recommended by the manufacturer, and accelerate to V_X or V_Y.
	Return to the altitude, heading, and airspeed specified by the evaluator.

Task	*D. Accelerated Stalls*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management related to accelerated (power-on or power-off) stalls. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Aerodynamics associated with accelerated stalls in various airplane configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
	Stall characteristics (i.e., airplane design), impending stall, and full stall indications (i.e., how to recognize by sight, sound, or feel).
	Factors and situations that can lead to an accelerated stall and actions that can be taken to prevent it.
	Fundamentals of stall recovery.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Factors and situations that could lead to an inadvertent accelerated stall, spin, and loss of control.
	Range and limitations of stall warning indicators (e.g., airplane buffet, stall horn, etc.).
	Failure to recognize and recover at the stall warning during normal operations.
	Improper stall recovery procedure.
	Secondary stalls, cross-control stalls, and spins.
	Effect of environmental elements on airplane performance related to accelerated stalls (e.g., turbulence, microbursts, and high-density altitude).
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Distractions, improper task management, loss of situational awareness, or disorientation.
Skills	The applicant demonstrates the ability to:
	Clear the area.
	Select an entry altitude that will allow the Task to be completed no lower than 3,000 feet AGL.
	Establish the configuration as specified by the evaluator.
	Set power appropriate for the configuration, such that the airspeed does not exceed the maneuvering speed (V_A) or any other applicable POH/AFM limitation.
	Establish and maintain a coordinated turn in a 45° bank, increasing elevator back pressure smoothly and firmly until an impending stall is reached.
	Acknowledge the cue(s) and recover promptly at the first indication of an impending stall (e.g., aircraft buffet, stall horn, etc.).
	Execute a stall recovery in accordance with procedures set forth in the POH/AFM.
	Configure the airplane as recommended by the manufacturer, and accelerate to V_X or V_Y.
	Return to the altitude, heading, and airspeed specified by the evaluator.

Task	*E. Spin Awareness*
References	FAA-H-8083-2, FAA-H-8083-3; AC 61-67; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with spins, flight situations where unintentional spins may occur and procedures for recovery from unintentional spins.
Knowledge	The applicant demonstrates understanding of:
	Aerodynamics associated with spins in various airplane configurations, to include the relationship between angle of attack, airspeed, load factor, power setting, airplane weight and center of gravity, airplane attitude, and yaw effects.
	What causes a spin and how to identify the entry, incipient, and developed phases of a spin.
	Spin recovery procedure.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Factors and situations that could lead to inadvertent spin and loss of control.
	Range and limitations of stall warning indicators (e.g., aircraft buffet, stall horn, etc.).
	Improper spin recovery procedure.
	Effect of environmental elements on airplane performance related to spins (e.g., turbulence, microbursts, and high-density altitude).
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Distractions, improper task management, loss of situational awareness, or disorientation.
Skills	[Intentionally left blank]

Task	*A. Supplemental Oxygen*
References	14 CFR part 91; FAA-H-8083-2, FAA-H-8083-25; AC 61-107; AIM; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills for flight at higher altitudes where supplemental oxygen is required or recommended.
Knowledge	The applicant demonstrates understanding of:
	Regulatory requirements for supplemental oxygen use by flight crew and passengers.
	Physiological factors, to include:
	a. Impairment
	b. Symptoms of hypoxia
	c. Time of useful consciousness (TUC)
	Operational factors, to include:
	a. Characteristics, limitations, and applicability of continuous flow, demand, and pressure-demand oxygen systems
	b. Differences between and identification of “aviator’s breathing oxygen” and other types of oxygen
	c. Necessary precautions when using supplemental oxygen systems
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	High altitude flight.
	Failure to use supplemental oxygen.
	Management of compressed gas containers.
	Combustion hazards in an oxygen-rich environment.
Skills	The applicant demonstrates the ability to:
	Determine the quantity of supplemental oxygen required in a scenario given by the evaluator.
	Operate or simulate operation of the installed or portable oxygen equipment in the airplane.
	Brief passengers on use of supplemental oxygen equipment in a scenario given by the evaluator.

Task	*B. Pressurization*
References	FAA-H-8083-2, FAA-H-8083-3, FAA-H-8083-25; AC 61-107; AIM; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management and skills for flight in pressurized aircraft at high altitudes.
Knowledge	The applicant demonstrates understanding of:
	Fundamental concepts of airplane pressurization system, to include failure modes.
	Physiological factors, to include:
	a. Impairment
	b. Symptoms of hypoxia
	c. Time of useful consciousness (TUC)
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	High altitude flight.
	Failure or malfunction of pressurization system, if equipment is installed.
Skills	The applicant demonstrates the ability to:
	Operate the pressurization system, if equipment is installed.
	Respond appropriately to simulated pressurization malfunctions, if equipment is installed.
	Brief passengers on use of supplemental oxygen in the case of pressurization malfunction, if equipment is installed.

Task	*A. Emergency Descent*
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, skills and risk management associated with an emergency descent.
Knowledge	The applicant demonstrates understanding of:
	Situations that would require an emergency descent (e.g., depressurization, smoke, or engine fire).
	Immediate action items and emergency procedures.
	Airspeed, to include airspeed limitations.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to consider altitude, wind, terrain, obstructions, and available glide distance.
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Improper airplane configuration.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Clear the area.
	Establish and maintain the appropriate airspeed and configuration appropriate to the scenario specified by the evaluator and as covered in POH/AFM for the emergency descent.
	Maintain orientation, divide attention appropriately, and plan and execute a smooth recovery.
	Use bank angle between 30° and 45° to maintain positive load factors during the descent.
	Maintain appropriate airspeed, +0/-10 knots, and level off at specified altitude, ±100 feet.
	Complete the appropriate checklist.

Task	C. Systems and Equipment Malfunctions
References	FAA-H-8083-2, FAA-H-8083-3, POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with system and equipment malfunctions appropriate to the airplane provided for the practical test, and that the applicant is able to analyze malfunctions and take appropriate action for simulated emergencies.
Knowledge	The applicant demonstrates understanding of:
	Partial or complete power loss related to the specific powerplant, including:
	a. Engine roughness or overheat
	b. Carburetor or induction icing
	c. Loss of oil pressure
	d. Fuel starvation
	System and equipment malfunctions specific to the airplane, including:
	a. Electrical malfunction
	b. Vacuum/pressure and associated flight instrument malfunctions
	c. Pitot/static system malfunction
	d. Electronic flight deck display malfunction
	e. Landing gear or flap malfunction
	f. Inoperative trim
	Smoke/fire/engine compartment fire.
	Any other system specific to the airplane (e.g., supplemental oxygen, deicing).
	Inadvertent door or window opening.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to use the proper checklist for a system or equipment malfunction.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	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 above.
	Complete the appropriate checklist.

Task	D. Emergency Equipment and Survival Gear
References	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with emergency equipment, personal, and survival gear appropriate to the airplane and environment encountered during flight and identifying appropriate equipment that should be onboard the airplane.
Knowledge	The applicant demonstrates understanding of:
	Emergency Locator Transmitter (ELT) operations, limitations, and testing requirements.
	Fire extinguisher operations and limitations.
	Emergency equipment and survival gear needed for:
	a. Climate extremes (hot/cold)
	b. Mountainous terrain
	c. Overwater operations
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to plan for basic needs (water, clothing, shelter) for 48 to 72 hours.
Skills	The applicant demonstrates the ability to:
	Identify appropriate equipment and personal gear.
	Brief passengers on proper use of on-board emergency equipment and survival gear.

Task	*E. Engine Failure During Takeoff Before V_{MC} (Simulated) (AMEL, AMES)*
References	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-66; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with an engine failure during takeoff before V_{MC}. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Factors affecting V_{MC}.
	V_{MC} (red line) and V_{YSE} (blue line).
	Accelerate/stop distance.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to plan for engine failure during takeoff.
	Improper airplane configuration.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Close the throttles smoothly and promptly when a simulated engine failure occurs.
	Maintain directional control and apply brakes (AMEL), or flight controls (AMES), as necessary.

Task	*F. Engine Failure After Liftoff (Simulated) (AMEL, AMES)*
References	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-66; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with an engine failure after liftoff. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Factors affecting V_{MC}.
	V_{MC} (red line), V_{YSE} (blue line), and Vsse (safe single-engine speed).
	Accelerate/stop and accelerate/go distances.
	How to identify, verify, feather, and secure an inoperative engine.
	Importance of drag reduction, to include propeller feathering, gear and flap retraction, the manufacturer's recommended control input and its relation to zero sideslip.
	Simulated propeller feathering and the evaluator's zero-thrust procedures and responsibilities.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to plan for engine failure after liftoff.
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Improper airplane configuration.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Promptly recognize an engine failure, maintain control, and utilize appropriate emergency procedures.
	Establish V_{YSE}; if obstructions are present, establish V_{XSE} or V_{MC} +5 knots, whichever is greater, until obstructions are cleared. Then transition to V_{YSE}.
	Reduce drag by retracting landing gear and flaps in accordance with the manufacturer's guidance.
	Simulate feathering the propeller on the inoperative engine (evaluator should then establish zero thrust on the inoperative engine).
	Use flight controls in the proper combination as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
	Monitor the operating engine and make adjustments as necessary.
	Recognize the airplane's performance capabilities. If a climb is not possible at V_{YSE}, maintain V_{YSE} and return to the departure airport for landing, or initiate an approach to the most suitable landing area available.
	Simulate securing the inoperative engine.
	Maintain heading ±10° and airspeed ±5 knots.
	Complete the appropriate checklist.

Task	*G. Approach and Landing with an Inoperative Engine (Simulated) (AMEL, AMES)*
References	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-66; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with an approach and landing with an engine inoperative, including engine failure on final approach. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Factors affecting V_{MC}.
	V_{MC} (red line) and V_{YSE} (blue line).
	How to identify, verify, feather, and secure an inoperative engine.
	Importance of drag reduction, to include propeller feathering, gear and flap retraction, the manufacturer's recommended flight control input and its relation to zero sideslip.
	Applicant responsibilities during simulated feathering.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to plan for engine failure inflight or during an approach.
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Improper airplane configuration.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
	Possible single-engine go-around.
Skills	The applicant demonstrates the ability to:
	Promptly recognize an engine failure and maintain positive aircraft control.
	Set the engine controls, reduce drag, identify and verify the inoperative engine, and simulate feathering of the propeller on the inoperative engine. (Evaluator should then establish zero thrust on the inoperative engine).
	Use flight controls in the proper combination as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
	Follow the manufacturer's recommended emergency procedures.
	Monitor the operating engine and make adjustments as necessary.
	Maintain the manufacturer's recommended approach airspeed ±5 knots in the landing configuration with a stabilized approach, until landing is assured.
	Make smooth, timely, and correct control application before, during, and after round out and touchdown.
	Touch down on the first one-third of available runway/landing surface, with no drift, and the airplane's longitudinal axis aligned with and over the runway center or landing path.
	Maintain directional control and appropriate crosswind correction throughout the approach and landing.
	Complete the appropriate checklist.

Task	*A. Maneuvering with One Engine Inoperative (AMEL, AMES)*
References	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-66; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with one engine inoperative. ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations.*
Knowledge	The applicant demonstrates understanding of:
	Factors affecting V_{MC}.
	V_{MC} (red line) and V_{YSE} (blue line).
	How to identify, verify, feather, and secure an inoperative engine.
	Importance of drag reduction, to include propeller feathering, gear and flap retraction, the manufacturer's recommended flight control input and its relation to zero sideslip.
	Feathering, securing, unfeathering, and restarting.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to plan for engine failure during flight.
	Collision hazards, to include aircraft, terrain, obstacles, and wires.
	Improper airplane configuration.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Recognize an engine failure, maintain control, use manufacturer's memory item procedures, and utilize appropriate emergency procedures.
	Set the engine controls, identify and verify the inoperative engine, and feather the appropriate propeller.
	Use flight controls in the proper combination as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
	Attempt to determine and resolve the reason for the engine failure.
	Secure the inoperative engine and monitor the operating engine and make necessary adjustments.
	Restart the inoperative engine using manufacturer's restart procedures.
	Maintain altitude ±100 feet or a minimum sink rate if applicable, airspeed ±10 knots, and selected headings ±10°.
	Complete the appropriate checklist.

Task	*B. V_{MC} Demonstration (AMEL, AMES)*
References	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-66; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with a V_{MC} demonstration.
Knowledge	The applicant demonstrates understanding of:
	Factors affecting V_{MC} and how V_{MC} differs from stall speed (V_S).
	V_{MC} (red line), V_{YSE} (blue line), and V_{SSE} (safe single-engine speed).
	Cause of loss of directional control at airspeeds below V_{MC}.
	Proper procedures for maneuver entry and safe recovery.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Improper airplane configuration.
	Maneuvering with one engine inoperative.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Configure the airplane in accordance with the manufacturer's recommendations, in the absence of the manufacturer's recommendations, then at V_{SSE}/V_{YSE}, as appropriate, and:
	a. Landing gear retracted
	b. Flaps set for takeoff
	c. Cowl flaps set for takeoff
	d. Trim set for takeoff
	e. Propellers set for high RPM
	f. Power on critical engine reduced to idle and propeller windmilling
	g. Power on operating engine set to takeoff or maximum available power
	Establish a single-engine climb attitude with the airspeed at approximately 10 knots above VSSE.
	Establish a bank angle not to exceed 5° toward the operating engine, as required for best performance and controllability.
	Increase the pitch attitude slowly to reduce the airspeed at approximately 1 knot per second while applying rudder pressure to maintain directional control until full rudder is applied.
	Recognize indications of loss of directional control, stall warning, or buffet.
	Recover promptly by simultaneously reducing power sufficiently on the operating engine, decreasing the angle of attack as necessary to regain airspeed and directional control, and without adding power on the simulated failed engine.
	Recover within 20° of entry heading.
	Advance power smoothly on the operating engine and accelerate to V_{SSE}/V_{YSE}, as appropriate, ±5 knots during recovery.

Task	*C. One Engine Inoperative (Simulated) (solely by Reference to Instruments) During Straight-and-Level Flight and Turns (AMEL, AMES)*
References	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-66; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with flight solely by reference to instruments with one engine inoperative.
Knowledge	The applicant demonstrates understanding of:
	Procedures used if engine failure occurs during straight-and-level flight and turns while on instruments.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to identify the inoperative engine.
	Inability to climb or maintain altitude with an inoperative engine.
	Low altitude maneuvering including, stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
	Fuel management during single-engine operation.
Skills	The applicant demonstrates the ability to:
	Promptly recognize an engine failure and maintain positive airplane control.
	Set the engine controls, reduce drag, identify and verify the inoperative engine, and simulate feathering of the propeller on the inoperative engine. (Evaluator should then establish zero thrust on the inoperative engine.)
	Establish the best engine-inoperative airspeed and trim the airplane.
	Use flight controls in the proper combination as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
	Verify the prescribed checklist procedures normally used for securing the inoperative engine.
	Attempt to determine and resolve the reason for the engine failure.
	Monitor engine functions and make necessary adjustments.
	Maintain the specified altitude ±100 feet or minimum sink rate if applicable, airspeed ±10 knots, and the specified heading ±10°.
	Assess the airplane's performance capability and decide an appropriate action to ensure a safe landing.
	Avoid loss of airplane control or attempted flight contrary to the engine-inoperative operating limitations of the airplane.
	Utilize SRM.

Task	*D. Instrument Approach and Landing with an Inoperative Engine (Simulated) (solely by Reference to Instruments) (AMEL, AMES)*
References	FAA-H-8083-2, FAA-H-8083-3; FAA-P-8740-66; POH/AFM
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with executing a published instrument approach solely by reference to instruments with one engine inoperative.
Knowledge	The applicant demonstrates understanding of:
	Instrument approach procedures with one engine inoperative.
Risk Management	The applicant demonstrates the ability to identify, assess, and mitigate risks, encompassing:
	Failure to plan for engine failure during approach and landing.
	Collision hazards, to include aircraft, terrain, obstacles, wires, vehicles, vessels, persons, and wildlife.
	Improper airplane configuration.
	Low altitude maneuvering including stall, spin, or CFIT
	Distractions, loss of situational awareness, or improper task management.
	Performing a go-around/rejected landing with a powerplant failure.
Skills	The applicant demonstrates the ability to:
	Promptly recognize engine failure and maintain positive airplane control.
	Set the engine controls, reduce drag, identify and verify the inoperative engine, and simulate feathering of the propeller on the inoperative engine. (Evaluator should then establish zero thrust on the inoperative engine).
	Use flight controls in the proper combination as recommended by the manufacturer or as required to maintain best performance, and trim as required.
	Follow the manufacturer's recommended emergency procedures.
	Monitor the operating engine and make adjustments as necessary.
	Request and follow an actual or a simulated ATC clearance for an instrument approach.
	Maintain altitude ±100 feet or minimum sink rate if applicable, airspeed ±10 knots, and selected heading ±10°.
	Establish a rate of descent that will ensure arrival at the MDA or DA/DH, with the airplane in a position from which a descent to a landing on the intended runway can be made, either straight in or circling as appropriate.
	On final approach segment, maintain vertical (as applicable) and lateral guidance within ¾-scale deflection.
	Avoid loss of airplane control or attempted flight contrary to the operating limitations of the airplane.
	Comply with the published criteria for the aircraft approach category if circling.
	Execute a normal landing.
	Complete the appropriate checklist.

Task	*B. Holding Procedures*
References	14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; AIM
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with holding procedures solely by reference to instruments.
Knowledge	The applicant demonstrates understanding of:
	Elements related to holding procedures, including reporting criteria, appropriate speeds, and recommended entry procedures for standard, nonstandard, published, and nonpublished holding patterns.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Recalculating fuel reserves if assigned an unanticipated EFC time.
	Scenarios and circumstances that could result in minimum fuel or the need to declare an emergency.
	Scenarios that could lead to holding, including deteriorating weather at the planned destination.
	Improper holding entry and improper wind correction while holding.
Skills	The applicant demonstrates the ability to:
	Explain and use an entry procedure that ensures the airplane remains within the holding pattern airspace for a standard, nonstandard, published, or non-published holding pattern.
	Change to the holding airspeed appropriate for the altitude or airplane when 3 minutes or less from, but prior to arriving at, the holding fix and set appropriate power as needed for fuel conservation.
	Recognize arrival at the holding fix and promptly initiate entry into the holding pattern.
	Maintain airspeed ±10 knots, altitude ±100 feet, selected headings within ±10°, and track a selected course, radial, or bearing within ¾-scale deflection of the CDI.
	Use proper wind correction procedures to maintain the desired pattern and to arrive over the fix as close as possible to a specified time and maintain pattern leg lengths when specified.
	Use an MFD and other graphical navigation displays, if installed, to monitor position in relation to the desired flightpath during holding.
	Comply with ATC reporting requirements and restrictions associated with the holding pattern.
	Demonstrate SRM.

Task	*B. Recovery from Unusual Flight Attitudes*
References	14 CFR part 61; FAA-H-8083-15
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with recovering from unusual flight attitudes solely by reference to instruments.
Knowledge	The applicant demonstrates understanding of:
	Procedures for recovery from unusual flight attitudes.
	Unusual flight attitude causal factors, including physiological factors, system and equipment failures, and environmental factors.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Situations that could lead to loss of control or unusual flight attitudes (e.g., stress, task saturation, and distractions).
	Failure to recognize an unusual flight attitude and follow the proper recovery procedure.
	Exceeding the operating envelope during the recovery.
Skills	The applicant demonstrates the ability to:
	Use proper instrument cross-check and interpretation to identify an unusual attitude (including both nose-high and nose-low), and apply the appropriate pitch, bank, and power corrections, in the correct sequence, to return to a stabilized level flight attitude.

Task	*A. Intercepting and Tracking Navigational Systems and Arcs*
References	14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; AFM; AIM ***Note:*** *The evaluator must reference the manufacturer's equipment supplement(s) as necessary for appropriate limitations, procedures, etc.*
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with intercepting and tracking navigation aids and arcs solely by reference to instruments.
Knowledge	The applicant demonstrates understanding of:
	Ground-based navigation (orientation, course determination, equipment, tests and regulations) including procedures for intercepting and tracking courses and arcs.
	Satellite-based navigation (orientation, course determination, equipment, tests and regulations, interference, appropriate use of databases, RAIM, and WAAS) including procedures for intercepting and tracking courses and arcs.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to manage automated navigation and autoflight systems.
	Distractions, loss of situational awareness, or improper task management.
	Limitations of the navigation system in use.
Skills	The applicant demonstrates the ability to:
	Tune and correctly identify the navigation facility/program the navigation system and verify system accuracy as appropriate for the equipment installed in the airplane.
	Determine airplane position relative to the navigational facility or waypoint.
	Set and correctly orient to the course to be intercepted.
	Intercept the specified course at appropriate angle, inbound to or outbound from a navigational facility or waypoint.
	Maintain airspeed ±10 knots, altitude ±100 feet, and selected headings ±5°.
	Apply proper correction to maintain a course, allowing no more than ¾-scale deflection of the CDI. If a DME arc is selected, maintain that arc ±1 nautical mile.
	Recognize navigational system or facility failure, and when required, report the failure to ATC.
	Use an MFD and other graphical navigation displays, if installed, to monitor position, track wind drift, and to maintain situational awareness.
	Use the autopilot to make appropriate course intercepts, if installed.

Task	*A. Nonprecision Approach*
References	14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; IFP, AIM, AC 120-108
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing nonprecision approach procedures solely by reference to instruments.
Knowledge	The applicant demonstrates understanding of:
	Procedures and limitations associated with a nonprecision approach, including the differences between Localizer Performance (LP) and Lateral Navigation (LNAV) approach guidance.
	Navigation system annunciations expected during an RNAV approach.
	Ground-based and satellite-based navigation systems used for a nonprecision approach.
	A stabilized approach, to include energy management concepts.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to follow the correct approach procedure (e.g., descending too early, etc.).
	Selecting an incorrect navigation frequency.
	Failure to manage automated navigation and autoflight systems.
	Failure to ensure proper airplane configuration during an approach and missed approach.
	An unstable approach, including excessive descent rates.
	Deteriorating weather conditions on approach.
	Operating below the minimum descent altitude (MDA) or continuing a descent below decision altitude (DA) without proper visual references.
Skills	The applicant demonstrates the ability to:
	Accomplish the nonprecision instrument approaches selected by the evaluator.
	Establish two-way communications with ATC appropriate for the phase of flight or approach segment, and use proper communication phraseology.
	Select, tune, identify, and confirm the operational status of navigation equipment to be used for the approach.
	Comply with all clearances issued by ATC or the evaluator.
	Recognize if any flight instrumentation is inaccurate or inoperative, and take appropriate action.
	Advise ATC or the evaluator if unable to comply with a clearance.
	Complete the appropriate checklist.
	Establish the appropriate airplane configuration and airspeed considering meteorological and operating conditions.
	Maintain altitude ±100 feet, selected heading ±10°, airspeed ±10 knots, and accurately track radials, courses, and bearings, prior to beginning the final approach segment.
	Adjust the published MDA and visibility criteria for the aircraft approach category, as appropriate, for factors that include NOTAMs, inoperative aircraft or navigation equipment, or inoperative visual aids associated with the landing environment, etc.
	Establish a stabilized descent to the appropriate altitude.
	For the final approach segment, maintain no more than a ¾-scale deflection of the CDI, maintain airspeed ±10 knots, and altitude, if applicable, above MDA, +100/-0 feet, to the Visual Descent Point (VDP) or Missed Approach Point (MAP).
	Execute the missed approach procedure if the required visual references are not distinctly visible and identifiable at the appropriate point or altitude for the approach profile; or execute a normal landing from a straight-in or circling approach.
	Use an MFD and other graphical navigation displays, if installed, to monitor position, track wind drift, and to maintain situational awareness.

Task	***B. Precision Approach***
References	14 CFR parts 61, 91; FAA-H-8083-15, FAA-H-8083-16; IFP; AIM
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing precision approach procedures solely by reference to instruments.
Knowledge	The applicant demonstrates understanding of:
	Procedures and limitations associated with a precision approach, including determining required descent rates and adjusting minimums in the case of inoperative equipment.
	Navigation system displays, annunciations, and modes of operation.
	Ground-based and satellite-based navigation (orientation, course determination, equipment, tests and regulations, interference, appropriate use of navigation data, signal integrity)
	A stabilized approach, to include energy management concepts
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to follow the correct approach procedure (e.g. descending below the glideslope, etc.).
	Selecting an incorrect navigation frequency.
	Failure to manage automated navigation and autoflight systems.
	Failure to ensure proper airplane configuration during an approach and missed approach.
	An unstable approach including excessive descent rates.
	Deteriorating weather conditions on approach.
	Continuing to descend below the Decision Altitude (DA)/Decision Height (DH) when the required visual references are not visible.
Skills	The applicant demonstrates the ability to:
	Accomplish the precision instrument approach(es) selected by the evaluator.
	Establish two-way communications with ATC appropriate for the phase of flight or approach segment, and use proper communication phraseology.
	Select, tune, identify, and confirm the operational status of navigation equipment to be used for the approach.
	Comply with all clearances issued by ATC or the evaluator.
	Recognize if any flight instrumentation is inaccurate or inoperative, and take appropriate action.
	Advise ATC or the evaluator if unable to comply with a clearance.
	Complete the appropriate checklist.
	Establish the appropriate airplane configuration and airspeed considering turbulence and windshear.
	Maintain altitude ±100 feet, selected heading ±10°, airspeed ±10 knots, and accurately track radials, courses, and bearings, prior to beginning the final approach segment.
	Adjust the published DA/DH and visibility criteria for the aircraft approach category, as appropriate, to account for NOTAMs, Inoperative airplane or navigation equipment, or inoperative visual aids associated with the landing environment.
	Establish a predetermined rate of descent at the point where vertical guidance begins, which approximates that required for the airplane to follow the vertical guidance.
	Maintain a stabilized final approach from the Final Approach Fix (FAF) to DA/DH allowing no more than ¾-scale deflection of either the vertical or lateral guidance indications and maintain the desired airspeed ±10 knots.
	Immediately initiate the missed approach procedure when at the DA/DH, and the required visual references for the runway are not unmistakably visible and identifiable.
	Transition to a normal landing approach (missed approach for seaplanes) only when the airplane is in a position from which a descent to a landing on the runway can be made at a normal rate of descent using normal maneuvering.
Task	***B. Precision Approach***

	Maintain a stabilized visual flight path from the DA/DH to the runway aiming point where a normal landing may be accomplished within the touchdown zone.
	Use an MFD and other graphical navigation displays, if installed, to monitor position, track wind drift, and to maintain situational awareness.

Task	*C. Missed Approach*
References	14 CFR parts 61, 91; FAA-H-8083-15; IFP; AIM
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing a missed approach procedure solely by reference to instruments.
Knowledge	The applicant demonstrates understanding of:
	Elements related to missed approach procedures and limitations associated with standard instrument approaches, including while using an FMS or autopilot, if equipped.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to follow prescribed procedures.
	Holding, diverting, or electing to fly the approach again.
	Failure to ensure proper airplane configuration during an approach and missed approach.
	Factors that might lead to executing a missed approach procedure before the missed approach point or to a go-around below DA/MDA.
	Failure to manage automated navigation and autoflight systems.
Skills	The applicant demonstrates the ability to:
	Promptly initiate the missed approach procedure and report it to ATC.
	Apply the appropriate power setting for the flight condition and establish a pitch attitude necessary to obtain the desired performance.
	Configure the airplane in accordance with airplane manufacturer's instructions, establish a positive rate of climb, and accelerate to the appropriate airspeed, ±10 knots.
	Follow the recommended checklist items appropriate to the missed approach/go-around procedure.
	Comply with the published or alternate missed approach procedure.
	Advise ATC or the evaluator if unable to comply with a clearance, restriction, or climb gradient.
	Maintain the heading, course, or bearing ±10°; and altitude(s) ±100 feet during the missed approach procedure.
	Use an MFD and other graphical navigation displays, if installed, to monitor position and track to help navigate the missed approach.
	Demonstrate SRM or CRM, as appropriate.
	Request ATC clearance to attempt another approach, proceed to the alternate airport, holding fix, or other clearance limit, as appropriate, or as directed by the evaluator.

Task	*D. Circling Approach*
References	14 CFR parts 61, 91; FAA-H-8083-15; IFP; AIM
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing a circling approach procedure.
Knowledge	The applicant demonstrates understanding of:
	Elements related to circling approach procedures and limitations including approach categories and related airspeed restrictions.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to follow prescribed circling approach procedures.
	Executing a circling approach at night or with marginal visibility.
	Losing visual contact with an identifiable part of the airport.
	Failure to manage automated navigation and autoflight systems.
	Failure to maintain an appropriate altitude, airspeed, or distance while circling.
	Low altitude maneuvering including stall, spin, or CFIT.
	Executing an improper missed approach after the MAP while circling.
Skills	The applicant demonstrates the ability to:
	Comply with the circling approach procedure considering turbulence, windshear, and the maneuvering capability and approach category of the aircraft.
	Confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or the evaluator.
	Demonstrate SRM.
	Establish the approach and landing configuration. Maintain a stabilized approach and a descent rate that ensures arrival at the MDA, or the preselected circling altitude above the MDA, prior to the missed approach point.
	Maintain airspeed ±10 knots, desired heading/track ±10°, and altitude +100/-0 feet until descending below the MDA or the preselected circling altitude above the MDA.
	Visually maneuver to a base or downwind leg appropriate for the landing runway and environmental conditions.
	If a missed approach occurs, turn in the appropriate direction using the correct procedure and appropriately configure the airplane.
	If landing, initiate a stabilized descent. Touch down on the first one-third of the selected runway without excessive maneuvering, without exceeding the normal operating limits of the airplane, and without exceeding 30° of bank.

Task	*E. Landing from an Instrument Approach*
References	14 CFR parts 61, 91; FAA-H-8083-15; AIM
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing the procedures for a landing from an instrument approach.
Knowledge	The applicant demonstrates understanding of:
	Elements related to the pilot's responsibilities, and the environmental, operational, and meteorological factors that affect landing from a straight-in or circling approach.
	Airport signs, markings and lighting, to include approach lighting systems.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Attempting to land from an unstable approach.
	Flying below the glidepath.
	Transitioning from instrument to visual references for landing.
Skills	The applicant demonstrates the ability to:
	Transition at the DA/DH, MDA, or visual descent point (VDP) to a visual flight condition, allowing for safe visual maneuvering and a normal landing.
	Adhere to all ATC or evaluator advisories, such as NOTAMs, windshear, wake turbulence, runway surface, braking conditions, and other operational considerations.
	Complete the appropriate checklist.
	Maintain positive airplane control throughout the landing maneuver.
	Demonstrate SRM.

Task	*B. One Engine Inoperative (Simulated) during Straight-and-Level Flight and Turns (AMEL, AMES)*
References	14 CFR 61; FAA-H-8083-3, FAA-H-8083-15
Objective	To determine the applicant exhibits satisfactory knowledge, risk management and skills associated with flight solely by reference to instruments with one engine inoperative.
Knowledge	The applicant demonstrates understanding of:
	Procedures used if engine failure occurs during straight-and-level flight and turns while on instruments.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to identify the inoperative engine.
	Inability to climb or maintain altitude with an inoperative engine.
	Low altitude maneuvering including stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
	Fuel management during single-engine operation.
Skills	The applicant demonstrates the ability to:
	Promptly recognize an engine failure and maintain positive airplane control.
	Set the engine controls, reduce drag, identify and verify the inoperative engine, and simulate feathering of the propeller on the inoperative engine. (Evaluator should then establish zero thrust on the inoperative engine.)
	Establish the best engine-inoperative airspeed and trim the airplane.
	Use flight controls in the proper combination as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
	Verify the prescribed checklist procedures normally used for securing the inoperative engine.
	Attempt to determine and resolve the reason for the engine failure.
	Monitor engine functions and make necessary adjustments.
	Maintain the specified altitude ±100 feet or minimum sink rate if applicable, airspeed ±10 knots, and the specified heading ±10°.
	Assess the airplane's performance capability and decide an appropriate action to ensure a safe landing.
	Avoid loss of airplane control or attempted flight contrary to the engine-inoperative operating limitations of the airplane.
	Demonstrate SRM.

Task	***C. Instrument Approach and Landing with an Inoperative Engine (Simulated) (AMEL, AMES)*** ***Note:*** *See Appendix 7: Aircraft, Equipment, and Operational Requirements & Limitations for related considerations.*
References	14 CFR parts 61,91; FAA-H-8083-3, FAA-H-8083-15, IFP
Objective	To determine that the applicant exhibits satisfactory knowledge, risk management, and skills associated with executing a published instrument approach solely by reference to instruments with one engine inoperative.
Knowledge	The applicant demonstrates understanding of:
	Instrument approach procedures with one engine inoperative.
Risk Management	The applicant demonstrates the ability to identify, assess, and mitigate risks, encompassing:
	Failure to plan for engine failure during approach and landing.
	Collision hazards, to include aircraft, terrain, obstacles, wires, vehicles, vessels, persons, and wildlife.
	Improper airplane configuration.
	Low altitude maneuvering including stall, spin, or CFIT.
	Distractions, loss of situational awareness, or improper task management.
	Performing a go-around/rejected landing with a powerplant failure.
Skills	The applicant demonstrates the ability to:
	Promptly recognize a engine failure and maintain positive airplane control.
	Set the engine controls, reduce drag, identify and verify the inoperative engine, and simulate feathering of the propeller on the inoperative engine. (Evaluator should then establish zero thrust on the inoperative engine.)
	Use flight controls in the proper combination as recommended by the manufacturer, or as required to maintain best performance, and trim as required.
	Follow the manufacturer's recommended emergency procedures.
	Monitor the operating engine and make adjustments as necessary.
	Request and follow an actual or a simulated ATC clearance for an instrument approach.
	Maintain altitude ±100 feet or minimum sink rate if applicable, airspeed ±10 knots, and selected heading ±10°.
	Establish a rate of descent that will ensure arrival at the MDA or DA/DH with the airplane in a position from which a descent to a landing on the intended runway can be made, either straight in or circling as appropriate.
	On final approach segment, maintain vertical (as applicable) and lateral guidance within ¾-scale deflection.
	Avoid loss of airplane control, or attempted flight contrary to the operating limitations of the airplane.
	Comply with the published criteria for the aircraft approach category if circling.
	Execute a normal landing.
	Complete the appropriate checklist.

Task	*D. Approach with Loss of Primary Flight Instrument Indicators*
References	14 CFR parts 61, 91; FAA-H-8083-15; IFP
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with performing an approach solely by reference to instruments with the loss of primary flight control instruments.
Knowledge	The applicant demonstrates understanding of:
	Recognizing if primary flight instruments are inaccurate or inoperative, and advising ATC or the evaluator.
	Common failure modes of vacuum and electric attitude instruments and how to correct or minimize the effect of their loss.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Use of secondary flight displays when primary displays have failed.
	Failure to maintain airplane control.
	Distractions, loss of situational awareness, or improper task management.
Skills	The applicant demonstrates the ability to:
	Advise ATC or the evaluator of if unable to comply with a clearance.
	Complete a nonprecision instrument approach without the use of the primary flight instruments using the skill elements of the nonprecision approach Task
	Demonstrate SRM.

Task	*A. Checking Instruments and Equipment*
References	14 CFR parts 61, 91
Objective	To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with checking flight instruments and equipment during postflight.
Knowledge	The applicant demonstrates understanding of:
	Procedures for checking the functionality of all installed instruments and navigation equipment.
Risk Management	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
	Failure to perform a proper postflight inspection and properly document airplane discrepancies.
Skills	The applicant demonstrates the ability to:
	Conduct a postflight inspection, and document discrepancies and servicing requirements, if any.

General

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

Stall and Spin Awareness

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

Use of Checklists

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

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

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

Use of 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 cockpit.

Positive Exchange of Flight Controls

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

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

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

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

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

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

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

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

Multiengine Considerations

On multiengine practical tests, where the failure of the most critical engine after liftoff is required, the evaluator must consider local atmospheric conditions, terrain, and type of aircraft used. The evaluator must not simulate failure of an engine until attaining at least $V_{SSE}/V_{XSE}/V_{YSE}$ and an altitude not lower than 400 feet AGL.

The applicant must supply an airplane that does not prohibit the demonstration of feathering the propeller in flight. However, an applicant holding an unrestricted AMEL rating may take a practical test for the addition of an AMES rating in an AMES without propeller feathering capability. Practical tests conducted in a flight simulation training device (FSTD) can only be accomplished as part of an approved curriculum or training program. Any limitations for powerplant failure will be noted in that program.

For safety reasons, when the practical test is conducted in an airplane, the applicant must perform Tasks that require feathering or shutdown only under conditions and at a position and altitude where it is possible to make a safe landing on an established airport if there is difficulty in unfeathering the propeller or restarting the engine. The evaluator must select an entry altitude that will allow the single-engine demonstration Tasks to be completed no lower than 3,000 feet AGL or the manufacturer's recommended altitude (whichever is higher). If it is not possible to unfeather the propeller or restart the engine while airborne, the applicant and the evaluator should treat the situation as an emergency. At altitudes lower than 3,000 feet AGL, engine failure should be simulated by reducing throttle to idle and then establishing zero thrust.

Engine failure (simulated) during takeoff should be accomplished prior to reaching 50 percent of the calculated V_{MC}.

Single-Engine Considerations

For safety reasons, the evaluator will not request a simulated powerplant failure in a single-engine airplane unless it is possible to safely complete a landing.

High Performance Aircraft Considerations

In some high performance airplanes, the power setting may have to be reduced below the ACS guidelines power setting to prevent excessively high pitch attitudes greater than 30° nose up