Airworthiness Directive

AD No.: 2018-0247

Issued: 13 November 2018

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Approval Holder's Name:

TRIG AVIONICS Ltd.

Type/Model designation(s):

TT31, AXP340 and KT74 mode S transponders

Effective Date: 27 November 2018

ETSOA Number(s): EASA.21O.643 Rev B, EASA.21O.906 Rev A, EASA.21O.10046993 and EASA.21O.10046583

Foreign AD: Not applicable

Supersedure: None

ATA 34 – Navigation – Transponders – Inspection / Modification

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Manufacturer(s):

Trig Avionics Ltd.

Note: Affected transponders are also supplied (but not manufactured) by, and having markings of, Avidyne Corporation and BendixKing / Honeywell International. See Appendix 1 of this AD for details on how to identify those affected transponders.

Applicability:

Trig Avionics TT31 Mode S transponders, Part Number (P/N) 00220-00-01, serial number (s/n) 05767 to 09715 inclusive, except those having modification (mod) level 7 or higher embodied. P/N 00220-00-01 may have been procured as part of Trig Avionics P/N 00225-00-01, which designates a kit composed of the transponder and its mounting tray;

Avidyne Corporation AXP340 Mode S transponders, P/N 200-00247-0000, also marked with Trig Avionics P/N 01155-00-01, s/n 00801 to 01377 inclusive, except those with mod level 1 or higher embodied; and

BendixKing / Honeywell International KT74 Mode S transponders P/N 89000007-000001, also marked with Trig Avionics P/N 01157-00-01, s/n 01143 to 02955 inclusive, except those with mod level 1 or higher embodied. P/N 89000007-000001 may have been procured as part of BendixKing / Honeywell International P/N 89000007-002001, which designates a kit composed of the transponder and its mounting tray.

These transponders are known to be installed on, but not limited to, Part 23 (JAR, FAR, CS) aeroplanes and Part 27 (JAR, FAR, CS) helicopters.

Definitions:

For the purpose of this AD, the following definitions apply:

Affected part: All transponders identified in the Applicability section of this AD.

Conventional installation: The transponder is installed with the control panel oriented in opposition to the direction of flight.

The applicable SB: Trig Avionics Ltd. Service Bulletin (SB) SUP/TT31/027, SB SUP/AXP340/002 and SB SUP/KT74/005, as applicable.

Reason:

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 AD requires a one-time inspection of the transponder installation to determine whether this is a conventional installation, as defined in this AD, and, depending on findings, removal from service of the affected transponder for modification.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Inspection:

(1) Within 3 months after the effective date of this AD, inspect the installation of the affected part on the aircraft, in accordance with the instructions of step 1 of the applicable SB.

Corrective Action(s):

(2) If, during the inspection as required by paragraph (1) of this AD, it is determined that the installation is not a conventional installation, as defined in this AD, before next flight, remove

the transponder from service in accordance with the instructions of steps 3, 4 and 5 of the applicable SB for in-shop modification.

Modification:

(3) Returning an affected part, removed from an aircraft as required by paragraph (2) of this AD, to Trig Avionics for modification, and re-installation of that modified transponder on that aircraft in accordance with the instructions of steps 6, 7 and 8 of the applicable SB, is an acceptable method to comply with the requirements of this AD for that aircraft.

Parts Installation:

(4) From the effective date of this AD, do not install an affected part on any aircraft, unless the installation is conventional, as defined in this AD.

Ref. Publications:

Trig Avionics Ltd. SB SUP/TT31/027 Issue 1.0 dated 01 October 2018.

Trig Avionics Ltd. SB SUP/AXP340/002 Issue 1.0 dated 01 October 2018.

Trig Avionics Ltd. SB SUP/KT74/005 Issue 1.0 dated 01 October 2018.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.

2. This AD was posted on 10 October 2018 as PAD 18-137 for consultation until 07 November 2018. No comments were received during the consultation period.

3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the EU aviation safety reporting system.

5. For any question concerning the technical content of the requirements in this AD, please contact: Trig Avionics, Ltd., Heriot Watt Research Park, Riccarton, Edinburgh EH14 4AP, United Kingdom, Telephone: +44 131 449 8810, E-mail: support@trig-avionics.com.

Appendix 1 – Examples of Affected Part Identification Labels

Avidyne Corporation

BendixKing / Honeywell International