

Islip Avionics, Inc.

WINTER / SPRING 1998 NEWSLETTER

Hope you have taken advantage of this mild weather. Over the winter we hired Daren Remmert. You may remember Daren from as American Flyer's chief flight instructor. Stop by and see Daren's military avionics background in action.

Upcoming events: Our 4th annual *Open House/Fly In* is scheduled for Saturday, June 13TH, 9:00 am to 3:00pm. Look for details in future mailing.

GPS Update: Garmin's new GPS-155XL, Com/GPS, is available and priced at \$5,700 for an IFR installation.
Garmin's new GNC 300XL, Com/GPS, is available and priced at \$6,450 with a compatible indicator in the aircraft.
Bendix King's KLN-89B IFR GPS system is on sale till May 1, '98, is priced at \$6,300.

Northstar M3 approach GPS with dedicated 2 1/4" indicator, not autopilot coupled, is priced at \$7,700.
If you can get 4 fellow pilots to each order an M3 then, we can offer a \$250 deduction for each pilot!
We have some special pricing on IFR units also. Call Fred at 588-3543 for details.

Any life left for Loran?: At the prompting of AOPA and the avionics industry, the FAA is again looking at maintaining loran as a long term ground based back up to GPS. This may extend loran past the Coast Guard's shut off date of December 2000.

Did you know?: Several years ago the FAA made internal policy where by air traffic control can report transponder failure, intermittent or mode c error to the local FSDO maintenance inspectors ? This has only been occasionally used. ATC has recently been directed to aggressively follow this procedure. What this means to us as pilots is that we could feasibly receive a violation of out transponder/mode c sends incorrect data. Mode c reports in 100' increments. The allowed tolerance (from the altimeter) is 125'. Incorrect mode c squawks can set off alarms at ATC and can cause TCAS equipped traffic (airlines) to make emergency deviations. This could cause a dangerous chain reaction. What can we do as pilots/aircraft owners to protect ourselves? First and foremost, make sure that your equipment is properly certified, and that you have the hog entry(s) to prove it. If ATC notifies you in flight that your mode c is off altitude, verify that your altimeter setting is correct. If it is, politely tell ATC that you will get your mode c checked as soon as possible. **If you have a second complaint, get your system checked and repaired asap.** When you get a complaint, ask ATC what altitude they are receiving you at. (This information helps us significantly when troubleshooting). With permission from ATC try climbing or descending 75-100' and ask ATC of they are now getting a correct reading. If the next controller (especially if he is from another facility) still has a complaint, or if you get a complaint on another flight, get your system checked.

Keep in mind that not all problems are due to equipment in our aircraft. It can also be ATC's equipment. If you have been flying for several hours, talking to several other controllers with no complaints, and then one controller squawks you mode c altitude it may well be his ground equipment and/ or a combination of problems. I will stress again, be polite to the controller, he is just doing his job.

The certification requirements are as follows: FAR 91.217(b) applies to all aircraft. This is a one time test and calibration required upon installation of mode c capability.

FAR 91.411 "altimeter system and altitude reporting equipment tests and inspections" – This is a 24 month requirement for **IFR** aircraft. Compliance with this regulation requires that the altimeter (s) be removed, bench tested I.A.W. Far 43 appendix E and reinstalled. Then the static system components and ports are visually inspected, then a static system leakage test is performed. Finally the "automatic pressure altitude reporting system" is tested. This is commonly called the data correspondence test. In a nut shell, this test verifies that the altitude as displayed on the pilot's altimeter (set to 29.92 pressure altitude) matches the information sent by the mode c encoding device via the transponder to ATC. The mode c data is always sent at 29.92. When you have a local altimeter setting on your altimeter, ATC's computer also uses the same setting to cause ATC's readout to show the 'local' altitude. There are 2 additional and very important requirements to 91.411 regarding system maintenance between 24 month inspections. If the static system is opened for maintenance (such as replacement of a vsi, airspeed, encoder etc) a system leak check must be performed and mentioned in the maintenance records. If any installation or maintenance is performed that could "introduce errors in data correspondence," the system needs to be retested. A static leakage check can be performed by any airframe mechanic as long as he has the appropriate test equipment. The altimeter test and the data correspondence test can only be performed by an appropriately rated repair station.

FA 91.413-ATC transponder tests and inspections- This applies to all aircraft **IFR and VFR** That have a transponder. This is a 24 month requirement to have that transponder certified in accordance with part 43 appendix E. It also requires that if any installation or maintenance is performed that could, "introduce errors in data correspondence", the system needs to be retested.

These test can only be performed by an appropriately rated repair station.

We are frequently asked, "Can I bring in my transponder and have it certified?" The best answer we can give is No. As a pilot (unless you also have an airframe license) you can not legally reinstall the transponder and make the appropriate and required log entry. More importantly, some of the operating parameters of a transponder can be effected by the actual aircraft installation. Your unit may pass o the bench but not work properly in the aircraft. By asking you to bring your aircraft, We can check the entire system.

There is no 24 month requirement for VFR only aircraft to have the mode c or altimeter tested. However with the FAA enforcement program now in effect it may be a good idea out of general maintenance procedures to have these items tested every 2 to 4 years! I suspect that there will be an FAR change on this in the near future.

Another brief review: A vor accuracy check is required within 30 days for ifr flights (FAR 91.171). This can be accomplished by the pilot. Tolerances are as listed below:

VOT check 4 degrees + of - error

VOR ground check point 4 degrees + of - error

AIRBORNE check point 6 degrees + of - error

DUAL vor's 4 degrees maximum difference.

An entry in a permanent record (airframe log, pilot's log or an appropriate form) must be made including the date, place, bearing error and signature. Stop by and pick up a free sample form!

Some final notes on all this regulatory nonsense:

- 1) Aircraft owner/operator are responsible that the proper log book entries are made. For many years we have provided our customers with peel and stick log entries. We strongly suggest that you bring your log books when ever your aircraft comes in for maintenance or alterations so that log entries can be placed in your book. Please bring in and pick up your log books in person. Do not leave them in your airplane if at all possible. Lost logs greatly effect the value of your aircraft.
- 2) You are required to have a current weight & balance, and equipment list in your aircraft, as well as the most recent form 337. We highly suggest that you make a copy of all your weight & balance/equipment list documents starting from the birth of your aircraft. Put the copies in your aircraft and keep the originals in a safe place, such as with your logs. The same goes for all form 337's.
- 3) FAR 91.407(a) operation after maintenance, preventative maintenance, rebuilding or alteration ; paragraph b states in synopsis that a log entry must be made by a pilot stating that he has test flown the aircraft, that there are no adverse conditions and that the aircraft is returned to service.
- 4) After your aircraft has under gone maintenance or alteration, a log entry should be made by a pilot that an operational flight check has been performed prior to carrying passengers. See FAR 91.407.

Feature jobs: The staff of IAI & PI wish you many flying miles of smiles!

N95423 (HWV), a Piper Cherokee, owned by Bill Dreschler, received a Garmin GNC-250 GPS/Com.

N29558 (FOK), a Cessna Cardinal, owned by George Guilde, received a KMA 24 audio panel, a KX-155 Nav/Com, a Garmin GPS-150XL and a NAT intercom.

N642CC (TEB), a Cessna Citation II, operated by Larry Jacobs of Air Partners, received a KLN-90B IFR certified GPS system.

N7185V (FOK), a Mooney M20F, owned by Bill Stevens, received an S-TEC 30 autopilot system.

N1624H (ISP), a Piper Archer, owned by Jerry Fink and Sam Klein, received an S-tec 30 altitude hold.

N1182J (ISP), a Rockwell 112, owned by Svein Faret, received a new custom panel, a KLN-89b IFR certified GPS, an NSD-1000 HIS and an S-tec 50 autopilot.

New things: S-tec has introduced a new altitude hold add on for most existing single axis (roll only) autopilots. This new altitude hold system can be added for under \$4,000. They already have a large list of approved aircraft and are adding more every month.

From the pilot's seat: GPS is still the hot item and will be for some time. We look forward to seeing you at the Open House/Fly In.

Happy flying,

Fred

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