



CINDTRONIX AVIATION

Cessna Pilot Center

PRIVATE PILOT STANDARDS MANUAL

POWER SETTING FOR COMMON AIRSPEEDS

1. Standard Training Power 2300 RPM
2. Slow flight 1200 RPM to slow then 2000 RPM to sustain altitude with full flaps

STEEP TURNS

1. Power reduced to 2000 RPM
2. Airspeed at 105 KIAS
3. Enter a smooth, coordinated 360 degree steep turn with a 45 degree bank.
4. Power should be increased slightly as aircraft exceeds 30 degree angle of bank to maintain entry, altitude and airspeed.
5. Rollout should be initiated 20 degrees prior to the desired heading (half the bank angle) and power reduced slightly as the aircraft is rolled through a 30 degree angle of bank to level flight.
6. Tolerances:
 - A. Altitude +/- 100 FEET
 - B. Airspeed +/- 10 KT
 - C. Angle of Bank +/- 5 degrees
 - D. Rollout Heading +/- 10 degrees

SLOW FLIGHT

Entered from level flight at an altitude that allows the task to be completed no lower than 1500 feet AGL.

Maintain coordinated flight throughout the maneuver

1. Clearing turns accomplished
2. Power reduce to 1500 RPM
3. Mixture rich
4. Increase elevator back pressure as airspeed slows to maintain altitude.
5. Flaps down in increments 10 degrees below 110 KIAS, 20 degrees, 30 degrees below 85 KIAS.
6. Airspeed bottom of white arc, 40 KT.
7. Increase Power to approx 2000 RPM to maintain altitude.
8. Adjust pitch to maintain airspeed.
9. Maintain altitude, airspeed and heading.



CINDTRONIX AVIATION

Cessna Pilot Center

RECOVERY

1. Power full
2. Flaps 20 degrees
3. Maintain Altitude and Heading
4. Airspeed (Vx) 62
5. Flaps 10 degrees
6. Maintain Altitude and Heading
7. Airspeed (Vy) 74
8. Flaps up
9. Maintain Altitude and Heading
10. Airspeed Cruise
11. Reduce Power to 2200 RPM.
12. Tolerances:

Private

- A. Altitude +/- 100 Feet
- B. Airspeed + 10 / -0

- C. Angle of Bank +/- 10 degrees
- D. Heading +/- 10 degrees

POWER OFF STALLS

Entered from level flight at an altitude that allows the task to be completed no lower than 1500 feet AGL.

Maintain coordinated flight throughout the maneuver.

Must be performed in level flight and in turns not to exceed 20 degree bank

Must be performed with approach and landing flaps

1. Clearing turns accomplished
2. Power reduced to 1500 RPM
3. Mixture rich
4. Increase elevator back pressure as airspeed slows to maintain altitude.
5. Flaps down in increments 10 degrees below 110 KIAS 20 to 30 degrees below 85 KIAS
6. Maintain stabilized descent at 65 KT
7. Power to idle
8. Smoothly apply back pressure on yoke to raise nose to pitch attitude that will induce a stall.
9. Maintain altitude until stall occurs.



CINDTRONIX AVIATION

Cessna Pilot Center

RECOVERY

10. Release back pressure to reduce angle of attack (level wings if necessary using coordinated controls)
11. Power Full
12. Flaps 20 degrees
13. Maintain Heading
14. Pitch to begin to climb
15. Airspeed (V_x) 62 KT
16. Flaps 10 degrees
17. Airspeed (V_y) 74
18. Flaps up
19. Maintain Heading
20. Climb to initial entry altitude
21. Airspeed Cruise
22. Reduce Power to 2200 RPM
23. Tolerances: Private
 - A. Angle of Bank in turning flight 20 degrees max +/- 10 degrees
 - B. Heading +/- 10 degrees in level flight

POWER ON STALLS

Entered from level flight at an altitude that allows the task to be completed no lower than 1500 feet AGL.

Maintain coordinated flight throughout the maneuver

Must be performed in level flight and in turns not to exceed 20 degrees of bank

Must be performed with 0 and 10 degrees of flaps

1. Clearing turns accomplished
2. Power reduced to 1500 RPM
3. Mixture rich
4. Increase elevator back pressure as airspeed slows to maintain altitude
5. Flaps down 10 degrees below 110 KIAS / 20 -30 degrees below 85 KIAS
6. At 55 KT Power to full
7. Smoothly apply back pressure on yoke to raise nose to a pitch attitude that will induce a stall.
8. Maintain attitude until stall occurs - IMPORTANT MAINTAIN RIGHT RUDDER!



CINDTRONIX AVIATION

Cessna Pilot Center

RECOVERY

9. Simultaneously release back pressure to reduce angle of attack (level wings if necessary using coordinated controls), power full.
10. Maintain Heading
11. Pitch to begin to climb
12. Airspeed (V_x) 62
13. Airspeed (V_y) 74
14. Flaps up
15. Maintain Heading
16. Climb to initial entry altitude
17. Airspeed Cruise
18. Reduce Power to 2200 RPM.
19. Tolerances:

Private

- A. Angle of Bank in turning flight 20 degrees max + / - 10 degrees
- B. Heading + / - 10 degrees in level flight

GROUND REFERENCE MANEUVERS

RECTANGULAR COURSE

Select a field away from populated areas, bounded on four sides by section lines or roads.

Field should have lengths one to one and one half mile long.

1. Estimate wind direction and velocity before beginning the maneuver.
2. Clear area of traffic
3. Enter maneuver at 1000 Ft AGL at a 45 degree angle to the downwind leg.
4. Fly parallel to the field boundary
5. Abeam the crosswind segment, begin a turn to the cross wind leg.
6. Abeam the upwind segment, begin a turn to the upwind leg.
7. Abeam the next crosswind segment, begin a turn to the cross wind leg.
8. Exit on the downwind leg.
9. Tolerances:
 - A. Altitude + / - 100 Feet
 - B. Airspeed + / - 10 Kt



CINDTRONIX AVIATION

Cessna Pilot Center

S- TURNS

Select a ground reference line away from populated areas utilizing a section line, road, fence line or similar feature.

Ground reference should be long enough to allow for a series of turns.

1. Estimate wind direction and velocity before beginning the maneuver.
2. Clear area of traffic
3. Enter maneuver at 1000 Ft AGL on the downwind heading.
4. Upon crossing the reference line, roll immediately into a left turn.
5. Apply wind drift correction to maintain a constant radius turn.
6. Cross reference line after 180 degree of turn wings level.
7. Roll immediately into a right turn.
8. Apply wind drift correction to maintain a constant radius turn.
9. Cross reference line after 180 degree of turn wings level.
10. Continue turns or exit maneuver on upwind heading.
11. Tolerances :
 - A. Altitude + / - 100 Feet
 - B. Airspeed +/- 10 Kt
 - B. Airspeed + / - 10 Kt

TURNS AROUND A POINT

Select an easily identifiable ground reference point away from populated area.

1. Estimate wind direction and velocity before beginning the maneuver.
2. Clear area of traffic.
3. Enter maneuver at 100 Ft AGL on the downwind heading.
4. When the reference point is abeam the airplane roll into a left turn.
5. Apply wind drift correction to maintain a constant radius turn.
6. Tolerances:
 - A. Altitude+ / - 100 Ft
 - B. Airspeed + / - 10 Kt



CINDTRONIX AVIATION

Cessna Pilot Center

NORMAL TAKEOFF AND CLIMB

Takeoffs at **controlled** airports require an ATC clearance prior to entering the runway.

At an **uncontrolled** airport do not taxi onto the runway and hesitate (position and hold). Be prepared to commence the take off once taxiing onto an active runway.

Keep your hand on the throttle throughout the takeoff to ensure that it does not slide back during the takeoff roll.

1. Complete the before takeoff checklist
2. At a controlled airport contact the tower and inform them that you are ready for takeoff. At an Uncontrolled airport, broadcast your intention on the CTAF.
3. Ensure that the runway, approach and departure paths are clear of other aircraft.
4. Taxi onto the runway, line up with the runway center line, center the nose wheel.
5. Position the flight controls for the existing wind conditions.
6. Advance the throttle smoothly to take off power (approx 23-2400 RPM)
7. Apply right rudder to counteract engine torque.
8. Maintain direction control with the rudders, position ailerons for the existing wind conditions.
9. At 55-60 Kt raise nose to establish takeoff attitude.
10. Use right rudder to counteract the left turning tendency.
11. Establish a pitch attitude that will maintain (Vy) 74 Kt.
12. Once reaching a safe altitude accelerate to cruise climb.
13. Complete the Climb, Cruise check list as appropriate.
14. Depart or remain in the traffic pattern.
15. Tolerances:
 - A. Maintains pitch attitude that will maintain Vy (74Kt) +10 / -5 Kt
 - B. Maintains Takeoff power and Vy (74 Kt) +10 / -1 Kt to a safe altitude.

CROSSWIND TAKEOFF AND CLIMB

Takeoffs at **controlled** airports require an ATC clearance prior to entering the runway.

At an uncontrolled airport do not taxi onto the runway and hesitate (position and hold). Be prepared to commence the take off once taxiing onto an active runway.

Keep your hand on the throttle throughout the takeoff to ensure that it does not slide back during the takeoff roll.

16. Complete the before takeoff checklist.
17. At a controlled airport contact the tower and inform them that you are ready for takeoff. At an Uncontrolled airport, broadcast your intentions on the CTAF.
18. Ensure that the runway, approach and departure paths are clear of other aircraft.



CINDTRONIX AVIATION

Cessna Pilot Center

19. Taxi onto the runway, line up with the runway center line, center the nose wheel.
20. Position the ailerons fully into the wind.
21. Advance the throttle smoothly to take off power (approx 2300- 2400 RPM)
22. Apply rudder to counteract the airplanes weathervaning tendency.
23. Maintain directional control with the rudders. Reduce aileron deflection gradually as the airplane accelerates.
24. Attain a slightly higher than normal liftoff speed. Lift airplane off the runway promptly and establish a normal climb.
25. Use right rudder to counteract the left turning tendency.
26. Establish a pitch attitude that will maintain (Vy) 74.
27. Once reaching a safe altitude accelerate to cruise climb.
28. Complete the Climb, Cruise check list as appropriate.
29. Depart or remain in the traffic pattern.
30. Tolerances:
 - A. Maintains pitch attitude that will maintain Vy (74) + 10 / -5 Kt.
 - B. Maintains Takeoff power and Vy + 10 / -1 Kt to a safe altitude.

TRAFFIC PATTERNS

At airports with an operating control tower you are required to establish and maintain communications with the tower. Traffic Patterns at airports with operating control tower may vary.

At airports without an operating control tower radio communications are not required. However, while operating within 10 miles on any airport you should monitor and communicate on the CTAF.

In the absence of an FSS, UNICOM operator (CTAF) or operating control tower, you should over fly the airport at least 500 feet above the traffic pattern altitude to determine the landing, runway, and traffic pattern direction.

1. Enter the traffic pattern at a 45 degree angle to the downwind leg, abeam the midpoint of the runway, or on a crosswind leg over the center of the runway at pattern altitude (normally 1000 Ft AGL).
2. Broadcast your intentions on the CTAF.
3. Fly the downwind leg parallel to the runway, at pattern altitude, approx ¾ mile, at normal cruise speed.
4. Abeam the intended touchdown point / reduce power to 1300- 1500 RPM, slow the airplane to 85 Kt, Add 10 degrees Flaps, begin descent.
5. Turn onto base leg when the touchdown point is approximately 45 degrees behind the inside wind (this will vary depending on wind conditions).
6. Broadcast your position on the CTAF.



CINDTRONIX AVIATION

Cessna Pilot Center

7. Extend the flaps to 20 degrees, slow the airplane to 85 Kt.
8. Turn to Final at least ¼ mile from the approach end of the runway. If desired extend flaps to 30 degrees for landing, slow the airplane to 65 Kt.
9. Broadcast your position on the CTAF.
10. On the departure leg (upwind), climb out on the extended centerline of the runway (runway heading plus correction for wind drift, if any) until you are within 300 Ft of traffic pattern altitude prior to turning crosswind.
11. If departing the traffic pattern, continue your climb to pattern altitude, then fly straight out or exit with a 45 degree turn to pattern side of the runway.
12. If you are staying in the traffic pattern, continue your climb to pattern altitude on the cross-wind leg.
13. Tolerances:
 - A. Airspeed + / - 10 Kt.
 - B. Altitude + / - 100 Ft.

NORMAL APPROACH AND LANDING

If the wind is gusty increase the final approach speed by one half the gust factor.

To judge altitude during the flare you must look to one side of the airplane since its nose may block your view ahead. Focus at an intermediate point between the nose of the airplane and the runway end.

1. Fly the downwind leg parallel to the runway, at pattern altitude approx ¾ mile, at normal cruise speed.
2. Abeam the intended touchdown point /reduce power to 1500- 1600, slow the airplane to 85 Kt., add 10 degrees Flaps, begin the descent.
3. Check for traffic on the Base and Final leg, then turn onto base leg when the touchdown point is approximately 45 degrees behind the inside wing (this will vary depending on wind conditions).
4. Broadcast your position on the CTAF.
5. Once on base, you are in the key position, an early decision point where you must assess your situation. At the key position any adjustment to altitude, airspeed, and distance from the runway should be made to ensure a smooth stabilized approach and avoid large or abrupt last minute corrections on short final.
6. Extend the flaps to 20 degrees, slow the airplane to 75 Kt.
7. Check for traffic on final approach path then, turn to Final at least ¼ mile from the approach end of the runway between 300 to 500 feet above ground.
8. Extend flaps to 30 degrees for landing, slow the airplane to 65 Kt.
9. Broadcast your position on the CTAF.
10. Adjust pitch and power as necessary to control descent angle and airspeed.
11. Estimate the point where the aircraft will actually touch down by finding the aiming point and adding the approximate distance the airplane will travel in the flare. The aiming point is the spot



CINDTRONIX AVIATION

Cessna Pilot Center

on the ground that has no relative movement. As the airplane descends, all objects beyond the aiming point appear to move away from the airplane, while the objects closer appear to move closer.

12. At approximately 10 to 20 feet above the ground, reduce power to idle and begin to flare the airplane by gradually increasing back pressure on the elevators, reduce speed and decrease the rate of descent.
13. Attempt to hold the airplane just off the runway by increasing elevator back pressure as it approaches stall speed.
14. Touch down on the main landing gear in a nose high attitude with the engine at idle.
15. Maintain directional control with the rudder to keep the airplane on the centerline of the runway.
16. As the airplane decelerates, gradually relax back pressure to allow the nose wheel to gently settle onto the runway.
17. Clear the runway and complete the after landing checklist.

Tolerances: A. Airspeed +10 / -5 Kt B. Touch down at or within 400' of specified point

GO AROUND

Generally, if the airplane has not touched down in the first third of the runway, you should execute a go-around. A go-around may be necessary when obstacles are on the runway or when you feel uncomfortable with the approach due to the incorrect procedures or other unsafe conditions.

At times you may perform landings that cause the airplane to bounce into the air. Usually it is wise not to attempt to salvage these landings and you should make an immediate go-around.

The decision to make a go-around must be positive and should be made before a critical situation develops. Once the decision has been made it should be implemented without hesitation. When full power is added, maintain control of aircraft.

1. Power Full
2. Raise flaps to 20 degrees
3. Maintain Heading
4. Pitch to begin climb at 55 Kt until obstacles are cleared
5. Airspeed (V_x) 62
6. Flaps 10 degrees
7. Airspeed (V_y) 74
8. Flaps Up
9. Maintain Heading
10. Climb to appropriate altitude
11. Announce your position / intentions on CTAF OR communicate with tower.