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SPECIAL AIRWORTHINESS INFORMATION BULLETIN

Aircraft Certification Service
Washington, DC

<http://www.faa.gov/aircraft/safety/alerts/>

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin alerts you, **General Aviation owners and operators of certain autopilot components** that could exhibit a potential failure of the Turn Coordinator causing the roll computer to drive the servo when not commanded to perform this function. The autopilot configuration that includes the Turn Coordinator, roll computer, and roll servo is installed in various small airplanes.

If the power reference signal is disconnected from the Turn Coordinator, the autopilot's roll computer produces drive signal to force the roll servo to an aircraft roll. When this failure occurs the autopilot might (if equipped) display to the pilot an "AP Ready" annunciation even though the roll axis is in a failed or misleading condition. This failure may result in loss of control of the aircraft.

Background

The Fort Worth Airplane Certification Office (ACO) and Small Airplane Directorate (SAD) have field data to support that when the Rate Gyro of the Turn Coordinator loses its power reference signal, the Roll Flight Guidance Computer would continuously drive the servo in a non-commanded direction. The field data also identifies that this failure may occur in various autopilots.

Recommendation

- **Proper pre-flight procedures per Pilot's Operating Handbook, Airplane Flight Manual Supplement, and/or placards**
 - This preflight test should check all modes of the Autopilot interconnected with the Turn Coordinator. This preflight testing reduces the exposure time of the power reference signal disconnecting.
- **Use primary flight instruments**
 - The primary flight instruments are required to cross check any flight condition in IFR. If the Pilot-In-Command (PIC) sees any deviation from the expected flight path, the A/P should be disconnected and the PIC should take control.
- **Maintenance Inspection**
 - During annual inspection please verify that the power reference signal for the Turn Coordinator is adequately grounded to airframe as applicable.

For Further Information Contact

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