



JLC AVIONICS - TROUBLESHOOTING GUIDE

KEEP THIS GUIDE IN THE AIRCRAFT. This will help to troubleshoot a problem, and help your avionics shop diagnose a problem after all these common problems have been considered. Also, use this list to establish normal operation.

General Troubleshooting

- Check the aircraft breaker or fuses. Reset once only.
- Is electrical system properly charging?
- Could water have leaked onto the avionics?
- Could a connector be loose or wire broken from recent maintenance?
- Do you hear alternator or mag noise?
- Are any antennas missing, corroded, dirty, broken, oil coated, delaminated?
- Is the problem intermittent?
- Could heat, cold, altitude or time be a factor?

Transponder

- Is ATC receiving both Mode-A (squawk code) and Mode-C (altitude)?
- Has the problem occurred with more than one ATC facility?
- Is Mode-C inop, or just reporting wrong altitude?
- Does the reply lamp illuminate in radar coverage?
- Is the reply lamp dimmer turned down?
- Is it in the correct mode (standby/on/alt)?
- Does it recycle (power off, then on, then wait 30 seconds)?
- Does test position illuminate reply lamp?
- Does turning off the DME resolve the problem?

Radar

- Does it paint rain and ground clutter?
- Is the gain turned down?
- Is the brightness turned down?
- Does it test?
- Does it display wheel spokes?
- Does the tilt work?
- Are the images smeared?
- Does it lose targets within 40 miles?
- Is the radome damaged or delaminating or leaking?
- Is stabilization working?

Com/Audio Panel/Intercom

- Is the correct frequency active (not standby)?
- Are the audio switches set correctly?
- Is the auto mode being used?
- Is the same radio selected for transmit & receive?
- Is the volume turned down?
- Is a mic key stuck?
- Are both the headphone and speaker working?
- Does it both receive and transmit?
- Do you hear your voice in headphone during transmit (side tone)?
- Did ATC say they heard carrier only without voice?
- Is there background noise when in test mode (squelch off)?
- Try a different headset or microphone.
- Try emergency or isolation modes.
- Are the plugs or jacks dirty, corroded or loose?
- Do all crew & passenger headset locations have the same problem?
- Does another com act the same?
- Is oxygen mic switch in proper position?

Autopilot

- Review operating procedures.
- Does it pass self-test on the ground?
- Does the autotrim work?
- Does the manual electric trim work?
- Does it engage?
- Can you overpower it on the ground?
- Do the controls lock when engaged?
- Could the cables be loose from maintenance?
- Is the aircraft out of trim?
- Is the horizontal gyro precessing?
- Is gyro vacuum within limits?
- Does it hold the wings level?
- Does it hold heading?
- Do the wings rock?
- Does it respond in basic pitch hold?
- Does it hold altitude?
- Does it lose altitude in a turn?
- Does it porpoise?
- Does it respond in NAV?
- How does it respond on an ILS?



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DME

- Does it receive an ident code?
(Listen for 60 seconds)
- Is the remote channeling switch set?
- Is the display dimmed?
- Does the GS and TTS function? (Flying directly to/from but not over station.)
- Is problem present on other frequencies?
- Does it test?
- Is there a NOTAM of any outages?

ADF

- Is it on the correct frequency?
- Is the unit in ADF mode?
- Does it point to the station?
- Does the needle move in test?
- Does the unit receive in ANT mode?
- Does the unit receive in ADF mode?
- Do all three frequency bands work— (200-399, 400-799, 800-1699)?
- Do you hear alternator or mag noise?
- Is the reception better on the ground with the engine off?
- Are other radios interfering with the ADF?
- Are there thunderstorms in the area?
- Is there a NOTAM of any outages?

Lightning Detection

- Does it pass self test?
- Does it display aircraft electrical noise?
- Is heading orientation functioning?
- In a turn, are the dots all in the same relative position?
- Is the brightness turned down?

Marker Beacon

- Do the lamps illuminate over markers?
- Do lamps test?
- Are the lamps dimmed?
- Is problem resolved when high sensitivity selected?
- Is the audio turned down or not selected?
- Are lights seen but tones not heard?
- Are the correct tones heard?

VOR/ILS

- Is the correct frequency active (not standby)?
- Does it receive the ident code?
- Do the needles or flags move at all?
- Can you select a reciprocal OBS course?
- Does the To/From indicator work?
- How many degrees off is the VOR?
- Does the NAV test (self or VOT)?
- Does it have 20° course width peg to peg?
- Do both NAVs have the same problem?
- Does the Localizer work but not the VOR?
- Are you close or far from the station?
- Does a change in engine rpm have an effect?
- Is the RNAV or PAR mode active?
- Is the Loran/GPS switched to the indicator?
- Is there a NOTAM of any outages?
- Is problem present on different frequencies?
- Does VOR station position relative to aircraft have an effect?

GPS

- Verify the correct waypoint.
- Check present position or nearest airport.
- Are at least three satellites being tracked (VFR), four satellites (IFR)?
- Is the satellite geometry poor?
- Are the satellite signal levels adequate?
- Has the unit been inactive for a few months?
- Is the hold or OBS mode selected?
- Is the NAV selected to an ILS frequency locking out course indication?
- Is there a NOTAM of any outages?
- Are there any warning or error messages?
- Does it have the latest hardware/software updates?

JLC Avionics

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