

**BEFORE ENGINE START**

- 1) Hobbs Time..... NOTED
- 2) Preflight..... COMPLETE
- 3) Fuel quantity ..... ADEQUATE
- 4) Documentation (including IFR)..... CHECK
- 5) Seats & Seat Belts ..... ADJUSTED & LATCHED
- 6) Brakes ..... TEST (SET)
- 7) ELT ..... ARMED
- 8) Landing gear switch..... DOWN
- 9) Magneto switch..... OFF
- 10) Master switch ..... OFF
- 11) Radio master switch ..... OFF
- 12) Alternate static ..... OFF
- 13) Lights and electrical equipment..... OFF
- 14) Boost pump..... OFF
- 15) Cowl flaps ..... OPEN
- 16) Fuel Selector..... Tank to be 2nd
- 17) Circuit breaker panel ..... CHECK
- 18) Passengers..... BRIEFED (normal & emergency)

**STARTING ENGINE**

- 1) Mixture..... CUT OFF
- 2) Propeller..... FULL ADVANCE
- 3) Throttle..... OPEN ¼ inch (1/2 for hot)
- 4) Master switch ..... ON
- 5) Alternator Field Switch ..... ON
- 6) Strokes and/or Navigation lights ..... ON
- 7) Propeller area..... CLEAR

*For hot start delete steps 8-10*

- 8) Boost pump..... ON
- 9) Mixture..... RICH for 3-8 seconds then cut off
- 10) Boost pump..... OFF
- 11) Magnetos .... Turn & push to START (10 sec max)
- 12) Mixture..... RICH
- 13) Oil pressure ..... NORMAL (within 30 seconds)
- 14) Mixture..... LEAN for smooth idle

**AFTER START**

- 1) Radio Master..... ON
- 2) Set JPI fuel quantity .. R button to set - L to enter
- 3) Lights..... AS REQUIRED
- 4) Electric trim ..... ON
- 5) Parking brake ..... RELEASED
- 6) Brake and steering check ..... ON TAXI
- 7) IFR taxi checks ..... ON TAXI

**BEFORE TAKEOFF**

- 1) IFR taxi check ..... COMPLETE
- 2) Flight controls..... FREE & CORRECT
- 3) Flight instruments ..... SET
- 4) Radios ..... Comm & Nav SET
- 5) Annunciator panel ..... CHECK
- 6) Auto pilot ..... TEST and OFF
- 7) Standby vacuum pump..... TEST (Optional)
- 8) Elevator Trim ..... SET for TAKEOFF
- 9) Flaps..... SET for TAKEOFF
- 10) Cowl flaps ..... FULL OPEN
- 11) Fuel selector ..... ON DESIRED TANK

**ENGINE RUN UP**

- a) Throttle..... 1900 RPM
- b) Magnetos .. CHECK (175 max drop)
- c) Oil pressure ..... NORMAL RANGE
- d) Ammeter ..... CHARGE
- e) Vacuum ..... CHECK
- f) Propeller... CYCLE then FORWARD
- g) Throttle..... 1000 RPM
- 12) Door ..... LOCKED
- 13) Emergency Gear extension handle ..... LATCHED
- 14) Mixture..... FULL RICH
- 15) Boost pump ..... ON
- 16) Lights & strobes ..... AS REQUIRED
- 17) Transponder ..... ALT
- 18) Time of departure..... NOTED
- 19) Pilot briefing..... NORMAL & EMERGENCY

**TAKEOFF & CLIMB**

- 1) Rotate ..... 63 KIAS
- 2) Gear ..... UP  
..... WHEN NO RUNWAY REMAINS
- 3) Climb..... 85 KIAS  
(66 KIAS max performance)
- 4) Flaps ..... UP
- 5) Throttle ..... 25 inches (at 500 AGL)
- 6) Propeller..... 2500 rpm
- 7) Climb..... 100 KIAS  
(85 for best rate)
- 8) Boost pump ..... OFF  
(confirm fuel pressure)
- 9) Mixture ..... LEAN  
(50 rich of peak or 14 gph)
- 10) Cowl flaps ..... FULL OPEN or as required
- 11) Cylinder temperatures ..... MONITOR

**CRUISE**

- 1) Level at altitude ..... ACCELERATE
- 2) Throttle ..... SET DESIRED POWER
- 3) Propeller ..... SET (2200 or 2400 rpm)
- 4) Trim for ..... LEVEL FLIGHT
- 5) Cowl flaps ..... CLOSE (if CHT allows)
- 6) Mixture ..... LEAN (lean of peak at < 60%)
- 7) Engine temperatures ..... MONITOR
- 8) Systems ..... CHECK

**DESCENT**

- 1) Throttle ..... (not less than 16" MP)
- 2) Cowl flaps ..... (remain) CLOSED
- 3) Mixture ..... LEAN (unless rough)

**IN RANGE**

- 1) Seats & belts ..... SECURE & LOCKED
- 1) Fuel ..... ADEQUATE & DESIRED TANK
- 2) AWOS – ATIS – Advisories ..... NOTED
- 3) Altimeter ..... SET
- 4) Approach & missed approach..... BRIEFED
- 5) Radios ..... SET
- 6) Lights ..... AS REQUIRED
- 7) Initial approach speed..... 105 KIAS

## BEFORE LANDING

### FLOW AT FINAL APPROACH FIX

- 1) Landing gear..... DOWN (below 132 KIAS)
- 2) Boost pump..... ON
- 3) Throttle..... SET
- 4) Propeller..... FORWARD
- 5) Mixture..... RICH
- 6) Cowl Flaps..... OPEN
- 7) Flaps..... SET (Full down below 115 KIAS)
- 8) Approach speed ..... 80 KIAS
  
- 9) Landing assured
  - a. Autopilot off
  - b. Gear confirmed down
  - c. Final approach speed – 71 KIAS

### MISSED APPROACH / GO AROUND

- 1) Throttle..... FORWARD
- 2) Propeller..... FORWARD
- 3) Speed ..... 65 to 80 KIAS
- 4) Flaps..... TAKEOFF SETTING 15° (3 seconds)
- 5) Gear ..... RETRACT after positive rate
- 6) Flaps..... RETRACT at 85 KIAS
- 7) Cowl flaps..... OPEN
- 8) Boost Pump ..... OFF

### AFTER LANDING

- 1) Transponder..... STANDBY
- 2) Flaps..... UP (clearing runway)
- 3) Boost pump..... OFF
- 4) Mixture..... LEAN
- 5) Strobes..... OFF (at night)
- 6) Lights..... AS REQUIRED
- 7) Trim ..... TAKEOFF SETTING

### ENGINE SHUTDOWN

- 1) Throttle..... 1000 rpm (stabilize CHT)
- 2) Electric trim..... OFF
- 3) Radio master ..... OFF
- 4) Electrical equipment..... OFF
- 5) Mixture..... CUT OFF
- 6) Throttle..... CLOSED
- 7) Magnetos..... OFF (remove key)
- 8) Lights..... OFF
- 9) Master switch ..... OFF
- 10) Alternator Field Switch ..... OFF
- 11) Overhead lights ..... OFF
- 12) Parking brake ..... OFF
- 13) Aircraft interior & exterior..... SECURE

### POWER SETTINGS

| CONDITION     | MP   | RPM   | MIX  | PWR | GPH |
|---------------|------|-------|------|-----|-----|
| Takeoff       | Full | 2700  | Rich | 95% | 18  |
| Initial climb | 25"  | 2500  | Rich | 75% | 14  |
| Cruise climb  | 24"  | 2500  | Lean | 71% | 10  |
| Cruise        | 24"  | 2400  | Lean | 67% | 9.6 |
| " "           | 22"  | 2400  | Lean | 63% | 9.0 |
| " "           | *20" | 2400  | Lean | 58% | 8.2 |
| " "           | *22" | 2200  | Lean | 55% | 7.8 |
| " "           | 20"  | 2200  | Lean | 50% | 7.3 |
| " "           | 18"  | 2200  | Lean | 45% | 6.8 |
| Descent       | 16"  | 22-24 | Lean | -   | 6.1 |

\* recommended for WCFC operations and fuel consumption

### WCFC recommended SPEEDS TO FLY

Va..... 120 KIAS  
 Vx..... 66 KIAS  
 Vy..... 85 KIAS

Best glide speed (clean)  
 @ gross weight..... 93 KIAS  
 @ 2300 pounds..... 84 KIAS

### WCFC required FIELD LENGTH

| Elevation | Normal     | Maximum performance |
|-----------|------------|---------------------|
| Sea level | 3,000 feet | 2,500 feet          |
| 500 feet  | 3,200      | 2,600               |
| 1,000     | 3,500      | 2,800               |
| 2,000     | 4,000      | 3,000               |
| 4,000     | 5,000      | 4,000               |
| 6,000     | 6,000      | 5,000               |