

# DUNCAN INTELLIGENCE

Unforgettable People—Legendary Service • Edited by Ron Grose • Winter 2000

## Is Your Autopilot Developing A Mind Of Its Own?

Just as we need our sense of sight to fly an aircraft, an autopilot needs to know what attitude the aircraft is at and the rate of change in attitude to compute a proper response. The vertical gyro acts as the “eyes” of the autopilot. If this information is missing, the autopilot will give a “hard-over” response in whatever direction drive is required. If the gyro is sluggish or slow, the rate information will not be correct for the autopilot and the result will be wing-rock or pitch porpoise. This symptom is usually fairly slow and constant. The attitude information is electrically picked off slip rings in the gyro by brushes. If the contact between brush and slip ring becomes intermittent due to tension or resistive contact, the autopilot interprets this as change in attitude and attempts to respond accordingly, resulting in jittery or rapid oscillation. Depending on the gyro installed there may also be Service Bulletins addressing this problem.

For more info, contact Larry Troyer in LNK at 800.228.4277, E-mail Larry at [larry\\_troyer@duncanaviation.com](mailto:larry_troyer@duncanaviation.com) or contact Pete Kilmartin in BTL at 800.525.2376, E-mail Pete at [pete\\_kilmartin@duncanaviation.com](mailto:pete_kilmartin@duncanaviation.com)

## Keep An Eye On That APU Inlet Screen Area

Watch out for loose parts in the APU inlet screen area. Sometimes parts of the screen will vibrate loose and could be ingested by the APU.

## Do You Need A Eurocontrol Extension?

As of January 1, 2000, aircraft with TOW of 15,000kg/33,000lbs traveling in European airspace (ECAC) are to have an operational ACAS II system.

The ACAS II requirement is met with a TCAS II system with 7.0 or MOPS 7 software. The TCAS system will also need recertification due to the new part number being installed. The STC which the system was “originally” certified under must also be revised. Only the original STC holder is being allowed to make these amendments.

Eurocontrol will allow an extension for compliance until March 31, 2001, for operators whose system currently has software version 6.04. Due to certification time constraints, it’s advisable to apply to Eurocontrol for an extension ASAP. Exemption forms are available on the Eurocontrol website at [www.eurocontrol.be/projects/eatchip/acas/](http://www.eurocontrol.be/projects/eatchip/acas/) (Select Annex D).

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## Falcon 900,900EX & 2000 Landing Gear Shudders

If you notice a shudder when operating your landing gear, suspect a failure of the main gear door position detectors L50GA1 and R50GA1 part number 248036820, which are located on the main gear door actuators. The sensor can fail intermittently and in rapid session causing the gear to make a shuddering movement. Make sure to follow the replacement procedure in the manual, the mounting bolt torques are critical.

## Falcon 50 Toilet Leakage

If you have a toilet leak that only seems to happen while in flight, check the dump cable for being too tight. The expansion of the pressure vessel during pressurization will cause the cable to bottom out and start pulling on the dump plunger, causing the plunger to leak. This can be checked by inspecting the dump tube while ground pressurizing the cabin.

## 731-2C Upgrade For Falcon 10s

This upgrade increases the ITT limit during takeoff, climb and cruise. The MPI interval is extended from 1400 to 2100 hours, with a reduced MSP hourly rate. This upgrade is normally performed at time of CZI. If you are a Non-MSP operator and you have a CZI coming due, MSP enrollment is no cost at the time of upgrade. The NI DEEC installation STC will need to accompany this upgrade.

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*For Falcon technical info, we have the experts. Our Falcon Team consists of tech reps and technicians with experience in airframe/engine, interior/exterior completions, avionics installations, component repair and parts.*

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