

<b>Crossbow Service Letter</b>			
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**Crossbow Service Letter Update**  
**NAV420-06-07**  
**NAV420CA-100 GPS Firmware Upgrade**

**Rev A**



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## **1 Equipment: NAV420CA-100**

## **2 Service Letter Number**

NAV420CA-06-07

## **3 Effectivity**

This Service Letter applies to the following articles:

NAV420CA-100, part numbers 8360-0127-03 and 8350-0127-03. All versions of the NAV420CA-200 are covered under Service Bulletin NAV420CA-06-02 and are not affected by this Service Bulletin.

## **4 Reason**

The GPS manufacturer has issued a software update to the GPS firmware inside the NAV420CA-100 that eliminates erroneous data during specific satellite configurations and flight profiles. The GPS settings have also been further tightened by Crossbow to improve the quality of data that is utilized for navigation by the NAV420CA-100 during normal operation. The NAV420CA-100 firmware has also been updated to provide additional features to the user, including BIT status changes that will provide additional levels of detail in regards to the operation of the NAV420CA-100. Finally, the NAV420CA-100 firmware has also been updated to increase heading slaving to the magnetometer, effectively improving heading response to magnetic field changes.

## **5 Description**

The Crossbow Letter NAV420-06-07 describes the conditions, how to recognize the conditions, and procedures for continued safe operation. This letter describes the progress made to date and the plan to repair NAV420CA-100 products described in paragraph #3.

## **6 Compliance**

Mandatory for IFR flight, Voluntary for VFR flight in manned aviation. All other applications should be evaluated by the end user.

## **7 Warranty Information**

This update will be covered under Crossbow warranty. The warranty is limited to repair or replacement of the NAV420CA-100 and does not cover removal or installation costs.

## **8 References**

None

## **9 Background**

The NAV420CA-100 is designed to provide correct attitude and heading information during all flight conditions. However, under specific GPS satellite conditions inaccurate GPS information can be generated within the NAV420CA-100 which may result in inaccurate data from the NAV420CA-100. Inaccurate bank and heading indications have been observed under such conditions. The condition can be detected by comparison to backup mechanical attitude indicators, magnetic compass or the outside horizon if flying VFR.

The following circumstances in which the behavior may occur are described below:

1. Poor or marginal GPS reception, and

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2. Climb or descent rates in excess of 800 fpm, and
3. Bank angles in excess of 10 degrees during the climb or descent noted above.

The frequency in which this behavior can occur has been greatly reduced by the recommendation of an external mount GPS antenna such as the Antcom 2G15A-XS-1 as noted in Crossbow Service Bulletin NAV420CA-02-06. Crossbow has executed an extensive testing program to assure our customers that the problems encountered and listed above have been corrected and will not reoccur.

## **10 Operator Action**

The modification will require return of the NAV420CA-100 to our Crossbow facility to update the GPS module and NAV420CA-100 system firmware. To arrange for the return of the NAV420CA-100, please contact our support staff via phone or email using the information below.

All returns will require a Crossbow RMA number. Prior to contacting Crossbow Support, please be prepared to provide the serial number of your NAV420CA-100.

We apologize for the inconveniences caused by the problems listed above and assure you that we value your business.

### **Contact Directory**

United States: Phone: 1-408-965-3300 (8 AM to 5 PM PST)  
Fax: 1-408-324-4840 (24 hours)  
Email: [techsupport@xbow.com](mailto:techsupport@xbow.com)  
Non-U.S.: refer to website [www.xbow.com](http://www.xbow.com)

### **Return Procedure**

Before returning any equipment, please contact Crossbow to obtain a Returned Material Authorization number (RMA). Be ready to provide the following information when requesting an RMA:

- Name and Address
- Telephone, Fax, Email
- Equipment Model Number
- Equipment Part Number
- Equipment Serial Number
- Installation Date