

**PREFLIGHT INSPECTION**

**CABIN**

- Certificates/Documents .....IN AIRCRAFT
  - Airworthiness Certificate
  - Registration
  - Radio Operators/Station License (**International Flights Only**)
  - Operating Limitations / Pilot's Operating Handbook
  - Weight & Balance (current)
- Control Wheel Lock .....REMOVE
- Throttle .....IDLE
- Mixture .....FULL LEAN
- Avionics Power Switch / All Switches .....OFF
- Master Switch .....ON (avionics cooling fan audible)
- Strobe/Navigation/Beacon Lights .....CHECK OPERATION
- Pitot Heat .....ON / CHECKED
- Fuel Quantity Indicators .....CHECK QUANTITY
- Flaps .....DOWN FOR INSPECTION
- Standby Vacuum Pump (IFR fit) .....ON / OFF
- Master Switch .....OFF
- Fuel Selector .....BOTH (L/R for Refueling)

**TAIL SECTION**

- Elevator & Rudder .....CHECK FREEDOM & SECURE
- Tail Tie-Down / Rudder Gust Lock .....REMOVE
- Nav. Lights .....UNBROKEN (WHITE)
- VOR Antenna .....CHECK

**RIGHT SIDE / WING**

- ELT & Transponder Antenna .....CHECK
- Alternate Static Port (both sides).....CHECK CLEAR
- Fuel Tank Sump .....CHECK GRADE / CONTAMINENTS
- Main Wheel Tire .....CHECK WEAR & INFLATION (42 psi)
- Flap Tracks & Actuator Rod .....CHECK
- Aileron .....CHECK FREEDOM, HINGES & BALANCE
- Strobe & Nav Light .....UNBROKEN (**GREEN**)
- Fuel Tank .....CHECK QUANTITY (CAP SECURE)
- Cabin Air Intake .....CHECK CLEAR
- Wing Tie-down / Chocks .....REMOVE

**NOSE / ENGINE**

- Windshield .....CHECK CLEAN
- Propeller & Spinner .....CHECK FOR NICKS & OIL LEAKS
- Landing Light & Taxi Light .....CHECK
- Air Filter .....CHECK CLEAN
- Cowl Flaps .....SECURE (PIN INSTALLED)
- Shock Strut .....CHECK ~3.25 in SHOWING (55-60 psi)
- Nose Wheel .....CHECK WEAR & INFLATION (50 psi)
- Wheel Chocks / Tow Bar .....REMOVE
- Engine Fill Cap & Oil Dipstick .....CHECK (9-12 qt.)
- Fuel Strainer Sump .....DRAIN (~4 sec)
- Static Port (both sides) .....CHECK CLEAR

**LEFT WING**

- Cabin Air Intake .....CHECK CLEAR
- Fuel Tank .....CHECK QUANTITY (CAP SECURE)
- Wing Tie-down / Chocks .....REMOVE
- Pitot Tube .....CHECK (REMOVE COVER)
- Stall Warning .....CHECK
- Fuel Tank Vent .....CHECK
- Strobe & Nav. Light .....UNBROKEN (**RED**)
- Aileron .....CHECK FREEDOM, HINGES & BALANCE
- Flap Tracks & Actuator Rod .....CHECK
- Fuel Tank Sump .....CHECK GRADE / CONTAMINENTS
- Main Wheel Tire .....CHECK WEAR & INFLATION (42 psi)

**BEFORE STARTING ENGINE**

- Chocks / Tow bar .....REMOVE
- All Items in Cabin .....SECURE
- Passenger Brief - Exits/Seat Belts/Stall Horn .....COMPLETE
- Seats, Seat Belts, Harness .....ADJUST & LOCK
- Avionics Power Switch / All Switches .....OFF
- Circuit Breakers .....CHECK IN
- Fuel Selector .....BOTH
- Cowl Flaps .....OPEN
- Brakes .....TEST & HOLD
- Ignition Key .....INSERT

**STARTING ENGINE**

- Mixture .....RICH
- Propeller .....HIGH RPM
- Throttle .....OPEN 1/2 inch
- Carburetor Heat .....COLD
- Prime .....AS REQUIRED (typ. 4x then IN & LOCKED)
- Master Switch .....ON
- Rotating Beacon .....ON
- Brakes .....HELD (Propeller Area CLEAR)
- Ignition Switch .....START (hold no longer than 30 sec.)
- Throttle .....800-1000 RPM
- Oil Pressure .....CHECK (10psi rise w/in 30 sec, 1 min cold wx)
- Ammeter .....CHECK

**BEFORE TAXI**

- Lights & Strobes .....AS REQUIRED
- Avionics Power Switch / Radios .....ON / SET
- Transponder .....CODE SET / ON
- Flaps .....UP
- Flight Instruments .....SET / CHECK (Alt w/in 75 ft for IFR)
- Brakes .....TEST ON INITIAL MOVEMENT
- Flight Instruments .....CHECK TURNING INDICATIONS
- Control Surfaces .....SET FOR WIND DIRECTION

**RUN UP / BEFORE TAKEOFF**

- Throttle .....800-1000 RPM
- Fuel Selector .....BOTH
- Cowl Flaps .....FULL OPEN
- Mixture .....RICH (<3000 ft density alt)
- Brakes .....SET
- Primer .....IN & LOCKED
- Throttle .....(Check Oil temp ≥75°F).....1700 RPM
- Suction Gage .....CHECK (4.5 to 5.0)
- Magnetos .....CHECK (150 max drop / 50 max diff.)
- Propeller .....CYCLE (do not allow >500 RPM drop (check RPM↓ MP↑ Oil Press↓))
- Carburetor Heat .....CHECK (cycle on / off)
- Ammeter .....CHECK (cycle Alt Switch Off / On)
- Throttle .....CHECK IDLE LIMITS (then 800-1000)
- Flight Controls .....FREE & CORRECT
- Flight Instruments & Radios .....CHECK & SET
- Fuel Selector .....BOTH
- Trim (Elevator & Rudder) .....SET for takeoff
- Carburetor heat .....COLD
- Brief .....TAKEOFF/DEPARTURE EMERGENCY
- Transponder, D.G. & Compass .....CHECK
- Cabin Doors & Windows .....CLOSED & LOCKED
- Strobe / Landing Light .....ON (after clearance received)

**TAKE OFF** (Note departure time) **Normal** **Short**

Wing Flaps .....0 or 10°	Flaps 20°
Carburetor Heat .....COLD	Brakes HELD
Mixture .....RICH (<3000 ft den alt)	Rotate 59 KTS
➤ Min 2500' rwy to allow t/o rejection ◀	
Throttle .....FULL "OPEN"	<b>Soft</b>
Engine Instruments .....2600 RPM, CHT, Oil Press & Temp	Flaps 20°
Elevator Control .....ROTATE at 55 KTS	Roll taxi → T/O
Climb Speed .....80 KTS (flaps up)	Elevator full aft
Wing Flaps .....UP, INCREMENTALLY	Liftoff min speed
	Use grd effect
	V <sub>y</sub> then 81 KTS

**ENROUTE CLIMB**

- Airspeed .....85-95 KTS
- Fuel Selector .....BOTH
- Power .....23" MP and 2400 RPM
- Mixture .....RICH (until 3000 feet)
- Cowl Flaps .....OPEN as required

**CRUISE**

Quick setpoints – see perf charts for pwr settings

- Power .....55% 20" 2100.....65% 22" 2100.....75% 23" 2300
- Mixture .....LEAN AS REQUIRED
- Cowl Flaps .....OPEN as required for CHT = 2/3 range
- Landing Light .....AS REQUIRED

Minimize time at power

