NORMAL PROCEDURES

NOTE: The inspections required by the pilot are the minimum requirement for safe flight. While making the exterior inspection, particular attention should be given to the following. Check all surfaces for general condition, antennas and access plates secure; check for fuel, oil, and hydraulic leaks; all covers removed; all vents and openings clear; check tires, brakes, and brake lines; check struts for proper extension; and airplane properly chocked. Additional checks may be performed at the discretion of the pilot.

INTERIOR INSPECTION

1. Certificates / Documents ..... CHECK
2. Gust lock. ..... REMOVE
3. Fuel selector. ..... RIGHT TANK
4. Magneto switch. ..... OFF
5. Mixture. ..... IDLE CUT-OFF
6. Electrical master switch. ..... OFF
7. Avionics master switch. ..... OFF
8. Landing gear switch. ..... DOWN
9. Flight controls ..... CHECK
10. Flaps. ..... DOWN
11. Master switch battery side. ..... ON
    a. Fuel gages ..... CHECK
    b. Landing gear lights. ..... CHECK
    c. External lights ..... ON

    NOTE: Visually check operation of external lights.
12. Master switch. ..... OFF

EXTERIOR INSPECTION

1. RIGHT WING
   - a. Flaps..... CHECK
   - b. Aileron. ..... CHECK
   - c. Wing tip & lights..... CHECK
   - d. Leading edge..... CHECK
   - e. Tie down & chock. ..... REMOVE
   - f. Main gear (strut approximately 2-in)..... CHECK
   - g. Fuel tank vent. ..... CHECK
   - h. Fuel drain. ..... CHECK
   - i. Fuel tank..... CHECK
   - j. Fresh air inlet..... CHECK
   - k. Cabin door hinges. ..... CHECK

2. ENGINE AND NOSE SECTION
   - a. Oil–8 qts max, 7 qts minimum for flight. ..... CHECK
   - b. Cowling right side. ..... SECURE
   - c. Prop & spinner..... CHECK
   - d. Alternator belt. ..... CHECK
   - e. Air inlets (induction & engine)..... CLEAR
   - f. Nose gear (strut approximately 2-3/4 in). ..... CHECK
   - g. Landing light. ..... CHECK
   - h. Cowling left side. ..... CHECK
   - i. Fuel strainer. ..... CHECK

3. LEFT WING
   - a. Fresh air inlet..... CHECK
   - b. Main gear (strut approximately 2-in)..... CHECK
   - c. Fuel drain. ..... CHECK

d. Fuel tank vent ..... CHECK
e. Tie down & chock. ..... REMOVE
f. Pitot tube. ..... CHECK
g. Fuel Tank. ..... CHECK
h. Stall Warning. ..... CHECK
i. Leading Edge. ..... CHECK
j. Wing tip & lights ..... CHECK
k. Aileron. ..... CHECK
l. Flaps ..... CHECK

4. FUSELAGE / EMPENNAGE

a. Antennas. ..... CHECK
b. Static port. ..... CHECK
c. Vertical stabilizer & rudder ..... CHECK
d. Anti-collision light. ..... CHECK
e. Stabilator & trim tab. ..... CHECK
f. Navigation light. ..... CHECK
g. Tie down & ground wire ..... REMOVE
h. Baggage compartment door ..... CLOSED

NOTE: Secure tow bar in brackets.

BEFORE STARTING ENGINE

1. Flaps. ..... UP
2. Door / windows. ..... CHECK
3. Seat backs. ..... ADJUST & LOCK
4. Seat belts. ..... FASTENED
5. Passenger briefing. ..... COMPLETE
6. Fuel selector. ..... LOWEST TANK

7. Circuit breakers..... IN
8. Alternate air..... CLOSED
9. Throttle ..... OPEN–1/2 INCH
10. Prop. ..... FULL INCREASE
11. Brakes..... SET OR HOLD
12. Master switch. ..... ON
13. Avionics master. ..... OFF
14. Anti-Collision light. ..... ON
15. Electric fuel pump. ..... ON

ENGINE START (Starting engine when cold)

1. Mixture. ..... FULL RICH
   (When fuel flow is indicated)..... IDLE CUT-OFF
2. Propeller..... CLEAR
3. Starter. ..... ENGAGE
4. Mixture. ..... HALF THEN FULL RICH
5. Throttle..... 1200 RPM
6. Electric fuel pump. ..... OFF
7. Alternator switch. ..... ON
8. Oil pressure..... CHECK

   NOTE: Check all engine instruments; oil temperature, fuel gages, fuel pressure, manifold pressure, fuel flow.

ENGINE START (Starting engine when hot)

1. Throttle..... OPEN 1/2 inch
2. Mixture. ..... IDLE CUT-OFF
3. Starter. ..... ENGAGE

   NOTE: When engine fires, advance mixture control 1/2 open
4. Mixture. ..... FULL RICH
5. Throttle..... 1200 RPM
6. Electric fuel pump. ..... OFF
7. Alternator switch. ..... ON
10. Oil pressure..... CHECK

BEFORE TAXI

1. Avionics master and radios ..... ON
2. Transponder. ..... STANDBY
3. Flight Instruments. ..... CHECK

   NOTE: Check airspeed, attitude, altimeter, vertical speed, directional gyro, and turn & bank indicator.
3. Communication and navigations radios..... SET
4. Lights . ..... AS REQUIRED
5. Fuel selector. ..... SWITCH TANKS
6. Brakes..... RELEASE

ENGINE RUN-UP

1. Nose wheel. ..... CENTERED
2. Brakes..... HOLD
3. Flight controls..... CHECK
4. Trim..... SET FOR TAKEOFF

5. Throttle..... 2000 RPM
6. Mixture . ..... Set for Field Elevation
7. Magnetos. ..... CHECK

   NOTE: 175 RPM max drop, 50 RPM max difference.
8. Propeller..... CYCLE

   NOTE: In cold weather cycle propeller lever at least three times to assure warm engine oil is circulated through system.
9. Vacuum gage..... CHECK

NOTE: Gage should read approx. 5 inches Hg At 2000 RPM.

10. Alternate air..... CHECK THEN CLOSED
11. Loadmeter..... CHECK
12. Throttle..... 1000 RPM

BEFORE TAKEOFF

1. Transponder. ..... ALT
2. Electric fuel pump. ..... ON
3. Alternate air..... CLOSED
4. Door & upper latch. ..... CLOSED & LOCKED
5. Heading indicator. ..... SET
6. Flaps. ..... AS REQUIRED

NORMAL TAKEOFF

1. Brakes..... RELEASED
2. Rotate . ..... 60 – 70 MPH

   WARNING: Maximum gear retract speed 125 MPH

   NOTE: Normal climb – 100 MPH

SHORT FIELD TAKEOFF (Obstacle Clearance)

1. Flaps . ..... 25° (second notch)
2. Rotate. ..... 60–65 MPH
3. Gear. ..... UP

NOTE: When safely airborne, accelerate to best angle of climb, 85 MPH. After clearing obstacle increase climb speed to 100 MPH and slowly retract flaps.

SOFT FIELD TAKEOFF (Obstacle Clearance)

1. Flaps. ..... 25 deg (second notch)
2. Rotate. ..... LOWEST POSSIBLE AIRSPEED
3. Gear. ..... UP

NOTE: When safely airborne accelerate to best angle of climb, 85 MPH just above the ground. After clearing obstacle increase climb speed to 100 MPH and slowly retract flaps.

NORMAL CLIMB

1. Manifold pressure . ..... 25 inches; Propeller 2500 RPM
2. Electric fuel pump. ..... OFF – above 1000 AGL
3. Normal cruise climb speed. ..... 110 MPH

	Gear Down	Gear Up
Best angle of climb	85	95
Best rate of climb	96	100

CRUISE

1. Mixture. ..... LEAN – above 5000'
2. Fuel management. ..... BALANCE
3. Normal power setting. ..... 75% Rated Power

WARNING: Improper leaning will greatly reduce endurance.

NOTE: Normal cruise power setting: 25" manifold pressure; 2400 RPM; 151mph (IAS); approximately 10 gph fuel consumption with proper leaning.

APPROACH AND LANDING

1. Mixture. ..... RICH
2. Fuel selector. ..... FULLEST TANK
3. Seat belts. ..... FASTENED
5. Electric fuel pump. ..... ON
6. Propeller. ..... 2600 RPM
7. Landing gear. ..... DOWN

   WARNING: Maximum gear extension speed150 MPH

8. Flaps. ..... SET

   WARNING: Maximum flap extension speed 125 MPH.

   NOTE: Trim airplane for approximately 90 MPH after gear and flaps are extended for landing.

   NOTE: For no flap landing maintain 95 MPH
   For full flap landing maintain 90 MPH

SHORT FIELD AND LOW SPEED LANDING

1. Mixture. ..... RICH
2. Fuel. ..... FULLEST TANK
3. Electric fuel pump. ..... ON

NOTE: Use full flaps and power to maintain desired flight path. Maintain 85 MPH on final approach. Airspeed should be reduced during flare and contact with the ground should be made close to stalling speed.

AFTER LANDING

1. Flaps. ..... RETRACT
2. Transponder. ..... OFF
3. Electric Fuel Pump. ..... OFF

ENGINE SHUTDOWN

1. Avionics Master. ..... OFF
2. Throttle . ..... IDLE
3. Magneto grounding. ..... CHECK
4. Mixture. ..... IDLE CUT-OFF
5. Magneto switch. ..... OFF
6. Master switch. ..... OFF

SECURING AIRCRAFT

1. Gust Lock . ..... INSTALL
2. Chocks, tie downs, ground wire. ..... IN PLACE
3. Pitot cover. ..... IN PLACE
4. Sun visor. ..... IN PLACE
5. Brakes..... OFF
6. Door & storm window..... CLOSED & LOCKED