

Section 4 Normal Procedures

INTRODUCTION

Section 4 contains checklists for normal procedures. As mentioned in Section 3, the owner of this handbook is encouraged to copy or otherwise tabulate the following normal procedures checklists in a format that is usable under flight conditions. Plastic laminated pages printed on both sides and bound together (if more than one sheet) are preferable. The first portion of Section 4 contains various checklists appropriate for normal operations. The last portion of this section contains an amplified discussion in a narrative format.

INDICATED AIRSPEEDS FOR NORMAL OPERATIONS

The speeds tabulated below, Figure 4 - 1, provide a general overview for normal operations and are based on a maximum certificated gross weight of 3400 pounds. At weights less than maximum certificated gross weight, the indicated airspeeds are different. The pilot should refer to Section 5 for specific configuration data.

Takeoff		Flaps Setting	Airspeed
Normal Climb Out		Up Position	106-115 KIAS
Short Field Takeoff to 50 feet		Takeoff Position	78 KIAS
Climb To Altitude		Flaps Setting	Airspeed
Normal (Best Engine Cooling)		Up Position	106-115 KIAS
Best Rate of Climb at Sea Level		Up Position	106 KIAS
Best Rate of Climb at 10,000 Feet		Up Position	93 KIAS
Best Angle of Climb at Sea Level		Up Position	80 KIAS
Best Angle of Climb at 10,000 Feet		Up Position	84 KIAS
Approach To Landing		Flaps Setting	Airspeed
Normal Approach		Up Position	105-110 KIAS
Normal Approach		Down (Landing Position)	80-85 KIAS
Short Field Landing		Down (Landing Position)	78 KIAS
Balked Landing (Go Around)		Flaps Setting	Airspeed
Apply Maximum Power		Takeoff Position	88 KIAS
Apply Maximum Power		Landing Position	80 KIAS
Maximum Recommended Turbulent Air Penetration Speed		Flaps Setting	Airspeed
3400 lbs. (1542 kg)		Up Position	148 KIAS
2500 lbs. (1134 kg)		Up Position	127 KIAS
Maximum Demonstrated Crosswind Velocity*		Flaps Setting	Airspeed
Takeoff		Takeoff Position	23 Knots
Landing		Landing Position	23 Knots
* The maximum demonstrated crosswind velocity assumes normal pilot technique and a wind with a fairly constant velocity and direction. The maximum demonstrated crosswind component of 23 knots is not considered limiting. See pages 4-12, 4-24, 4-27, and 5-7 for a discussion of techniques and a computation table.			

Figure 4 - 1

NORMAL PROCEDURES CHECKLISTS

PREFLIGHT INSPECTION

Figure 4-2 depicts the major inspection points, and the arrow shows the sequence for inspecting each point. The inspection sequence in Figure 4 - 2 runs in a clockwise direction; however, it does not matter in which direction the pilot performs the preflight inspection so long as it is systematic. The inspection should be initiated in the cockpit from the pilot's side of the airplane.

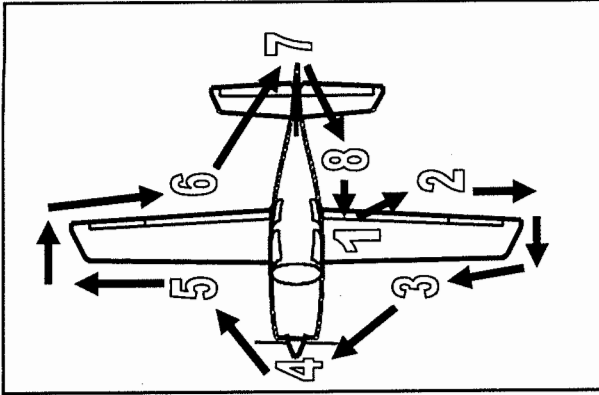


Figure 4 - 2

Area 1 (The Cabin)

1. Pitot Tube Cover — REMOVE AND STORE
2. *Required Aircraft Documents* — AVAILABLE IN THE AIRPLANE
3. Ignition Switch — OFF
4. Mixture — IDLE CUTOFF
5. Avionics Master Switch — OFF
6. Crosstie Switch — OFF
7. Left Battery Switch — ON (Press right side of split rocker switch.)
8. Right Battery Switch — ON (Press right side of split rocker switch.)
9. A/P Trim System Switch in Overhead — CHECK ON
10. Rudder Limiter — TEST (See Amplified Discussion on page 4-16.) *lights + Lin.*
11. Flaps — TAKEOFF THEN LANDING POSITION
12. Trim Tabs — NEUTRAL
13. Fuel Quantity Indicators — CHECK FUEL QUANTITY
14. Fuel Annunciation — NOT DISPLAYED
15. Oxygen System — CHECK IF REQUIRED
 - 15.1. Avionics Switch — ON
 - 15.2. Oxygen System — ON, CHECK QUANTITY, ENSURE SYSTEM RETAINS PRESSURE, VERIFY PROPER OXYGEN FLOW AT ALL BREATHING DEVICES
 - 15.3. Oxygen System — OFF
 - 15.4. Avionics Switch — OFF
16. Pitot Heat, Propeller Heat, and Exterior Lights — ON AS REQUIRED, CHECK OPERATION
17. Induction Heated Air — CYCLE THEN OFF
18. Stall Warning Vane — CHECK WARNING HORN
19. Pitot Heat, Propeller Heat, and Exterior Lights — OFF
20. Left and Right Battery Switches — OFF
21. Circuit Breakers — CHECK IN

NOTE

The heated pitot housing should be warm to the touch in a minute or so, and it should not be operated for more than one to two minutes when the airplane is in the static condition. For this reason the operational check must be performed out of sequence. The pitot heat system includes a relay which will keep it from getting too hot on the ground. Full pitot heat is only available during flight.

WARNING

The pitot tube can get hot within one minute, and care must be used when touching the housing. The technique used for testing the hotness of an iron should be employed.

Area 2 (Left Wing Flap, Trailing Edge and Wing Tip)

1. Flap — CHECK (Proper extension and security of hardware.)
2. Left Wing Tie-down — REMOVE
3. Aileron — CHECK (Movement, condition, and security of hardware.)
4. Aileron Servo Tab — CHECK FOR PROPER OPERATION
5. Static Wicks (2) — CHECK FOR INSTALLATION AND CONDITION
6. Wing Tip — CHECK (Look for damage; check security of position and anti-collision lights.)

Area 3 (Left Wing Leading Edge, Fuel Tank, and Left Tire)

1. Leading Edge, Leading Edge Tape, and Stall Strips — CHECK (Look for damage.)
2. Fuel Vent — CHECK FOR OBSTRUCTIONS
3. Landing Light — CHECK (Look for lens cracks and check security.)
4. Fuel Quantity — CHECK VISUALLY AND SECURE FILLER CAP
5. Stall Warning Vane — CHECK FOR FREE MOVEMENT AND ENSURE NOT BENT
6. Wing Fuel Drain — CHECK FOR CONTAMINATION (Preceding first flight of the day or after refueling.)
7. Left Main Strut and Tire — CHECK (Remove wheel chocks, check tire for proper inflation, check gear strut for evidence of damage, bushing in place.)
8. Main Fuel Drain — CHECK FOR CONTAMINATION (Preceding first flight of the day or after refueling.)
9. Gascolator Access Door and Inspection Panels — CHECK (Security of hardware.)

Area 4 (Nose Section)

1. Left Windscreen, Cowl, and Exhaust — CHECK (Condition and security of hardware.)
2. Engine Oil — CHECK LEVEL (Maintain between 6 and 8 quarts; fill to 8 quarts for extended flights.)
3. Engine Oil Filler Cap and Accessory Door — CAP AND ACCESSORY DOOR SECURE
4. Propeller and Spinner — CHECK (Look for nicks, security, and evidence of oil leakage.)
5. Alternator Belt — CHECK (Condition and tension.)
6. Nose Wheel Strut — CHECK INFLATION (Approx. 3 to 4 inch of chrome strut must be visible.)
7. Nose Tire — CHECK (Remove wheel chocks, check tire for proper inflation.)
8. Right Windscreen, Cowl, Cabin Air Inlet, and Exhaust — CHECK (Condition, no obstructions, and security of hardware.)

Area 5 (Right Wing Leading Edge, Fuel Tank, and Right Tire)

1. Wing Fuel Drain — CHECK FOR CONTAMINATION (Preceding first flight of the day or after refueling.)
2. Right Main Strut and Tire — CHECK (Remove wheel chocks, check tire for proper inflation, check gear strut for evidence of damage, bushing in place.)

3. Leading Edge, Leading Edge Tape, and Stall Strips — CHECK (Look for damage.)
4. Fuel Quantity — CHECK VISUALLY AND SECURE FILLER CAP
5. Fuel Vent — CHECK FOR OBSTRUCTIONS
6. Pitot Tube — CHECK FOR OBSTRUCTIONS

Area 6 (Right Wing Tip, Trailing Edge, Wing Flap, and Right Fuselage Area)

1. Wing Tip — CHECK (Look for damage; check security of position and anti-collision lights.)
2. Aileron — CHECK (Movement, condition, and security of hardware.)
3. Aileron Trim Tab — CHECK FOR NEUTRAL POSITION
4. Static Wicks (2) — CHECK FOR INSTALLATION AND CONDITION
5. Right Wing Tie-down — REMOVE
6. Flap — CHECK (Visually check for proper extension and security of hardware.)
7. Antennas Bottom of Fuselage — CHECK FOR SECURITY
8. Static Port — CHECK FOR BLOCKAGE

Area 7 (Tail Section)

1. Leading Edge of Horizontal and Vertical Surfaces — CHECK (Look for damage.)
2. Leading Edge Tape — CHECK (Attached and in good condition.)
3. Antennas Vertical Stabilizer — CHECK FOR SECURITY
4. Rudder/Elevator Hardware — CHECK (General condition and security.)
5. Rudder Surface — CHECK (Freedom of movement.)
6. Fixed Elevator Surfaces — CHECK SECURE, CHECK CLEARANCE TO RUDDER TO FULL DEFLECTION
7. Elevator Surface — CHECK (Freedom of movement.)
8. Elevator Trim Tab — CHECK FOR NEUTRAL POSITION
9. Static Wicks (5) — CHECK FOR INSTALLATION AND CONDITION
10. Tail Tie-Down — REMOVE

Area 8 (Aft Fuselage and Cabin)

1. Baggage Door — CHECK CLOSED AND LOCKED
2. Fire Extinguisher — CHECK FOR PRESENCE AND SECURITY
3. Crash Ax/Hatchet — CHECK FOR PRESENCE AND SECURITY

BEFORE STARTING ENGINE

1. Preflight Inspection — COMPLETE
2. Fresh Air Vents — CLOSED FOR ENGINE START
3. Seat Belts and Shoulder Harnesses — SECURE (Stow all unused seat belts.)
4. Fuel Selector — LEFT OR RIGHT TANK
5. Avionics Master Switch — OFF
6. Crosstie Switch — VERIFY OFF
7. Brakes — TESTED AND SET
8. Circuit Breakers — CHECK IN
9. Oxygen Masks and Cannulas — CHECK (Kinks in hose, rips or tears.)
10. Passenger Briefing Card — ADVISE PASSENGERS TO REVIEW

CAUTION

There is a significant amount of electric current required to start the engine. For this reason, the avionics master switch must be set to the OFF position during starting to prevent possible serious damage to the avionics equipment.

STARTING COLD ENGINE

1. Mixture — RICH
2. Propeller — HIGH RPM
3. Vapor Suppression — OFF
4. Induction Heated Air — OFF
5. Throttle — CLOSED, THEN OPEN APPROXIMATELY ONE INCH
6. Left and Right Battery Switches — ON
7. Anti-Collision/Position Lights — ON AS REQUIRED
8. Primer Switch — PUSH IN (Approximately 5 seconds.)
9. Throttle — CLOSED THEN OPEN ½ INCH
10. Check Propeller Area — CLEAR (Ensure people/equipment are not in the propeller area.)
11. Ignition Switch — START
12. Throttle — ADJUST IDLE (900 to 1000 RPM)
13. Oil Pressure — CHECK (Ensure the oil pressure gauge reads between 30 to 60 psi.)

CAUTION

If no oil pressure is noted within 30 seconds, shut down the engine and investigate the cause. Operating the engine without oil pressure may result in engine malfunction or stoppage.

14. Left and Right Alternator Switches — ON

STARTING HOT ENGINE

1. Mixture — IDLE CUTOFF
2. Propeller — HIGH RPM
3. Throttle — CLOSED
4. Induction Heated Air — OFF
5. Left and Right Battery Switches — ON
6. Anti-Collision/Position Lights — ON AS REQUIRED
7. Vapor Suppression — ON FOR 30 TO 60 SECONDS THEN OFF
8. Mixture — RICH
9. Primer Switch — PUSH IN (Approximately 3 seconds.)
10. Throttle — CLOSED, THEN OPEN APPROXIMATELY ¼ INCH OR FULL OPEN
11. Check Propeller Area — CLEAR (Ensure people/equipment are not in the propeller area.)
12. Ignition Switch — START

NOTE

It may be necessary to leave the vapor suppression on during starting (steps 7 – 10) and turn it off approximately one minute after engine start. If the engine is only moderately warm it may be necessary to push the primer switch for a few seconds before starting.

13. Throttle — IDLE (900 to 1000 RPM)
14. Oil Pressure — CHECK (Ensure the oil pressure gauge reads between 30 to 60 psi.)
15. Left and Right Alternator Switches — ON

STARTING ENGINE WITH GROUND POWER CART

CAUTION

When starting with a ground power cart, the battery conditions cannot be monitored during the start cycle. Do not start the engine if both batteries are completely dead. Recharge or replace the batteries if weak or dead; before flight.

1. Left and Right Master Switches — VERIFY OFF
2. Check Propeller Area — CLEAR (Ensure people/equipment are not in the propeller area.)
3. Auxiliary Power — CONNECTED AND ON (Use a 24 volt DC source.)
4. Crosstie Switch — ON
5. Aircraft Buses — VERIFY POWERED UP (Do not turn on the BATT or ALT Switch.)
6. Anti-Collision/Position Lights — ON AS REQUIRED
7. Mixture — RICH
8. Propeller — HIGH RPM
9. Vapor Suppression — OFF
10. Induction Heated Air — OFF
11. Throttle — CLOSED, THEN OPEN APPROXIMATELY ONE INCH
12. Primer Switch — PUSH IN (Approximately 5 seconds.)
13. Throttle — CLOSED, THEN OPEN ½ INCH
14. Check Propeller Area — CLEAR (Ensure people/equipment are not in the propeller area.)
15. Ignition Switch — START

CAUTION

If the engine starter is engaged for 30 seconds and the engine will not start, release the starter switch, and allow the starter motor to cool for three to five minutes. Release the starter as soon as the engine fires. Never engage the starter while the propeller is still turning.

CAUTION

The master switches should not be turned on until after the engine has started and the ground power plug has been removed.

16. Throttle — ADJUST IDLE (900 TO 1000 RPM)
17. Oil Pressure — CHECK (Ensure oil pressure gauge reads between 30 to 60 psi.)
18. Auxiliary Power — SIGNAL LINE SERVICE TO TURN OFF AND DISCONNECT
19. Crosstie Switch — OFF
20. Left and Right Master Switches — ON
21. Before Moving — CLEAR (Wait for the line service technician to clear you to move.)
22. Left and Right Alternator Switches — ON

AFTER ENGINE START

1. Avionics Master Switch — ON
2. Engine Indication Systems — CHECK
3. Ammeters — CHECK (Ensure the alternator annunciation message is not displayed and the ammeters are indicating the left and right batteries are charging.)
4. MFD Fuel Remaining — INITIALIZE
5. Radios and Required Avionics — SET AS REQUIRED
 - 5.1. COM Radios — SET
 - 5.2. NAV Radios — SET
 - 5.3. PFD and Backup Altimeters — SET
 - 5.4. FMS Flight Plan — LOADED

L/R Alt out

- 5.5. Altitude and Heading Bugs — SET
- 5.6. Transponder — SET CODE

CROSSTIE OPERATION

1. Environmental Control System (ECS) — OFF
2. Left Master Switch — OFF (Ensure the essential and avionics buses are energized.)
3. L BUS OFF Annunciation — DISPLAYED *→ L Alt*
4. Crosstie Switch — ON (Ensure the right ammeter is showing charge and load increase for left and right buses.)
5. L BUS OFF Annunciation — CLEARS *→ Auto ID*
6. Crosstie Switch — OFF
7. Left Master Switch — ON
8. Right Master Switch — OFF (Ensure the essential and avionics buses are energized.)
9. R BUS OFF Annunciation — DISPLAYED *early*
10. Crosstie Switch — ON (Ensure the left ammeter is showing charge and load increase for left and right buses.)
11. R BUS OFF Annunciation — CLEARS
12. Crosstie Switch — OFF
13. Right Master Switch — ON
14. Environmental Control System (ECS) — USE AS DESIRED

SPEEDBRAKE™ GROUND OPERATIONS

1. SpeedBrake™ Switch — ON/UP POSITION
2. Rudder Limiter — TEST (Ensure SpeedBrakes™ have stowed after the Rudder Limiter annunciation has displayed.)
3. SPEED BRAKES Annunciation — DISPLAYED *→ Auto*
4. SpeedBrake™ Switch — OFF/DOWN POSITION (Ensure both SpeedBrakes™ are retracted.)
5. SPEED BRAKES Annunciation — CLEARS

NOTE

The SpeedBrake™ system should be functionally checked for proper operation prior to flight. The independent electrical clutches need to be synchronized by SpeedBrake™ activation before flight and/or after SpeedBrake™ circuit breaker pull. If the SpeedBrakes™ remain slightly extended, it indicates SpeedBrake™ failure and the SpeedBrake™ circuit breaker should be pulled.

AUTOPILOT AUTOTRIM OPERATIONS

1. Autopilot — ENGAGE
2. Control Stick — APPLY FORWARD PRESSURE TO OVERRIDE PITCH SERVO
3. Control Stick — APPLY SIDE PRESSURE TO OVERRIDE ROLL SERVO
4. Electric Trim Switch — MOVE UP AND DOWN, ENSURE AUTOPILOT DISCONNECTS (Trim should operate in the commanded direction.)
5. Autopilot — ENGAGE
6. Depress Autopilot Disconnect/Trim Interrupt Switch on Control Stick — ENSURE AUTOPILOT DISCONNECTS (Ensure all controls for freedom of motion and ensure the autopilot is disconnected.)

WARNING

If the Autotrim fails any portion of the above check procedures, do not attempt to use the autopilot pitch axis until the fault is corrected.

GROUND OPERATION OF AIR CONDITIONING

1. Control Head — SELECT MODE AND TEMPERATURE DESIRED
2. Engine RPM — KEEP RPM AT OR ABOVE 1000 RPM
3. Ammeters — MONITOR BATTERIES (Decrease electrical load if a discharge is displayed.)

BEFORE TAXI

1. Engine Instruments — CHECK (Within proper ranges.)
2. Fuel Gauges — CHECK PROPER INDICATION
3. Ammeters — CHARGING
4. Wing Flaps — TAKEOFF THEN UP (Cruise Position)
5. Radio Clearance — AS REQUIRED
6. Taxi Light — AS REQUIRED
7. Brakes — RELEASE

TAXIING

1. Brakes — CHECK FOR PROPER OPERATION
2. PFD and Standby Flight Instruments — CHECK FOR PROPER OPERATION
3. Rate Of Turn Indicator — CHECK FOR PROPER OPERATION
4. Horizontal Situation Indicator (HSI) — CHECK FOR PROPER OPERATION

BEFORE TAKEOFF

1. Runup Position — MAXIMUM HEADWIND COMPONENT
2. Parking Brake/Foot Brakes — SET or HOLD
3. Flight Controls — FREE AND CORRECT
4. Crosstie Switch — VERIFY OFF
5. Autopilot (A/P) Trim System Switch in Overhead — VERIFY ON
6. Autopilot — VERIFY DISENGAGED
7. Trim Tabs — SET FOR TAKEOFF
8. PFD and Backup Flight Instruments — CROSSCHECK AND SET
9. Fuel Selector — SET OUT OF DETENT (Ensure that 2 seconds after the annunciation displays the aural warning is played.)
10. Alerts Softkey on PFD — PRESS (Ensure aural warning stops.)
11. Fuel Selector — SET TO FULLER TANK
12. Cabin Doors — CLOSED AND LATCHED (Verify that red annunciation message is not displayed.)
13. Passenger Side Door Lock — IN THE UNLOCKED POSITION
14. Engine Runup — OIL TEMPERATURE CHECK (Above 75°F)
15. Throttle — 1700 RPM
16. Ignition Switch — L POSITION (25 RPM drop minimum, 150 RPM drop maximum, EGTs should rise.)
17. Ignition Switch — R POSITION (25 RPM drop minimum, 150 RPM drop maximum, 50 RPM difference between L and R, EGTs should stay stable.)
18. Ignition Switch — R/L POSITION (EGTs should drop.)
19. Propeller — CHECK OPERATION (Cycle two or three times with a 300 to 500 RPM drop.)
20. Engine Instruments and Ammeter — CHECK (Within proper ranges.)
21. Batteries — VERIFY CHARGE CONDITION BEFORE TAKEOFF (At 1700 RPM, the battery charge rate should be less than 10 amps for each battery.)
22. Throttle — VERIFY IDLE THEN 900 TO 1000 RPM
23. Illuminated Switch Bulb Test — ALL LAMPS ILLUMINATED

24. Radios — SET, CROSSCHECK NAV INDICATORS
25. Flight Director — AS REQUIRED
26. Transponder — VERIFY CODE
27. Wing Flaps — TAKEOFF POSITION
28. SpeedBrake™ Switch — VERIFY OFF/DOWN POSITION
29. Doors — LATCHED AND DETENTED
30. PFD Annunciation Window — ALL MESSAGES ADDRESSED
31. Door Seals — ON
32. Backup Fuel Pump — ARMED
33. Oxygen Switch — ON
34. Mask or Cannula — DON
35. Flowmeters — CHECK AND ADJUST TO PLANNED CRUISE ALTITUDE (Ensure that the internal metering ball moves freely and oxygen is flowing to the delivery devices.)
36. Time — NOTED
37. Brakes — RELEASE

WARNING

The absence of RPM drop when checking magnetos may indicate a malfunction in the ignition circuit resulting in a hot magneto, i.e., one that is not grounding properly. Should the propeller be moved by hand (as during preflight inspection) the engine might start and cause death or injury. This type of malfunction must be corrected before operating the engine.

CAUTION

Do not underestimate the importance of pre-takeoff magneto checks. When operating on single ignition, some RPM drop should always occur. Normal indications are 25 to 75 RPM and a slight engine roughness as each magneto is switched off. A drop in excess of 150 RPM may indicate a faulty magneto or fouled spark plugs.

NOTE

When checking the oxygen flowmeter, the reading is taken at the midpoint of the ball. Ensure the flowmeter is held vertically when adjusting flow rate or reading.

MINOR SPARK PLUG FOULING (Minor plug fouling can usually be cleared as follows.)

1. Brakes — HOLD BRAKES MANUALLY
2. Throttle — 2200 RPM
3. Mixture — ADJUST FOR MAXIMUM PERFORMANCE (Move towards idle cutoff until RPM peaks, and hold for 10 seconds. Return mixture to full rich.)
4. Throttle — 1700 RPM
5. Magnetos — RECHECK (50 RPM difference with a maximum drop of 150 RPM.)
6. Throttle — IDLE (900 to 1000 RPM)

CAUTION

Do not operate the engine at a speed of more than 2000 RPM longer than necessary to test engine operations and observe engine instruments. Proper engine cooling depends on forward speed. Discontinue testing if temperature or pressure limits are approached.

NORMAL TAKEOFF

1. Landing/Taxi Lights — AS REQUIRED
2. Mixture — AS REQUIRED
3. Pitot Heat and Propeller Heat — AS REQUIRED
4. Throttle — ADVANCE SLOWLY TO FULL POWER (2700 RPM)
5. Elevator Control — LIFT NOSE AT 75 KIAS
6. Climb Speed — ACCELERATE TO CLIMB SPEED OF 115 KIAS
7. Wing Flaps — RETRACT (At 400 feet AGL, and at or above 95 KIAS.)

SHORT FIELD TAKEOFF (Complete "BEFORE TAKEOFF" checklist first)

1. Landing/Taxi Lights — AS REQUIRED
2. Wing Flaps — TAKEOFF POSITION
3. Brakes — APPLY
4. Mixture — AS REQUIRED
5. Backup Fuel Pump — ARMED
6. Throttle — ADVANCE SLOWLY TO FULL POWER (2700 RPM)
7. Brakes — RELEASE
8. Elevator Control — MAINTAIN LEVEL NOSE ATTITUDE
9. Rotate Speed — 65 KIAS
10. Climb Speed — 78 KIAS
11. Wing Flaps — RETRACT (At 400 feet AGL, and at or above 95 KIAS.)

NOTE

If usable runway length is adequate, it is preferable to use a rolling start to begin the takeoff roll as opposed to a standing start at full power. Otherwise, position the airplane to use all of the runway available.

CROSSWIND OPERATIONS

Crosswind takeoffs and landings require a special technique but not specific procedures and, as such, do not require a dedicated checklist. Please see the amplified discussion on pages 4-24 and 4-28 for applicable crosswind techniques.

NOTE

If the cross control method is used during a crosswind approach, the resulting slight sideslip causes the airspeed to read up to 5 kts higher or lower, depending on the direction of the sideslip.

NORMAL CLIMB

1. Airspeed — 115 KIAS (See cruise climb discussion on page 4-24.)
2. Power Settings — ADJUST AS NECESSARY
3. Fuel Selector — SET TO RIGHT OR LEFT TANK
4. Mixture — AS REQUIRED (See discussion on page 4-25.)
5. Backup Fuel Pump — ARMED
6. Landing/Taxi Lights — AS REQUIRED

MAXIMUM PERFORMANCE CLIMB

1. Airspeed — 106 to 93 KIAS (Sea level and 10,000 feet, respectively.)
2. Power Settings — 2700 RPM AND FULL THROTTLE
3. Fuel Selector — SET TO RIGHT OR LEFT TANK (As appropriate.)
4. Mixture — NEAR OR AT FULL RICH
5. Backup Fuel Pump — ARMED

CRUISE

1. Throttle — SET AS APPROPRIATE TO ACHIEVE 80% POWER OR LESS (Refer to the cruise performance charts.)
2. Propeller — SET AS APPROPRIATE TO ACHIEVE 80% POWER OR LESS (Refer to the cruise performance charts.)
3. Mixture — LEAN AS REQUIRED (Use the EGT gauge or performance charts in Section 5.)
4. Backup Fuel Pump — OFF
5. Changing Fuel Tanks — PERFORM STEPS 5.1 AND 5.2.
 - 5.1. Vapor Suppression — SET TO ON DURING FUEL TANK CHANGEOVERS
 - 5.2. Fuel Selector — CHANGE AS REQUIRED (The maximum permitted fuel imbalance is 10 gallons (38 L).)
6. Landing/Taxi Lights — AS REQUIRED
7. Oxygen Quantity — CHECK PERIODICALLY (Approximately every 20 minutes.)
8. Oxygen Outlet Pressure — CHECK PERIODICALLY (Approximately every 20 minutes.)
9. Flowmeter or Flow Indicator — CHECK PERIODICALLY FOR OXYGEN FLOW (Approximately every 10 minutes.)
10. Altitude Change — ADJUST FLOW DEVICES TO NEW ALTITUDE
11. Physiological Requirement — ADJUST FLOW DEVICE TO HIGHER ALTITUDE

NOTE

The vapor suppression must be turned on before changing the selected fuel tank. After proper engine operations are established, the pump is turned off.

When changing power, the sequence control usage is important. To increase power, first increase mixture (not necessarily to full rich), then increase RPM with the propeller control and then increase manifold pressure with the throttle control. To decrease power, decrease manifold pressure first with the throttle control and then decrease RPM with the propeller control.

DESCENT

1. Fuel Selector — SET TO RIGHT OR LEFT TANK (As appropriate.)
2. Power Settings — AS REQUIRED
3. Mixture — AS REQUIRED
4. Backup Fuel Pump — OFF
5. PFD and Backup Altimeters — SET
6. Altitude Bug — SET
7. Landing/Taxi Lights — AS REQUIRED

APPROACH

1. Approach — LOADED INTO FLIGHTPLAN
2. PFD Baro Min — SET
3. GPS Raim/Map Integrity — VERIFY
4. PFD OBS/SUSP Softkey — REVIEW and BRIEF USAGE DURING APPROACH
5. PFD CDI Softkey — SELECT NAV SOURCE
6. Nav aids — TUNED AND IDENTIFIED
7. Approach Course — SET
8. Mixture — AS REQUIRED

NOTE

Passing FAF, new course may be needed.

BEFORE LANDING

1. Seat Belts and Shoulder Harnesses — SECURE (Both pilot and passengers.)
2. Mixture — AS REQUIRED
3. Fuel Selector — SET TO RIGHT OR LEFT TANK (As appropriate.)
4. Backup Fuel Pump — OFF
5. Propeller — HIGH RPM
6. Autopilot — DISENGAGED (If applicable.)

NORMAL LANDING

1. Approach Airspeed — AS REQUIRED FOR CONFIGURATION
 - Flaps (Cruise Position) 95 to 100 KIAS
 - Flaps (Takeoff Position) 90 to 95 KIAS
 - Flaps (Landing Position) 85 to 90 KIAS
2. Trim Tabs — ADJUST AS REQUIRED
3. Touchdown — MAIN WHEELS FIRST
4. Landing Roll — GENTLY LOWER NOSE WHEEL
5. Braking — AS REQUIRED

SHORT FIELD LANDING (Complete "BEFORE LANDING" Checklist first)

1. Wing Flaps — LANDING POSITION
2. Initial Approach Airspeed — 90 KIAS
3. Minimum Approach Speed — 78 KIAS
4. Trim Tabs — ADJUST AS REQUIRED
5. Power — REDUCE AT THE FLARE POINT
6. Touchdown — MAIN WHEELS FIRST
7. Landing Roll — LOWER NOSE WHEEL SMOOTHLY AND QUICKLY
8. Braking and Flaps — APPLY HEAVY BRAKING AND RETRACT FLAPS (Up position.)

BALKED LANDING (Go Around)

1. Throttle — FULL (At 2700 RPM)
2. SpeedBrake™ Switch — OFF/DOWN POSITION
3. Wing Flaps — TAKEOFF POSITION
4. Airspeed — 80 KIAS
5. Climb — POSITIVE (Establish Positive Rate of Climb.)
6. Backup Fuel Pump — ARM
7. Wing Flaps — RETRACT (At 400 feet AGL and at or above 95 KIAS.)

AFTER LANDING

1. Wing Flaps — UP (Cruise Position)
2. SpeedBrake™ Switch — OFF/DOWN POSITION
3. Door Seal, Pitot Heat, and Propeller Heat — OFF
4. Transponder — VERIFY STANDBY/GROUND MODE
5. Landing/Taxi Lights — AS REQUIRED
6. Time — NOTE

SHUTDOWN

1. Parking Brake — SET
2. Throttle — IDLE (900 to 1000 RPM)
3. Oxygen System — OFF
4. ELT — CHECK NOT ACTIVATED
5. Trim Tabs — SET TO NEUTRAL
6. Avionics Master Switch — OFF (Ensure shutdown.)
7. Electrical/Environmental Equipment — OFF

8. Mixture — IDLE CUTOFF
9. Left and Right Master Switches — OFF
10. Ignition Switch — OFF (After engine stops.)
11. Anti-Collision/Position Lights — OFF