

400 SERIES

(GPS 400, GNC 420, and GNS 430)



Pilot's Guide Addendum

Display Interface for Traffic and Weather Data



This addendum is written for Main System Software version 2.11 or above, and is not suitable for earlier software versions.

GARMIN International, Inc., 1200 East 151st Street, Olathe, Kansas 66062 USA
Tel: 913-397-8200 Fax: 913-397-8282

GARMIN (Europe) LTD, Unit 5, The Quadrangle, Abbey Park, Romsey, Hampshire SO51 9AQ, UK
Tel: 011-44-1794-519944 Fax: 011-44-1794-519222

GARMIN (Asia) Corp., 3F, No. 1, Lane 45, Pao Hsing Road, Hsin Tien, Taipei, Taiwan R.O.C.
Tel: 011-886-02-2917-4107 Fax: 011-886-02-2917-1758

Web Site Address: www.garmin.com

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INTRODUCTION

Foreword

STORMSCOPE® and SKYWATCH™ are
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INTRODUCTION

Warnings and Cautions

Warnings and Cautions

To reduce the risk of unsafe operation, carefully review and understand all aspects of the STORMSCOPE, SKYWATCH, and TCAD Pilot's Guides including all warnings and cautions.

The Global Positioning System is operated by the United States government, which is solely responsible for its accuracy and maintenance. The system is subject to changes which could affect the accuracy and performance of all GPS equipment. Although the GARMIN 400 Series Unit is a precision electronic NAVIGATION AID (NAVAID), any NAVAID can be misused or misinterpreted and therefore become unsafe.

Use the GARMIN 400 Series Unit at your own risk. To reduce the risk of unsafe operation, carefully review and understand all aspects of the Owner's Manual, flight manual supplement, and this addendum, and thoroughly practice basic operation prior to actual use. When in actual use, carefully compare indications from the GARMIN 400 Series Unit to all available navigation sources, including the information from other NAVAIDS, visual sightings, charts, etc. For safety, always resolve any discrepancies before continuing navigation.

The altitude calculated by the GARMIN 400 Series Unit is geometric height above mean sea level and could vary significantly from altitude displayed by pressure altimeters in aircraft. GPS accuracy may be degraded by the U.S. Department of Defense-imposed Selective Availability (SA) program. With "SA" on, GPS altitude may be in error by several hundred feet. Never use GPS altitude for vertical navigation.

The Jeppesen database incorporated in the GARMIN 400 Series Unit must be updated regularly in order to ensure that its information is current. Updates are released every 28 days. A database information packet is included in your GARMIN 400 Series Unit package.

Pilots using an out-of-date database do so entirely at their own risk.

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This addendum is not intended to replace the documentation that is supplied with the applicable GARMIN 400 Series Unit, BF Goodrich STORMSCOPE, SKYWATCH, and Ryan TCAD.

SECTION 1

Introduction



The screen display examples shown in this addendum are taken from the GNS 430. Interface functionality is the same for the GPS 400, GNC 420, and GNS 430.

Section 1 Introduction

NOTE

This addendum assumes the user has experience operating the applicable GARMIN 400 Series Unit, the applicable Traffic/Weather interface component, and all supplied documentation.

The GARMIN GPS 400, GNC 420, and GNS 430 provide the display interface for the BFGoodrich STORMSCOPE® WX-500 Series II Weather Mapping Sensor, BF Goodrich SKY497 SKYWATCH™ Traffic Advisory System, and the Ryan 9900B series TCAD.

The interface capability allows traffic and weather data to be shown on the GARMIN color display which gives you the ability to look at your display and quickly identify traffic and weather hazards relative to your aircraft.

NOTE

Your GARMIN dealer will configure the applicable Traffic/Weather interface equipment.

Section 2 STORMSCOPE Interface

STORMSCOPE Description

NOTE

Refer to the WX-500 Pilot's Guide for a detailed description of the WX-500 STORMSCOPE.

The STORMSCOPE WX-500 Series II Weather Mapping Sensor is a passive weather avoidance system that detects electrical discharges associated with thunderstorms within a 200-nm radius of the aircraft. The STORMSCOPE measures relative bearing and distance of thunderstorm related electrical activity and reports the information to the display. **Interfaces are currently available for the WX-500 Series II STORMSCOPE System only.**

Power-Up Self-Test

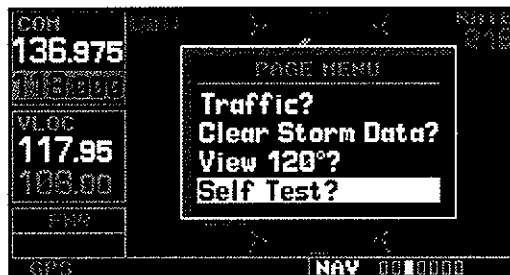
The power-up self-test ensures the WX-500 functions are operating properly. An error message will be displayed on the Message Page if data is no longer being received.



The unit performs a self-test during power up to ensure proper operation of the applicable interface components.

SECTION 2

STORMSCOPE Interface



There are provisions for an operator initiated self-test that is executed through the 400 series display.

Operator Initiated Self-Test

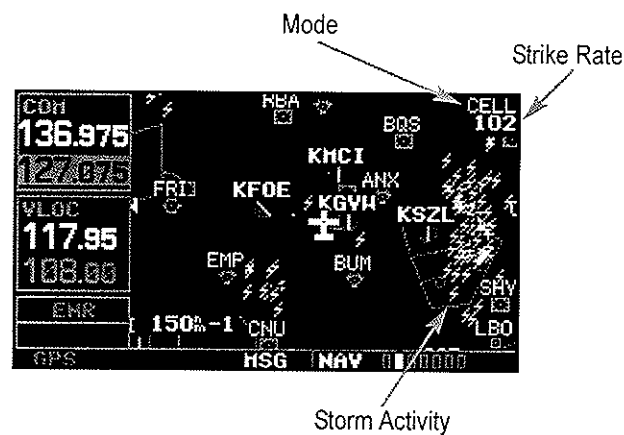
In addition to the power-up test, the WX-500 performs a continuous self-test. This continuous self test is performed several times each minute. An operator initiated self-test can also be performed. The WX-500 Pilot's Guide lists all the possible faults, the probable causes, and the recommended actions.

To perform a user-initiated self-test:

1. From the Default Nav Page rotate the small right knob (NOV CAS) to select the Traffic/Weather Page.
2. If in Traffic Mode, press MENU to display the Page Menu.
3. From the Traffic Screen, press ENT to select "Weather?". Weather Data is now displayed.
4. Press MENU to display the Page Menu.
5. Use the small right knob (NOV CAS) to select "Self Test?" and press ENT.

Displaying Storm Data on the Map Page

The Map Page displays cell or strike information using yellow lightning strike symbology overlaid on a moving map. This added capability improves situational awareness which makes it much easier for the pilot to relate the storm activity to airports, nav aids, obstacles and other ground references.



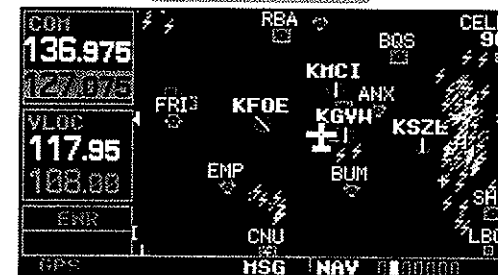
Storm Data Displayed on the Map Page

As the viewing area scale is changed to a different range, the underlying moving map may be automatically adjusted to remove or add map detail. Electrical activity is displayed on the Map Page which is automatically synchronized with the heading of the aircraft (if available).

NOTE

Storm Data is displayed on the Map Page only if aircraft heading data is available.

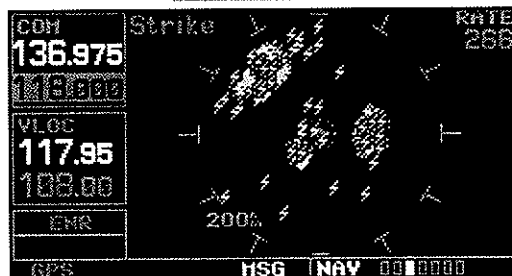
SECTION 2
STORMSCOPE Interface



Cell mode uses a clustering program to identify clusters of electrical activity that indicate cells. Cell mode is most useful during periods of heavy storm activity. Displaying cell data during these periods frees the user from sifting through a screen full of discharge points to better determine where the storm cells are located.

SECTION 2

STORMSCOPE Interface



Strike Mode allows you to view a building thunderstorm.

A status word in the upper right corner of the GARMIN display is dedicated to the WX-500. In normal operation, this status word shows the current strike rate, accompanied in the top left corner by the word "strike" when in strike mode, or "cell" when in cell mode. A black guard band is placed around the strike symbol during the first six seconds of display.

The strike data display phases are:

1. Lightning Symbol (latest strikes; less than 1 minute)
2. Large Plus "+" sign (> 1 minute old)
3. Small Plus sign (> 2 minutes old)
4. Strike Data no longer displayed (after 3 minutes)

To configure Storm Data on the Map Page:

1. Rotate the small right knob (⊖) to select the Map Page.
2. Press **MENU** to display the Page Menu.
3. Use the small right knob (⊖) to select "Setup Map?" and press **ENT**.
4. The flashing cursor highlights the GROUP field. Use the small (⊖) right knob to display the Map Setup Options Menu. Use the small (⊖) right knob to select "Weather" and press **ENT**.
5. The flashing cursor highlights "Weather" in the GROUP field. Rotate the small right knob (⊖) to select the desired Lightning Mode field and press **ENT**. Rotate the large right knob (⊕) to select the desired range option and press **ENT**. Repeat for the remaining desired fields and options.
6. Return to the Map Page by pressing **CLR**.