



SUBJ: AUTO FLIGHT - Autopilot

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin advises you of an airworthiness concern on certain **Honeywell** autopilots where inappropriate pitch commands or unintentional disengagement of some modes could occur. This faulty behavior is the result of translation errors between the Garmin G500/G600 Integrated Flight Deck Systems and the Honeywell KFC 275 or KFC 325 autopilot system.

Please note that this is the same concern highlighted by Garmin Service Advisory No. 1555. The configuration that may exhibit the faulty behavior is known to be installed on, but not limited to, **Socata TBM 700/850 and Pilatus PC-12** airplanes that have incorporated Garmin STC SA02153LA-D.

At this time, the airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

Background

This SAIB is the result of an intermittent signal processing error in the Garmin GAD 43e being received from the Honeywell KFC 275 or KFC 325 autopilot system. This only occurs in configurations of the G500/G600 Integrated Flight Deck System interfaced with the Honeywell KFC 275 or KFC 325 autopilot, utilizing a Garmin GAD 43e. Other configurations utilizing the GAD 43e do not appear to be susceptible. Also, G500/G600 configurations not utilizing a Garmin GAD 43e do not appear to be susceptible. This issue affects the operation of the altitude capture (ALTC) and/or (VS) modes of the autopilot, potentially causing inappropriate pitch commands and/or unintentional disengagement of these modes. Other autopilot modes (including altitude hold or glideslope/glidepath) are not affected.

Garmin has determined the following behaviors may occur when altitude capture or vertical speed modes are in use:

- Premature engagement of altitude capture mode (ALTC) resulting in inappropriate pitch up or pitch down commands.
- Pitch commands in vertical speed (VS) mode that are not appropriate for the selected vertical speed.
- Unintentional disengagement of altitude capture (ALTC) or vertical speed (VS) modes.

NOTE: Altitude capture modes are annunciated on the PFD as white "ALT" or green "ALTC" text and vertical speed mode as green "VS" text.

Garmin has provided a solution to this concern with a software upgrade. This solution can be implemented by incorporating Garmin Mandatory Service Bulletins No. 1571 and No. 1570.

Recommendations

The FAA recommends incorporating the software fix per Garmin STC Service Bulletin 1570 and Garmin TSO Service Bulletin 1571. Prior to incorporating the software fix, the FAA recommends that the following precautions are taken as summarized from Garmin Service Advisory No. 1555.

- Pilot Action
 - ✓ Monitor the autopilot/flight director for proper operation at all times.
 - ✓ If inappropriate autopilot/flight director pitching is experienced, immediately disengage the autopilot/flight director and hand-fly the airplane.
 - ✓ Until the software update is completed to address this issue, we recommend minimizing the use of VS and/or altitude capture (ALTC) modes as follows:
 - Use pitch attitude hold or Indicated Airspeed mode (IAS) as an alternative to VS mode for climbs and descents.
 - Avoid climbs or descents with altitude capture mode armed. Hand-fly the airplane to level off at the desired altitude, then engage altitude hold (ALT) mode at the desired altitude.
 - Do not use VS/ALTC (altitude capture) on coupled, non-precision approaches. (ILS and LPV coupled approach operation is not affected by this issue).
- Resolution
 - ✓ Contact your local Garmin dealer for the implementation of GAD 43e Expansion Board Software Version 2.31 (Garmin STC Service Bulletin 1570 and Garmin TSO Service Bulletin 1571).

For Further Information Contact

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