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SERVICE INFORMATION LETTER

KLN 89B and KLN 90B Global Positioning System (GPS) Navigation System (KLN 89B, KLN 90B), KLN 94 GPS Navigation System (KLN 94), KLN 900 GPS Navigation System (KLN 900), GNS-XL Flight Management System (FMS) (GNS-XL), GNS-XLS FMS (GNS-XLS), and CDU-XLS FMS (CDU-XLS); Degraded Availability of the Receiver Autonomous Integrity Monitoring (RAIM) Function Due to Changes in the GPS Constellation

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SERVICE INFORMATION LETTER

Transmittal Information

Publication Number D200908000024

Summary

This is the INITIAL release.

Revision History

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

Table 1. Revision History

Revision Number	Revision Date
Initial Release	11 Sep 2009

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SERVICE INFORMATION LETTER

1. General Information

A. Effectivity

- (1) This service information letter is applicable to customers having aircraft equipped with Bendix King and Global units: KLN 89B, KLN 90B, KLN 94, KLN 900, GNS-XL, GNS-XLS, and CDU-XLS.

B. Reason

- (1) This service information letter is to notify customers of the following:
- The KLN 89B, KLN 90B, KLN 94, KLN 900, GNS-XL, GNS-XLS and CDU-XLS units may experience degraded availability of the RAIM function due to changes in the GPS constellation. As a result, GPS RNAV approaches may not be available on some flights. These units remain compliant with their respective applicable regulatory documents.
 - This situation is caused by the PXPRESS GPS sensor that is common to each of these units. The GPS sensor is capable of tracking eight (8) satellites at any time and, when more are present, it must choose from among those visible. The PXPRESS was tested extensively using the live satellites available at the time of development, as well as the nominal GPS configuration defined in the regulatory documents. Testing against the current configuration of 32 healthy satellites was not possible at the time of development.
 - The GPS sensor initially chooses satellites to acquire in a manner that ensures that the position function is available as rapidly as possible. Under nominal conditions, this also leads to a good selection for providing the RAIM function necessary to support GPS RNAV approaches. However, when there are more than 10 satellites in view, it is possible the unit may choose a set of satellites that provides a position without the RAIM function.
 - After the initial acquisition of satellites, the GPS receiver chooses satellites that improve the availability of the RAIM function to replace those satellites that have set or are no longer in view. As time passes, this reselection leads to better RAIM availability. Over the course of a typical flight, the GPS will have reselected satellites that will maximize the GPS RNAV approach availability. Although seldom in occurrence, there may be instances when this reselection does not have time to occur and the RAIM function may not be available.