

AIRCRAFT CHECKLISTS

222UM and 333UM

NORMAL CHECKLIST AMPLIFIED

BEFORE START

Seats & Belts..... Adjusted & Latched

Adjust seats to flying position where the pilot's feet can reach the rudder pedals and brakes in the fully depressed position in both directions, with the heels on the floor. The control yoke should be free to move fully left and right when in the full forward and aft position. Seat height should be set so the pilot can see over the glare shield in a normally seated position. Seat belts and shoulder belts should be fastened and tightened to a firm but comfortable position.

Doors..... Closed & Locked

Both cabin doors should be firmly closed and the door handle rotated forward to the horizontal and locked position.

Fuel Selector..... On

The fuel selector lever should be in the horizontal, "On" position. The lever should be physically checked that it is in the detent position.

Circuit Breakers..... Check

All circuit breakers should be in with the white circuit breaker shaft not visible.

Mixture..... Rich

The mixture control should be placed in the full forward "Rich" position by grasping the control like a syringe and while holding the center locking button depressed, move the control full forward.

Throttle Open 1/8"

From a full aft position, move the throttle forward or open approximately 1/8".

Carb Heat Cold

The carb heat control should be pushed to the full forward or Cold position.

Electrical Switches..... Off

All aircraft electrical switches including rheostats should be in the Off position.

Rotating Beacon..... On

The rotating beacon should be placed to the On position as visual indication of imminent start to personnel outside the aircraft, day or night.

Bus Tie Circuit Breaker (333UM ONLY) Out

The Bus Tie Circuit Breaker (333UM ONLY) should be in the out or off position, with the white circuit breaker shaft exposed and in view.

Avionics Master Switch..... Off

The Avionics Master Switch should be in the off position for prior to engine start.

Master Switch..... On

Place the aircraft master switch, both the battery and alternator side, in the On position. This will supply electrical power from the battery to the Primary Bus for engine starting.

Prime As Req'd

The primer, if needed, should be rotated to unlock it and smoothly pulled fully aft until the plunger is full. Then the primer should be smoothly pushed in to the full forward position. This should be repeated as many times as deemed necessary by the pilot. When finished priming, the primer should be rotated so that the locking pin can pass through the slot in the panel fitting and rotated at least 90 degrees while holding the primer in the full forward position.

Prop..... Clear

Just prior to engaging the starter open the pilot's window and loudly and clearly "yell" the verbal warning "C-L-E-A-R".

Starter Engage

After verbally clearing the area by loudly announcing "Clear" out the aircraft window, rotate the rotary ignition switch in a clockwise direction to the spring loaded "Start" position, and hold it in this position until the engine has started or the start attempt has been aborted.

AFTER START

Throttle 600-800 RPM

Immediately after engine start, set the engine RPM to between 600 and 800 RPM's. During cold starts you may need to keep the engine running initially with applications of prime and the throttle momentarily advanced to a higher than normal power setting. The engine should be idled between 600 and 800 RPM's after start so that the engine oil has a chance to circulate throughout the engine.

Oil Pressure..... Green Arc

Immediately after engine start, the oil pressure should begin rising into the green arc, normal operating range within 30 seconds. During cold temperature starting the oil pressure may take as long as 60 seconds to rise in to the green arc. You may also find that the pressure will rise towards the top of the green arc and not drop to a lower pressure until the engine oil has had a chance to warm up.

Fuel Quantity..... Check

Check the fuel quantity at this time to ensure that the gauges are working properly and verifying that the intended fuel load is on the airplane. If the gauges are not indicating correctly or the wrong fuel load is on the airplane, shutdown the engine and ascertain and correct the problem prior to flight.

Nav Lights As Req'd

The aircraft navigation lights should be placed On if the aircraft is going to operate IFR during the day or anytime between sunset and sunrise. Any other time the navigation lights should remain off.

Avionics Master Switch..... On

The avionics master switch should be placed to the On position. This will supply electrical power to the Radio Bus from the Primary Bus, thus providing electrical power for all aircraft avionics.

Flaps..... Retracted

After engine start the flaps should be fully retracted and the flap lever visually checked in the retracted position and the flaps visually checked to be fully retracted and symmetrical relative to each other.

BEFORE TAKEOFF

Flight Controls..... Check

The aircraft flight controls (elevator, aileron and rudder) should be checked for unrestricted and smooth operation. This can be accomplished by pushing the elevator full forward and turning the control yolk to the right, then pulling the elevator to the full aft position and rotating the control yolk full left. With the control yolk fully aft, depress the rudder pedals fully left than right. Then push the control yolk to the full forward position and deflect the rudder pedals fully left and right again.

Fuel Selector..... On

The fuel selector lever should be in the horizontal position. The lever should be physically checked that it is centered in the detent position.

Trim Set

The trim should be set to the Takeoff position by rolling the trim wheel upward or downward until the trim indicator is located at or near the placarded Takeoff position.

Mixture..... Rich

The mixture control should be checked that it is in the full forward or "Rich" position.

Throttle 1700 RPM

After the friction lock is turned far enough counter clockwise to loosen any friction grip on the throttle, it should be smoothly and slowly advanced until 1700 RPM's are indicated on the tachometer. The throttle friction lock should be rotated clockwise to sufficiently tighten the throttle in the 1700 RPM position.

Carb Heat Check

The carb heat control should be pulled to the fully aft or Hot position, checking to see if there is a smooth RPM drop of no more than about 75 RPM's.

Mags..... Check

The aircraft mags should be individually checked for proper operation. This is accomplished by first turning the ignition key counter clockwise two clicks to the Left mag position, then two clicks clockwise to the Both position. Then turn the ignition key counter clockwise one click to the Right mag position and then one click back to the Both position. The mag drop when switching to the single mag operation (either left or right) should be a smooth drop and not exceed 125 RPM's, nor have a greater differential between the two mags than 50 RPM's.

Low Vac Light..... Out

The red Low Vac Warning Light should be extinguished, indicating normal vacuum pump operation.

Suction Gauge..... Check

The suction gauge should indicate between 4.5 to 5.4 inches of mercury at run up RPM.

Low Volt Light Out

The Low Volt Light should be extinguished indicating that the alternator is on line and operating normally.

Voltmeter/Ammeter..... Check

With the volt/amp selector switch in the volt position the voltage should indicate approximately 28 volts and remain at that voltage reading after turning on a high load electrical component such as the aircraft landing light.

Oil Temp Green Arc or lower

The oil temperature should be in the green arc. During cold weather operations the oil temperature may not rise into the green arc until after takeoff. After a suitable worm-up period of 2 to 5 minutes at 1,000 RPM's and as long as the engine accelerates smoothly to a higher RPM and the oil pressure remains normal and steady, the airplane is ready for takeoff.

Oil Pressure Green Arc

The oil pressure should indicate in the green arc. During cold weather operations the oil pressure may indicate towards the top of the green arc, but should drop to a lower level once the engine has reached a warmer operating temperature.

Fuel Quantity Check

Check the fuel quantity at this time to ensure that the gauges are working properly and verifying that the intended fuel load is on the airplane. If the gauges are not indicating correctly or the wrong fuel load is on the airplane, shutdown the engine and ascertain and correct the problem prior to flight.

Throttle 800 RPM

After completion of the "run up" smoothly reduce the engine to 800 RPM.

Flight Instruments..... Checked & Set

Check the six aircraft flight instruments for proper operation.

Radios Set

Set the aircraft com and nav radios as desired for departure.

Transponder..... On/Alt

Turn the transponder selector switch to the Alt position unless there is an operational reason to do otherwise.

Strobe Lights..... On As Req'd

Turn the strobe lights on for flight unless operation of the strobes on the ground would create a "blinding effect" for nearby aircraft or if flight conditions after takeoff would create an atmospheric "back scatter" that could be disorienting to the pilot. In either case turning on the

strobe lights should be delayed until the aircraft is on the runway or until after departure and the pilot can determine that the strobe lights can be safely operated.

Flaps..... Set

Place the flaps in the takeoff position required for the type of takeoff. Be sure to visually check that the flaps approximately match the switch position and that both flaps are in a symmetrical position relative to each other.

Doors & Windows Closed & Latched

Close both cabin doors and rotate the door latching lever forward to the horizontal and locked position. Ensure that both aircraft side windows are closed and the window latch securely latched.

Landing Lights On As Req'd

When the aircraft has been cleared for takeoff the pilot may turn the landing lights On for collision and bird strike avoidance. If operational conditions require, the landing lights should be left Off.

Time Off..... Check & Record

The approximate “time off” should be mentally noted, and written down as close to takeoff clearance as possible.

NOTE: Bold-italicized items represent an abbreviated checklist during full-stop landings with “taxi-backs” for departure.

CLIMB

Throttle Full Forward

Check to ensure that the throttle is set full forward for all normal climb attitudes.

Flaps..... Retracted

Ensure that the flaps have been fully retracted, both flaps are symmetrical relative to each other and that the flap lever is in the flaps zero position.

Landing Lights..... As Req'd

The landing lights should be left on if required for collision avoidance. Otherwise they should be turned off.

Low Vac Light..... Out

The red Low Vac Warning Light should be extinguished, indicating normal vacuum pump operation.

Suction Gauge..... Check

The suction gauge should indicate between 4.5 to 5.4 inches of mercury at run up RPM.

Low Volt Light Out

The Low Volt Light should be extinguished indicating that the alternator is on line and operating normally.

Voltmeter/Ammeter..... Check

With the volt/amp selector switch in the volt position the voltage should indicate approximately 28 volts and remain at that voltage reading after turning on a high load electrical component such as the aircraft landing light.

Oil Temp Green Arc or lower

The oil temperature should be in the green arc. During cold weather operations the oil temperature may not rise into the green arc until after takeoff. After a suitable warm-up period of 2 to 5 minutes at 1,000 RPM's and as long as the engine accelerates smoothly to a higher RPM and the oil pressure remains normal and steady, the airplane is ready for takeoff.

Oil Pressure..... Green Arc

The oil pressure should indicate in the green arc. During cold weather operations the oil pressure may indicate towards the top of the green arc, but should drop to a lower level once the engine has reached a warmer operating temperature.

Fuel Quantity..... Check

Check the fuel quantity at this time to ensure that the gauges are working properly and verifying that the intended fuel load is on the airplane. If the gauges are not indicating correctly or the wrong fuel load is on the airplane, shutdown the engine and ascertain and correct the problem prior to flight.

CRUISE

Throttle Set

Set the engine RPM to the desired cruise setting as per the aircraft performance charts.

Mixture Lean As Req'd

Lean the mixture to the desired EGT setting as per the aircraft performance charts.

Landing Lights Out

The landing lights should be turned off unless there is an operational reason to have them on.

Engine Instruments Monitor

Check the fuel quantity for normal indication periodically throughout the flight. Also, check the suction gauge, oil temperature and pressure, ammeter and all warning lights for normal indication periodically throughout the flight.

IN-RANGE

Fuel Selector On

Ensure that the fuel selector is in the horizontal, "On" position detent for approach and landing.

Mixture Rich

The mixture control should be in the full forward or "Rich" position for approach and landing.

Carb Heat As Req'd

The carb heat control should either be in the cold position or the full hot position, as conditions dictate. The carb heat should never be placed in a partially On position.

Landing Lights As Req'd

The landing lights should be turned on if the pilot determines they would assist in collision avoidance.

Altimeter Set

The altimeter should be set to the destination airport setting as received from the most recent source.

Seat Belts Check

Ensure that the seat belts and shoulder harness for the front seat passengers and seat belts for the rear seat passengers are On, securely latched and are comfortably tight.

AFTER LANDING

Flaps..... Retracted

After landing and when the aircraft is clear of the runway and stopped or moving at a slow taxi speed and the pilot has ensured that there are no taxi hazards or traffic, the flaps should be fully retracted and the flap lever visually checked in the retracted position and the flaps visually checked to be fully retracted and symmetrical relative to each other.

Mixture..... Rich

The mixture control should be placed in the full forward or “Rich” position.

Carb Heat..... Cold

The carb heat control should be placed in the full forward or “Cold” position.

Landing Lights As Req’d

The landing lights should be turned on if the pilot determines they would assist in collision avoidance.

Strobe Lights..... Off

The strobe light should be turned off when the aircraft is clear of the runway.

Nav Lights As Req’d

The navigation lights should be turned off unless the aircraft is operating IFR during the day or anytime between sunset and sunrise.

Transponder..... Standby

The transponder selector switch should be placed to the standby position.

Radios Set

The primary aircraft comm. radio should be set to the appropriate ground control frequency for taxi clearance or set to the frequency as instructed by ATC or determined by the pilot when conditions warrant.

NOTE: Bold-italicized items represent an abbreviated checklist during full-stop landings with “taxi-backs” for departure.

PARKING

Avionics Master Switch..... Off

Turn the avionics master switch Off.

Electrical Switches..... Off As Req'd

Turn all of the aircraft light switches off, except the rotating beacon or any other electrical switches the pilot deems necessary to remain on in the interest of safety. Turn all cockpit rheostats off.

Throttle 600-800 RPM

Set the throttle to between 600 to 800 RPM's for engine shutdown.

Mixture Idle Cutoff

Pull the mixture control to the full aft "Idle Cutoff" position by grasping the control and holding the lock button in, as the control is pulled fully aft.

Rotating Beacon..... Off

Once the prop has stopped rotating, turn the rotating beacon off.

Mags..... Off

Turn the ignition key switch clockwise to the Off position.

Master Switch..... Off

Turn both the alternator and battery side of the master switch off.

Control Lock..... As Req'd

Install the control lock unless the aircraft will be parked in a hangar until the next flight.

Doors & Windows Closed After Exit

Ensure that both aircraft doors and windows are closed and latched after all passengers have exited the aircraft. Leaving the aircraft doors open expose them to damaging wind gusts.