

## **NORMAL PROCEDURES BEFORE STARTING ENGINE**

- Pre-flight – COMPLETE
- Passengers – Brief S.A.F.E.T.Y.
- Seatbelts – SECURED
- Fuel – FULLEST TANK
- Avionics – OFF
- Electrical Equipment – OFF
- Circuit breakers – CHECK IN
- Brakes – TEST / SET

## **STARTING ENGINE**

- Mixture – RICH
- Carb heat – COLD / OFF
- Prime – AS REQUIRED
- Battery ONLY – ON
- Fuel Pump – ON
- Beacon Light – ON
- Throttle – OPEN 1/8"
- Prop Area – CLEAR
- Ignition – START
- Oil Pressure – CHECK
- Throttle – 1000 rpm
- Fuel Pump – OFF
- Alternator – ON & Check Load
- Radio – ON/SET for Taxi
- Weather – RECORD & SET
- Transponder – ON /ALT
- Wing Flaps – UP
- Mixture – LEAN 1 INCH
- READY TO TAXI

## **TAXI**

- Comms – ANNOUNCE TAXI
- Brakes – TEST
- Controls – ADJUST for winds

## **RUN UP & BEFORE T/O CHECKS**

- Brakes – ON
- Doors – CLOSED/LATCHED
- Flight controls - FREE/CORRECT
- Flight instruments
  - Instruments – Correct and working
  - Heading – SET
  - NAV/GPS – SET
  - COMMS/XPDR – SET
- Fuel – FULLEST TANK
- Mixture – RICH
- Trim – SET FOR TAKEOFF
- Throttle – 2000 rpm
  - Mags – Max 175 DROP / 50 DIFF
  - Carb heat – CHECK
  - Engine instr. – CHECK
  - Ammeter – CHECK
  - Suction – CHECK
  - Idle – CHECK W/ CARB HEAT ON
- Throttle – SET 1000 RPM
- Throttle friction lock – ADJUST
- Transponder & ADS-B – ALT & ON

## **NORMAL TAKEOFF**

- Departure – BRIEFED
- Time – RECORD
- Trim – SET FOR TAKEOFF
- Lights – AS REQUIRED
- Wing flaps – SET 0°
- Mixture – RICH
- Carb heat – COLD
- Fuel Pump – ON
- Throttle – FULL in 3-5 seconds
- Elevator – ROTATE 55 ⇒ 60mph
- Climb Speed – 85 mph

## **ENROUTE CLIMB (1,000 ft)**

- Airspeed – SET Cruise Climb Speed
- Fuel Pump – OFF
- Comms – ANNOUNCE Departure & SWITCH Frequency A/R
- Navigation – SET

## **CRUISE**

- Power – 2200⇒2500 rpm
- Elevator – TRIM SET
- Mixture – LEAN A/R

## **APPROACH / DESCENT**

- Weather – RECORD & SET
- Mixture – RICH A/R
- Lights – ON A/R
- Radio – SET & Announce Inbound
- Approach – LOAD and ACTIVATE
- Fuel – FULLEST TANK

## **BEFORE LANDING**

- Seats, seatbelts, harnesses – ON
- Mixture – RICH
- Landing Light – ON
- Fuel Pump – ON
- Carburetor Heat – A/R
- Airspeed – 85 mph Flaps 0  
76 mph Flaps 40
- Touchdown – 55-65 mph MAINS FIRST
- Landing roll – GENTLY LOWER NOSE
- Braking – MINIMUM REQUIRED

## **BALKED LANDING (GO-AROUND)**

- Throttle – FULL
- Carburetor Heat – Cold
- Wing Flaps – Retract to 25°
- Upon 65 mph and positive rate of climb
  - Retract flaps SLOWLY

## **AFTER LANDING**

- Wing Flaps – RETRACT
- Carb heat – COLD A/R
- Lights – STROBES/LANDING OFF
- Fuel Pump – OFF
- Trim – RESET
- Mixture – LEAN for Taxi

## **SECURING AIRCRAFT**

- Brakes – ON
- Transponder & ADS-B/NAV – OFF
- Comms – OFF
- Lights – OFF
- Throttle – 1000 rpm
- Mixture – IDLE/CUTOFF
- Ignition – OFF/KEYS OUT
- Master Switch – OFF
- Control lock – INSTALL
- Hobbs and Tack – RECORD
- Covers / Tie-Downs – INSTALL

## **SHORT FIELD TAKEOFF**

**(Review NORMAL TAKEOFF First)**

- Mixture – RICH
- Wing Flaps – 25°
- Brakes – HOLD
- Throttle – FULL & Check Gauges
- Brakes – RELEASE
- Rotate 55 - 60 mph
- Climb Speed – 74 mph Vx Obstacle
- Flaps – SLOWLY RETRACT
- Climb Speed – 85 mph Vy

## **SOFT FIELD TAKEOFF**

**(Review NORMAL TAKEOFF First)**

- Mixture – RICH
- Wing Flaps – 25°
- Brakes – MINIMAL
- Elevator – AFT for weight off Nose
- Throttle – SLOWLY APPLY
- Rotate – LOWEST airspeed
- ACCELERATE IGE to 85 mph
- Flaps – SLOWLY RETRACT while climbing at 85 mph Vy

## **SHORT FIELD LANDING**

**(Review BEFORE LANDING First)**

- Wing Flaps – 40°
- Airspeed – 76 mph
- Throttle – IDLE at obstacle clear and landing assured
- Touchdown – MAINS FIRST
- Braking – MAXIMUM Required
- Flaps – RETRACT

## **SOFT FIELD LANDING**

**(Review BEFORE LANDING First)**

- Normal Approach Configuration
- During Flare – NOSE HIGH
- Throttle – A/R for elevator effectiveness
- Landing roll – GENTLY LOWER NOSE
- Maintain aft stick
- Braking – MINIMUM or NONE

*Version June 2025*

## EMERGENCY PROCEDURES

### ENGINE FAILURE AFTER TAKEOFF

- Airspeed – 83 mph Vg
- Mixture – RICH
- Fuel Selector – SWITCH TANKS
- Fuel Pump – ON
- Carb Heat – ON

### ENGINE FAILURE DURING FLIGHT

- Airspeed – 83 mph Vg HORIZON
- SELECT FIELD
- Mixture – RICH
- Fuel Selector – SWITCH TANKS
- Fuel Pump – ON
- Carb Heat – ON
- Primer – IN & LOCKED
- Ignition – BOTH/START
- Engine Gauges – CHECK

If Engine Starts:

- Fuel Pump – AS REQUIRED
  - Mixture – AS REQUIRED
  - Carb Heat – ADJUST IF ICE SUSPECTED
- LAND AS SOON AS POSSIBLE

### EMERGENCY LANDING W/O POWER

- Airspeed – 83 mph (FLAPS UP)
  - SELECT FIELD
  - MAYDAY 121.5 or LAST APPCH
- Squawk 7700

When Landing Assured:

- Ignition – OFF
- Mixture – OFF
- Fuel Selector – OFF
- Seat Belts & Cargo – SECURE
- Door – UNLATCH
- Flaps – AS REQUIRED
- Touchdown – TAIL LOW & LOWEST SPEED
- Brakes – APPLY HEAVILY

### ENGINE FIRE ON GROUND

- CONTINUE CRANKING
  - Throttle – OPEN
  - Mixture – IDLE CUTOFF
  - Fuel Pump – OFF
  - Fuel Selector – OFF
  - Ignition – OFF
- EVACUATE

If Engine Starts:

- Throttle – 1800 rpm for 2 min
  - Mixture – IDLE CUTOFF
  - Fuel Pump – OFF
  - Fuel Selector – OFF
  - Ignition – OFF
- SHUTDOWN AND INSPECT

### ENGINE ROUGHNESS

- Carb Heat – ON
- Mixture – ADJUST for SMOOTH
- Fuel Pump – ON & VERIFY PRESSURE
- Fuel Selector – SWITCH
- Primer – CONFIRM IN / LOCKED
- Magnetos – CHECK L / R / BOTH

If roughness persists, prepare for precautionary landing

### ENGINE FIRE IN FLIGHT

- Mixture – IDLE/CUTOFF
- Fuel Selector – OFF
- Fuel Pump – OFF
- Master Switch – OFF
- Ignition – OFF
- Throttle – CLOSED
- Cabin heat/air – OFF
- Airspeed – 100 mph EMERGENCY DESCENT
- Fire extinguisher – ACTIVATE
- Forced landing – EXECUTE

### ELECTRICAL FIRE IN FLIGHT

- Master Switch – OFF
  - All other switches (except ignition) OFF
  - Vents – OPEN
  - Cabin Air/Heat – OFF
  - Fire extinguisher – ACTIVATE
- LAND AS SOON AS POSSIBLE

### LOSS OF FUEL PRESSURE

- Fuel Pump – ON
  - Fuel Selector – SWITCH TANKS, then SET TO FULLEST
  - Mixture – RICH
- LAND AS SOON AS PRACTICAL

### ALTERNATOR FAILURE

- Load Meter – CHECK
- Alternator – OFF
- Electrical Load – REDUCE
- Circuit Breakers – CHECK / RESET
- Alternator – ON

If Alternator Not Restored:

- Alternator – OFF
  - Electrical Load – REDUCE
- LAND AS SOON AS PRACTICAL

## PERFORMANCE

Ground Roll.....800 ft

Takeoff Over 50 ft.....1700 ft

Landing Roll.....535 ft

Vso.....55 mph

Vs.....64 mph

Vx.....74 mph

Vy.....85 mph

Vfe.....115 mph

Va.....129 mph

Vno.....140 mph

Vne.....171 mph

Vg.....83 mph



Version June 2025