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SERVICE INFORMATION LETTER

KGS 200 Mercury² Wide Area Augmentation System (WAAS) Global Navigation System Sensor Unit (GNSSU), PN 066-01201-0102 and -0104; Software Defect in Implementation of Minimum Operational Performance Specifications (MOPS) Specified Ionospheric Modeling Used by Global Positioning System (GPS) When Computing Solutions for Precision Approaches Using Satellite Based Augmentation System (SBAS)

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SERVICE INFORMATION LETTER

Transmittal Information

Publication Number D201207000003

Summary

This is the INITIAL release.

Revision History

This service information letter (SIL) has had no revision(s) as shown in Table 1.

Table 1. Revision History

| Revision Number | Revision Date |
|-----------------|---------------|
| 0 | 9 Jul 2012 |

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SERVICE INFORMATION LETTER

1. General Information

A. Effectivity

- (1) This SIL is applicable to Pilatus PC-12 operators using navigation systems that have the ability to select a GPS navigation sensor(s) that utilize the Mercury² PX SBAS capable Global Navigation Sensor System (GNSS), PN 205-00948-2200 and -2202. Specifically, the affected end-item units are the KGS 200 GNSSU, PN 066-01201-0102 and -0104.
- (2) Pilatus will provide original equipment manufacturer (OEM) specific details to their customers and operators.

B. Reason

- (1) The purpose of this SIL is to notify OEMs and operators with aircraft systems that employ the use of the aforementioned KGS 200 sensors, to terminate the use of any operational approaches utilizing the line of minima for Localizer Performance (LP), Localizer Performance with Vertical Guidance (LPV), and Lateral Navigation (LNAV)/Vertical Navigation (VNAV) (when SBAS based VNAV is used).

C. References

- (1) FAA, Technical Standard Order Number TSO-C145c, Airborne Navigation Sensors Using the Global Positioning System Augmented by the Satellite Based Augmentation System.
- (2) FAA, Technical Standard Order Number TSO-C146c, Stand-Alone Airborne Navigation Equipment Using the Global Positioning System Augmented by the Satellite Based Augmentation System.
- (3) RTCA, Document Number DO-229D, Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment.

NOTE: The documents identified above are commercially available. Do not send an order to Honeywell for these documents as part of this SIL.

D. Summary

- (1) Honeywell has discovered a software error in the Mercury² PX GNSS that can affect the GPS ionospheric corrections that are utilized in determining the SBAS GPS position of the host aircraft.
- (2) The affected systems could provide incorrect position data that could place an aircraft outside of the SBAS protected limits during LP, LPV, and LNAV/VNAV (when SBAS based VNAV is used).

E. Action

- (1) Affected operators should immediately terminate the use of LP, LPV, and LNAV/VNAV (when SBAS based VNAV is used) line of minima for any and all navigational approaches.
- (2) Because receiver autonomous integrity monitoring (RAIM)/fault detection and exclusion (FDE) continues to protect the oceanic, en route, terminal, and GPS nonprecision approaches, no remediation is necessary for those phases of flight.

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- (3) Honeywell has identified the root cause of the problem and plans to release a software modification in the third quarter of the Year 2012 that will resolve this issue.