

NORMAL TAKEOFF AND CLIMB

OBJECTIVE

To teach the private student the knowledge of the elements related to a normal takeoff, climb operations, and rejected takeoff procedures.

COMPLETION STANDARDS

1. Positions the flight controls for existing wind conditions.
2. Clears the area; taxis into the takeoff position and aligns the airplane on the runway center/takeoff path.
3. Lifts off at the recommended airspeed and accelerates to V_Y .
4. Establishes a pitch attitude that will maintain $V_Y +10/-5$ knots.
5. Retracts the landing gear, if appropriate, and flaps after a positive rate of climb is established.
6. Maintains takeoff power and $V_Y +10/-5$ knots to a safe maneuvering altitude.
7. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
8. Complies with noise abatement procedures.
9. Completes the appropriate checklist.

DESCRIPTION

The airplane will be aligned with runway centerline. Takeoff power will be applied smoothly, instruments will be checked and the airplane allowed to accelerate to rotation speed, then the pitch attitude is increased to establish a climb out at V_Y airspeed.

PROCEDURE

1. Set recommended flaps.
2. Clear final approach.
3. After receiving clearance from tower or announcing intentions on the common traffic advisory frequency, taxi onto the runway.
4. Align the airplane on the runway centerline.
5. Advance the throttle smoothly to maximum allowable power.
6. Check the engine instruments.
7. Check airspeed alive.

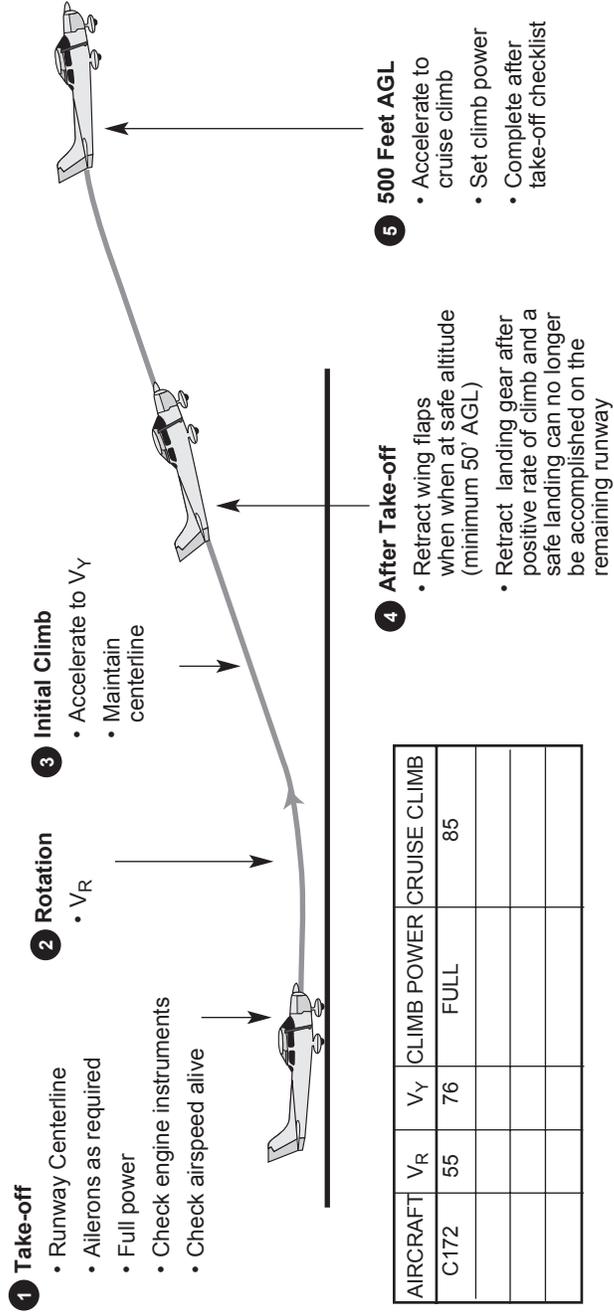
8. Maintain directional control on runway centerline by use of the rudder. Avoid using brakes.
9. Rotate smoothly at V_R and establish the pitch attitude for V_Y .
10. If a significant headwind or gusty wind conditions exist, the airplane should be held on the ground slightly longer than normal so a smooth and definite lift off can be made.
11. Keep the wings level with use of the ailerons.
12. Retract the wing flaps when at a safe speed and safe altitude (minimum 50 feet AGL).
13. Accelerate and maintain V_Y .
14. Retract landing gear after positive rate of climb and a safe landing can no longer be accomplished on the remaining runway.
15. Maintain takeoff power and V_Y to 500 feet AGL or until all obstacles are cleared.
16. Accelerate to cruise climb airspeed then set climb power.
17. Maintain a straight track over the extended runway centerline until a turn is required.
18. Avoid noise sensitive areas.
19. Complete after-takeoff checklist.

Note: FAR 91.103 requires takeoff and landing performance data to be computed prior to all flights.

References

Private Pilot Practical Test Standards FAA-S-8081-14A, pg. 1-10.
Airplane Flying Handbook FAA-H-8083-3, pg. 5-1 ⇒ 5-5.

NORMAL/CROSSWIND TAKE-OFF



Limitations — $V_Y + 10/-5$ Knots