



SERVICE ADVISORY

NO.: 0904 Revision A

TO: Owner/Operators of Garmin Integrated Flight Deck Systems with Synthetic Vision Technology

DATE: 21 January 2009

SUBJECT: Cold climate conditions may cause SVT Pathways to intercept the glidepath at a higher altitude than the published altitude.

AFFECTED PRODUCTS

All Garmin Integrated Flight Deck systems with GDU Software v9.00 through v9.13 and Synthetic Vision Technology (SVT) installed are affected.

ISSUE

A condition has been identified whereby the Pathways feature of Synthetic Vision Technology (SVT) may depict the leg immediately preceding glidepath interception at an altitude higher than is published for an approach.

NOTE

The term 'glidepath' in this document refers to either an ILS glideslope or a GPS vertical guidance indication.

DESCRIPTION

With either a GPS Vector-to-Final (VTF) with vertical guidance or an ILS approach procedure in the active flight plan, Pathways are drawn level until they intersect the glidepath. The system calculates and depicts this level segment and intersection based upon the higher of:

- 1) The pilot-selected (barometric) glidepath intercept altitude using the altitude pre-selector knob.
- 2) The geometric derived (not barometric) altitude at which the glidepath intersects the published FAF (Final Approach Fix) waypoint.

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When the outside air temperature is colder than the standard temperature at the aircraft's altitude, barometric altitude is higher than the geometric altitude. This natural discrepancy combined with the conditions stated above, causes the system to depict Pathways higher than the published (barometric) glidepath intercept altitude. For approach altitudes at or below 2000 ft AGL (Above Ground Level), the error is less than 300 ft at -30 degrees Celsius and decreases as temperatures warm to standard temperature.

Pathways that are past the glidepath intercept point (the descending section of Pathways) are displayed correctly. All other phases of flight are unaffected by this issue.

PILOT ACTION

Synthetic Vision and Pathway elements are prohibited from being used for navigation or navigation guidance in place of the primary flight instruments. The Pathway presentation is intended to aid the pilot's awareness of the programmed flight path location relative to the airplane's current position. The flight crew must control the aircraft by reference to the primary flight instruments including the barometric altimeter.

To avoid potential confusion, pilots should select Pathway elements off during instrument approaches especially during cold climate conditions.

RESOLUTION

Garmin plans to address this issue in a future software release. In the interim, pilots should be aware that in cold climate conditions, Pathways may depict the leg immediately preceding glidepath interception at an altitude that is higher than is published for an approach.