

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

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

**10 deg. flaps-normal TO.- hold V<sub>x</sub> after TO to 50 ft.  
Reduce flaps - climb at V<sub>y</sub>.**