



# SERVICE BULLETIN

<b>Document Number:</b>	601-00006-096
<b>Title:</b>	PFD Mandatory Service Bulletin to Address Air Data Performance Issues
<b>Revision:</b>	Rev 01
<b>Date:</b>	14 July 2008

## 1. Planning Information

### 1.1 Distribution/Eligibility

This Mandatory Service Bulletin (hereinafter "Service Bulletin") may be distributed only to those groups indicated below with a check mark:

<i>Group</i>	<i>Distribution?</i>
Avidyne internal	√
Avidyne-authorized Service Facility	√
Avidyne Web Post	√
Avidyne-authorized Installer	√
Avidyne OEM customers	√
End-use customers, owners and operators	√

The Accomplishment Instructions contained in Section 3 may be performed by Avidyne Service or Manufacturing Facilities, Avidyne Authorized Service Centers, Avidyne OEM's, or other qualified service facilities. As noted in Section 3.1, pilots may accomplish the serial number check for PFDs whose serial numbers are recorded in reliable aircraft logbook entries. In all cases, accomplishment of the procedures of this Service Bulletin should be logged in accordance with the applicable requirements of 14 CFR Parts 43 and 91.

### 1.2 Description

This Service Bulletin provides important safety information concerning aircraft equipped with certain Avidyne EXP5000 Primary Flight Displays (PFDs) that may display incorrect altitude and airspeed information. It includes a process to positively identify Avidyne PFDs affected by these issues. Elements of this process include serial number comparison to identify PFDs that may



have been affected and a field test procedure to verify proper performance of the Avidyne PFD air data instruments.

Compliance with this Service Bulletin is expected to allow removal of flight restrictions imposed under FAA AD 2008-06-28 R1.

### **1.3 Reason**

This Service Bulletin communicates important safety information concerning aircraft equipped with certain Avidyne EXP5000 Primary Flight Displays (PFDs) that may display incorrect altitude and airspeed information.

### **BACKGROUND INFORMATION**

Avidyne has received a limited number of field reports of PFDs displaying incorrect altitude and airspeed information. 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 addition, in the event 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 potentially non-conforming and the aircraft should not be flown.

Avidyne has prepared a factory service procedure that will correct the possible incorrect altitude and airspeed information displayed on the Avidyne PFD.



1.4 Effectivity/Compatibility

This Service Bulletin applies to all aircraft equipped with Avidyne EXP5000 Primary Flight Displays (PFDs) (P/N 700-00006-XXX with these serial numbers listed below. Note that this list is identical to that presented in FAA AD 2008-06-28 with the exception that PFDs subsequently serviced under an approved Alternate Means of Compliance (AMOC) have been omitted and require no further action.

- D1031, D1037, D1075, D1080, D1084, D1101, D1112, D1115, D1136, D1138, D1141, D1144, D1158, D1170, D1172, D1174, D1178, D1188, D1197, D1199, D1212, D1234, D1240, D1249, D1256, D1259, D1262, D1277, D1283, D1288, D1313, D1319, D1327, D1351, D1380, D1391, D1396, D1405, D1412, D1428, D1433, D1434, F0006, F0011, F0021, F0030, F0031, F0032, 20002067, 20003147, 20003296, 20003316, 20004297, 20005316, 20008167, 20008227, 20009297, 20009476, 20010177, 20010255, 20011396, 20011456, 20012337, 20012506, 20013406, 20014027, 20014227, 20017286, 20018317, 20018425, 20018486, 20019067, 20019297, 20020297, 20021067, 20021197, 20022177, 20022207, 20022217, 20022286, 20023197, 20023377, 20024196, 20024297, 20024397, 20024407, 20024425, 20025067, 20025177, 20025317, 20026067, 20026197, 20026265, 20026407, 20026506, 20027177, 20027226, 20027317, 20027377, 20029177, 20029197, 20029246, 20029265, 20029506, 20030197, 20031207, 20031406, 20031407, 20031516, 20032067, 20032265, 20032337, 20032516, 20033337, 20034207, 20034327, 20035177, 20036197, 20036237, 20036397, 20037285, 20038127, 20038197, 20038337, 20039177, 20040177, 20040197, 20040265, 20040317, 20042265, 20042317, 20042337, 20043197, 20043215, 20043237, 20043247, 20044226, 20044237, 20044285, 20045215, 20045265, 20046215, 20047147, 20048197, 20048247, 20049147, 20049357, 20050147, 20050287, 20050346, 20050434, 20051215, 20052215, 20053357, 20054357, 20055087, 20056247, 20056257, 20057237, 20057346, 20061087, 20061247, 20062087, 20063087, 20064087, 20064147, 20066147, 20067087, 20068147, 20068337, 20069087, 20072087, 20073346, 20073506, 20074207, 20075087, 20075147, 20075207, 20076217, 20076257, 20077087, 20077506, 20078087, 20078217, 20078257, 20078346, 20078496, 20084257, 20085396, 20087257, 20089257, 20089346, 20090346, 20092297, 20094107, 20094416, 20098037, 20099107, 20099346, 20099416, 20101416, 20102417, 20103396, 20104246, 20106224, 20111224, 20112224, 20114416, 20115346, 20118416, 20123416, 20124456, 20126416, 20129346, 20135337, 20140336, 20142037, 20142296, 20146037, 20147336, 20158097, 20164097, 20165097, 20166097, 20170097, 20170175, 20177175, 20204175, 20209246, 20214175, 20216265, 20217175, 20224175, 20229265, 20232175, 20233175, 20236175, 20236265, 20241175, 20243265, 20265355, 20273355, 20278355, 20281355, 20302384, 20314384, 20317384, 20320305, 20321376, 20330376, 20330384, 20347305, 20348305, 20350305, 20356305, 20359305, 20378475, 20380225, 20381225, 20382475, 20388225, 20402174, 20403174, 20438345, 20440345, 20452315, 20458315, 20467315, 20540094, 20576445, 20580445, 20581445, 20582525, 20584525, 20591525, 20595065, 20599065, 20605065, 20615116, 20618065, 20638116, 20656284, 20732074, 20735176, 20739176, 20755493, 20815015, 20974365, 20978365, 20978434, 20986365, 20990434, 21002365, 21060395, 21063184, 21063395, 21067184, 21070184, 21075395, 21191045, 21219045, 21294414, 21311414, 21315414, 21324414, 21325414, 21330414, 21334414, 21340414, 21491056, 21493056, 21596354, 21603435, 21604435, 21606435, 21608435, 21610435, 21646086, 21812514, 21823514, 21826514, 21836304, 21839304, 21852304, 22310186, 22378026, 22380026, 22398294, 22401294, 22405085, 22412385, 22418026, 22418385, 22419026, 22471524, 22479524, 22483524, 22525264, 22531204, 22559135, 22568135, 22572135, 22578135, 22579135, 22586135, 22602135, 22603135, 22608135, 22642493, 22647493, 22682076, 22908334, 22921334, 22961354, 23169495, 23173495, 23175495, 23371455, 23443264, 23445264, 23581244, 23737136, 23738136, 24021335, 24029335, 24231144, 24248144, 24381324, 24478515, 24746144, 24750144, 24772085, 24773085, 24865155, 24870155, 24990084, 24991084, 24993084, 24996084, 25023034, 25027034, 25522465, 25525465, 25530465, 25532465, 25538465, 25600465, 25618106, 26287114, 26528095, 26547095, 26553095, 26569464, 26571095, 26584095, 26588464, 26592464, 28478495, 29023044, 29029044, 29032044, 29512216, 29514216



## **1.5 Compliance**

**This Service Bulletin is mandatory.** Compliance with Section 3 of this Service Bulletin is required for all aircraft equipped with an Avidyne PFD whose serial number appears in the list in Section 1.4.

## **1.6 Approval**

The engineering data underlying the accomplishment instructions contained in Section 3 are FAA approved. No other portion of this Service Bulletin is FAA approved.

## **1.7 Time Required**

Compliance with the serial number verification and testing procedures contained in this Service Bulletin should take one (1) person less than one (1) hour. If service is required, complying with the serial number verification, testing and service procedures contained in this service bulletin should take one (1) person less than four (4) hours.

For PFDs whose serial numbers appear in the list in Section 1.4, the testing and service procedures are covered by Avidyne's standard warranty when performed by an authorized Avidyne Service Center.

## **1.8 Weight and Balance**

No change.

## **1.9 Electrical Load Data**

No change.

## **1.10 Reference**

None

## **1.10 Publications Affected**

None

## **2. Material – Cost and Availability**

Not Applicable.

### **3. Accomplishment Instructions**

#### **3.1 Identifying Possible Affected Avidyne PFDs by Serial Number**

PFDs that may be affected by this issue can be identified by comparing their serial numbers to the list presented in Section 1.4. If your PFD's serial number is known based on reliable records in the aircraft logbook, this check may be accomplished by a pilot. If other actions are required to determine the PFD's serial number, they must be accomplished by an appropriately qualified service facility.

**If your Avidyne PFD serial number has been positively identified and is not listed in Section 1.4, no further action is required under this Service Bulletin.**

#### **3.2 Identifying PFDs That Have Already Been Serviced**

Any PFD whose air data system has been serviced in accordance with the requirements of this Service Bulletin can be identified by either of the following:

1. \_\_\_\_\_ A label marked "Deviation 08-19A" on the exterior of the PFD in the vicinity of the TSO label; or,
2. \_\_\_\_\_ A "MOD 52" marking.

**This check, if necessary, must be performed by an appropriately qualified service facility.**

**If your Avidyne PFD has, by means of one of these methods, been positively identified as having been serviced, no further action is required under this Service Bulletin.**

#### **3.3 Avidyne PFD Air Data System Performance Verification Test Procedures**

The purpose of the Avidyne PFD Air Data System Performance Verification Test is to determine if the PFD shows proper altitude and airspeed information while the aircraft is located on the ground. Improper display of altitude and airspeed information on the PFD indicates a need for service by Avidyne.

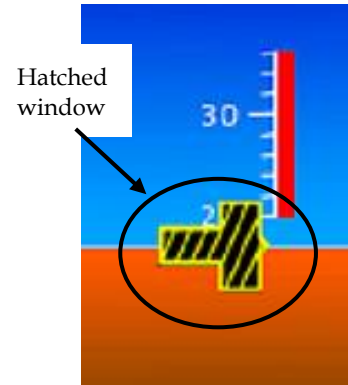
Read this test procedure carefully before running it. Avidyne recommends that you dry-run the procedure before parking the aircraft as described below so that you will be familiar with all of the conditions and indications when it comes time to perform the final run of the test.

1. \_\_\_\_\_ Leave the aircraft parked for at least 24 hours. *It is essential that the Avidyne PFD is powered off for at least 24 hours immediately prior to this test.*
2. \_\_\_\_\_ Park the aircraft in a location isolated from wind disturbances, either ambient or propeller generated as they may affect the results of this test.

*Throughout this procedure, **do not** adjust the barometric pressure setting on the PFD! It is not important that the altitude readings recorded below reflect the actual field elevation; it is only important that they be referenced to a constant barometric pressure setting.*

3. \_\_\_\_\_ Power up the Avidyne PFD.

4. \_\_\_\_\_ As PFD powers up, the red X's over the airspeed and altitude will be replaced by actual airspeed and altitude tapes. Thirty (30) seconds after initial application of power, perform the following:
  - a) Verify that the airspeed tape shows a yellow hatched window as in Figure 1.
  - b) Verify that there is an altitude tape reading.
  - c) Record the initial displayed altitude tape reading \_\_\_\_\_.
5. \_\_\_\_\_ Monitor the PFD while the AHRS completes its alignment. If during this period of time: a red X appears on the airspeed indicator; a non-zero airspeed is displayed; a red X reappears on the altimeter; **or** the difference between the altitude reading at any time and the initial altitude reading exceeds  $\pm 20$  feet, then the PFD is considered to be non-conforming.
6. \_\_\_\_\_ The PFD should complete AHRS alignment and the horizon should be visible on the screen approximately three and one half minutes after power up. At this moment proceed to:
  - a. Record the altitude tape reading \_\_\_\_\_.
  - b. Verify that the recorded altitude tape reading is within  $\pm 20$  feet from its initial measurement.
  - c. Verify that the airspeed tape still shows a yellow hatched window as in Figure 1.



*Figure 1: Airspeed indicator.*

**This test, if necessary, must be performed by an appropriately qualified service facility.**

**If this test is conducted and passed, no further action is required under this Service Bulletin.**

### **3.4 Avidyne PFD Exhibiting a Non-Conforming Condition**

If either the altitude or airspeed measurements do not stay within the limits stated during the Avidyne PFD Air Data Performance Verification Test (Section 3.3), then there is a non-conforming condition, indicating a need for service by Avidyne.

**Removal and reinstallation of the PFD, if necessary, must be performed by an Avidyne Authorized Service Center in accordance with the procedures given in the applicable Installation Manual.**

**Once the PFD has been serviced by Avidyne and reinstalled in accordance with the applicable Installation Manual, no further action is required under this Service Bulletin.**

### **3.5 Additional Instructions**

Avidyne recommends that all pilots review the Avidyne EXP5000 PFD Pilot Operating Handbook, follow recommended procedures and checklists for their specific aircraft and vigilantly cross-check primary and backup instruments.



## SERVICE BULLETIN

If you have questions about the applicability of this Service Bulletin to your aircraft or about the Accomplishment Instructions it contains, including the Air Data Performance Verification Test (Section 3.2), please contact Avidyne Technical Support at 1-888-723-7592 for assistance.