

#### IV. Takeoffs, Landing and Go-Arounds

<b>Task</b>	<b><i>E. Short-Field Takeoff and Maximum Performance Climb (ASEL, AMEL)</i></b>
<b>References</b>	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
<b>Objective</b>	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.
<b>Knowledge</b>	The applicant demonstrates understanding of:
<i>PA.IV.E.K1</i>	Effects of atmospheric conditions, including wind, on takeoff and climb performance.
<i>PA.IV.E.K2</i>	$V_X$ and $V_Y$ .
<i>PA.IV.E.K3</i>	Appropriate aircraft configuration.
<b>Risk Management</b>	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
<i>PA.IV.E.R1</i>	Selection of runway based on pilot capability, aircraft performance and limitations, available distance, and wind.
<i>PA.IV.E.R2</i>	Effects of:
<i>PA.IV.E.R2a</i>	a. Crosswind
<i>PA.IV.E.R2b</i>	b. Wind shear
<i>PA.IV.E.R2c</i>	c. Tailwind
<i>PA.IV.E.R2d</i>	d. Wake turbulence
<i>PA.IV.E.R2e</i>	e. Runway surface/condition
<i>PA.IV.E.R3</i>	Abnormal operations, to include planning for:
<i>PA.IV.E.R3a</i>	a. Rejected takeoff
<i>PA.IV.E.R3b</i>	b. Engine failure in takeoff/climb phase of flight
<i>PA.IV.E.R4</i>	Collision hazards, to include aircraft, terrain, obstacles, and wires.
<i>PA.IV.E.R5</i>	Low altitude maneuvering/stall/spin.
<i>PA.IV.E.R6</i>	Distractions, loss of situational awareness, and/or improper task management.
<b>Skills</b>	The applicant demonstrates the ability to:
<i>PA.IV.E.S1</i>	Complete the appropriate checklist.
<i>PA.IV.E.S2</i>	Make radio calls as appropriate.
<i>PA.IV.E.S3</i>	Verify assigned/correct runway.
<i>PA.IV.E.S4</i>	Ascertain wind direction with or without visible wind direction indicators.
<i>PA.IV.E.S5</i>	Position the flight controls for the existing wind conditions.
<i>PA.IV.E.S6</i>	Clear the area, taxi into takeoff position and align the airplane on the runway centerline utilizing maximum available takeoff area.
<i>PA.IV.E.S7</i>	Apply brakes while setting aircraft power to achieve maximum performance.
<i>PA.IV.E.S8</i>	Confirm takeoff power prior to brake release and verify proper engine and flight instrument indications prior to rotation.
<i>PA.IV.E.S9</i>	Rotate and lift off at the recommended airspeed, and accelerate to the recommended obstacle clearance airspeed or $V_X + 10/-5$ knots.
<i>PA.IV.E.S10</i>	Establish a pitch attitude that will maintain the recommended obstacle clearance airspeed, or $V_X + 10/-5$ knots, until the obstacle is cleared, or until the airplane is 50 feet above the surface.
<i>PA.IV.E.S11</i>	After clearing the obstacle, establish the pitch attitude for $V_Y$ , accelerate to $V_Y$ , and maintain $V_Y + 10/-5$ knots, during the climb.
<i>PA.IV.E.S12</i>	Retract landing gear and flaps after a positive rate of climb has been verified or in accordance with aircraft manufacturer's guidance.
<i>PA.IV.E.S13</i>	Maintain $V_Y + 10/-5$ knots to a safe maneuvering altitude.
<i>PA.IV.E.S14</i>	Maintain directional control and proper wind-drift correction throughout takeoff and climb.
<i>PA.IV.E.S15</i>	Comply with noise abatement procedures.

#### IV. Takeoffs, Landing and Go-Arounds

<b>Task</b>	<b>F. Short-Field Approach and Landing (ASEL, AMEL)</b>
<b>References</b>	FAA-H-8083-2, FAA-H-8083-3; POH/AFM
<b>Objective</b>	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.
<b>Knowledge</b>	The applicant demonstrates understanding of:
PA.IV.F.K1	A stabilized approach, to include energy management concepts.
PA.IV.F.K2	Effects of atmospheric conditions, including wind, on approach and landing performance.
PA.IV.F.K3	Wind correction techniques on approach and landing.
<b>Risk Management</b>	The applicant demonstrates the ability to identify, assess and mitigate risks, encompassing:
PA.IV.F.R1	Selection of runway based on pilot capability, aircraft performance and limitations, available distance, and wind.
PA.IV.F.R2	Effects of:
PA.IV.F.R2a	a. Crosswind
PA.IV.F.R2b	b. Wind shear
PA.IV.F.R2c	c. Tailwind
PA.IV.F.R2d	d. Wake turbulence
PA.IV.F.R2e	e. Runway surface/condition
PA.IV.F.R3	Abnormal operations, to include planning for:
PA.IV.F.R3a	a. Rejected landing and go-around
PA.IV.F.R3b	b. Land and hold short operations (LAHSO)
PA.IV.F.R4	Collision hazards, to include aircraft, terrain, obstacles and wires.
PA.IV.F.R5	Low altitude maneuvering/stall/spin.
PA.IV.F.R6	Distractions, loss of situational awareness, and/or improper task management.
<b>Skills</b>	The applicant demonstrates the ability to:
PA.IV.F.S1	Complete the appropriate checklist.
PA.IV.F.S2	Make radio calls as appropriate.
PA.IV.F.S3	Ensure the aircraft is aligned with the correct/assigned runway.
PA.IV.F.S4	Scan the landing runway and adjoining area for traffic and obstructions.
PA.IV.F.S5	Consider the wind conditions, landing surface, and select a suitable touchdown point.
PA.IV.F.S6	Establish the recommended approach and landing configuration and airspeed, and adjust pitch attitude and power as required to maintain a stabilized approach.
PA.IV.F.S7	Maintain manufacturer's published airspeed, or in its absence, not more than $1.3 V_{SO}$ , +10/-5 knots, with wind gust factor applied.
PA.IV.F.S8	Maintain crosswind correction and directional control throughout the approach and landing sequence.
PA.IV.F.S9	Make smooth, timely, and correct control inputs during the round out and touchdown.
PA.IV.F.S10	Touch down at the recommended airspeed.
PA.IV.F.S11	Touch down within 200 feet beyond 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.
PA.IV.F.S12	Use manufacturer's recommended procedures for aircraft configuration and braking.
PA.IV.F.S13	Execute a safe and 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.
PA.IV.F.S14	Utilize runway incursion avoidance procedures.