



## **FREDERICK FLIGHT CENTER, INC.**

### **PROCEDURES GUIDE CESSNA 172RG**

**THESE PROCEDURES ARE DESIGNED TO PROVIDE STANDARDIZED METHODS UNDER NORMAL CONDITIONS. AS CONDITIONS CHANGE, THE PROCEDURES WILL NEED TO BE ADJUSTED.**

#### **TAXI**

1. Speed:
  - a. Control speed with power - do not ride the brakes.
  - b. Speed should be equivalent to a slow walk in congested areas.
  - c. Speed equivalent to a fast walk on open taxiways.
2. Controls: Position for wind direction and velocity.
3. Watch for traffic.

#### **NORMAL TAKEOFF**

1. Align aircraft with the centerline.
2. Position ailerons as required for the wind.
3. Apply power smoothly until full power is reached.
4. Check engine gauges to ensure indications are in the green.
5. At 55 KIAS apply back pressure to rotate.
6. When you have a positive rate of climb and no useable runway remaining, retract the landing gear.
7. Watch for traffic.

#### **NORMAL CLIMB**

1. Climb at  $V_y$  of 84 KIAS with full power and prop full forward.
  2. At 500 feet AGL retract flaps
    - Throttle back to 25 inches manifold pressure
    - Propeller back to 2500 RPM
  3. At 1000 feet AGL or higher, cruise climb of 95 KIAS
- Watch for traffic.

**CRUISE**

1. Level Off
2. Set Throttle at desired setting.
3. Set Prop at desired setting.
4. Lean Mixture.
5. Turn Off Landing Light. (It is recommended that Landing Light stay on within 10 miles of an airport)

**NORMAL LANDING**

1. Perform the pre-landing check and descend to pattern altitude before entering the 45 degree entry, or at mid-field if performing multiple closed traffic landings. Set power to 18" and slow down to approximately 100-110 KIAS before the turn to downwind. Leave prop set at cruise.
2. At mid-field, lower the landing gear. Leave prop at cruise setting.
3. Abeam the numbers: Carb heat on, reduce power to 15", set first notch of flaps (10°), slow to 80 KNOTS and trim at that airspeed to start the descent.
  - a. first GUMPS check
    - (1) Gas Both
    - (2) Undercarriage DOWN – GREEN
    - (3) Mixture RICH
    - (4) Prop FULL FORWARD (below 100 Knots)
    - (5) Set Flaps
4. Turn base when the numbers are at a 45° angle, or when traffic permits. On the base leg:
  - a. Set second notch of flaps.(20°)
  - b. Slow to 75 KIAS
  - c. Perform second GUMPS check.
    - (1) Gas Both
    - (2) Undercarriage DOWN – GREEN
    - (3) Mixture RICH
    - (4) Prop FULL FORWARD
    - (5) Set Flaps
5. On final:
  - a. Set third notch of flaps. (30°)
  - b. Slow to 65-70 KIAS.
  - c. Perform third GUMPS check
    - (1) Gas Both
    - (2) Undercarriage DOWN – GREEN
    - (3) Mixture RICH
    - (4) Prop FULL FORWARD
    - (5) Set Flaps
  - d. Check Gear DOWN Green on short Final

**GO-AROUND**

1. POWER - smoothly apply full power while turning off carb heat
2. PITCH - to level attitude
3. FLAPS - retract to 20° and initiate climb attitude
4. FLAPS – verify at positive rate, retract to 10°
5. Gear- retract at a positive rate and out of usable runway
6. AIRSPEED - climb at Vy (84 KIAS)
7. FLAPS - retract remaining flaps at 500 AGL or higher.

**SHORT FIELD TAKEOFF**

1. Perform all pre-takeoff checks, and set flaps to 0°.
2. Taxi onto runway and align aircraft with the centerline at the extreme end of the runway.
3. Holding the brakes, apply full power.
4. Check engine gauges, and then release the brakes.
5. Rotate at 55 KIAS.
6. Climb at 63 KIAS until clear of obstacles.
7. Lower the nose and begin to accelerate to 84 KIAS.
8. While still accelerating, verify positive rate of climb and retract the gear when out of runway

**SHORT FIELD LANDING**

1. Abeam the numbers, carb heat on/reduce power, set flaps to 10 degrees and slow to 75 KIAS.
2. On base, set flaps 20° and slow to 70 KIAS.
3. On final, set flaps 30° establish at steeper than normal approach and slow to 63 KIAS
4. On touchdown, immediately but **gently** apply brakes. (Simulate braking as much as possible to avoid flat spots)

**SOFT FIELD TAKEOFF**

1. Perform all pre-takeoff checks and set flaps to 0° before taxiing onto soft surface.
2. Taxi onto the runway with full up elevator.
3. Without stopping on the runway, apply full power, holding full up elevator.
4. As nose rises, reduce back pressure only enough to keep tail from striking the runway.
5. Lift off at as slow a speed as possible.
6. As the airplane lifts off, lower the nose and accelerate in ground effect to 63 KIAS if not already there
7. At 63 KIAS, pitch to climb attitude and climb out
8. Once clear of obstacles, lower the nose and begin to accelerate to 84 KIAS
8. While accelerating, verify positive rate of climb and retract gear

**SOFT FIELD LANDING**

1. Abeam the numbers, carb heat on/reduce power, set flaps to 10 degrees and slow to 75 KIAS.
2. On base, set flaps 20° and slow to 70 KIAS.
3. On final, set flaps 30° establish a steeper than normal approach and slow to 63 KIAS
4. On touchdown, hold the nose up as long as possible, then maintain full up elevator until on a hard surface.

**APPROACH TO LANDING STALL**  
(POWER-OFF)

1. Pre-maneuver check - COMPLETE.
2. Power - REDUCE TO 20"
3. Clearing turns - COMPLETE.
4. Power - carb heat on, REDUCE TO 15"
5. Use GUMPS to verify configuration for the maneuver.
  - a. **Gas** BOTH
  - b. **Undercarriage** DOWN – GREEN
  - c. **Mixture** RICH
  - d. **Prop** FULL FORWARD (below 100 KTS)
  - e. **Set full flaps** in increments
6. Establish a stabilized descent at approach speed.
7. Power to IDLE and maintain altitude to produce the stall.
8. Initiate recovery of stall by:

- POWER - smoothly apply full power and turn carb heat off
- PITCH - to level attitude
- FLAPS - retract to 20° and initiate climb attitude
- FLAPS - at positive rate, retract to 10°
- PITCH - to climb attitude
- GEAR - retract
- AIRSPEED - climb at Vy (84 KIAS)
- FLAPS - retract remaining flaps.

**TAKE-OFF/DEPARTURE STALL**  
(POWER ON)

1. Pre-maneuver check - COMPLETE.
2. Power - REDUCE TO 20".
3. Clearing turns - COMPLETE.
4. Power - carb heat on, REDUCE TO 15"
5. Use GUMPS to verify configuration for the maneuver.
  - a. **Gas** BOTH
  - b. **Undercarriage** DOWN – GREEN
  - c. **Mixture** RICH
  - d. **Prop** FULL FORWARD (below 100 KTS)
  - e. **Set flaps** (Retracted)
6. Speed - SLOW TO ROTATION SPEED (55-60 KTS).
7. Pitch/Power/Gear - FULL POWER/CARB HEAT OFF, RAISE NOSE TO PRODUCE THE STALL.
8. Recovery:
  - a. Pitch - LOWER THE NOSE TO LEVEL.
  - b. Pitch –CLIMB AT VY(84 KNOTS)
  - c. VERIFY POSITIVE RATE OF CLIMB, THEN RETRACT THE LANDING GEAR
  - d. LEVEL OFF & PERFORM CRUISE CHECKLIST

**SLOW FLIGHT**

1. Pre-maneuver check - COMPLETE.
2. Power - REDUCE TO 20"
3. Clearing turns - COMPLETE.
4. Power – carb heat on, REDUCE TO 15"
5. Pitch - MAINTAIN ALTITUDE.
6. Use GUMPS to verify configuration for the maneuver.
  - a. **Gas** BOTH
  - b. **Undercarriage** DOWN – GREEN
  - c. **Mixture** RICH
  - d. **Prop** FULL FORWARD (below 100 KTS)
  - e. **Set FULL** flaps
7. Establish an airspeed at which any further increase in AOA, Load Factor, or Reduction in power will result in a stall.
8. Maintenance - MAINTAIN AIRSPEED WITH PITCH, AND ALTITUDE WITH POWER.
9. Recovery:
  - a. Power – Simultaneously FULL/TURN CARB HEAT OFF
  - b. Pitch – WHATEVER NECESSARY TO MAINTAIN LEVEL FLIGHT
  - c. Flaps - RETRACT TO 20°
  - d. Flaps – RETRACT TO 10°
  - e. Gear – RETRACT
  - f. Flaps – RETRACT FULLY ABOVE 84 KTS
  - g. PERFORM CRUISE CHECKLIST

**STEEP TURNS**

1. Pre-maneuver check - COMPLETE
2. Power - REDUCE TO 18"
3. Clearing turns – COMPLETE
4. Verify airspeed is less than Va (106 KIAS at max weight).
5. Establish 45° or 50° bank. (Bank angle depends on the rating sought)

**CHANDELLE**

1. Pre-maneuver check - COMPLETE
2. Power - REDUCE TO 18"
3. Clearing turns - COMPLETE
4. Use GUMPS to verify configuration for the maneuver.
  - a. **Gas/Fuel & pumps ON**
  - b. **Undercarriage UP**
  - c. **Mixture RICH**
  - d. **Prop FULL FORWARD (below 100 KTS)**
  - e. **Set flaps (Retracted)**
5. Verify airspeed is below Va (109 KIAS).
6. Execute the maneuver.
7. Perform cruise checklist.

**LAZY EIGHTS**

1. Pre-maneuver check - COMPLETE
2. Power - REDUCE TO 15'-18"
3. Prop – 2500 RPM. (Higher RPM helps prevent excess airspeed in descent portion)
3. Clearing turns - COMPLETE
4. Use GUMPS to verify configuration for the maneuver.
  - a. **Gas/Fuel & pumps ON**
  - b. **Undercarriage UP**
  - c. **Mixture RICH**
  - d. **Prop CRUISE SETTING**
  - e. **Set flaps (Retracted)**
5. Verify airspeed is less than Va, then execute the maneuver.
6. Perform cruise checklist.

**EIGHTS ON PYLONS**

1. Pre-maneuver check - COMPLETE
2. Power - REDUCE TO 18"
3. Clearing turns - COMPLETE
4. Use GUMPS to verify configuration for the maneuver.
  - a. **Gas/Fuel & pumps ON**
  - b. **Undercarriage UP**
  - c. **Mixture RICH**
  - d. **Prop CRUISE SETTING**
  - e. **Set flaps (Retracted)**
5. Execute the maneuver.
6. Perform cruise checklist.