ISLIP AVIONICS

(631) 588-3543

IN-FLIGHT AVIONICS TROUBLESHOOTING GUIDE

KEEP THIS GUIDE IN THE AIRCRAFT. This will help troubleshoot a problem in-flight and help Islip Avionics diagnose a problem after all these common problems have been considered.

GENERAL TROUBLE SHOOTING

- ❑ Check the aircraft circuit breaker or fuses.
- ❑ Is there an aircraft voltage problem?
- ❑ Could water have leaked onto the avionics?
- ❑ Could a connector be loose or wires broken from recent maintenance?
- ❑ Is the unit seated correctly in its mount?
- ❑ Do you hear alternator or magneto noise?
- ❑ Are any antennas corroded, dirty, broken, oil coated or delaminated?
- ❑ Is it intermittent?
- ❑ Is heat, cold, altitude or time a factor?

COM. RADIO/ AUDIO PANEL/ INTERCOM

- ❑ Are the audio switches set correctly?
- ❑ Is the auto mode being used?
- ❑ Is the volume set correctly?
- ❑ Is ICS in pilot isolation mode?
- ❑ Is a mic key stuck?
- ❑ Do you hear both the phone and speaker?
- ❑ Does it both receive and transmit?
- ❑ Do you hear sidetone?
- ❑ Do you transmit carrier without voice?
- ❑ Does it make noise with squelch disabled?
- ❑ Try a different headset or microphone.
- ❑ Try an emergency or isolation mode.
- ❑ Are the plugs or jacks corroded?
- ❑ Do all positions have the same problem?
- ❑ Does the second com. Act the same way?

VOR/ILS

- ❑ Do you receive the ident tone?
- ❑ Do the needles or flags move at all?
- ❑ Can you select a reciprocal OBS course?
- ❑ Does the TO/FROM flag work?
- ❑ How many degrees off is the VOR?
- ❑ Does the VOR test (self or VOT)?
- ❑ Does the VOR have 20 degrees deflection?
- ❑ Does the Localizer work but not the VOR?
- ❑ Are you close or far from the station?
- ❑ Could tail antenna shadowing be a factor?
- ❑ Is the indicator switched to the correct NAV?
- ❑ Is there a NOTAM of any outages?

TRANSPONDER

- ❑ Does both Mode-A and Mode-C work?
- ❑ Is Mode-A inop or just wrong codes?
- ❑ Is Mode-C inop or just wrong altitude?
- ❑ Does the reply lamp illuminate?
- ❑ Is the dimmer turned down?
- ❑ Is it in the correct mode?
- ❑ Does it recycle (power off then on)?
- ❑ Does it test?
- ❑ Does DME interfere?

GPS

- ❑ Verify the correct waypoint.
- ❑ Check present position or nearest airport.
- ❑ Are at least three satellites being tracked?
- ❑ Is the satellite geometry poor?
- ❑ Are the satellite signal levels adequate?
- ❑ Has a current almanac been downloaded?
- ❑ Is the hold mode selected?
- ❑ Is the NAV selected to an ILS frequency?
- ❑ Is there a NOTAM for outages?
- ❑ Are there any warning messages?

AUTOPILOT

- ❑ Does the autopilot engage?
- ❑ Can you overpower the autopilot?
- ❑ Do the controls lock when engaged?
- ❑ Could the control cables be too loose?
- ❑ Is the aircraft out of trim?
- ❑ Is the gyro vacuum within limits?
- ❑ Does the autopilot hold wings level?
- ❑ Does the autopilot hold heading?
- ❑ Do the wings rock?
- ❑ Does the autopilot respond to basic pitch hold?
- ❑ Is the autopilot following a precessing gyro?
- ❑ Does the autopilot hold altitude?
- ❑ Does the autopilot lose altitude in a turn?
- ❑ Does the autopilot porpoise?
- ❑ Does the autopilot respond to NAV?
- ❑ Does the autopilot respond to an ILS?
- ❑ Does the manual electric trim work?
- ❑ Does the autotrim work?

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MARKER BEACON

- ❑ Does the lamp illuminate?
- ❑ Do lamps test or are they dimmed?
- ❑ Is high or low sensitivity selected?
- ❑ Is the audio turned down or not selected?
- ❑ Are the lights seen, but tones not heard?

RADAR

- ❑ Does it paint clouds and ground clutter?
- ❑ Is the gain turned down?
- ❑ Does the Radar test?
- ❑ Does the display spoke?
- ❑ Does the tilt work?
- ❑ Is stabilization on or off?
- ❑ Are the images smeared?
- ❑ Does it lose targets at high ranges?
- ❑ Is the radome damaged or delaminating?

DME

- ❑ Does the DME receive an ident tone?
- ❑ Is remote channeling selected?
- ❑ Is the display dimmed?
- ❑ Does the GS and TTS function?
- ❑ Does the DME work on different channels?
- ❑ Does the DME test?
- ❑ Does the transponder interfere?

GENERAL AVIONICS LONGEVITY TIPS:

Install a cooling fan, outside forced air is not recommended.

Cover instrument panel when aircraft is parked.

Exercise autopilot clutches and motors once a month.

Instruct your mechanic to keep control cables tight for autopilot response.

Know where your autopilot and trim circuit breakers are by feel.

Turn avionics on after alternators are on-line and off before shutdown.

ADF

- ❑ Is the unit in ADF mode?
- ❑ Does the ADF 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 (200-399, 400-799 & 800-1699) work?
- ❑ Do you hear alternator or magneto noise?
- ❑ Is the reception better with the engine off?
- ❑ Are other radios interfering with the ADF?
- ❑ Is the aircraft structure shadowing the antenna?
- ❑ Is there a NOTAM of any outages?

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