



FREDERICK FLIGHT CENTER, INC.

PROCEDURES GUIDE ARROW PA28R-201

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. Between 65 to 75 knots, 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 90 knots with full power and prop.
2. At 500 feet AGL
 - a. Retract flaps
 - b. Accelerate to 104 KTS
 - c. Throttle back to 25in
 - d. Propeller back to 2500 RPM
3. At 1000 feet AGL or higher, turn off fuel pump.
4. Watch for traffic.

CRUISE

1. Level Off
2. Set Throttle at desired setting. (Max 75% horse power)
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 closed traffic multiple landings. Set power to 20" and slow down to approximately 110 KIAS before the turn to downwind. Leave prop set at cruise.
2. At mid-field, lower the landing gear and slow to approximately 100 KIAS. Leave prop at cruise setting.
3. Abeam the numbers, reduce power to 15", set first notch of flaps (10°), slow to 95 kts and trim at that airspeed to start the descent.
 - a. first GUMPS check
 - (1) Gas/Fuel & pumps ON
 - (2) Undercarriage DOWN – 3 GREEN
 - (3) Mixture RICH
 - (4) Prop FULL FORWARD (below 100 Knots)
 - (5) Set Flaps
4. Turn base when the numbers are on at a 45° angle, or when traffic permits. On the base leg:
 - a. Set second notch of flaps.(25°)
 - b. Slow to 85 KIAS.
 - c. Perform second GUMPS check.
 - (1) Gas/Fuel & pumps ON
 - (2) Undercarriage DOWN – 3 GREEN
 - (3) Mixture RICH
 - (4) Prop FULL FORWARD
 - (5) Set Flaps
5. On final:
 - a. Set third notch of flaps. (40°)
 - b. Slow to 75 KIAS.
 - c. Perform third GUMPS check
 - (1) Gas/Fuel & pumps ON
 - (2) Undercarriage DOWN – 3 GREEN
 - (3) Mixture RICH
 - (4) Prop FULL FORWARD
 - (5) Set Flaps
 - d. Check Gear DOWN Three Green on short Final

GO-AROUND

1. POWER - smoothly apply full power
2. PITCH - to level attitude
3. FLAPS - retract to 25°
4. PITCH - to climb attitude
5. FLAPS - retract to 10°
6. GEAR - retract when positive climb is achieved
7. AIRSPEED - climb at Vy (90 kts)
8. FLAPS - retract remaining flaps at 500 AGL or higher.

SHORT FIELD TAKEOFF

1. Perform all pre-takeoff checks, and set flaps to 25° (second notch).
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, then release the brakes.
5. Rotate at 50 to 60 knots depending on weight.
6. Climb at 55 to 65 knots depending on weight.
7. Gear Up and accelerate to 78 Knots
8. Slowly retract flaps to 10°
9. When obstacle is clear pitch to 90 knots climb speed.
10. Retract remaining flaps at 500 feet AGL.

SHORT FIELD LANDING

1. Abeam the numbers, set flaps to 10 degrees and slow to 90 knots instead of 95.
2. On base, slow to 80 knots instead of 85.
3. On final, establish at steeper than normal approach and slow to 70 knots on short final with full flaps.

(NOTE: The steep approach allows you to clear the obstacle)

4. On touchdown, immediately but **gently** apply brakes.

SOFT FIELD TAKEOFF

1. Perform all pre-takeoff checks and set flaps to 25° (second notch) before taxiing onto soft surface.
2. Taxi onto the runway will 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 soon as you lift off, lower the nose and accelerate in ground effect to 72 knots (V_x).
7. At 72 knots, pitch to climb attitude and climb out normally.

SOFT FIELD LANDING

1. Abeam the numbers, set flaps to 10 degrees and slow to 90 knots instead of 95.
2. Extend pattern if necessary to establish a normal approach path.
3. On base, slow to 80 knots instead of 85.
4. On final, slow to 70 knots on short final with full flaps, instead of 75.
5. Maintain 1-2" MP above idle through the flare.
6. Upon touchdown, hold the nose up as long as possible, then maintain full up-elevator until on hard surface.

APPROACH TO LANDING STALL (POWER-OFF)

1. Pre-maneuver check - COMPLETE.
2. Power - REDUCE TO 20"
3. Clearing turns - COMPLETE.
4. Power - REDUCE TO 15".
5. Use GUMPS to verify configuration for the maneuver.
 - a. Gas/Fuel & pumps ON
 - b. Undercarriage DOWN – 3 GREEN
 - c. Mixture RICH
 - d. Prop FULL FORWARD (below 100 knots)
 - e. Set full flaps
6. Establish a stabilized descent.
7. Power to IDLE and maintain altitude to produce stall.
8. Initiate recovery of stall by:
 - a. Pitch - LOWER THE NOSE.
 - e. Power - FULL.
 - f. Pitch - LEVEL.
 - c. Flaps - RETRACT TO 25°.
 - d. Pitch - CLIMB AT 90 KNOTS.
 - e. Flaps - RETRACT TO 10°
 - f. Landing gear - RETRACT WHEN POSITIVE CLIMB ACHIEVED.
 - g. Flaps - RETRACT REMAINING WHEN CLIMB ESTABLISHED AT SPEED > 90.
 - h. LEVEL OFF & PERFORM CRUISE CHECKLIST.

TAKE-OFF/DEPARTURE STALL
(POWER ON)

1. Pre-maneuver check - COMPLETE.
2. Power - REDUCE TO 20".
3. Clearing turns - COMPLETE.
4. Power - REDUCE TO 15".
5. Use GUMPS to verify configuration for the maneuver.
 - a. **Gas/Fuel & pumps ON**
 - b. **Undercarriage DOWN – 3 GREEN**
 - c. **Mixture RICH**
 - d. **Prop FULL FORWARD (below 100 knots)**
 - e. **Set flaps (Retracted)**
6. Speed - SLOW TO ROTATION SPEED (65 to 75 knots).
7. Pitch/Power/Gear - FULL POWER, RETRACT LANDING GEAR, RAISE NOSE TO PRODUCE THE STALL.
8. Recovery:
 - a. Pitch - LOWER THE NOSE TO LEVEL.
 - b. Pitch –CLIMB AT VY(90 Knots)
 - c. LEVEL OFF & PERFORM CRUISE CHECKLIST

SLOW FLIGHT

1. Pre-maneuver check - COMPLETE.
2. Power - REDUCE TO 20"
3. Clearing turns - COMPLETE.
4. Power - REDUCE TO 15".
5. Pitch - MAINTAIN ALTITUDE.
6. Use GUMPS to verify configuration for the maneuver.
 - a. **Gas/Fuel & pumps ON**
 - b. **Undercarriage DOWN – 3 GREEN**
 - c. **Mixture RICH**
 - d. **Prop FULL FORWARD (below 100 knots)**
 - 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. (60 knots is recommended)
8. Maintenance - MAINTAIN AIRSPEED WITH PITCH, AND ALTITUDE WITH POWER.
9. Recovery:
 - a. Power - FULL
 - b. Pitch - LOWER THE NOSE TO LEVEL
 - c. Flaps - RETRACT TO 25°
 - d. Pitch - 90 KTS
 - e. Gear - RETRACT
 - f. Flaps - RETRACT TO 10°, then 0°
 - g. Pitch - MAINTAIN LEVEL FLIGHT
 - h. PERFORM CRUISE CHECKLIST

STEEP TURNS

1. Pre-maneuver check - COMPLETE
2. Power - REDUCE TO 20"
3. Clearing turns – COMPLETE
4. Verify airspeed is less than Va (118 knots 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 20"
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 knots)
 - e. Set flaps (Retracted)
5. Verify airspeed is below V_a (118 knots at max weight).
6. Execute the maneuver.
7. Perform cruise checklist.

LAZY EIGHTS

1. Pre-maneuver check - COMPLETE
2. Power - REDUCE TO 20"
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 V_a , then execute the maneuver.
6. Perform cruise checklist.

EIGHTS ON PYLONS

1. Pre-maneuver check - COMPLETE
2. Power - REDUCE TO 20"
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.

