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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-2191; Directorate Identifier 2015-CE-019-AD; Amendment 39-18183; AD 2015-10-51]

RIN 2120-AA64

Airworthiness Directives; Avidyne Corporation Integrated Flight Displays

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for Avidyne Corporation (Avidyne) Integrated Flight Displays (IFDs) part number (P/N) 700-00083-() loaded with software release 9.3.1.0 or earlier release (referred to as Model R9–10 inch), P/N 700-00171-() loaded with software release 9.2.5.0 or earlier release (referred to as Model R9–12 inch), and P/N 700-00182-() loaded with software release 10.0.3.0 or earlier release (referred to as Model IFD540). This emergency AD was sent previously to all known U.S. owners and operators of all aircraft that incorporate the above referenced Avidyne IFDs. This AD requires incorporating an operational limitation into the Limitations section of the airplane flight manual (AFM) or airplane flight manual supplement (AFMS). This AD was prompted by reports of Avidyne IFDs displaying incorrect course deviation indication information during GPS approaches (incorrect display of lateral deviations). We are issuing this AD to correct the unsafe condition on these products.

DATES: This AD is effective July 1, 2015 to all persons except those persons to whom it was made immediately effective by Emergency AD 2015-10-51, issued on May 18, 2015, which contained the requirements of this amendment.

We must receive comments on this AD by July 31, 2015.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- 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: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-2191; or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Anthony Pigott, Aerospace Engineer, Boston Aircraft Certification Office, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7158; fax: (781) 238-7199; email: anthony.pigott@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

On May 18, 2015, we issued Emergency AD 2015-10-51, which requires incorporating an operational limitation into the Limitations section of the airplane flight manual (AFM) or airplane flight manual supplement (AFMS). This emergency AD was sent previously to all known U.S. owners and operators of all aircraft that incorporate Avidyne Corporation (Avidyne) Integrated Flight Displays (IFDs) part number (P/N) 700-00083-() loaded with software release 9.3.1.0 or earlier release (referred to as Model R9-10 inch), P/N 700-00171-() loaded with software release 9.2.5.0 or earlier release (referred to as Model R9-12 inch), and P/N 700-00182-() loaded with software release 10.0.3.0 or earlier release (referred to as Model IFD540).

This action was prompted by reports of Avidyne IFDs displaying incorrect course deviation indication information during GPS approaches (incorrect display of lateral deviations). This condition occurs when the airplane is flying in certain approaches, the leg to the Final Approach Fix (FAF) is active, and the leg to the FAF is not aligned with the final approach course (i.e., an angled entry to the FAF). The software of the Avidyne IFDs as referenced above will produce lateral deviations to the final approach course as soon as the leg to the FAF becomes active. Therefore, when the leg does not align with the final approach course, the course deviation indicator (CDI) will show a deviation when, in fact, the aircraft is on the proper course for the active leg. This could result in the pilot making flight decisions that put the aircraft in unsafe flight conditions, flying into airspace that was, by the GPS approach design, to be avoided (terrain, obstacle, traffic, restricted).

FAA's Determination

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

AD Requirements

This AD requires incorporating an operational limitation into the Limitations section of the airplane flight manual (AFM) or airplane flight manual supplement (AFMS). The operational limitation will contain the following:

- Flying a full procedure (non Vector-to-Final) GPS approach, with a course change at the Final Approach Fix (FAF), is prohibited."
- "Flying a GPS approach, with a Direct-To or with an Omni-Bearing Selector (OBS) leg to the FAF, is prohibited."

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 of the Avidyne IFDs displaying incorrect course deviation indication information during GPS approaches (incorrect display of lateral deviations), which could result in the pilot making flight decisions that put the aircraft in unsafe flight conditions, flying into airspace that was, by the GPS approach design, to be avoided (terrain, obstacle, traffic, restricted). Therefore, we find that notice and opportunity for prior public comment are impracticable and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety and was not preceded by notice and an opportunity for public comment. However, we invite you to send any written data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include Docket Number FAA-2015-2191 and Directorate Identifier 2015-CE-015-AD at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because 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 about this AD.

Costs of Compliance

We estimate that this AD affects 324 products installed on airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Incorporate operational limitations into the Limitations section of the airplane flight manual (AFM) or airplane flight manual supplement	.5 work-hour × \$85 per hour = \$42.50	Not applicable	\$42.50	\$13,770

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

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),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) 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.

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List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, 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):



2015-10-51 Avidyne Corporation: Amendment 39-18183; Docket No. FAA-2015-2191; Directorate Identifier 2015-CE-015-AD.

(a) Effective Date

This AD is effective July 1, 2015 to all persons except those persons to whom it was made immediately effective by Emergency AD 2015-10-51, issued on May 18, 2015, which contained the requirements of this amendment.

(b) Affected ADs

None.

(c) Applicability

Avidyne Corporation (Avidyne) Integrated Flight Displays (IFDs) part number (P/N) 700-00083-() loaded with software release 9.3.1.0 or earlier release (referred to as Model R9–10 inch), P/N 700-00171-() loaded with software release 9.2.5.0 or earlier release (referred to as Model R9–12 inch), and P/N 700-00182-() loaded with software release 10.0.3.0 or earlier release (referred to as Model IFD540). These IFDs are installed on, but not limited to, airplanes that are certificated in any category and are identified in the following:

(1) For Model R9–10 inch: AML STC SA00282BO. This document can be found at: [http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/24d8d8ba6cb57e4f86257d1d0055dec4/\\$FILE/SA00282BO_AML.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/24d8d8ba6cb57e4f86257d1d0055dec4/$FILE/SA00282BO_AML.pdf).

(2) For Model R9–12 inch: Korea Aerospace Industries KC-100 (currently being type validated by the FAA).

(3) For Model IFD540: STC SAA00343BO. This document can be found at: [http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/5084676a444f3b2b86257d20005d08ab/\\$FILE/SA00343BO_AML.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/5084676a444f3b2b86257d20005d08ab/$FILE/SA00343BO_AML.pdf).

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code: 34, Navigation.

(e) Unsafe Condition

This AD was prompted by reports of Avidyne IFDs displaying incorrect course deviation indication information during GPS approaches (incorrect display of lateral deviations). This condition occurs when the airplane is flying in certain approaches, the leg to the Final Approach Fix (FAF) is active, and the leg to the FAF is not aligned with the final approach course (i.e., an angled entry to the FAF). The software of the Avidyne IFDs as referenced above in the Applicability section, paragraph (c) of this AD, will produce lateral deviations to the final approach course as soon as the leg to the FAF becomes active. Therefore, when the leg does not align with the final approach course, the course deviation indicator (CDI) will show a deviation when, in fact, the aircraft is on the proper

course for the active leg. We are issuing this AD to prevent such incorrect display of lateral deviations, which could result in the pilot making flight decisions that put the aircraft in unsafe flight conditions, flying into airspace that was, by the GPS approach design, to be avoided (terrain, obstacle, traffic, restricted).

(f) Compliance

Unless already done, comply with paragraphs (g)(1) through (g)(4) of this AD, including all subparagraphs.

(g) Airplane Flight Manual (AFM) or Airplane Flight Manual Supplement (AFMS) Limitation

(1) Before further flight after July 1, 2015 to all persons except those persons to whom it was made immediately effective by Emergency AD 2015-10-51, issued on May 18, 2015, which contained the requirements of this amendment, incorporate the operational limitations listed in paragraphs (g)(1)(i) and (g)(1)(ii) of this AD into the Limitations section of the AFM or AFMS, as applicable. This can be done by inserting a copy of this AD into the Limitations section of the AFM or AFMS.

(i) "Flying a full procedure (non Vector-to-Final) GPS approach, with a course change at the Final Approach Fix (FAF), is prohibited."

(ii) "Flying a GPS approach, with a Direct-To or with an Omni-Bearing Selector (OBS) leg to the FAF, is prohibited."

(2) This action may be done by an owner/operator (pilot) holding at least a private pilot certificate and must be entered into the airplane records showing compliance with this AD in accordance with 14 CFR 43.9(a)(1)(4) and 14 CFR 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.173 or 135.439.

(3) Paragraphs (g)(3)(i) and (g)(3)(ii) of this AD provides examples of prohibited and allowed GPS approach per paragraph (g)(1)(i) of this AD:

(i) An example of a prohibited GPS approach per paragraph (g)(1)(i) of this AD can be found at: <http://aeronav.faa.gov/d-tpp/1505/05597r25.pdf>.

(ii) An example of an allowed GPS approach per paragraph (g)(1)(i) of this AD can be found at: <http://aeronav.faa.gov/d-tpp/1505/00626rz29.pdf>.

(4) This AD is no longer applicable if software is installed that is different than that referenced in paragraph (c) Applicability of this AD.

(h) Special Flight Permit

Under 14 CFR 39.23, special flight permits are prohibited for this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) 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. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (j) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

For further information about this AD, contact Anthony Pigott, Aerospace Engineer, Boston ACO, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: (781) 238-7158; fax: (781) 238-7199; email: anthony.pigott@faa.gov.

Issued in Kansas City, Missouri, on June 8, 2015.
Earl Lawrence,
Manager, Small Airplane Directorate,
Aircraft Certification Service.