

Normal Landing

Objective

To safely land the aircraft under normal conditions while maintaining proper descent profile and control in a Cessna 172.

Execution

- Downwind: Complete GLUMPS (Gas, Landing lights, Undercarriage, Mixture, Props, Seatbelts).
- Establish desired touchdown point and desired aiming point
- Abeam the threshold: Reduce power to 1500 RPM, add flaps 10°, and pitch for 90 MPH.
- Use the region of reverse command; pitch is airspeed and power is altitude
- Base leg: Add flaps 20°–30°, pitch for 80 MPH.
- Final leg: Flaps 30°, pitch for 70 MPH.
- Flare over the aiming point, bringing eyes ahead of the airplane, and continue to apply backpressure through touchdown.
- Maintain centerline alignment with the runway, using rudder for any necessary corrections.
- ACS Tolerances:
 - Airspeed: +10/-5 KIAS
 - Landing Zone: +400/-0 feet

References

- FAA-H-8083-3C Airplane Flying Handbook, Chapter 8
 - Private Pilot Airman Certification Standards (ACS), Section IV: Approaches and Landings
-

Short-Field Landing

Objective

To land over an obstacle and stop within the shortest possible distance while maintaining full control of the aircraft in a Cessna 172.

Execution

- Downwind: Complete GLUMPS (Gas, Landing lights, Undercarriage, Mixture, Props, Seatbelts).
- Establish desired touchdown point and desired aiming point
- Abeam the threshold: Reduce power to 1500 RPM, add flaps 10°, and pitch for 90 MPH.
- Use the region of reverse command; pitch is airspeed and power is altitude
- Base leg: Add flaps 20°, pitch for 80 MPH.
- Final leg: Flaps 40°, pitch for 65 MPH.
- Flare over your aiming point (1-2 centerline stripes beforehand)
- Pull power idle as you reach your touchdown point
- Touchdown on the touchdown point and immediately retract flaps
- ACS Tolerances:
 - Airspeed: +10/-5 KIAS
 - Landing Zone: +200/-0 feet

References

- FAA-H-8083-3C Airplane Flying Handbook, Chapter 8
 - Private Pilot Airman Certification Standards (ACS), Section IV: Approaches and Landings
-

Soft-Field Landing

Objective

To land on a soft or rough field with minimal impact while keeping the nosewheel off the ground as long as possible in a Cessna 172.

Execution

- Downwind: Complete GLUMPS (Gas, Landing lights, Undercarriage, Mixture, Props, Seatbelts).
- Establish desired aiming point
- Abeam the threshold: Reduce power to 1500 RPM, add flaps 10°, and pitch for 90 MPH.
- Use the region of reverse command; pitch is airspeed and power is altitude
- Base leg: Add flaps 20°, pitch for 80 MPH.
- Final leg: Flaps 30°, pitch for 70 MPH.
- Flare over your aiming point and pull power smoothly to gently let the plane touchdown
- Touch down gently with the nose high and full back pressure to keep the nosewheel off the ground.
- Avoid braking to prevent the nose wheel from digging in.
- ACS Tolerances:

- Airspeed: +10 MPH, -5 MPH
- Landing Zone: +400 feet, -0 feet

References

- FAA-H-8083-3C Airplane Flying Handbook, Chapter 8
 - Private Pilot Airman Certification Standards (ACS), Section II: Approaches and Landings
-

Normal Takeoff

Objective

To depart the runway safely and efficiently using a normal takeoff technique, establishing a stable climb while maintaining directional control and recommended airspeeds.

Execution

- Line up on centerline, heels on the floor
- Verbalize: *"Engine instruments green, heading matches runway"*
- Smoothly apply full power
- Verbalize: *"Airspeed alive"*
- Rotate at 60 MPH, establish a positive rate of climb
- Pitch for V_y (80 MPH)
- Maintain centerline and coordinated flight

Reference

- FAA Airplane Flying Handbook, Chapter 5
 - Private Pilot Airman Certification Standards (ACS)
-

Short Field Takeoff

Objective

To depart from a short runway or obstacle-limited environment using maximum performance technique while maintaining safe and coordinated flight.

Execution

- Flaps set to 10°
- Line up on centerline, use all available runway
- Verbalize: *"Engine instruments green, heading matches runway"*
- Apply full power while holding brakes
- Release brakes, begin takeoff roll
- Verbalize: *"Airspeed alive"*
- Rotate at 60 MPH, pitch to climb out at V_x (68 MPH) until clear of obstacle
- After obstacle clearance, pitch for V_y (80 MPH) and retract flaps gradually
- Maintain centerline and coordinated flight

Reference

- FAA Airplane Flying Handbook, Chapter 5
 - Private Pilot Airman Certification Standards (ACS)
-

Soft Field Takeoff

Objective

To safely depart from a soft or rough surface while minimizing the risk of getting stuck or damaging the aircraft, and to establish a positive climb while maintaining directional control.

Execution

- Flaps set to 10°
- Keep back pressure on the yoke while taxiing onto the runway, using minimal braking
- Verbalize: *"Engine instruments green, heading matches runway"*
- Smoothly apply full power
- Verbalize: *"Airspeed alive"*
- Lift nose wheel off the ground as soon as possible
- Lift off at the lowest safe airspeed, stay in ground effect
- Accelerate in ground effect to V_y (80 MPH) before beginning a full climb
- Retract flaps gradually after a positive rate of climb is established

Reference

- FAA Airplane Flying Handbook, Chapter 5

- Private Pilot Airman Certification Standards (ACS)
-