

Cessna 152 Maneuvers

N757GX

Important Information:

V-speeds:

V_{so}	35
V_s	40
V_r	55
V_x	55
V_y	70
V_{fe}	85
V_a	104
V_{no}	111
V_{ne}	149
V_{glide}	65

Engine:

Lycoming O-235-L2C. 110 HP @ 2550 RPM

Horizontally opposed, Air-cooled, Normally aspirated, Direct Drive 4 cylinder engine.

Fuel System:

2 13 gallon (26 total) fuel tanks. 25.5 usable and 1.5 unusable.

Fuel flows by gravity from the two wing tanks to a fuel shutoff valve, through a fuel strainer and to the carburetor. From the carburetor, mixed fuel and air flows to the cylinders through intake manifold tubes. The manual primer draws its fuel from the fuel strainer and injects it into the cylinder intake ports.

3 Fuel Sumps and one fuel strainer sump. (1 fuel sump under each wing, one fuel sump near the oil, and one fuel strainer sump under the aircraft)

Electrical System:

28 V 60 Amp Alternator and a 24 V 14 amp hour Battery

Battery is used for engine start and in case of alternator failure. The battery supplies 30 minutes of power after alternator failure.

Oil System:

Oil is used for lubrication, cooling, and cleaning.

Capacity: 6 quarts

Minimum: 4 quarts

Takeoff

1. Obtain takeoff clearance from the tower
2. Line up on the centerline. Heels on the floor, toes of the rudders. No brakes
3. Aileron into the wind.
4. Apply power slowly and smoothly. Use rudders to maintain centerline
5. Rotate at 55, climb at 70. Pitch for the horizon
6. Trim as required

Approach and Landing

From Abeam the numbers on downwind

1. Abeam the numbers:
 - a. Carb heat on
 - b. Power to 1500
 - c. Pitch for 80 kts
 - d. 10° flaps down in the white arc (below 85 kts)
2. Turn base at 45° from the runway or 900 feet above the ground
 - a. Flaps 20°
 - b. Pitch for 75 kts
3. Turn Final
 - a. Pitch for 65-70 kts
4. On final, use pitch to control your airspeed and power to control your altitude
5. Pull power to idle once the runway is “made.” Pitch to maintain a stable descent to the runway
6. Flare once you’re within 3 feet of the runway.
 - a. Push, pull, patience. Let the airspeed bleed off and pull once you feel the airplane start to “fall.” If the airplane balloons back up, SLIGHTLY pitch the nose down and flare again.
7. Touchdown on the mains first with the nose gear slightly high. Let the nose gear settle on its own, do not push forward
8. Use rudders to maintain centerline

Slow Flight

Purpose: To learn how the aircraft flies at low airspeeds

Entry:

1. Climb to at least 3000' AGL
2. Perform clearing turns
3. Carb Heat On
4. Power to 1500. Maintain altitude with back pressure and heading
 - a. Back pressure will need to be increased as airspeed decreases to maintain the same altitude
5. Flaps 10° below the white arc (85 kts)
6. Add in remaining flaps in 2 second increments
7. Pitch for 60 kts
 - a. Use trim as necessary
8. Power to maintain altitude
 - a. Use rudder to counteract left turning tendencies
 - b. If you're descending, add power
 - c. If you're climbing, reduce power

Recovery:

1. Carb heat off, full power
2. Retract first 10° of flaps
3. Let airspeed build, retract remaining flaps in increments
4. Once airspeed builds to a safe speed, decrease power to cruise (2200 RPM)

Power Off Stall

Purpose: Simulate a stall on the approach to landing

Entry:

1. Climb to at least 3000' AGL
2. Clearing turns
3. Carb Heat On
4. Power to 1500. Maintain altitude with back pressure and heading
 - a. Back pressure will need to be increased as airspeed decreases to maintain the same altitude
5. Flaps 10° below the white arc (85 kts)
6. Add in remaining flaps in 2 second increments
7. Pitch down to simulate approach to landing
8. Pull power to idle, slowly pitch back until stall horn warning
9. Maintain wings level with rudder

Recovery:

1. Release back pressure and add full power
 - a. Do not dive
2. Retract first 10° of flaps
3. Hold nose near the horizon
4. Incrementally retract remaining flaps once airspeed builds to a safe speed
5. Establish a climb back to initial altitude
6. Level off once instructed

Power On Stall

Purpose: Simulate a stall after takeoff

Entry:

1. Climb to at least 3000' AGL
2. Clearing turns
3. Carb Heat on
4. Power to 1500. Maintain altitude with back pressure and heading
 - a. Back pressure will need to be increased as airspeed decreases to maintain the same altitude
5. At 55 knots (rotation speed), add power and pitch up to the stall
 - a. Add rudder to keep the nose straight and on heading
 - b. Maintain coordinated flight

Recovery:

1. Relax backpressure to break the stall
 - a. Pitch just below the horizon
2. Let the airspeed build and climb out at V_y (70)
3. Level off once instructed

