

Instrument Cockpit Check I

Gyro Instruments

- Check suction gauge
- Check electrical power for electrical driven gyros
- Check before starting engine for any off flags
- After starting engine check for off flags disappearing
- Attitude
 - Should stabilize in less than 5 min
 - Should be wings level with the artificial horizon
 - Should show no more than 5 degree deviation in a turn
- DG
 - Should stabilize within 5 min
 - Should show turn to the direction of turn during taxi
 - Should be set before taxi and right before takeoff
 - Should not have more than 3⁰ precession in 15 min
- Turn Coordinator
 - Should be stabilize within 5 min
 - Should show wings level
 - Should have no flags

Pitot Static System

- Static pressure system – must be tested within 24 calendar months
- Airspeed indicator
 - Make sure that it indicates 0 on the ground
 - If it indicates some higher value because of wind make sure it drops the 0 after the turn
 - Make sure it comes alive in the takeoff roll
- Altimeter
 - Must have an altimeter check within 24 calendar months
 - Should be indicating within 75 feet of field elevation if set to the correct altimeter setting
- VSI
 - Make sure it is indicating 0
 - If not indicating 0 take a mental note of the indication as the 0 point

ELT - check within 12 calendar months

- must replace the battery after half of its useful life or 1 cumulative hour of use

Navigation Equipment

- VOR
 - Must be checked with an appropriate check within the preceding 30 days
 - VOT either a 360 from or 180 to indication $\pm 4^0$
 - VOR ground checkpoint – must be within $\pm 4^0$

- FAA or homemade airborne checkpoint - $\pm 6^{\circ}$ over landmark on victor airway or on selected radial
 - Dual VOR – two VOR's must be within 4 degrees of each other
 - Make sure the station that you are trying to use identifies on each VOR
 - Make sure the off flag is not showing
- ADF
 - Continuously Ident
 - Make sure the needle is not fluctuating
 - Make sure it is not in ant mode but ADF mode
- GPS
 - Check for the right database
 - Check if within valid date of use
 - Garmin
 - Course deviation – half left
 - TO/FROM – TO
 - Bearing to destination - 135°
 - Dist to destination – 10 nm
 - Glide slope – Half up
 - Time to destination – 4 min
 - Desired track – 149.5
 - Groundspeed – 150kts
 - All external annunciators – on
 - Bendix
 - Dist – 34.5 nm
 - CDI – Half scale deflection and FROM indication
 - Any exterior CDI should show the same
 - Make sure that the waypoint on the next page is displaying where you are

Communications equipment - Make sure that they work and that you can hear on certain frequencies as soon as possible

Outside air temp gauge - **Make sure that the is reading a normal indication**

Mag compass – Make sure that the compass is not leaking fluid and that it turns to known headings

Clock – Make sure that it is set to the correct time

INSTRUMENT COCKPIT CHECK II

Before Engine Start

Check the navigation equipment log to determine if the VOR check has been performed within the preceding 30 days.

After Engine Start

1. Altimeter dialed to current setting and reading within 75 feet of the airport elevation.
2. COM 1 and COM 2 tuned to appropriate frequencies.
3. Heading Indicator set to present heading.
4. GPS configured for expected routing.
5. Perform VOR checks if not current.
6. Check OBS 1 and OBS 2 for proper indications.
7. Check Marker Beacon lights (test).

Taxiing

1. Magnetic compass moves freely and is full of fluid.
2. Airspeed indicator reads zero.
3. Attitude indicator is erect and stable -- not deflected more than when turning 5° .
4. Altimeter set within 75 feet of field elevation.
5. Turn coordinator indicates direction of turn -- no flag.
6. Ball moves to outside of turn.
7. Heading indicator turns freely and aligned with magnetic compass.
8. VSI reading zero (if not, note reading).

• INSTRUMENT COCKPIT CHECK III

- Communication and navigation equipment – frequencies set, checked, and identified
- Magnetic compass – no bubbles, known heading
- Clock – set and turning
- Airspeed indicator – pegged at zero
- Attitude indicator – upright in five minutes, no more than 5° deflection during turns
- Altimeter – pressure set and reading within 75 feet
 - Make sure it's the correct thousands! 1854 looks close to 854.
- Vertical speed indicator – note current indication
- Heading indicator – proper change during turn, set to runway heading
- Turn coordinator – no flag, ball to the outside / plane to the inside during turn
- Power / vacuum source for gyroscopic instruments – safe range
- Pitot heat – checked during preflight
- Electronic flight instrument display (PFD)
- Traffic and terrain awareness systems
- FMS
- Autopilot

