SA-08-001
12 February 2008

SERVICE ALERT

Avidyne Primary Flight Display

{P/Ns: 700-00006-000,-001,-002,-003,-100}

This **SERVICE ALERT** communicates important safety information concerning aircraft equipped with certain Avidyne EXP5000 Primary Flight Displays (PFDs).

BACKGROUND INFORMATION

Avidyne has received a limited number of field reports of PFDs displaying incorrect altitude and airspeed information. None of these occurrences led to an accident or incident. These occurrences included incorrect display of information at system startup, including one or more of the following:

- Altitude significantly in error when compared to field elevation with local barometric correction setting entered on PFD.
- Altitude significantly in error when compared to backup altimeter with identical barometric correction settings on both.
- Non-zero airspeed (inconsistent with high winds or propwash from a nearby airplane) indicated at system startup.
- Altitude or airspeed indications that vary noticeably after startup under static conditions.
- Erroneous airspeed indications in combination with erroneous attitude indications.
- A steady or intermittent “red X” in place of the airspeed indicator, altimeter, VSI or attitude indicator.

Aircraft exhibiting any of these incorrect indications should not be flown.

In any case where an erroneous indication is present at system startup (without an identifiable external cause such as surface winds or propwash) and this indication subsequently returns to normal, the PFD should nonetheless be considered unreliable and the aircraft should not be flown.

As a normal practice, all pilots should be vigilant in conducting proper preflight and in-flight checks of instrument accuracy, including:

- Preflight check of the accuracy of both the primary and backup altimeter against known airfield elevation and against each other.
- Verification of airspeed indications consistent with prevailing conditions at startup, during taxi and prior to takeoff.
- “Airspeed alive” check and reasonable indications during takeoff roll.
- Maintenance of current altimeter setting in both primary and backup altimeters.
- Cross-check of primary and backup altimeter at each change of altimeter setting and prior to entering IMC.

- Cross-check of primary and backup altimeters and validation against other available data, such as glideslope intercept altitude, prior to conducting any instrument approach.
- Periodic cross-checks of primary and backup airspeed indicators, preferably in combination with altimeter cross-checks.

In any case where the accuracy of either the primary or backup altimeter is in question on aircraft with an independent altitude encoder, ATC may be able to provide assistance in the form of a baro-corrected Mode C readout. Remember that a Mode C readout only indicates altitude to the nearest 100 feet.

Avidyne has notified the FAA and its OEMs about these events, and Avidyne's technical investigation is ongoing. At this time, this issue is considered to affect all Avidyne Primary Flight Displays manufactured or serviced between July 27, 2007, and February 1, 2008. The final list of affected PFDs may differ based on the results of our investigation.

Retain this Service Alert in the Primary Flight Display Pilot's Guide which is to be in the aircraft.

SAFETY WARNINGS

BEFORE CONDUCTING FLIGHT OPERATIONS PILOTS MUST REVIEW AND FAMILIARIZE THEMSELVES WITH THE CROSS-CHECK MONITOR SECTION OF THE AVIDYNE PRIMARY FLIGHT DISPLAY PILOT'S GUIDE AND ALL LIMITATIONS CONTAINED IN THEIR AIRCRAFT OPERATING HANDBOOK.

FOR FLIGHT OPERATIONS IN INSTRUMENT METEOROLOGICAL CONDITIONS (IMC) OR IN OTHER CONDITIONS IN WHICH VISUAL REFERENCE TO THE HORIZON CANNOT BE RELIABLY MAINTAINED (E.G., NIGHT OPERATIONS, FLIGHT OPERATIONS OVER WATER, IN HAZE OR SMOKE, ETC.):

- FULL OR PARTIAL FAILURE OF THE PFD CAN LEAD TO SPATIAL DISORIENTATION OF THE PILOT AND SUBSEQUENT LOSS OF AIRCRAFT CONTROL. THIS COULD RESULT IN AN ACCIDENT CAUSING DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.
- WHERE THE PILOT HAS REASONS TO SUSPECT THAT ANY SOURCE (PFD OR BACK-UP INSTRUMENTS) OF ATTITUDE, AIRSPEED OR ALTITUDE IS NOT FUNCTIONING PROPERLY, FLIGHT IN THESE CONDITIONS SHOULD BE DISCONTINUED UNTIL EQUIPMENT IS SERVICED AND FUNCTIONING PROPERLY.

OPERATION OF AIRCRAFT NOT EQUIPPED WITH AN OPERATING BACK-UP, OR STANDBY, ALTIMETER OR AIRSPEED INDICATOR, LOCATED WHERE IT IS READILY VISIBLE TO THE PILOT, IS NOT RECOMMENDED AND MAY VIOLATE LIMITATIONS CONTAINED IN THE AIRCRAFT OPERATING HANDBOOK.

PILOTS SHOULD FREQUENTLY SCAN AND CROSS-CHECK FLIGHT INSTRUMENTS. MAKE SURE THE INFORMATION DEPICTED ON THE PFD CORRELATES AND AGREES WITH THE INFORMATION DEPICTED ON YOUR BACK-UP, INSTRUMENTS.

Electronic copies of the Primary Flight Display Pilot's Guide are available on the Avidyne website at http://www.avidyne.com/techpubs.shtm.

SERVICE ACTIONS

At this time, no specific service actions have been identified for PFDs that have not exhibited the behaviors described in this Service Alert. If a PFD and associated aircraft systems exhibit the behavior described herein, this PFD may be functioning improperly and MUST be returned to Avidyne for servicing prior to further flight.

Owners of aircraft with Primary Flight Displays in the date range indicated above and any others that are deemed to be affected as a result of our investigation of this issue will be notified of any service action that is determined to be necessary.