[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-1081; Product Identifier 2018-NE-39-AD]

RIN 2120-AA64

Airworthiness Directives; Trig Avionics Limited Transponders

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain Trig Avionics Limited TT31, Avidyne Corporation AXP340, and BendixKing/Honeywell International KT74 Mode S transponders. This proposed AD was prompted by the discovery that the retaining cam that engages in the mounting tray may not withstand g-forces experienced during an emergency landing. This proposed AD would require a one-time inspection of the transponder installation to determine if this is a conventional aft-facing installation, and depending on the findings, removal of the affected transponder for modification. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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.

For service information identified in this NPRM, contact Trig Avionics Limited, Heriot Watt Research Park, Riccarton, Edinburgh EH14 4AP, United Kingdom; phone: +44 131 449 8810; fax: +44 131 449 8811; email: support@trig-avionics.com; Internet: https://trig-avionics.com. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

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-2018-1081; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Min Zhang, Aerospace Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7161; fax: 781-238-7199; email: min.zhang@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section.

Include "Docket No. FAA-2018-1081; Product Identifier 2018-NE-39-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM 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 NPRM.

Discussion

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2018-0247, dated November 13, 2018 (referred to after this as "the MCAI"), to address the unsafe condition on these products. The MCAI states:

> While testing a new model of transponder, it was detected that the retaining cam was not meeting the approved design criteria for crash safety shock in the aft direction (20g sustained). This was due to an uncontrolled deviation in the manufacturing process of the retaining cam by the part manufacturer. The retaining cam is a small nylon part that engages in the mounting tray when the transponder is installed into the aircraft. Additional tests using affected retaining cam showed that the transponders meet RTCA/DO-106G Section 7.0 operational shocks and crash safety impulse tests, as well as RTCA/DO-160G Section 7.0 crash safety sustained tests for all directions, except the aft direction. As a consequence, units which have been installed with a control panel

> orientation that is not opposite to the direction of flight may not withstand g-forces experienced during an emergency landing. This condition, if not detected and corrected, could lead to detachment of the transponder, possibly resulting in damage to fuel systems or emergency evacuation equipment, and/or injury to aircraft occupants.
>
> To address this potential unsafe condition, Trig Avionics published the applicable SB to provide instructions to inspect the installation and the transponder, and how to arrange for modification.
>
> For the reason described above, this [EASA] AD requires a one-time inspection of the transponder installation to determine whether this is a conventional installation, as defined in this [EASA] AD, and, depending on findings, removal from service of the affected transponder for modification.

You may obtain further information by examining the MCAI in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-1081.

Related Service Information under 1 CFR Part 51

We reviewed Trig Avionics Ltd. Service Bulletin (SB) SUP/TT31/027, Issue 1.0, dated October 1, 2018; Trig Avionics Ltd. SB SUP/AXP340/002, Issue 1.0, dated October 1, 2018; and Trig Avionics Ltd. SB SUP/KT74/005, Issue 1.0, dated October 1, 2018. Trig Avionics Ltd. SB SUP/TT31/027, Issue 1.0, dated October 1, 2018, describes procedures for determining the direction of the Trig Avionics Limited TT31 Mode S transponder installation and removal of these affected transponders for replacement or repair. Trig Avionics Ltd. SB SUP/AXP340/002, Issue 1.0, dated October 1, 2018, describes procedures for determining the direction of the Avidyne Corporation AXP340

Mode S transponder installation and removal of these affected transponders for replacement or repair. Trig Avionics Ltd. SB SUP/KT74/005, Issue 1.0, dated October 1, 2018, describes procedures for determining the direction of the BendixKing/Honeywell International KT74 Mode S transponder installation and removal of these affected transponders for replacement or repair. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

This product has been approved by EASA, and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all the relevant information provided by EASA and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require a one-time inspection of the transponder installation to determine if this is a conventional aft-facing installation, and depending on the findings, removal of the affected transponder for modification.

Costs of Compliance

We estimate that this proposed AD affects 2,390 transponders installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspect the transponder installation	0.5 work-hours X $85 per hour = $42.50	$0	$42.50	$101,575

We estimate the following costs to do any necessary repairs that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need these repairs:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replace the transponder	1 work-hour X $85 per hour = $85	$2,872	$2,957

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under the 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.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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):

Trig Avionics Limited: Docket No. FAA-2018-1081; Product Identifier 2018-NE-39-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to:

(1) Trig Avionics Limited TT31 Mode S transponders, part number (P/N) 00220-00-01 and P/N 00225-00-01, with a serial number (S/N) from 05767 to S/N 09715 inclusive, and Modification (Mod) Level 6 or below, installed.

(2) Avidyne Corporation AXP340 Mode S transponders, P/N 200-00247-0000, also marked with Trig Avionics P/N 01155-00-01, with a S/N from 00801 to S/N 01377 inclusive, and Mod Level 0, installed.

(3) BendixKing/Honeywell International KT74 Mode S transponders, P/N 89000007-002001, also marked with Trig Avionics P/N 01157-00-01, with a S/N from 01143 to S/N 02955 inclusive, and Mod Level 0, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 3452, ATC transponder system.

(e) Unsafe Condition

This AD was prompted by the discovery that the retaining cam that engages in the mounting tray may not withstand g-forces experienced during an emergency landing. We are issuing this AD to prevent the transponder from detaching from the avionics rack. The unsafe condition, if not addressed, could result in damage to the fuel system or emergency evacuation equipment, or injury to aircraft occupants.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Within 90 days after the effective date of this AD, inspect the transponder installation to determine if the transponder is installed in a conventional aft-facing avionics rack.

(2) If the transponder is not installed in a conventional aft-facing avionics rack, remove the transponder before further flight.

(3) Use the Accomplishment Instructions, paragraphs 4-8, to determine if the part is eligible for repair and re-installation, for the appropriate transponder, per Trig Avionics Limited Service Bulletin (SB) SUP/TT31/027, Issue 1.0, dated October 1, 2018; Trig Avionics Limited SB SUP/AXP340/002, Issue 1.0, dated October 1, 2018; or Trig Avionics Limited SB SUP/KT74/005, Issue 1.0, dated October 1, 2018.

(h) Installation Prohibition

After the effective date of this AD, do not install an affected transponder on any aircraft, unless the transponder is installed in a conventional aft-facing avionics rack as defined in this AD.

(i) No Reporting Requirement

No reporting requirement contained within the SB referenced in paragraph (g)(2) of this AD is required by this AD.

(j) Definition

For the purposes of this AD, a conventional aft-facing avionics rack is defined as an installation with the control panel oriented in opposition to the direction of flight (aft facing).

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Boston ACO Branch, 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 Branch, send it to the attention of the person identified in paragraph (l)(1) 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.

(l) Related Information

(1) For more information about this AD, contact Min Zhang, Aerospace Engineer, Boston ACO Branch, FAA, 1200 District Avenue, Burlington, MA, 01803; phone: 781-238-7161; fax: 781-238-7199; email: min.zhang@faa.gov.

(2) Refer to European Union Aviation Safety Agency AD 2018-0247, dated November 13, 2018, for more information. You may examine the EASA AD in the AD docket on the Internet at http://www.regulations.gov by searching for and locating it in Docket No. FAA-2018-1081.

(3) For service information identified in this AD, contact Trig Avionics Limited, Heriot Watt Research Park, Riccarton, Edinburgh EH14 4AP, United Kingdom; phone: +44 131 449 8810; fax: +44 131 449 8811; email: support@trig-avionics.com; Internet: https://trig-avionics.com. You may view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Issued in Burlington, Massachusetts, on March 18, 2019.

Karen M. Grant,
Acting Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.
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