

## SERVICE INFORMATION NO. SI 40-036

## SERVICE INFORMATION NO. SI D4-055

**NOTE:** SI's are used **only**:  
1) To distribute information from DAI to our customers.  
2) To distribute applicable information / documents from our suppliers to our customers with additional information.  
Typically there is no revision service for SI's. Each new information or change of that will be send along with a new SI.

### I. TECHNICAL DETAILS

#### 1.1 Airplanes affected:

All DA 40      aircraft with GNS 430 or GNS 430A installed or GNS 530 or GNS 530A installed  
All DA 40D    aircraft with GNS 430 or GNS 430A installed or GNS 530 or GNS 530A installed  
All DA 40F    aircraft with GNS 430 or GNS 430A installed or GNS 530 or GNS 530A installed

#### 1.2 Subject:

Garmin GNS 430/430A and GNS 530/530A use of additional TERRAIN functionality  
ATA-Code:    34-00

#### 1.3 Reason:

Garmin has issued a new Service Advisory which clarifies the application and intended purpose of Garmin Service Bulletins 0530, Revision B; and 0532, Revision B.

#### 1.4 Information:

For detailed technical information see Garmin Service Advisory which is applicable without any further additions or restrictions.

### II. OTHERS

The Service Advisory 0608 Revision A from Garmin is attached to this SI.

In case of doubt contact Diamond Aircraft Industries.



## SERVICE ADVISORY

NO.: 0608 Revision A

**TO:** All Garmin Aviation Service Centers

**DATE:** 9 May 2006

**SUBJECT:** Applicability of Service Bulletins 0530 and 0532 appropriate to TERRAIN functionality of Garmin 400 and 500 series units

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### PURPOSE

This Service Advisory clarifies the application and intended purpose of Garmin Service Bulletins 0530, Revision B; and 0532, Revision B. Service Bulletins 0530 and 0532 have been revised and released as "B" and include FAA approved sections that describe procedures to modify, as well as to facilitate return-to-service and enable operational use of all Garmin 400 and 500 series units incorporated with TERRAIN functionality. Revision B supersedes all prior released revisions of 0530 and 0532.

### UNITS AFFECTED

Garmin 400 and 500 series units that are eligible for installation with TERRAIN capability configured for use include those that are:

- *Modified* by an authorized Garmin Aviation Service Center using previously released Service Bulletins.
- *Modified* by an authorized Garmin Aviation Service Center using Revision B of Service Bulletins 0530 and 0532.
- *Modified* by the Garmin Certified Repair Station.
- *Newly manufactured* by Garmin International.

### DESCRIPTION

- A. Certain sections of the referenced Service Bulletins have been approved by the Wichita Aircraft Certification Office (ACO) and were coordinated with the Airmen and Avionics Branch, AFS 350, as noted in Section B of each respective Service Bulletin. As such, the applicable sections of the Service Bulletins constitute FAA approved data that may be used by authorized Garmin Aviation Service Centers to modify the respective 400/500 series units. Section J (MODIFICATION INSTRUCTIONS) serves as the approved means to perform the modifications and Section L (COMPLETING AND SUBMITTING THE FAA FORM 337 AND RETURNING THE AIRPLANE TO SERVICE) for purposes of describing the changed configuration for TERRAIN functionality, identifying the inclusion of the

FAA approved Addendum to the Airplane Flight Manual Supplement (AFMS) or Supplemental Airplane Flight Manual (SAFM), and stipulating that the aircraft records properly reflect the changed configuration and refer to the Instructions for Continued Airworthiness.

- B. Section L of the Service Bulletin, Note 2 is repeated below. It applies to all persons that enable the TERRAIN functionality following a unit's installation or reinstallation that seek FAA approval in accordance with the Service Bulletin. That same person is responsible for completing and filing the applicable FAA Form 337 with its local Flight Standards District Office.

*Note 2: If the GPS 400, GNC 420/420A, or GNS 430/430A unit was not configured to enable the Terrain capability upon initial installation, and Terrain is intended to be used, you must comply with this service bulletin, in its entirety, in order to facilitate approval for use.*

- C. The specimen FAA Form 337 Section 8, Description of Work Accomplished, item "a" is repeated below from the 400 Series Service Bulletin, 0532. The 500 Series Service Bulletin, 0530, specimen FAA Form 337 uses the same language and the following discussion applies there as well.

*a) Performed alteration to [GPS 400, GNC 420/420A, or GNS 430/430A unit, as applicable] applying the instructions contained in FAA approved sections of Garmin Service Bulletin 0532, Revision B.*

While there is no change to the physical configuration of the airplane into which the respective GPS 400, GNC 420/420A, or GNS 430/430A unit will be reinstalled following its modification, the FAA Form 337 is required to identify the inclusion of the FAA approved Addendum and to characterize the required Instructions for Continued Airworthiness, as well as to inform that the person performing the work properly documented the change into the aircraft records. The FAA Form 337 is the document that identifies the unit's configuration and establishes that the unit was modified for TERRAIN functionality using FAA approved data.

The FAA Form 337 included as part of the Service Bulletin is a specimen or sample. As such, it is to be tailored to correctly reflect the circumstances of the unit modification and installation. For example: item "a" repeated above should be adjusted to appropriately document who accomplished the unit alteration if different than the installer.

- D. In the second paragraph of Section L of the Service Bulletin there was an instruction to complete "...sections (blocks) 1 through 3 and 5 through 8 of the FAA Form 337...". This instruction is in error. Block 3 is reserved for FAA for field approval and is not to be "filled out" by an applicant. Remember, there is no field approval required, provided you adhere to the details specified in Section L, complete the Form 337, ensure insertion of the Addendum into the AFMS or SAFM and submit the FAA Form 337, as directed.

- E. Attached is a copy of the FAA approval letter from the Wichita ACO to provide objective evidence of the Service Bulletin approval should you be required to produce it for the FAA or other authority.
- F. Also attached is a copy of the revised FAA approved AFMS or SAFM Addendum at Revision B status, dated April 10, 2006. Revision A of the Addendum can be used for *modified* installations. Revision B (attached) may be used for *modified*, or *newly manufactured* Garmin 400 and 500 series units. TERRAIN capability is identified by the Mod 7 marking on the unit's data plate (identification label) for both *newly manufactured* and *modified* units.

The installer (applicant) of a new installation of a Garmin 400 and 500 series unit which includes TERRAIN capability, may submit a specifically tailored AFMS or SAFM that includes the "Limitations" language of the Addendum incorporated into the AFMS or SAFM which may be submitted to the FAA for field approval for operational use of the GPS receiver/navigator. Flight Standards Information Bulletin for Airworthiness, FSAW 94-32 has been recently adjusted to revision C to allow an appropriately qualified FAA Airworthiness Aviation Safety Inspector to approve an AFMS or SAFM that includes the functionality of TERRAIN.

- G. Finally, if a previously installed and FAA field approved Garmin 400 and 500 series unit is limited for operational use as indicated by a placard worded such as: "NOT APPROVED FOR USE IN IFR", limiting its GPS use, the FAA approved AFMS or SAFM Addendum must be provided to the aircraft owner/operator when TERRAIN functionality is enabled and intended for operational use.

## **APPROVAL**

Information contained in this Service Advisory does not affect published operational specifications or performance of the affected Garmin 400 and 500 series units. This Service Advisory has been reviewed and accepted by the FAA, Airmen and Avionics Branch, AFS-350.

Garmin Ltd. or its subsidiaries  
c/o Garmin International, Inc.  
1200 E. 151<sup>st</sup> Street  
Olathe, Kansas 66062 U.S.A.

GPS 500, GNS 530/530A AFMS / SAFM  
(Airplane Flight Manual Supplement / Supplemental Airplane Flight Manual)  
Terrain Addendum

The GPS 500, GNS 530/530A AFMS / SAFM (Airplane Flight Manual Supplement / Supplemental Airplane Flight Manual) Terrain Addendum contains the limitations for the GARMIN GPS 500 or GNS 530/530A units when installed in accordance with STC SA00864WI, or follow-on field approved installations.

Insert this addendum into the Limitations section of the existing AFMS / SAFM for the Garmin GPS 500 or GNS 530/530A. The combination of the existing document and the inserted addendum serves as the FAA Approved AFMS / SAFM for the Garmin GPS 500 or GNS 530/530A with Terrain.

FAA APPROVED



*M* Margaret Kline  
Manager, Aircraft Certification Office  
Federal Aviation Administration  
Wichita, Kansas 67209

DATE: APRIL 10, 2006

Garmin Ltd. or its subsidiaries  
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1200 E. 151<sup>st</sup> Street  
Olathe, Kansas 66062 U.S.A.

GPS 500, GNS 530/530A AFMS / SAFM  
(Airplane Flight Manual Supplement / Supplemental Airplane Flight Manual)  
Terrain Addendum

**LIMITATIONS**

1. The GPS 500 or GNS 530/530A upgraded to include Terrain must utilize Main Sub-System Version 6.01 or later FAA approved software version. The Main software version is displayed on the self test page immediately after turn-on for 5 seconds.
2. Navigation must not be predicated upon the use of the TERRAIN display.

**NOTE: The terrain display is intended to serve as a situational awareness tool only and does not provide TAWS capability. It does not provide either the accuracy or fidelity, or both, on which to solely base decisions and plan maneuvers to avoid terrain or obstacles.**

3. To avoid giving unwanted alerts, TERRAIN should be inhibited when landing at an airport that is not included in the airport database.
4. Pilots are NOT authorized to deviate from their current ATC clearance to comply with terrain/obstacle alerts from a TERRAIN unit except as allowed by 14 CFR Part 91.3(b). TERRAIN unit alerts are advisory only and are not equivalent to warnings provided by a TAWS unit.
5. The TERRAIN databases have an area of coverage as detailed below:
  - (a) The Terrain Database has an area of coverage from North 75° Latitude to South 60° Latitude in all longitudes.
  - (b) The Airport Terrain Database has an area of coverage that includes the United States, Canada, Mexico, Latin America, and South America.
  - (c) The Obstacle Database has an area of coverage that includes the United States.

NOTE: The area of coverage may be modified, as additional terrain data sources become available.

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GPS 400, GNC 420/420A, GNS 430/430A AFMS / SAFM  
(Airplane Flight Manual Supplement / Supplemental Airplane Flight Manual)  
Terrain Addendum

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Insert this addendum into the Limitations section of the existing AFMS / SAFM for the Garmin GPS 400, GNC 420/420A, or GNS 430/430A. The combination of the existing document and the inserted addendum serves as the FAA Approved AFMS / SAFM for the Garmin GPS 400, GNC 420/420A, or GNS 430/430A with Terrain.

FAA APPROVED



for Margaret Kline  
Manager, Aircraft Certification Office  
Federal Aviation Administration  
Wichita, Kansas 67209

DATE: APRIL 10, 2006

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U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Small Airplane Directorate  
Wichita Aircraft Certification Office  
1801 Airport Road, Room 100  
Wichita, Kansas 67209

April 17, 2006

Mr. Van Ruggles  
Director of Quality Assurance  
Garmin International, Inc.  
1200 East 151<sup>st</sup> Street  
Olathe KS 66062

**Subject:** Submittal of Garmin Service Bulletins 0530 & 0532, Rev. B, and Garmin 400/500 Series Terrain Airplane Flight Manual Supplement / Supplemental Flight Manual (AFMS / SAFM) Addendums

**Reference:** (1) Garmin International, Inc. letter # GL06038 dated April 17, 2006  
(2) Garmin International, Inc. letter # GL06032 dated April 4, 2006

Dear Mr. Ruggles:

Your Reference (1) request for FAA Approval of Garmin Service Bulletins No. 0530 & 0532, Revision B, dated April 11, 2006, is hereby granted. These two service bulletins provide procedures to incorporate an FAA Approved Addendum to a new or existing approved AFMS / SAFM and return an airplane to service following installation of a unit incorporating the TERRAIN function. The Wichita Aircraft Certification Office (ACO) has approved Sections A, C-E, G, J, and K of these service bulletins.

We have also reviewed and approved the following Garmin manuals:


- Document No. 190-00181-16, GPS 500, GNS 530/530A AFMS / SAFM (Airplane Flight Manual Supplement / Supplemental Airplane Flight Manual) Terrain Addendum.
- Document No. 190-00140-14, GPS 400, GNC 420/420A, GNS 430/430A AFMS / SAFM (Airplane Flight Manual Supplement / Supplemental Airplane Flight Manual) Terrain Addendum

These AFMS / SAFM were submitted with your letter reference GL06032 dated April 3, 2006, and recommended for approval by Designated Engineering Representative DERY-230152 (Thomas Schaffstall).

Enclosed are the (2) signed FAA Approved Airplane Flight Manual Supplements / Supplemental Airplane Flight Manuals (AFMS / SAFM).

We will retain a copy of the approved data in our files.

Sincerely,

A handwritten signature in cursive script that reads "Harvey E. Nero". The signature is written in dark ink and is positioned above the typed name.

Harvey E. Nero  
FAA Program Manager  
Wichita Aircraft Certification Office

2 Enclosures