

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0340; Directorate Identifier 2008-CE-020-AD; Amendment 39-15440; AD 2008-06-28]

RIN 2120-AA64

Airworthiness Directives; Avidyne Corporation Primary Flight Displays (Part Numbers 700-00006-000, -001, -002, -003, and -100)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Avidyne Corporation (Avidyne) Primary Flight Displays (PFDs) (Part Numbers (P/Ns) 700-00006-000, -001, -002, -003, and -100) that are installed on airplanes. This AD requires a check of the maintenance records and inspection of the PFD (if necessary) to determine if an affected serial number PFD is installed. If an affected serial number PFD is installed, this AD requires you to incorporate information that limits operation when certain conditions for the PFD or backup instruments exist. This AD results from several field reports of PFDs displaying incorrect altitude and airspeed information. We are issuing this AD to prevent certain conditions from existing when PFDs display incorrect attitude, altitude, and airspeed information. This could result in airspeed/altitude mismanagement or spatial disorientation of the pilot with consequent loss of airplane control, inadequate traffic separation, or controlled flight into terrain.

DATES: This AD becomes effective on April 10, 2008.

We must receive any comments on this AD by May 27, 2008.

ADDRESSES: Use one of the following addresses to comment on this AD.

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

To get the service information identified in this AD, contact Avidyne Corporation, 55 Old Bedford Road, Lincoln, MA 01773; telephone: (781) 402-7400; fax: (781) 402-7599.

To view the comments to this AD, go to <http://www.regulations.gov>. The docket number is FAA-2008-0340; Directorate Identifier 2008-CE-020-AD.

FOR FURTHER INFORMATION CONTACT: Solomon Hecht, Aerospace Engineer, Boston Aircraft Certification Office, 12 New England Executive Park, Burlington, MA 01803; telephone: (781) 238-7159; fax: (781) 238-7170.

SUPPLEMENTARY INFORMATION:

Discussion

We received several 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.
- 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, vertical speed indicator, or attitude indicator.

The conditions described above occur because of a manufacturing process defect on a certain batch of PFD serial numbers during incorporation of a design improvement on the air data unit assembly. The root cause of this manufacturing process defect is still being analyzed.

This condition, if not corrected, could result in airspeed/altitude mismanagement or spatial disorientation of the pilot and consequent loss of airplane control, inadequate traffic separation, or controlled flight into terrain.

FAA's Determination and Requirements of This AD

We are issuing this AD because we evaluated all the information and determined the unsafe condition described previously is likely to exist or develop on type design airplanes that incorporate one of the affected PFDs. This AD requires a check of the maintenance records and inspection of the PFD (if necessary) to determine if an affected serial number PFD is installed. If an affected serial number PFD is installed, this AD requires you to incorporate information that limits operation when certain conditions for the PFD or backup instruments exist.

This is considered interim action. Avidyne is working on a process to rework and/or modify the affected PFD units. The FAA will consider taking additional rulemaking action to supersede this AD and terminate the above limitations when Avidyne completes the process development, and the FAA approves it as addressing the unsafe condition.

FAA's Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because PFDs that display incorrect attitude, altitude, and airspeed information could result in airspeed/altitude mismanagement or spatial disorientation of the pilot with consequent loss of

airplane control, inadequate traffic separation, or controlled flight into terrain. Therefore, we determined that notice and opportunity for public comment before issuing this AD are impracticable and that good cause exists for making this amendment effective in fewer than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and an opportunity for public comment. We invite you to send any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number "FAA-2008-0340; Directorate Identifier 2008-CE-020-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive concerning this AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866;
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

Examining the AD Docket

You may examine the AD docket that contains the AD, the regulatory evaluation, any comments received, and other information on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5527) is located at the street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



2008-06-28 Avidyne Corporation: Amendment 39-15440; Docket No. FAA-2008-0340; Directorate Identifier 2008-CE-020-AD.

Effective Date

- (a) This AD becomes effective on April 10, 2008.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Avidyne Corporation (Avidyne) Primary Flight Displays (PFDs) (Part Numbers (P/Ns) 700-00006-000, 700-00006-001, 700-00006-002, 700-00006-003, and 700-00006-100) that are installed on, but not limited to the following airplanes that are certificated in any category:

- (1) Adam Aircraft Model A500;
- (2) Cessna Aircraft Company Model 441 (STEC Alliant Supplemental Type Certificate (STC) No. SA09547AC-D incorporated);
- (3) Cessna Aircraft Company Models LC42-550FG and LC41-550FG (Columbia Aircraft Manufacturing and The Lancair Company previously held the type certificate for these airplanes);
- (4) Cirrus Design Corporation Models SR20 and SR22;
- (5) Diamond Aircraft Industries GmbH Model DA 40;
- (6) Hawker Beechcraft Corporation Model E90 (STEC Alliant STC No. SA09545AC-D incorporated);
- (7) Hawker Beechcraft Corporation Model 200 series (STEC Alliant STC No. SA09543AC-D incorporated); and
- (8) Piper Aircraft, Inc. Models PA-28-161, PA-28-181, PA-28R-201, PA-32R-301 (HP), PA-32R-301T, PA-32-301FT, PA-32-301XTC, PA-34-220T, PA-44-180, PA-46-350P, PA-46R-350T, and PA-46-500TP.

Unsafe Condition

(d) This AD is the result of several field reports of PFDs displaying incorrect altitude and airspeed information. We are issuing this AD to prevent certain conditions from existing when PFDs display incorrect attitude, altitude, and airspeed information. This could result in airspeed/altitude mismanagement or spatial disorientation of the pilot with consequent loss of airplane control, inadequate traffic separation, or controlled flight into terrain.

Compliance

- (e) To address this problem, you must do the following, unless already done:

Table 1.—Actions, Compliance, and Procedures

Actions	Compliance	Procedures
(1) Do a logbook check of maintenance records to determine if any PFD (P/Ns 700-00006-000, 700-00006-001, 700-00006-002, 700-00006-003, or 700-00006-100) with any affected serial number listed in TABLE 2 —Serial Numbers of Affected PFDs is installed. (i) If, as a result of this check, you find any PFD installed with an affected serial number, do the action required by paragraph (e)(3)(i) or (e)(3)(ii) of this AD. (ii) If, as a result of this check, you cannot positively identify the serial number of the PFD, do the inspection required in paragraph (e)(2) of this AD. (iii) If, as a result of this check, you positively identify that the PFD installed does not have a serial number affected by this AD, then no further action is required.	Within 15 days after April 10, 2008 (the effective date of this AD).	The owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7) may do the logbook check. Make an entry into the aircraft logbook showing compliance with this portion of the AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).
(2) If you find, as a result of the check required by paragraph (e)(1) of this AD you cannot positively identify the serial number of the PFD, inspect any PFD (P/Ns 700-00006-000, 700-00006-001, 700-00006-002, 700-00006-003, or 700-00006-100) for any affected serial number listed in TABLE 2 —Serial Numbers of Affected PFDs. You may do the requirement of paragraph (e)(3) of this AD instead of this inspection.	Within 15 days after April 10, 2008 (the effective date of this AD).	Not Applicable.

(3) If you find, as a result of the check required by paragraph (e)(1) of this AD or the inspection required by paragraph (e)(2) of this AD, any PFD installed with an affected serial number, do whichever of the following applies: (i) For airplanes with an airplane flight manual (AFM), pilots operating handbook (POH), or airplane flight manual supplement (AFMS), incorporate the language in the Appendix of this AD into the Limitations section. (ii) For airplanes without an AFM, POH, or AFMS, do the following: (A) incorporate the language in the Appendix of this AD into your aircraft records; and (B) fabricate a placard (using at least 1/8-inch letters) with the following words and install the placard on the instrument panel within the pilot's clear view: "AD 2008-06-28 CONTAINS LIMITATIONS REGARDING AVIDYNE PRIMARY FLIGHT DISPLAYS (PFD) AND REQUIRED INCORPORATION OF THESE LIMITATIONS INTO THE AIRCRAFT RECORDS. YOU MUST FOLLOW THESE LIMITATIONS."	Within 15 days after April 10, 2008 (the effective date of this AD).	The owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7) may insert the information into the AFM, POH, AFMS, or maintenance records as required in paragraph (e)(3)(i) or (e)(3)(ii)(A) of this AD and/or fabricate the placard required in paragraph (e)(3)(ii)(B) of this AD. Make an entry into the aircraft records showing compliance with these portions of the AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9)
(4) Do not install any PFD (P/Ns 700-00006-000, 700-00006-001, 700-00006-002, 700-00006-003, or 700-00006-100) with any affected serial number listed in TABLE 2—Serial Numbers of Affected PFDs.	As of the effective date of this AD.	Not Applicable.

Note 1: If you have an AFM, POH, or AFMS, you may fabricate and install a placard as described in paragraph (e)(3)(ii) of this AD in addition to, but not instead of, the Limitations section requirement of paragraph (e)(3)(i) of this AD.

Note 2: Avidyne Service Alert No. SA-08-001, dated February 12, 2008, pertains to the subject matter of this AD. The service information cautions that all pilots should be vigilant in conducting proper preflight and in-flight checks of instrument accuracy.

**Table 2.—Serial Numbers of Affected PFDs
[AD 2008-06-28]**

D1023, D1031, D1037, D1069, D1075, D1080, D1084, D1090, D1101, D1102, D1106, D1112, D1115, D1136, D1138, D1141, D1144, D1158, D1170, D1172, D1174, D1178, D1188, D1197, D1199, D1212, D1234, D1240, D1249, D1253, D1254, D1256, D1259, D1260, D1262, D1270, D1272, D1277, D1283, D1288, D1313, D1319, D1327, D1351, D1364, D1380, D1387, D1391, D1396, D1405, D1412, D1428, D1433, D1434, D1435, F0006, F0011, F0021, F0030, F0031, F0032, F0035, 20002067, 20003147, 20003296, 20003316, 20004297, 20005316, 20005487,

20008167, 20008227, 20008255, 20009297, 20009476, 20010177, 20010255, 20011396, 20011456, 20012337, 20012506, 20013406, 20014027, 20014227, 20015357, 20017286, 20018317, 20018425, 20018486, 20019067, 20019297, 20020297, 20021067, 20021197, 20022177, 20022207, 20022217, 20022286, 20022287, 20022296, 20023197, 20023377, 20024196, 20024217, 20024297, 20024397, 20024407, 20024425, 20025067, 20025177, 20025217, 20025317, 20026067, 20026197, 20026207, 20026265, 20026377, 20026407, 20026506, 20027177, 20027226, 20027317, 20027377, 20028177, 20028337, 20029177, 20029197, 20029246, 20029265, 20029506, 0030197, 20030237, 20031207, 20031217, 20031406, 20031407, 20031516, 20032067, 20032265, 20032337, 20032516, 20033337, 20034207, 20034327, 20035177, 20036197, 20036237, 20036397, 20037265, 20037285, 20038127, 20038197, 20038337, 20039177, 20040127, 20040177, 20040197, 20040265, 20040317, 20041177, 20042197, 20042265, 20042317, 20042337, 20043197, 20043215, 20043237, 20043247, 20044226, 20044237, 20044285, 20045215, 20045265, 20045437, 20046215, 20047127, 20047147, 20047197, 20048197, 20048215, 20048247, 20049147, 20049357, 20050147, 20050287, 20050346, 20050434, 20051215, 20052215, 20053247, 20053257, 20053357, 20054247, 20054257, 20054357, 20055087, 20056247, 20056257, 20057237, 20057346, 20058346, 20061087, 20061247, 20062087, 20062247, 20063087, 20064087, 20064147, 20064226, 20064337, 20066147, 20067087, 20068147, 20068337, 20069087, 20071237, 20072087, 20073087, 20073346, 20073506, 20074207, 20075087, 20075147, 20075207, 20076217, 20076257, 20077087, 20077506, 20078087, 20078217, 20078257, 20078346, 20078496, 20084257, 20085396, 20087257, 20089257, 20089346, 20090346, 20092297, 20093247, 20094107, 20094416, 20097137, 20098037, 20099107, 20099346, 20099416, 20101416, 20102417, 20103396, 20104246, 20106224, 20111224, 20112224, 20114416, 20115346, 20116346, 20118416, 20123416, 20124456, 20126416, 20129346, 20135337, 20139336, 20140336, 20142037, 20142296, 20146037, 20147336, 20153037, 20158097, 20161097, 20164097, 20165097, 20166097, 20170097, 20170175, 20172175, 20177175, 20202257, 20204175, 20209246, 20214175, 20216265, 20217175, 20224175, 20224265, 20229265, 20232175, 20233175, 20236175, 20236265, 20241175, 20243265, 20265355, 20272355, 20273355, 20278355, 20281355, 20302384, 20308384, 20314384, 20317384, 20320305, 20321376, 20330376, 20330384, 20343384, 20347305, 20348305, 20350305, 20356305, 20359305, 20378475, 20380225, 20381225, 20382475, 20388225, 20402174, 20403174, 20438345, 20440345, 20447425, 20452315, 20458315, 20462315, 20467315, 20540094, 20550094, 20576445, 20580445, 20581445, 20582525, 20584525, 20591525, 20595065, 20599065, 20605065, 20615116, 20618065, 20638116, 20656284, 20732074, 20735176, 20739176, 20755493, 20814015, 20815015, 20974365, 20978365, 20978434, 20986365, 20990434, 20998365, 21002365, 21056395, 21060395, 21063184, 21063395, 21067184, 21070184, 21075395, 21191045, 21200045, 21219045, 21294414, 21311414, 21315414, 21324414, 21325414, 21330414, 21334414, 21340414, 21491056, 21493056, 21596354, 21603435, 21604435, 21606435, 21608435, 21610435, 21614435, 21646086, 21668086, 21812514, 21823514, 21826514, 21836304, 21839304, 21852304, 22310186, 22378026, 22380026, 22398294, 22401294, 22405085, 22412385, 22418026, 22418385, 22419026, 22470524, 22471524, 22472524, 22479524, 22483524, 22486524, 22523204, 22525264, 22531204, 22559135, 22568135, 22572135, 22578135, 22579135, 22586135, 22602135, 22603135, 22608135, 22642493, 22647493, 22682076, 22908334, 22921334, 22961354, 23166495, 23169495, 23173495, 23175495, 23182495, 23371455, 23378455, 23443264, 23445264, 23448264, 23581244, 23602244, 23737136, 23738136, 24021335, 24029335, 24231144, 24238144, 24248144, 24381324, 24478515, 24735144, 24746144, 24750144, 24772085, 24773085, 24865155, 24867155, 24870155, 24990084, 24991084, 24993084, 24996084, 25023034, 25027034, 25522465, 25525465, 25530465, 25532465, 25538465, 25600465, 25618106, 26287114, 26528095, 26547095, 26553095, 26569464, 26571095, 26572095, 26584095, 26588464, 26592464, 27865034, 28478495, 28519495, 29019044, 29023044, 29029044, 29031044, 29032044, 29512216, 29514216, and 29522216

Alternative Methods of Compliance (AMOCs)

(f) The Manager, Boston Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Solomon Hecht, Aerospace Engineer, Boston ACO, 12 New England Executive Park, Burlington, MA 01803; telephone: (781) 238-7159; fax: (781) 238-7170. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

Additional Information

(g) For the service alert referenced in this AD, contact Avidyne Corporation, 55 Old Bedford Road, Lincoln, MA 01773; telephone: (781) 402-7400; fax: (781) 402-7599.

Appendix to AD 2008-06-28 Limitations Regarding Avidyne Primary Flight Displays (PFDs)

Before conducting flight operations, pilots must review and be familiar with the Crosscheck Monitor section of the Avidyne Primary Flight Display Pilot's Guide and all limitations contained in the aircraft operating handbook.

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 altimeters at each change of altimeter setting and prior to entering instrument meteorological conditions (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.

For flight operations under instrument flight rules (IFR) or in conditions in which visual reference to the horizon cannot be reliably maintained (that is IMC, night operations, flight operations over water, in haze or smoke) and the pilot has reasons to suspect that any source (PFD or back-up instruments) of attitude, airspeed, or altitude is not functioning properly, flight under IFR or in these conditions must not be initiated (when condition is determined on the ground) and further flight under IFR or in these conditions is prohibited until equipment is serviced and functioning properly.

Operation of aircraft not equipped with operating backup (or standby) attitude, altimeter, and airspeed indicators that are located where they are readily visible to the pilot is prohibited.

Pilots must frequently scan and crosscheck flight instruments to make sure the information depicted on the PFD correlates and agrees with the information depicted on the backup instruments.

Issued in Kansas City, Missouri, on March 13, 2008.

David R. Showers,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. E8-5701 Filed 3-25-08; 8:45 am]