**COCKPIT C177B N34727**

1. Check paperwork
2. Remove Control Lock
3. Master switch - ON
	* 1. Check Fuel gauges
		2. Lower Flaps
		3. Cowl Flaps – OPEN
		4. Rotating Beacon – ON
		5. Check NAV lights, Strobes, & Pitot Heat, if required
4. Master OFF / Lights OFF / Pitot Heat OFF

# EXTERIOR INSPECTION

1. Check actual fuel levels, fuel caps securely on.
2. Baggage door – LOCKED

Tail, check:

1. Fuselage and upper wing
2. Stabilator, trim tab, rudder
3. Remove tail tie-down

Right Wing, check:

1. Flap and Aileron
2. Fuel vent clear and free of aileron
3. Wing tip
4. Remove wing tie-down, chocks and cabin air plugs
5. Tire & Brake / Wheel pant security
6. Passenger door condition and hinges
7. Fuel sample from wing, if required

Right Front, check:

1. Static Air source
2. Condition of cowling
3. Oil level and engine condition: minimum of 6 quarts
4. Cowl Flaps
5. Nose tire and strut / Wheel pant security
6. Exhaust pipe security and condition

Nose, check:

1. Propeller & spinner
2. Engine compartment and Air filter
3. Front of cowling

Left Front, check:

1. Static Air source
2. Fuel sample from engine sump
3. Engine cowling
4. Cowl Flaps
5. Nose tire and strut / Wheel pant security

Left Wing, check:

1. Pitot tube / Stall warning
2. Remove wing tie-down, chocks and cabin air plugs
3. Wing tip
4. Fuel vent clear and free of aileron
5. Aileron and Flap
6. Fuel sample from wing, if required
7. Pilot’s door condition and hinges
8. Tire & Brake / Wheel pant security

# BEFORE STARTING ENGINE

1. Seats / seat belts / shoulder harness – Adjust
2. Passenger briefing – COMPLETED
3. Cabin Doors – LATCHED
4. Brakes – SET or HOLD
5. Fuel Shutoff Valve – Check on (Full in)
6. Fuel Selector – Both On
7. Cowl flaps - OPEN
8. Electrical equipment – OFF / Rotating beacon - ON
9. Master Switch – ON

# STARTING ENGINE

1. Carb Heat – COLD
2. Mixture – RICH
3. Propeller – HIGH RPM (full in)
4. Primer – As Required (1 to 6 strokes, none if engine is warm)
5. Throttle – Open 1/2 INCH
6. Propeller Area – CLEAR
7. Ignition Switch – Start, 1000 RPM after starting
8. Oil Pressure – green arc

# BEFORE TAXI

1. Avionics switch – ON
2. Intercom and Radios – SET
3. Transponder – ALT (1200 for VFR)
4. Flaps – UP
5. Lights – As Required
6. ATIS and Clearance – As Required

# TAXI

1. Brakes – TEST
2. Turn and Bank – Check operation during turns
3. Heading Indicator and Compass – Check operation during turns

# BEFORE TAKE-OFF

1. Cabin Doors and Windows – CLOSED AND LOCKED
2. Throttle – 1800 RPM
	1. Engine instruments – green arc
	2. Suction Gauge – Check (4.6" – 5.4")
	3. Ammeter – Slight Charge
	4. Magnetos – Check (max 150 RPM drop, 50 RPM difference)
	5. Carb Heat – Check
	6. Propeller – CYCLE (HIGH to LOW, then full in)
	7. Auxiliary Fuel Pump – Check Operation (Use if below 2 psi fuel)
	8. Mixture – Rich below 3000 ft, otherwise lean for max RPM
	9. Engine – Idle, then 1000 RPM
3. Autopilot – TEST, then OFF (If desired for use during flight)
4. Flight Controls – Check for freedom of movement
5. Stabliator and Rudder Trim – “Take-Off” setting
6. Flight Instruments – SET (Verify G5’s heading to compass)
7. Radios and Transponder – SET (1200 for VFR)
8. Lights – Strobes – ON; Landing/Taxi Lights – As Required
9. Clearance, if required

# NORMAL TAKE-OFF

1. Flaps – 0 – 10 DEG (10 DEG Preferred)
2. Carb Heat – COLD
3. Throttle – FULL
4. Elevator – Lift nose at 52 KIAS (VR) (60 MPH)
5. Climb speed 65 to 74 KIAS (75 to 85 MPH)
6. Flaps – Retract

# SHORT FIELD TAKE-OFF

1. Flaps – 15 DEG
2. Carb Heat – COLD
3. Brakes – HOLD
4. Throttle – FULL
5. Brakes – Release
6. Climb Speed – 60 KIAS (until clear of obstacles) (69 MPH)
7. Wing Flaps – Retract slowly after obstacles cleared

# NORMAL CLIMB

1. Airspeed – 78 - 87 KIAS (90 to 100 MPH)
2. Power – 24 INCHES manifold pressure
3. Propeller – 2500 to 2600 RPM
4. Mixture – Rich below 3000 ft, otherwise lean for max RPM
5. Cowl Flaps – OPEN as required

# MAX PERFORMANCE CLIMB

1. Airspeed – 80 KIAS (92 MPH) at S.L - 72 KIAS (83 MPH) at 10,000 ft
2. Power – FULL Throttle and 2700 RPM
3. Mixture – Rich below 3000 ft, otherwise lean for max RPM
4. Cowl Flaps – OPEN

# CRUISE

1. Power – Max of 75% power, 15-24 inch MP / 2100-2500 RPM
2. Mixture – Rich below 3000 ft, otherwise lean for max RPM
3. Cowl Flaps – CLOSED

# DESCENT

1. Mixture – Rich, or lean for smooth engine operation
2. Power – As desired (Less than 10 inches MP avoid continuous operation between 1700 and 1900 RPM)
3. Carburetor Heat – As Required
4. IFR Approach:
	1. Heading Indicator – SET to Magnetic Compass
	2. NAV Radios – SET for Approach
	3. Tower / CTAF – SET as STANDBY
	4. Approach – BRIEF Minimums / Timing / Missed Approach

# BEFORE LANDING

1. Fuel Selector – BOTH ON
2. Mixture – RICH (Lean for high altitude operations)
3. Carb Heat – ON (apply full heat prior to closing throttle)
4. Propeller – FULL FORWARD
5. Cowl Flaps – CLOSED
6. Lights – As Required
7. At Night or IMC:
	1. Landing/Taxi Light – ON
	2. Pilot Controlled Runway Lights – ON
8. Airspeed – 70-78 KIAS (80 - 90 MPH) (flaps up)
9. Flaps – AS DESIRED (10 below 112 KIAS, 10-40 below 91 KIAS)
10. Airspeed 61 – 70 KIAS (70 – 80 MPH) (Flaps down)
11. Stabilator and Rudder Trim – Adjust

# SHORT FIELD LANDING

1. Mixture – RICH (Lean for high altitude operations)
2. Carb Heat – ON (apply full heat prior to closing throttle)
3. Propeller – FULL FORWARD
4. Cowl Flaps – CLOSED
5. Flaps – 30 (below 91 KIAS) (105 MPH)
6. Lights – As Required
7. Airspeed – 61 KIAS (70 MPH) (flaps down)
8. Brakes – Apply Heavily
9. Wing Flaps – Retract for maximum braking

# AFTER LANDING (WHEN CLEAR OF RUNWAY)

1. Flaps – UP
2. Carb Heat – COLD
3. Cowl Flaps – OPEN
4. Transponder – ALT
5. Radios – As Required
6. Lights – As Required (Strobes – OFF)
7. Taxi Clearance – As Required

# ENGINE SHUTDOWN

1. Radios & Electrical Equipment - OFF
2. Engine – 1000 RPM
3. Mixture – Idle cut-off
4. Master and Mags – OFF
5. All Switches – OFF
6. Air Vents – CLOSED

# SECURE AIRCRAFT

1. Parking Brake – SET
2. Control Lock – INSTALLED
3. Cowl Flaps – CLOSED
4. Tie down airplane / set wheel chocks / pitot cover
5. Lock Aircraft
6. Flight Plan – CLOSE (if filed)

## **EMERGENCY PROCEDURES**

# ENGINE FIRE ON START

1. Continue cranking engine
2. If engine starts, run at 1800 RPM for 1 minute and shut down
3. If start is unsuccessful: Crank with Mixture – IDLE CUT-OFF and
Throttle – FULL OPEN to attempt to suck flames back into engine
4. Shut down engine
	1. Mixture – Idle Cut-Off
	2. Fuel Selector – OFF
	3. Master – OFF
	4. Mags – OFF
5. Exit aircraft and check for damage

# ENGINE FAILURE AFTER TAKE-OFF

1. Airspeed – 74 KIAS (85 MPH) (flaps UP)
 70 KIAS (80 MPH) (flaps DOWN)
2. Mixture – IDLE CUT-OFF
3. Fuel Selector Valve – OFF
4. Ignition Switch – OFF
5. Wing Flaps – As Required
6. Master – OFF
7. Cabin Doors – UNLATCH prior to touchdown

# ENGINE FAILURE DURING FLIGHT

1. Slow to Best Glide Speed: 70 KIAS (85 MPH)
2. Carb Heat - ON
3. Determine, and head for, an Emergency Landing area

If Engine Restart is Feasible:

1. Fuel Selector Valve – BOTH
2. Mixture – RICH
3. Ignition Switch – Left / Right / BOTH (START if propeller is stopped)
4. Primer – IN and LOCKED

If Engine Cannot (or Should Not) be Restarted:

1. Transmit MAYDAY, Squawk 7700
(emergency frequency: 121.5, or last ATC frequency you were on)
2. Airspeed – 70 KIAS (flaps UP)
 65 KIAS (flaps DOWN)
3. Mixture – IDLE CUT-OFF
4. Fuel Selector Valve – OFF
5. Ignition Switch – OFF
6. Wing Flaps – As Required (40 deg. Recommended)
7. Master – OFF prior to touchdown
8. Doors – UNLATCH prior to touchdown

# ENGINE FIRE IN FLIGHT

1. Mixture – IDLE CUT-OFF
2. Fuel Selector Valve – OFF
3. Master – OFF
4. Cowl Flaps – OPEN
5. Cabin Heat and Air Vents – CLOSED (overhead vents open)
6. Airspeed – 100 KIAS (or faster) to blow out fire
7. Land as soon as possible

# ELECTRICAL FIRE IN FLIGHT

1. Master – OFF
2. All Radio / Electrical Switches – OFF
3. Vents / Cabin Heat and Air vents – CLOSED

If fire appears out and power is necessary for the continuance of flight:

1. Master – ON
2. Circuit Breakers – CHECK for faulty circuit, do not reset
3. MINIMUM required electrical equip. – ON ONE AT A TIME,
 delay after each until short circuit is found (then that switch OFF)
4. Cabin Air and Heat, vents open after fire is extinguished.

**PRECAUTIONARY LANDING WITH ENGINE POWER**

Inspection Pass:

1. Fly over selected field with flaps 15O at 65 KIAS (75 MPH)
2. After inspection, go-around

Landing Pass:

1. Radio, Electrical Switches – OFF
2. Flaps – 30O (on final approach)
3. Airspeed – 65 KIAS (75 MPH)
4. Master – Off
5. Doors – UNLATCH prior to touchdown

**DITCHING**

1. Transmit MAYDAY on 121.5, Squawk 7700
2. Secure or Jettison heavy objects (expect aircraft to flip upside down
 and the cabin to flood immediately upon landing)
3. Approach into the wind if winds are high and seas heavy. With light
 winds, land parallel to swells
4. Flaps – 10O (Maintain 300 ft/min descent at 65 KIAS)
5. Doors – UNLATCH prior to touchdown
6. Do NOT inflate life vests or raft until AFTER evacuation of aircraft

|  |  |  |
| --- | --- | --- |
| **Light Gun Signals** | **On Ground** | **In Flight** |
| Steady Green | Cleared for Take-off | Cleared to land |
| Flashing Green | Cleared for Taxi | Return for landing (to be followed by steady green) |
| Steady Red | STOP | Give way to other aircraft, continue circling |
| Flashing Red | Taxi clear of runway | Airport unsafe – do not land |
| Flashing White | Return to starting point | Not applicable |
| Alternating Red & Green | Exercise caution | Exercise caution |

**Lost Communications**

1. Check Radio and Headset Volume
2. Check Squelch setting on Radio & Intercom
3. Try a different Frequency
4. Try a different Radio
5. Plug headset into different jack (use appropriate PTT)
6. Try the hand-held Microphone
7. Try the Cabin Speaker
8. Disable/Emergency Setting on Audio Panel
 (sets Pilot’s headset to Comm 1)
9. Try a Hand-Held Radio (if available)
10. Try using a cell phone (if available)

If Communications Cannot Be Established:

 Consider diversion to a non-towered airport.

If proceeding to a towered airport, then:

1. Squawk 7600
2. Review Light Gun signals
3. Overfly the airport 500 ft above pattern altitude
	1. Determine active runway, locate traffic
	2. Descend outside downwind to pattern altitude
	3. Enter pattern on the standard 45 deg entry leg
	4. Watch for light gun signals on final

**If IFR:**

If in VMC:

1. Remain in VMC
2. Proceed to a landing point under VFR
3. Contact ATC as soon as possible

If in IMC:

1. Maintain the highest altitude of
	1. Minimum IFR Altitude
	2. Expected Altitude
	3. Assigned Altitude
2. Fly Route:
	1. Assigned
	2. Vectored (fly to next fix: IAF or Enroute)
	3. Expected

(leave fix at Expect Further Clearance time)

* 1. Filed

3. Arriving at your destination:

 a. If ahead of your filed time enroute (early) hold
so as to leave your holding fix in order to start
the approach at your filed ETA

 b. If after ETA, simply start the approach

 c. Watch for Light Gun signals from tower

4. If VMC Encountered: remain VFR and land ASAP