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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-1081; Product Identifier 2018-NE-39-AD; Amendment 39-19676; AD 2019-13-03]

RIN 2120-AA64

Airworthiness Directives; Trig Avionics Limited Transponders

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain Trig Avionics Limited TT31, Avidyne Corporation AXP340, and BendixKing/Honeywell International KT74 Mode S transponders. 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. This AD requires one-time inspection of the transponder installation and, depending on the findings, removal of the affected transponder for modification. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 27, 2019.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of August 27, 2019.

ADDRESSES: For service information identified in this final rule, 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. It is also available on the internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2018-1081.

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 final rule, the

mandatory continuing airworthiness information (MCAI), the regulatory evaluation, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

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:

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Trig Avionics Limited TT31, Avidyne Corporation AXP340, and BendixKing/Honeywell International KT74 Mode S transponders. The NPRM published in the Federal Register on March 22, 2019 (84 FR 10735). The NPRM 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. The NPRM proposed to require one-time inspection of the transponder installation to determine if it is a conventional aft-facing installation, and depending on the findings, removal of the affected transponder for modification. The FAA is issuing this AD to address the unsafe condition on these products.

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.

Comments

The FAA gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Clarify Compliance

An individual commenter commented that paragraph (g)(1) of the NPRM does not state clearly that no further action is required if the transponder is installed in a conventional rear facing installation.

The FAA agrees. The FAA added a new paragraph (g)(2) to this AD to indicate that no further action is required if the transponder is installed in a conventional aft-facing avionics rack. Because of this change, paragraph (g)(2) in the NPRM becomes paragraph (g)(3) and paragraph (g)(3) in the NPRM becomes paragraph (g)(4) in this AD.

Support for the AD

An individual commenter supported the AD because it is cost-effective and the manufacturer may cover some of the costs under warranty.

Conclusion

The FAA reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule with the change described previously and minor editorial changes. The FAA has determined that these minor changes:

[Agr]re consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and

Do not add any additional burden upon the public than was already proposed in the NPRM.

The FAA has also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information Under 1 CFR Part 51

The FAA reviewed 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; and Trig Avionics Limited SB SUP/KT74/005, Issue 1.0, dated October 1, 2018.

Trig Avionics Limited 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 Limited 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 Limited 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.

Costs of Compliance

The FAA estimates that this AD affects 2,390 transponders installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

Estimated Costs

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

The FAA estimates the following costs to do any necessary repairs that are required based on the results of the inspection. The FAA has 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 × $85 per hour = $85	$2,872	$2,957

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has 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.

The FAA is 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

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 this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,
(2) Will not affect intrastate aviation in Alaska, 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.

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):

2019-13-03 Trig Avionics Limited: Amendment 39-19676; Docket No. FAA-2018-1081; Product Identifier 2018-NE-39-AD.

(a) Effective Date

This AD is effective August 27, 2019.

(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. The FAA is 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 installed in a conventional aft-facing avionics rack, no further action is required.

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

(4) 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 SBs referenced in paragraph (g)(4) of this AD is required by this AD.

(j) Definition

For the purpose 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 (EASA) 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.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Trig Avionics Limited Service Bulletin (SB) SUP/TT31/027, Issue 1.0, dated October 1, 2018.

(ii) Trig Avionics Limited SB SUP/AXP340/002, Issue 1.0, dated October 1, 2018.

(iii) Trig Avionics Limited SB SUP/KT74/005, Issue 1.0, dated October 1, 2018.

(3) For Trig Avionics Limited 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.

(4) You may view this service information at FAA, Engine & Propeller Standards Branch, 1200 District Avenue, Burlington, MA, 01803. For information on the availability of this material at the FAA, call 781-238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued in Burlington, Massachusetts, on July 16, 2019.

Robert J. Ganley,

Manager, Engine and Propeller Standards Branch,

Aircraft Certification Service.