



# GPSMAP 172/172C

*chartplotting receivers  
owner's manual*



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## **Preface**

Congratulations on choosing one of the most advanced marine navigation systems available! The Garmin GPSMAP 172/172C models utilize the proven performance of Garmin GPS and full-featured mapping to create an unsurpassed marine navigation chartplotter.

This manual covers instructions for the GPSMAP 172 and GPSMAP 172C (color). Unit operation and specifications will be the same on both models unless otherwise specified. For GSD 20 sonar related operations, refer to “GSD 20 Sounder Module with Garmin Chartplotters” (190-00241-03). To get the most out of your new navigation system, take the time to go through this owner’s manual and learn the operating procedures for your unit. This manual is broken down into two parts for your convenience.

Part One introduces you to the GPSMAP 172/172C and provides a Getting Started tour so that you may become more familiar with the unit. This section provides you with a basic knowledge necessary to use the unit.

Part Two is divided into sections that provide detailed references to the advanced features and operations of the GPSMAP 172/172C. This allows you to concentrate on a specific topic quickly and look up detailed information about the GPSMAP 172/172C.

## **Software License Agreement**

BY USING THE GPSMAP 172/172C, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE FOLLOWING SOFTWARE LICENSE AGREEMENT. PLEASE READ THIS AGREEMENT CAREFULLY.

Garmin grants you a limited license to use the software embedded in this device (the “Software”) in binary executable form in the normal operation of the product. Title, ownership rights and intellectual property rights in and to the Software remain in Garmin.

You acknowledge that the Software is the property of Garmin and is protected under the United States of America copyright laws and international copyright treaties. You further acknowledge that the structure, organization and code of the Software are valuable trade secrets of Garmin and that the Software in source code form remains a valuable trade secret of Garmin. You agree not to decompile, disassemble, modify, reverse assemble, reverse engineer or reduce to human readable form the Software or any part thereof or create any derivative works based on the Software. You agree not to export or re-export the Software to any country in violation of the export control laws of the United States of America.

## **Introduction**

### **Preface/Registration/ Software License Agreement**

#### **Customer Service Product Registration**

#### **Help us better support you by completing our on-line registration today!**

*Have the serial number of your GPSMAP 172/172C handy and connect to our web site ([www.garmin.com](http://www.garmin.com)).*

*Look for the Product Registration link on the Home page. Also, be sure to record your serial number in the area provided on page iv of this manual.*

**NOTE:** *If you have previously registered a Garmin product purchase, we invite you to re-register using our NEW on-line system. Many services provided by our new product registration system are now being automated and re-registering your purchase ensures you the best possible support from Garmin.*

## Introduction

### FCC Compliance



### **FCC Compliance**

The GPSMAP 172/172C complies with Part 15 of the FCC interference limits for Class B digital devices FOR HOME OR OFFICE USE. These limits are designed to provide more reasonable protection against harmful interference in a residential installation, and are more stringent than “outdoor” requirements.

Operation of this device is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The GPS 172/172C does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could result in permanent damage to the equipment, and void your warranty and your authority to operate this device under Part 15 regulations.

## Introduction

### Warnings and Precautions



The GPS 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 GPSMAP 172/172C is a precision electronic NAVigation AID (NAVAID), any NAVAID can be misused or misinterpreted and, therefore, become unsafe.

The electronic chart is an aid to navigation and is designed to facilitate the use of authorized government charts, not replace them. Only official government charts and notices to mariners contain all information needed for safe navigation – and, as always, the user is responsible for their prudent use.

Use the GPSMAP 172/172C at your own risk. To reduce the risk of unsafe operation, carefully review and understand all aspects of this Owner's Manual—and thoroughly practice operation using the simulator mode prior to actual use. When in actual use, carefully compare indications from the GPSMAP 172/172C to all available navigation sources, including the information from other NAVAIDs, visual sightings, charts, etc. For safety, always resolve any discrepancies before continuing navigation.

**CAUTION: IT IS THE USER'S RESPONSIBILITY TO USE THIS PRODUCT PRUDENTLY. THIS PRODUCT IS INTENDED TO BE USED ONLY AS A NAVIGATIONAL AID AND MUST NOT BE USED FOR ANY PURPOSE REQUIRING PRECISE MEASUREMENT OF DIRECTION, DISTANCE, LOCATION, OR TOPOGRAPHY.**

**MAP DATA INFORMATION:** One of the goals of Garmin is to provide customers with the most complete and accurate cartography that is available to us at a reasonable cost. We use a combination of governmental and private data sources, which we identify (as required) in product literature and copyright messages displayed to the consumer. Virtually all data sources contain inaccurate or incomplete data to some degree. This is particularly true outside the United States, where complete and accurate digital data is either not available or prohibitively expensive.

**WARNING:** This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This Notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our web site at <http://www.garmin.com/prop65>.

## Introduction

### Warranty and Serial Number

#### Serial Number

Use this area to record the serial number (8-digit number located on the back of the unit) in case it is lost, stolen, or needs service. Be sure to keep your original sales receipt in a safe place or attach a photocopy inside the manual.

Serial Number:

\*         \*



The Garmin GPSMAP 172/172C has no user-serviceable parts, and is fastened shut with screws. Any attempt to open the case to change or modify the unit in any way voids your warranty and may result in permanent damage to the equipment.

This Garmin product is warranted to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, Garmin will at its sole option repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL GARMIN BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE, OR INABILITY TO USE THIS PRODUCT OR FROM DEFECTS IN THE PRODUCT. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you.

Garmin retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

Products sold through online auctions are not eligible for rebates or other special offers from Garmin. Online auction confirmations are not accepted for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Garmin will not replace missing components from any package purchased through an online auction.

To obtain warranty service, contact your local Garmin authorized dealer or call Garmin Product Support for shipping instructions and an RMA tracking number. The unit should be securely packed with the tracking number clearly written on the outside of the package. The unit should then be sent, freight charges prepaid, to any Garmin warranty service station. A copy of the original sales receipt is required as the proof of purchase for warranty repairs.

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Designed for detailed electronic charting capability, the Garmin GPSMAP 172/172C is a powerful navigation device that can give you the information you need:

### **Precision Performance**

- (172) 10 level grayscale FSTN display with backlighting
- (172C) 256-color CSTN display with backlighting
- 12-channel parallel receiver tracks and uses up to 12 satellites for fast, accurate positioning
- WAAS Capable — receive signals from the additional set of WAAS (Wide Area Augmentation System) satellites to give you better accuracy
- Differential-Ready — just add an optional Garmin beacon receiver for better than 5-meter accuracy
- Fully gasketed, high-impact plastic alloy case, waterproof to IEC 60529-IPX-7

### **Advanced Navigating and Plotting**

- 3000 alphanumeric waypoints with selectable icons and comments
- Built-in Worldwide basemap to 20 miles includes detailed ocean, river and lake coastlines, cities, interstates, US state highways and local thoroughfares
- 50 reversible routes with up to 50 waypoints each
- Uploadable maps using Garmin's MapSource PC products and BlueChart Data Cards
- Coordinates: Lat/Lon, UTM/UPS, Loran TD, over 20 grids, including Maidenhead
- TracBack route feature which allows you to quickly retrace your track log to a starting position
- Built-in simulator mode
- Built-in tide information from over 3,000 tide stations around the USA coastline, Alaska, Hawaii, western Canada and several Caribbean Islands

## **Introduction**

### **Capabilities**

#### **Superior Fishfinding Ability (when combined with the GSD 20 Sounder Module)**

- Whiteline feature provides a clear image of bottom hardness and structure
- See-Thru technology which helps separate fish returns from thermoclines and structure
- Depth Control Gain (DCG) feature automatically adjusts fishfinder sensitivity according to depth
- Multiple Zoom levels with a moving view window, plus bottom lock
- Underwater waypoint marking
- Map/Sonar split screen combines navigation and fishfinding ability
- Fish and Depth alarms

# Introduction

## Packing List

Before installing and getting started with your unit, please check to see that your package includes the following items. **If any parts are missing, please contact your Garmin dealer immediately.**

### Standard Package:

- GPSMAP 172/172C Unit
- GA 29 Remote External Antenna and 30' cable\*
- Internal Antenna\*\*
- Single-Knob Tilt & Swivel Bracket
- Power/Data Cable
- Owner's Manual
- Quick Reference Card
- Protective Cover

\* Not included with part numbers 010-00327-01 with internal antenna.

\*\* Not included with part numbers 010-00327-00 with remote antenna.

### Optional Accessories:

- US A/C, PC Adapter
- EURO A/C, PC Adapter
- UK A/C, PC Adapter
- Cigarette Lighter Adapter
- BlueChart Marine Data Cards, MapSource CDs, USB Data Card Programmer, and Data Cards
- GSD 20 Remote Sounder Module
- GBR 23 Beacon Receiver for differential corrections



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# Introduction

## “How To” Index



*The list to the right is provided to help you quickly find some of the more important procedures you may use on your new GPSMAP 172/172C.*

<b>TO DO THIS:</b>	<b>SEE PAGE(S):</b>
Turn the unit on or off . . . . .	6
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### **(ZOOM) OUT Key**

The **OUT** key adjusts the map scale to display a larger area with less detail. (Zooms out)

### **(ZOOM) IN Key**

The **IN** key adjusts the map scale to display a smaller area with more detail. (Zooms in)

### **PAGE Key**

The **PAGE** key selects the main pages in sequence and returns display from a submenu page.

### **QUIT Key**

The **QUIT** key returns the display to the previous page and, when entering data, it restores the previous value (cancels data entry).

### **ARROW KEYPAD**

The **ARROW KEYPAD** is used to select (Highlight) menu options and enter data. It also controls cursor movement on the Map Page.

### **ENTER/MARK Key**

The **ENTER/MARK** key selects a highlighted menu option. When entering data, it allows you to initiate entry, and then to accept the selected value(s). It also marks the current location as a waypoint when pressed and held for more than one second.

### **MENU Key**

The **MENU** key displays a menu of available options for the current page. Press twice (or press and hold for more than one second) to display the Main Menu.

### **NAV/ MOB Key**

The **NAV** key displays the Go To and Follow navigation menu. **MOB** (Man OverBoard) activates the Man OverBoard navigation feature when pressed and held for more than one second.

### **FIND Key**

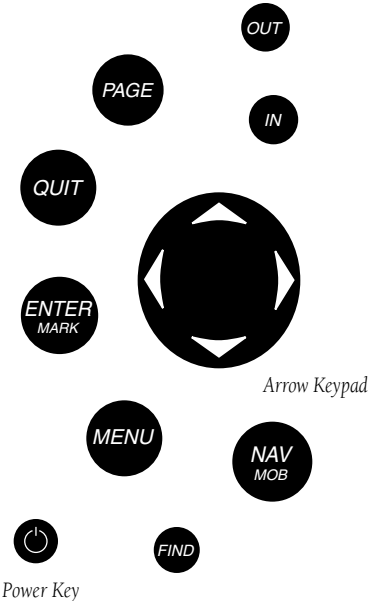
The **FIND** key activates the find function to search for nearby items and user waypoints.

### **POWER/ BACKLIGHT Key**

The **POWER/ BACKLIGHT** key turns on/off the unit and adjusts the display illumination/contrast. Multiple presses toggle the unit's backlight between maximum, user-set, and minimum brightness levels.

## Getting Started

### Keypad Usage



*Always press and release a key to perform its primary function. Press, hold for more than one second, then release the **ENTER/MARK**, **NAV/MOB**, and **MENU** keys to activate their secondary function.*

# Getting Started

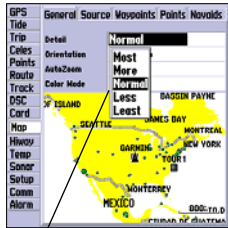
## Selecting Options



Options Menu with highlighted option.



Use the **ARROW KEYPAD** to highlight the next option. Press **ENTER/MARK** to activate.



Pop-up list of options for a highlighted field.

The GPSMAP 172/172C's advanced keypad system is designed to allow for fast, convenient selection of navigation options and data entry. The Getting Started Tour introduces you to the keypad and provides a 'hands-on' lesson in using the GPSMAP 172/172C. We strongly encourage you to take the Getting Started tour before using your unit for actual navigation. The GPSMAP 172/172C Quick Reference Guide contains helpful tips on using the unit and performing various navigation tasks.

### How To Select Options and Enter Data

You can select and activate options and enter data to customize the GPSMAP 172/172C to fit your requirements. You can use the **ENTER/MARK** key and **ARROW KEYPAD** to select options, enter names and numbers in data fields, and activate your selections.

#### To select and activate an optional feature:

1. With any page displayed, press the **MENU** key to pop-up the options menu. The options menu displays a list of optional features which are specific for that particular page. To select any feature on the list of options requires movement of the cursor, which is called "highlighting", selecting or choosing an item in a list or a field (box) on a page.
2. Use the **ARROW KEYPAD** to move the cursor (highlight) up and down a list or up, down, and sideways on menus.
3. Once you have moved to the desired selection, press the **ENTER/MARK** key to either activate the feature or the **MENU** key to pop-up a sub-menu or list of yet more feature options. Repeat this process to select an option from the list or press the **QUIT** key to return to the previous setting. The **QUIT** key moves backwards through these steps back to the main page you started on.

#### To select and activate a function button:

1. When moving about a page with function buttons, like the 'New Map Waypoint' page, you observe functions such as 'Show Map', 'Delete' and 'OK'. To activate the function, highlight the desired button and press the **ENTER** key.

Naming a waypoint or placing any sort of data that has not been predefined requires the use of both the **ARROW KEYPAD** and the **ENTER/MARK** key.

### To enter a name or number in a data field:

1. Once you have accessed a page with programmable data fields (e.g. 'Waypoint Edit') you can use the **ARROW KEYPAD** to move the cursor (Highlight) to fields on the page. Use the UP/DOWN arrows to move up or down and the LEFT/RIGHT arrows to move sideways.
2. Pressing the **ENTER** key with the field highlighted begins the process for entering data in the form of alphanumeric characters.
3. Use the **ARROW KEYPAD** UP/DOWN arrows to cycle through numbers 0 to 9, plus/minus symbols, blank space, and the alphabet. Pressing and releasing the keypad moves you character by character through the list. Pressing and holding the keypad moves you rapidly through the list.
4. Use the **ARROW KEYPAD** LEFT/RIGHT arrows to move to the next character on the line or backwards to edit characters. If there are more than two lines of data, keep pressing to the RIGHT to drop down to the next line.
5. When data entry is completed press **ENTER** to accept data, then move to the next programmable field. Not all data fields are programmable, such as the date and time. When moving about a page with these fields, the cursor skips over them.

Every field and button on this page can be programmed or activated.

A waypoint symbol can be selected from a list of symbols.

A comment can be added.

The coordinates can be changed.



The waypoint can be renamed.

A depth can be entered.

A water temperature can be entered.

Option buttons can be activated.

## Getting Started

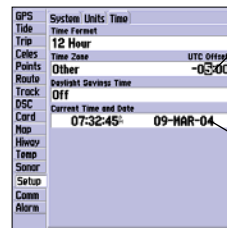
### Entering Data



Pressing **UP** or **DOWN** on the **ARROW KEYPAD** changes numbers and letters.



Pressing **LEFT** or **RIGHT** on the **ARROW KEYPAD** moves the cursor along the line or to the next line.



Data Entry Field

Non-programmable data fields

# Getting Started

## Initializing the Receiver



GPSMAP 172/172C  
Warning Screen

### Initializing the Receiver

The first time you power up your new GPSMAP 172/172C, the receiver must be given an opportunity to collect satellite data and establish its present position. To ensure proper initialization, the GPSMAP 172/172C is shipped from the factory in AutoLocate mode, which allows the receiver to “find itself” anywhere in the world. To speed up the initialization process, we recommend using the graphic initialization process described on the next page, which usually provides a position fix within a few minutes.

Before you initialize, make sure the GPSMAP 172/172C unit and antenna have been correctly installed on your vessel according to the instructions in Appendix G. The antenna needs to be in a location with a clear and unobstructed view of the sky to receive satellite signals.

#### **To turn the GPSMAP 172/172C on:**

1. Press and hold the **POWER** key until the power tone sounds and the display comes on, then release the **POWER** key.

An introduction page appears, asking you to read and acknowledge important information regarding the proper use of the unit.

#### **To acknowledge the introduction:**

1. After reading the introduction page, press the **ENTER** key if you agree.

## Initializing the Receiver

### To graphically initialize the GPSMAP 172/172C:

1. Press the **MENU** key twice for the Main Menu. Press Up or Down on the **ARROW KEYPAD** until the 'GPS' tab is highlighted, then press the **MENU** key once.
2. Using the **ARROW KEYPAD**, highlight 'Initialize Position' and press **ENTER** to initialize the receiver from the map. The Initialize Position Page appears, prompting you to select your approximate location with the map cursor.
3. Use the **ARROW KEYPAD** to move the map cursor and point to your approximate location within 200 miles. If you have difficulty identifying your position, press and release the **IN** key to see the next lower map scale.
4. Once you have determined your approximate location on the map, press the **ENTER** key.

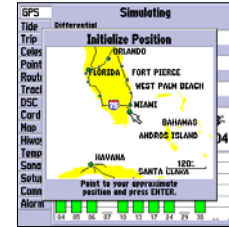


*This does not "calibrate" the unit in any way, but rather helps to speed up the initial satellite acquisition. If the unit displays "Ready (2D) or (3D)" during this process, it is not necessary to initialize the unit.*

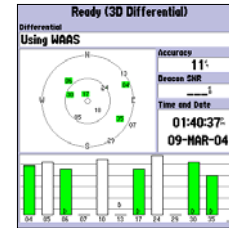
The GPS Information Page appears as the receiver begins acquiring satellites for your region and should acquire a fix within a few minutes. When viewing the 'GPS' tab on the Main Menu, a signal strength bar for each satellite in view appears on the bottom of the page, with the appropriate satellite number under each bar. The progress of satellite acquisition is shown in three stages:

- No signal strength bars— the receiver is looking for the satellites indicated.
- Hollow signal strength bars— the receiver has found the indicated satellite(s) and is collecting data.
- Solid signal strength bars— the receiver has collected the necessary data and the satellite(s) are ready for use.

Once the receiver has collected information from at least three satellites, the top of the screen displays either "Ready (2D or 3D)", and the GPSMAP 172/172C is ready for use.



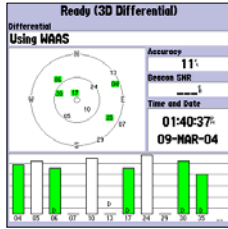
Point to your approximate location and press **ENTER/MARK**



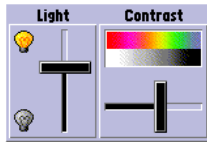
A satellite's strength bars turns green when it's ready for use.

# Getting Started

## Power On/Screen Backlighting



A full-screen GPS Information pop-up page is displayed after you press the **ENTER** key to acknowledge the Warning Page. The pop-up page goes away after the unit gets a position fix or you press either **ENTER** or **QUIT**.



Use the **ARROW KEYPAD** to move the backlighting slider UP for brighter or DOWN for dimmer backlighting. Press LEF or RIGHT to adjust the display contrast.

## GPSMAP 172/172C Getting Started Tour

The Garmin GPSMAP 172/172C is a powerful electronic navigation system that provides detailed map coverage and convenient control of many advanced features right from the screen display. This tour is designed to take you through the basic pages and functions of the system using the simulator mode. Once you're familiar with the main pages and functions of the unit, refer to the reference section for instructions on performing specific tasks and functions. For GSD 20 sonar related operations, refer to "GSD 20 Sounder Module with Garmin Chartplotters" (190-00241-03).

The Getting Started Tour assumes that the receiver has been properly installed and initialized, and you have not changed any of the default unit settings. If you have changed any settings (position formats, units of measure, etc.), the descriptions and pictures in the tour may not match your configuration.

### To turn the GPSMAP 172/172C on:

1. Press and hold the **POWER** key until the power tone sounds, then release the **POWER** key. The Warning Page appears while the unit conducts a self-test.
2. Once the self-test is complete, press the **ENTER/MARK** key, if you agree, to acknowledge the warning.

The GPS Information Page appears as the receiver begins acquiring satellites. From this or any other page, you may also adjust the screen backlighting.

The GPSMAP 172/172C's adjustable screen backlighting is controlled with the **POWER** key. The backlight can cycle through minimum, user-defined, and maximum backlight levels by repeatedly pressing the **POWER** key.

### To adjust the backlighting and contrast:

1. Press **POWER** and the Light/Contrast window appears.
2. Press **POWER** again and the user-defined level of backlighting activates. You may adjust this level by pressing UP or DOWN on the **ARROW KEYPAD**. If you press **POWER** one more time, the backlighting is at the minimum setting. Press LEFT (brighter) or RIGHT (darker) to adjust the contrast.
3. Press **ENTER** or **QUIT** when done.



## Getting Started

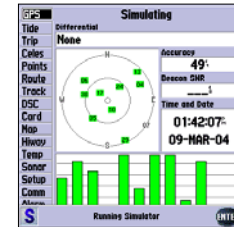
### Simulator Mode

Each page of the GPSMAP 172/172C's system also features an options page, which gives you access to other functions and features that relate to the specific page you are viewing. To get a feel for how the options pages work, let's put the GPSMAP 172/172C into simulator mode.

#### To place the GPSMAP 172/172C in simulator mode:

1. Press the **MENU** key twice for the Main Menu. Press Up or Down on the **ARROW KEYPAD** until the 'GPS' tab is highlighted, then press the **MENU** key once.
2. Use the UP or DOWN arrow of the **ARROW KEYPAD** to highlight the 'Start Simulator' option and press **ENTER**. Choose 'No' to the retail demonstration and press the **ENTER** key.
3. Press the **ENTER** key to confirm the 'Running Simulator' message that appears at the bottom of the display. 'Simulating' appears at the top of the Main pages.

While in Simulator mode, a 'Running Simulator' message appears after 2 minutes of inactivity. Now you're ready to continue the rest of the simulated tour. **Keep in mind that the GPSMAP 172/172C does not track satellites in simulator mode, and this mode should never be used for actual navigation.** All the waypoint and route planning done in simulator mode is retained in memory for future use.



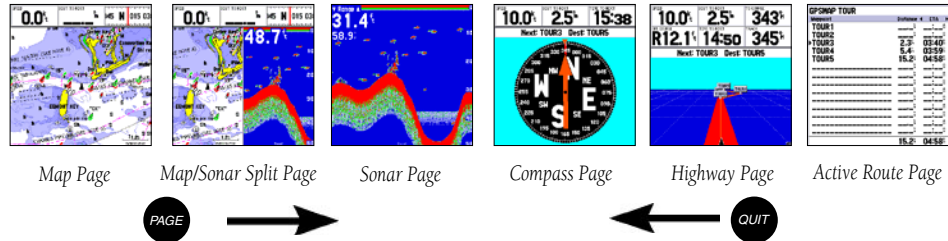
A "Running Simulator" message appears at 2 minute intervals.

## Getting Started

### Main Pages/ Map Page

The Map Page is one of six main pages used in the GPSMAP 172/172C's system. The six main pages are the Map Page, Map/Sonar Split Page\*, Sonar Page\*, Compass Page, Highway Page, and Active Route Page. All pages are linked together in a simple chain, which allows you to scroll through the pages in either direction using the **PAGE** and **QUIT** keys.

(\* If equipped with GSD 20. For GSD 20 sonar related operations, refer to “GSD 20 Sounder Module with Garmin Chartplotters” (190-00241-03))



### Map Page

The GPSMAP 172/172C's Map Page combines digital chartplotting with a user-selectable display of navigation data and a built-in worldwide database. It is also the page you use most to create and edit waypoints and routes. Before we take off on our practice route, let's take a brief look at its various features and displays.

The map display shows your “boat” as a triangle marker on an electronically generated chart. Geographic names, roads, markers and buoys that are provided by the optional BlueChart or MapSource data are also shown. It also displays your track, routes and nearby waypoints. An on-screen cursor lets you pan to other map areas, determine the range and bearing to a position, and perform various waypoint and route functions.

The data window, located at the top of the page, provides a user-selectable display of various navigation data, including speed over ground, distance to the next navigation point, compass ribbon and current position coordinates. The current map scale setting is located at the bottom right of the page.

## Using the Map Cursor

Working from the Map Page is a simple process that centers around the use of the cursor. Controlled by the **ARROW KEYPAD**, the cursor is an important tool that can be used to pan to other map locations, mark and edit waypoints and routes, and review position data of on-screen map items and waypoints.

**To get a feel for using the Map Page and using the cursor, try the following exercise:**

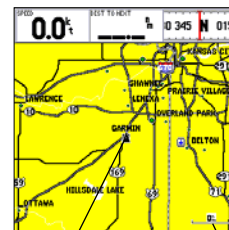
1. Use the **IN/OUT** keys to set the map scale to the 50 nm setting. Your boat should be near the center of the map, at the receiver's last known position. (If your boat isn't where it should be, make sure that you have initialized the receiver and acquired a position as described on pages 1-2.)
2. Use the **ARROW KEYPAD** to move the cursor. Notice how another data field appears, showing the bearing and distance from your boat to the cursor, along with the latitude/longitude of the cursor.
3. Press the **QUIT** key to remove the cursor and re-center your boat on the map display.

As you become more familiar with the cursor, you'll see that the map display actively scrolls or 'pans', letting you explore areas around the world and create waypoints and routes. Wherever you move the cursor, you'll always be just one **QUIT** keystroke away from returning the map to your present position.

Now that you've seen how the Map Page can be used to monitor your present location, let's take a minute to learn how to mark and store your present position as a "waypoint". (Since you're in simulator mode, the present position displayed is the last position calculated by the receiver, which should be the spot where you've initialized the unit.) This also gives you an opportunity to see how the GPSMAP 172/172C's keypad and **ENTER** key are used for data entry and changing the waypoint name and symbol.

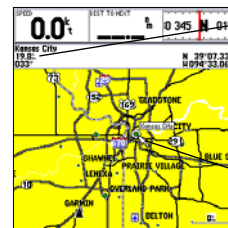
## Getting Started

### Map Cursor



Current position

Map Scale



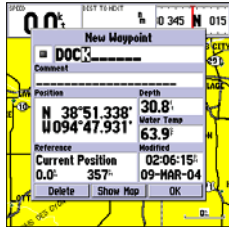
Distance/  
Bearing

Cursor  
Coordinates

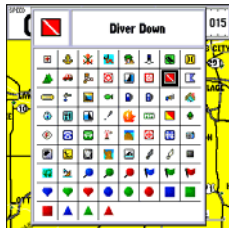
Map Cursor

# Getting Started

## Marking Waypoints



Press **ENTER/MARK**  
after entering the name.



You can choose from a list of useful symbols. There are two Diver Down waypoint symbols to select from: the International and U.S. versions.

### To mark your present position:

1. Hold down the **ENTER/MARK** key until the 'New Waypoint' window appears then release the key. The window shows a default three-digit waypoint name/number (001), symbol (dot), and position. You can leave the name as the auto-assigned number, but for this exercise, let's change the name to 'DOCK'.
2. Use the **ARROW KEYPAD** to highlight the waypoint name field (001) and press **ENTER**. You see that just the first '0' is now highlighted.
3. Press **LEFT** on the **ARROW KEYPAD** to clear the name field.
4. Press **UP** or **DOWN** on one of the **ARROW KEYPAD** until the letter 'D' appears, and then press **RIGHT** to go to the next space to the right, then **UP** or **DOWN** again until 'O' appears. Repeat this until you have entered the name 'DOCK'. If you make a mistake and select an incorrect character, simply press **LEFT** on the **ARROW KEYPAD** to backspace the cursor and then **UP** or **DOWN** to correct the entry. (If you accidentally press **ENTER** before you are done, simply press **ENTER** again and move the highlight to where you left off.)
5. After you have entered all the letters, press **ENTER** to confirm the name.
6. To access the waypoint symbol page, highlight the waypoint symbol field which is to the left of the waypoint's name and press **ENTER**. Note: The default symbol is a dot.
7. You see a grid of available waypoint symbols to choose from. Use the **ARROW KEYPAD** to highlight the 'ANCHOR' symbol.
8. Press **ENTER** to confirm the 'ANCHOR' symbol.
9. Highlight 'OK' at the bottom of the window and press **ENTER** again to confirm the 'OK' prompt and save the waypoint.

The waypoint is now stored in memory. Note that waypoints may also be created graphically from the map display or by manually entering position coordinates. Each of these techniques is described in the reference section of this manual.

## Going to a Destination

GPS is all about marking positions as waypoints and navigating to them using the receiver's steering guidance and map displays. We've already seen how to use the **ENTER/MARK** key to store our present position, so it's time to move on to the fun part—going to a destination.

The **NAV/MOB** key, located on the keypad above the **QUIT** key, is the primary tool used to select a destination waypoint, TracBack, or a route to navigate. The **NAV** key can be used in two primary ways:

- Pressing **NAV** once displays a list of options from which you can select 'Go To Point', 'Follow Route', 'Follow Track', or 'Stop Navigation'.
- Highlighting an on-screen waypoint or map item as a destination directly from the Map Page and pressing **NAV** allows you to graphically select points to "Go To".

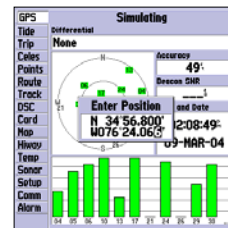
For our simulated trip, you're going to select a pre-programmed tour route using the first method. This also shows how the **MENU** key is used throughout the GPSMAP 172/172C system to provide tab style options and functions. Let's start by changing the position to where the practice route is located.

### To change the GPSMAP 172/172C position in simulator mode:

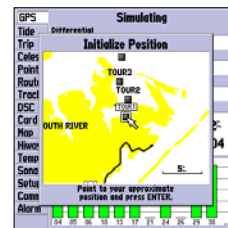
1. Press the **MENU** key twice to display the list of Main Menu tab items.
2. Use the UP or DOWN arrow of the **ARROW KEYPAD** to highlight the 'Setup' tab, then LEFT or RIGHT to highlight the 'System' submenu tab.
3. Highlight 'Set Position' in the simulator setup window and press **ENTER**.
4. From the Initialize Position page, press the **MENU** key. You see 'Enter As Text' highlighted, then press **ENTER**.
5. On the Enter Position window, press **ENTER** then use the **ARROW KEYPAD** to enter N34°56.800', W076°24.066' and press **ENTER** when done, then press **QUIT** to return to the Map Page.

## Getting Started

### Using the NAV Key



Text entry for simulator position.



For future practice, you may skip steps 3 and 4 and point to a location from the Initialize Position page.

# Getting Started

## Simulated Tour



You can also Invert a route to follow it in reverse.



The Set Position, Track Control, Track and Speed fields only show while in simulator mode.

### To activate the practice route stored in memory for navigation:

1. Press **NAV**. The option list page appears. (If you were selecting a single waypoint to navigate to rather than a route, you could highlight the waypoint on the map, press **NAV** and then press **ENTER**.)
2. Use the **ARROW KEYPAD** to highlight the 'Follow Route' option. Press **ENTER** to confirm.
3. The Select Route page appears, with the 'GPSMAP TOUR' route highlighted.
4. Press **ENTER** then highlight 'Activate' and press **ENTER** again.

### To zoom in to a closer map scale:

1. Repeatedly press the **IN** key until the 3 nm scale displays.

You may also hold the **IN** or **OUT** keys down to quickly scroll through the map scales. The Map Page should now display five waypoints chained together in a simple route, with your boat at the first route waypoint.

A data field at the top of the page now displays the speed, distance to the second route waypoint, and a compass ribbon which shows you which way to go. To get started, let's enter a speed for our vessel, which we can do from the Main Menu Page.

### To enter a boat speed:

1. Press the **MENU** key twice to display the Main Menu Page.
2. Use the **ARROW KEYPAD** to highlight the 'Setup' tab, then press **RIGHT** then **DOWN** until the field below the word 'Speed' is highlighted on the 'System' submenu tab and press **ENTER**.
3. Use the **ARROW KEYPAD** to enter a speed of 40 knots.
4. Press **ENTER** to finish, and **PAGE** until you return to the Map Page.

Once a speed has been entered, you'll notice that the map automatically begins to move slowly, keeping your boat centered on the display. The direction of movement, also called 'track', is controlled by the simulator.

## Getting Started

You'll now have a clearer picture of the route you are navigating. Keep in mind that whenever you do exceed the usable range of the built-in database or the optional MapSource or BlueChart data in use, the range field displays 'OVERZOOM' to indicate that you should exercise extreme caution using the map data. Press the **IN** key to zoom into the 2 nm scale. Now that you've zoomed in a little closer to your route, you can pan ahead of your vessel with the cursor to review map items and create on-screen waypoints. Try moving the cursor to highlight the 'TOUR3' waypoint— just use the **ARROW KEYPAD** to move the cursor as close as possible to the waypoint. (To move the cursor in small increments, try a series of short key presses.)

Once the cursor is over the TOUR3 waypoint, you'll notice that the waypoint symbol and name becomes highlighted. The data field at the top of the map displays the waypoint name, the range and bearing from your present position, and the coordinates for the waypoint.

### To review the waypoint page for a selected waypoint:

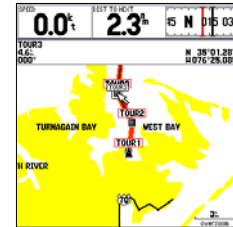
1. With the waypoint highlighted, press the **ENTER** key.
2. To return to the Map Page, press **ENTER** again or press **QUIT**.

The cursor can also be used to create new waypoints right from the map display.

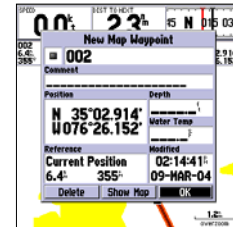
### To create a new waypoint using the cursor:

1. Use the **ARROW KEYPAD** to move the cursor as close as possible to the following position: N35° 02.914'; W 076° 26.152' (Use the data window to verify the cursor position.)
2. Press and release the **ENTER** key to capture the cursor position. Do not hold the button down, as doing so marks your present position, not the map position.
3. Use the **ARROW KEYPAD** to highlight the waypoint symbol field to the left of the waypoint name/number.
4. Press **ENTER** to access the symbol page.
5. Use the **ARROW KEYPAD** to select the 'Shipwreck' symbol and press **ENTER** to confirm.
6. Highlight 'OK' at the bottom and press **ENTER** again to finish.

## Reviewing/Creating Map Waypoints



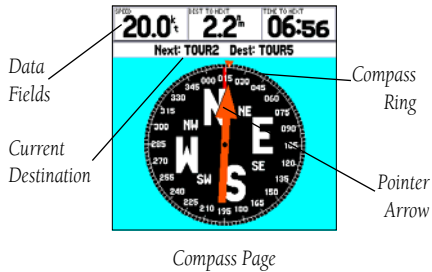
The waypoint 'highlights' when the cursor is moved over it.



Waypoint numbering starts with 001 and continually counts up, even if the waypoint name has been deleted.

## Getting Started

### Compass Navigation Page



Now that we're navigating to an actual destination, let's move on to the GPSMAP 172/172C navigation pages by pressing the **PAGE** key three times. (When using the GPSMAP 172/172C in simulator mode, the optional GSD 20 Map/Sonar Page and Sonar Page are displayed (see page 8)

The Compass Page provides graphic steering guidance to a destination waypoint, with an emphasis on the bearing to your destination and current direction of travel. The middle of the page features a rotating 'compass ring' that shows your course over ground (track) while you're moving, and a bearing pointer that indicates the direction of the destination (bearing) relative to the course over ground. The compass ring and pointer arrow work independently to show—at a glance—the direction of your movement and the direction to your destination. For instance, if the arrow points up, you are going directly to the waypoint. If the arrow points any direction other than up, turn toward the arrow until it points up—then continue in that direction. Because the compass rings uses GPS technology, you must be moving in order for the track to display properly.

The current speed, distance to the next waypoint, turn angle and and time to the next waypoint display at the top of the screen. When you are not navigating to a waypoint, the compass shows your direction of travel as you move, but the arrow does not appear.

The Compass Page allows for precision navigation to one degree of steerage. The default page displays one row of medium numbers fields. You may customize the Compass Page to display the size and number of fields along with the type data you wish to see. (See pages 25-26) for changing the types of data.)

Let's move on to the Highway Page by pressing the **PAGE** key.



## Highway Page

The GPSMAP 172/172C's Highway Page also provides graphic steering guidance to a destination waypoint, placing greater emphasis on the straight-line desired course and the distance and direction you are off course. As you head toward your destination, the middle of the screen provides visual guidance to your waypoint on a moving graphic "highway." Your present position is at the bottom center of the highway display. The line down the middle of the highway represents your desired course.

As you navigate toward a waypoint, the highway actually moves—indicating the direction you're off course. To stay on course, simply steer toward the center of the highway or "keep it on the road". The default data fields at the top of the page indicate 'Speed' and 'Distance To Next' point, along with 'To Course' which shows the bearing to get you back on course and 'Time To Next' point. Use the Highway Page as your primary navigation page (in lieu of the Compass Page) when your main concern is following a defined course.

Whenever the GPSMAP 172/172C is in simulator mode, you can also adjust your speed and course from the Highway Page using the **ARROW KEYPAD**. As you head toward each waypoint in the tour route, try adjusting your boat speed and course to get a feel for how the Highway Page works.

### To adjust the simulated boat speed/heading from the Highway Page:

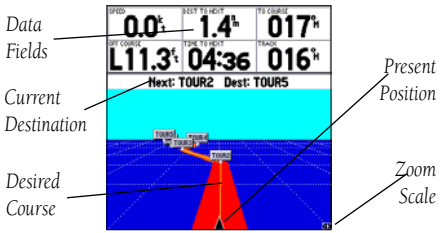
1. Press the UP arrow of the **ARROW KEYPAD** to increase the speed in 10 knot/kph/mpH increments. Press the DOWN arrow to decrease the speed in the same increments. Press the LEFT and RIGHT arrows of the **ARROW KEYPAD** to steer the boat.

Notice that as you get off course, the highway moves to give you graphic guidance to get back on course. You can zoom in or out on the Highway display for a smaller or larger view. Five available settings range from 1X to 16X, with a default setting of 8X. The current scale appears in the bottom right of the display.

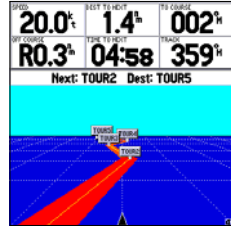
### To zoom in or out on the highway display:

1. Press either the **IN** or **OUT** key to increase or decrease the zoom scale.

## Highway Page



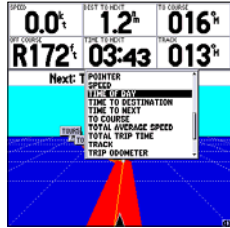
Highway Page



Steer towards the center of the highway to get back on course.

# Getting Started

## Active Route Page/ Main Menu Page



You may choose from several different types of data

Current  
waypoint

Waypoint	Distance	Course
TOUR 1		017
TOUR 2	1.2	344
TOUR 3	3.7	015
TOUR 4	6.8	339
TOUR 5	16.6	
	16.6	351

Active Route Page

The main pages' data fields may also be configured to display several different information categories (see pages 25-26 for the complete list). On the Highway Page, let's change the 'TIME TO NEXT' field to 'TIME OF DAY'.

### To change a data field:

1. Press the **MENU** key to display the Highway Page options.
2. With 'Change Numbers' highlighted, press **ENTER**.
3. Use the **ARROW KEYPAD** to highlight 'TIME TO NEXT', then press **ENTER**.
4. On the alphabetical list of options, press UP or DOWN on the **ARROW KEYPAD** to highlight a selection. Press LEFT or RIGHT to jump through the list a page at a time. The scroll bar on the right side of the window indicates the current position on the entire list of options. Select 'TIME OF DAY' and press **ENTER**.
5. Press **QUIT** when finished.

Press **PAGE** to see the last page appearing in the main sequence, which is the Active Route Page. Whenever you have activated a route or Follow Track, this page shows each waypoint name along with useful data for each point. As you navigate the route, the information automatically updates to indicate the next point along the route. For more detailed information on the Active Route Page, see page 50.

As you've seen, the primary pages provide map and navigation information. The tour's last page is the Main Menu page, which allows access to the GPSMAP 172/172C's waypoint, route and planning functions, as well as various operational and navigation setup features, and celestial and tide data.

The Main Menu is available from any page, and is accessed through the **MENU** key.

### To access the main menu page:

1. Press the **MENU** key twice (or hold down the **MENU** key for two seconds).

The Main Menu page lists 16 menu 'tabs' that are divided into categories by function. You can view a particular menu by simply highlighting the desired tab, which shows any secondary submenu tabs and options for that tab.

To get a basic feel for how the Main Menu page works, let's delete the two waypoints you created during the simulated tour. This ensures that you have a clean slate once you start navigating in your home waters.

### To select the Points (Waypoint) submenu tab:

1. Use the **ARROW KEYPAD** to highlight the 'Points' menu tab. You see a list of stored waypoints appear to the right of the Main Menu list.
2. Press to the right one time on the **ARROW KEYPAD** and you see the 'User' submenu tab highlighted.
3. Press down on the **ARROW KEYPAD** until waypoint 001 with the shipwreck symbol is highlighted.
4. You may delete the waypoint by either pressing **MENU**, then highlighting 'Delete Waypoint' or press **ENTER** and then highlight 'Delete' from the Waypoint Edit page.
5. Press **ENTER** to delete the waypoint, then **ENTER** again to confirm. Repeat the above steps to delete the 'Dock' waypoint also.

Congratulations! You've now gone through the basic operation of the Garmin GPSMAP 172/172C. Your new digital chartplotter is a powerful tool with many advanced features not covered in the Getting Started tour. For detailed instructions on using these features or performing a specific task, please refer to the Quick Reference Guide or the appropriate reference section of this manual. If equipped with GSD 20, refer to the "GSD 20 Sounder Module with Garmin Chartplotters" (190-00241-03) for sonar operations. The unit is still in Simulator mode for practice, but automatically returns to its 'Normal' operation mode when you shut it off and turn it back on.

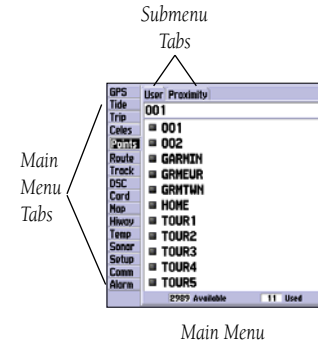
### To turn the GPSMAP 172/172C off:

1. Press and hold the **POWER** key for about two seconds, until the screen is blank.
2. When the screen is blank, release the **POWER** key.

The next section of the manual describes the pages and functions of the GPSMAP 172/172C in detail. If you are unable to locate a specific option or function, please refer to the Index.

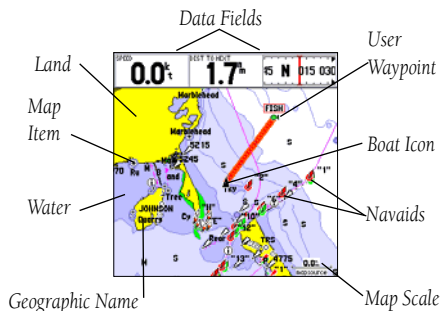
## Getting Started

### Deleting Waypoints/ Powering Off Unit



## Reference

### Map Page



Map Page shown using optional MapSource data.

### Map Page

The GPSMAP 172/172C's Map Page provides a comprehensive display of electronic cartography, plotting and navigational data. When using the unit with the optional BlueChart data or MapSource software, the map display shows your boat on a digital chart, complete with geographic names, map items, navaids and a host of other chart features. It also plots your track and displays any routes and waypoints you create. An on-screen cursor lets you pan and scroll to other map areas, determine the distance and bearing to a position, and perform various route and waypoint functions.

When the cursor is active, an additional data window appears below the data fields to indicate the position, range and bearing to the cursor or a selected waypoint or map item. The map scale displays at the bottom right of the page.

The **(ZOOM IN** and **(ZOOM OUT** keys, combined with the **ARROW KEYPAD**, let you select zoom ranges and move the cursor. Two basic map operating modes, position mode and cursor mode, determine what cartography is shown on the map display. Position mode pans the cartography to keep the present position marker within the display area, while cursor mode pans the cartography to keep the cursor within the display area.

The GPSMAP system always powers up in the position mode, with your vessel centered on the map display.

- When sufficient map coverage is not available to keep the boat centered, the boat icon moves toward the edge of the display.

When the **ARROW KEYPAD** is pressed, the GPSMAP 172/172C enters cursor mode. In cursor mode:

- The cursor can be moved over the map display using the **ARROW KEYPAD**.
- Whenever the cursor reaches the edge of the display, the map scrolls forward under the cursor. Keep in mind that the boat icon moves with the map scrolling and may go off the display screen (you may not be able to see your present position).
- When the cursor is stationary, a fixed coordinate position appears in the position field. Note that the distance and bearing changes as the boat's position changes.

- Whenever you zoom in cursor mode, the cursor is centered on screen.
- To return to position mode, press the **QUIT** key.



*When the cursor reaches the edge of the map, the unit may pause as it loads new map data.*

## Using the Cursor

The cursor allows you to pan away from your present position and scroll to other map areas around the world (even outside of your current detail coverage). As you pan past the edge of the current map display, the screen actively scrolls forward to provide continuous map coverage. You see an hourglass symbol by the pointer while the unit is busy drawing new map detail.

### To move the cursor:

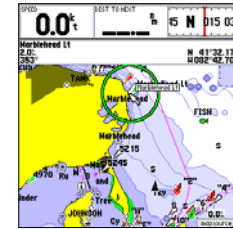
1. Press the **ARROW KEYPAD** to move the cursor in an up, down, left or right direction.

As you move the cursor, the distance and bearing from your present position to the cursor is displayed in the data window, along with the cursor's position coordinates. Keep in mind that when the cursor is stationary, the distance and bearing from your present position changes as your boat moves. The cursor may also be used to 'snap' to on-screen waypoints and map items, allowing you to review a selected position directly from the map display.

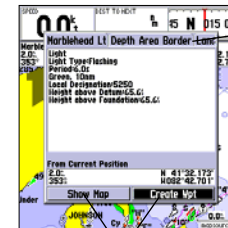
### To select an on-screen waypoint or map item with the cursor:

1. Use the **ARROW KEYPAD** to move the cursor to the desired waypoint or map item (if there are several waypoints grouped closely together, zoom in closer for a better view).
2. When a waypoint or map item is selected, it becomes highlighted on screen, with the name and position displayed. Press **ENTER** to show details of the map item. When using BlueChart or MapSource data, additional information tabs appears. Use the **ARROW KEYPAD** to highlight the individual tabs to display the information and additional options.

## Map Page: Cursor



*Move the cursor over an item on the map to highlight it.*



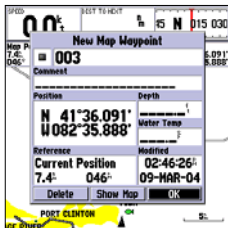
*Additional information tabs.*

*Pressing **ENTER/MARK** while highlighting a map item brings up additional details and options.*

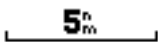
*Option buttons*

## Reference

### Map Page: Cursor and Zooming



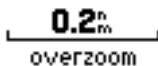
Creating New Map Waypoint



Using Built-In Basemap



Using BlueChart/MapSource Data



Overzoom, no additional data

#### To eliminate the cursor and re-center your position on-screen:

1. Press the **QUIT** key.

The cursor may also be used to create new waypoints directly from the map.

#### To create a waypoint with the cursor:

1. Use the **ARROW KEYPAD** to move the cursor to the desired map position.
2. Press the **ENTER/MARK** key and the 'New Map Waypoint' window appears. If the cursor is on a map item, you get a new window with details about the item when **ENTER/MARK** is pressed. Press **ENTER** again on the highlighted 'Create Wpt' option.
3. Press **ENTER** to confirm the new waypoint using the default three-digit name and symbol.

#### Selecting Map Scales

The map display has 28 available range scales from 20 ft. to 800 mi. (5 m to 1200 km). The map scale is controlled by the **IN** and **OUT** keys, with the current scale displayed at the bottom right of the data window.

#### To select a map scale:

1. Press the **OUT** key to zoom out and the **IN** key to zoom in.



*The scale value represents the distance from one end of the scale bar to the other.*

The GPSMAP 172/172C's system has a built-in worldwide database to 20 mi, with more detailed coverage available through the use of the optional BlueChart or MapSource data. The GPSMAP 172/172C displays cartography as long as there is chart information available for the range you've selected. Map coverage conforms to the following conditions:

- When the selected zoom range is covered by either the internal database, BlueChart, or MapSource data, cartography is displayed.
- When the selected zoom range is covered by both the internal database and BlueChart/MapSource data, cartography is displayed using the data with the best resolution.
- When the selected zoom range exceeds the resolution of the data in use, overzoom cartography is displayed and an 'overzoom' warning appears below the scale field.

## Map Page Options

Many features of the GPSMAP 172/172C are menu driven. Each of the main pages have an options menu, allowing you to custom tailor the corresponding page to your preferences and/or select special features that specifically relate to that page. The data window, located at the top of the main pages provides a user-selectable layout of various types of useful data. Each data field may be configured to display any one of several data options. The data window layout may also be changed to display additional data fields and change the actual size of the data displayed.

The GPSMAP 172/172C's Map Page provides access to functions and features relating to the Map Page and the layout options.

### To display the Map Page options:

1. Press **MENU**.

### To select a menu option:

1. Use the **ARROW KEYPAD** to highlight the desired option and press **ENTER**.

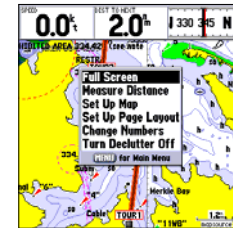
The available options are Full Screen Map/Show Data, Measure Distance, Set Up Map, Set Up Page Layout, Change Numbers, and Turn Declutter On/Off. Following are details on using each of these options.

- **Full Screen Map/Show Data** — toggles between a Map Page without or with data fields on the map display. The unit defaults back to "Show Data" the next time it is powered on.

### To maximize the map/show data fields:

1. Highlight the 'Full Screen Map' option and press **ENTER**. The Map Page is now maximized with no data fields.
2. To show the data fields again, press **MENU**, highlight 'Show Data' and press **ENTER**.

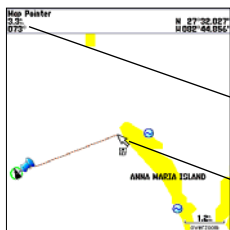
## Map Page: Options



Map Page Options

## Reference

### Map Page: Options

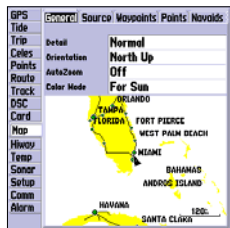


Cursor  
Coordinates

Distance and  
Bearing

Map Cursor

Full screen map shown



Main Menu—  
Map Configuration Tab

- **Measure Distance**— allows you to measure the bearing and distance between any two points on the map display.

#### To measure the Bearing/distance between two points:

1. Highlight the 'Measure Distance' option and press **ENTER**. An on-screen pointer appears on the map display at your present position with 'ENT REF' below it.
2. Move the cursor to the desired reference point (the point that you want to measure from) and press **ENTER**.
3. Move the cursor to the point that you want to measure to. The bearing and distance from the reference point and cursor coordinates is displayed in the data window at the top of the display. Press the **QUIT** key to finish.

• **Set Up Map**— allows you to configure the map display to your preferences, including map detail, map orientation, automatic zoom, and various map items and points. The map set up option uses a 'file tab' feature, making it easier to organize the various settings for ease of use. The following table lists the file tabs and the settings available under each tab:

General	Detail, Orientation, AutoZoom, Color Mode
Source	Basemap, Data Card Maps
Waypoints	Waypoints, Active Route
Points	Spot Soundings, Tide Stations, Services
NavAids	Symbol Set, Symbol, Size, Text Size, Light Sectors
Nav Line	Heading Line, Bearing Line, Course Line
Track	Saved Tracks, Track Log
Other	Accuracy Circle, Lat/Lon Grid, Map Outlines

#### To change a map setup feature:

1. From the Map Page menu, highlight 'Set Up Map' and press **ENTER**.
2. Move LEFT or RIGHT on the **ARROW KEYPAD** to highlight the desired tab, then UP or DOWN on the **ARROW KEYPAD** to move the highlight to the setting you want to change and press **ENTER**.
3. Move UP or DOWN on the **ARROW KEYPAD** to highlight to the desired setting and press **ENTER**. To exit, press **QUIT**.



## General Tab

Detail— Most, More, Normal, Less, Least: controls how much map detail displays. Those features which have a specified scale or turned “Off” are unaffected by this setting.

Orientation— North Up— fixes the top of the map display to a north heading; Track Up Below— fixes the top of the map display to the current track heading and centers your position on the lower portion of the screen. Set to ‘Off; for constant Track Up. The numeric value is the range the unit switches to North Up when zooming out. Course Up— fixes the map so the direction of navigation is always “up” and turns the navigation leg line vertical on the screen.

AutoZoom — On/Off: when “On” the map automatically adjusts the map scale to a lower scale as you approach you destination point.

Color Mode — (172C) For Sun, For Dark (172) Water Mode, Land Mode

## Source Tab

Basemap— On/Off: turns the built in base map on or off.

Data Card Maps— On/Off: turns all optional BlueChart/MapSource data loaded on the data card on or off. The ‘Data Card Maps’ option box shows a list of the optional BlueChart/MapSource data loaded on the data card. Each area is described by name and may be deselected if you do not wish to display the data on the Map Page.

## To display the Map Information Page:

1. Highlight the ‘Data Card Maps’ option box and press **ENTER**.
2. Use the **ARROW KEYPAD** to scroll through the list of maps.
3. To select/deselect a map family, highlight the check box to the left of the name and press **ENTER** to select/deselect the map. The map is selected and is displayed on the Map Page when an “✓” appears in the box adjacent to that map. You may also press **MENU** and choose to ‘Show All’ or ‘Show None’ and press **ENTER**.
4. To display detailed information/notes for each area or to turn individual maps in the family on/off, highlight the family name and press **ENTER**. To view the notes for that area, choose ‘Show Notes’. To scroll through the notes, you may either highlight the notes, press **ENTER** and use the **ARROW KEYPAD** to scroll UP, DOWN, LEFT and RIGHT or press **MENU** and choose the desired scroll option.

## Map Page Options

General Tab

General	Source	Waypoints	Points	Nav aids
Detail	Normal			
Orientation	North Up			
AutoZoom	Off			
Color Mode	For Sun			

Source Tab

General	Source	Waypoints	Points	Nav aids
Basemap	On			
Data Card Maps	On			
Data Card Maps				

‘Data Card Maps’ Map Information Page

Map Information	
Marco, Florida, Port Charlotte, Florida, Cape Corb, Mar 2004	
Show	Map Name
<input checked="" type="checkbox"/>	Ce470060 (20000)
<input checked="" type="checkbox"/>	Ce470075 (20000)
<input checked="" type="checkbox"/>	Ce470072 (12500)
<input checked="" type="checkbox"/>	Ce470070 (20000)
<input checked="" type="checkbox"/>	Ce470005 (20000)
<input checked="" type="checkbox"/>	Ib4401 (2750000)
<input checked="" type="checkbox"/>	Us 13003 (1200000)
<input checked="" type="checkbox"/>	Ce476031 (3500000)
<input checked="" type="checkbox"/>	Us 18447 (B) (10000)
American BlueChart v6; Ce470290 (20000), American BlueChart v6	

## Map Page Options

General	Source	Waypoints	Points	Nav aids
		Text		Zoom
Waypoints		Medium		Auto
Active Route		Medium		Auto

Waypoints  
Tab

General	Source	Waypoints	Points	Nav aids
		Text		Zoom
Spot Soundings		Small		On
Tide Stations		None		Auto
Services		None		Auto

Points Tab

General	Source	Waypoints	Points	Nav aids
Symbol Set		Auto		
Symbol Size		Small		
Text Size		Medium		
Light Sectors		Auto		

Nav aids Tab

Waypoints	Points	Nav aids	Nav Line	Track	Other
					Zoom
Heading Line		Off			
Bearing Line					Off
Course Line					Auto

Nav Line Tab

Waypoints	Points	Nav aids	Nav Line	Track	Other
					Zoom
Saved Tracks					Auto
Track Log					Auto

Track Tab

### Waypoints Tab—

Waypoints/Active Route

Text— None, Small, Medium, and Large: controls the screen size of the name.

Zoom— Auto, Off, 20 ft.-800 mi.: sets the maximum scale at which the feature should appear on the screen. Some types of data only shows up to certain zoom scales.

### Points Tab—

Spot Soundings/Tide Stations/Services

Text— None (except Spot Snd.), Small, Medium, and Large: controls the screen size of the name.

Zoom— Auto, Off, 20 ft.-800 mi.: sets the maximum scale at which the feature should appear on the screen. Some types of data only shows up to certain zoom scales.

### Nav aids Tab—

Symbol Set— Auto, GARMIN, NOAA, International: controls the desired navaid symbol set.

Auto - BlueChart maps are drawn using symbols similar to the NOAA/NIMA standard. Non-BlueChart maps are drawn using traditional Garmin symbols.

GARMIN - All maps are drawn using traditional Garmin symbols.

NOAA - All maps are drawn using a symbol set similar to NOAA/NIMA.

International - All maps are drawn using a symbol set similar to the IALA symbol set.

Symbol/Text Size— Small, Medium, and Large: controls the screen size of the symbol/name.

Light Sectors— Off, Auto, On: controls the drawing light sectors on the map. Color units indicate the actual color of each sector using the color of the light.

Off— No light sectors are ever drawn.

Auto— Light sectors appear when you point to them with the map cursor.

On— Light sectors are drawn for all lights that have them.

### Nav Line Tab—

Heading Line— On/Off: draws an extension from the end of the boat icon in the direction of travel.

Bearing Line— On/Off: toggles the black/white line which points to the current navigation point.

Course Line— Auto, Off, 20 ft.-800 mi.: sets the maximum zoom scale at which the desired course line should appear on the screen.

### Track Tab—

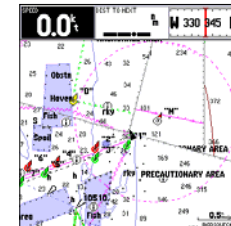
Saved Tracks/Track Log

Zoom— Auto, Off, 20 ft.-800 mi.: sets the maximum scale at which the feature should appear on the screen. Some types of data only display up to certain zoom scales.

## Map Page Options

ints	Points	Navoids	Nav Line	Track	Other
					Zoom
Accuracy Circle					On
Lat/Lon Grid				Medium	Off
Map Outlines					On

Other Tab



Highlight the field you wish to change

**Other Tab—**

**Accuracy Circle—** On/Off: toggles the circle “On” and “Off”. The circle represents the approximate accuracy of the unit based on ÉPE, DOP, and basemap quality. Your position is within the circle.

**Lat/Lon Grid—** Text— None, Small, Medium, and Large: controls the screen size of the name.

**Zoom—** Auto, Off, 20 ft.-800 mi.: sets the maximum scale at which the feature should appear.

**Map Outlines—** On/Off: toggles the coverage boxes for BlueChart/MapSource data “On” and “Off”.

From the map setup page, you can access the following menu options by pressing **MENU**:

- **Defaults—** restores settings back to factory settings for the tab highlighted.
- **All Map Defaults—** restores settings back to factory settings for all tabs.

• **Set Up Page Layout —** the layout of the data fields may be changed to show more fields (with a smaller number size) or less fields (with a larger number size). You may also choose to show a Compass Tape on the Map Page only.

**To set up the page layout:**

1. Press the **MENU** key to display the Page options.
2. Highlight ‘Set Up Page Layout’ and press **ENTER**.
3. The current setting displays, press **ENTER** to change. Use the **ARROW KEYPAD** to highlight the desired setting, then press **ENTER**.
4. Press **QUIT** when finished.

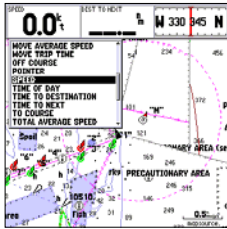
• **Change Numbers —** allows you to specify the type of data displayed in each data field used on the map display. This option is available from any of the main pages. See pages 25-26 for instructions on changing data field numbers.

The following data options are available for data fields on the main pages:

- **BEARING –** Compass direction from your position to destination
- **COMPASS –** Compass ribbon
- **COURSE –** Desired Track
- **DEPTH\* –** Depth below transducer
- **DIST TO DESTINATION –** Distance to final waypoint
- **DIST TO NEXT –** Distance to next waypoint

## Reference

### Map Page Options



Choose the type of data  
you wish to display.



Map Setup  
Menu Options

- ELEVATION – Elevation above/below MSL (Mean Sea Level)
- ETA AT DESTINATION – Estimated Time of Arrival to final waypoint
- ETA AT NEXT – Estimated Time of Arrival to next waypoint
- GPS ACCURACY – Shows estimated GPS accuracy
- HIGHWAY – Smaller version of the Highway Page
- MAXIMUM SPEED – Fastest speed the unit has traveled
- MOVE AVERAGE SPEED – Average moving speed
- MOVE TRIP TIME – Time unit has been moving for a trip
- OFF COURSE – Distance from desired track
- POINTER – Arrow points to your destination
- POSITION – Current position coordinates
- SONAR\* – Compressed view of sonar data
- SPEED – Speed over ground
- TIME OF DAY – Current time
- TIME TO DESTINATION – Time to final waypoint
- TIME TO NEXT – Time to next waypoint
- TO COURSE – Bearing to desired track
- TOTAL AVERAGE SPEED – Total average speed
- TOTAL TRIP TIME – Total travel time of trip, stopped and moving
- TRACK – Current compass direction of travel
- TRIP ODOMETER – Trip Odometer
- TURN – Directional amount of turn needed to match bearing
- VELOCITY MADE GOOD – Velocity Made Good to destination
- VOLTAGE – Current voltage reading being received by unit
- WATER SPEED\* – Speed through the water
- WATER TEMP. LOG\* – Timeline graph of the transducer's temperature reading.
- WATER TEMPERATURE \* – Water temperature

\*If receiving proper sonar data from other device, such as a GSD 20 Sounder Module or NMEA device.

NOTE: COMPASS, HIGHWAY, POSITION, SONAR, and WATER TEMP. LOG are only available on Large and Huge sized data fields.

• **Turn Declutter On/Off** — toggles between showing spot soundings and map outlines for easier viewing.

## Compass Page

The GPSMAP 172/172C features two different navigation pages: Compass and Highway. Whenever a **NAV** goto, Follow Track (TracBack), or Follow Route have been activated, the GPSMAP 172/172C's Compass Page guides you to your destination with digital readouts and a graphic compass display, which includes a bearing pointer. Use this page (instead of the Highway Page) when your desired path may be varied in direction. The middle of the page features a rotating 'compass ring' that shows your course over ground (track) while you're moving. Your present course over ground is indicated at the top of the compass ring. A bearing pointer arrow, in the middle of the compass ring, and a bearing 'bug' indicator on the outside of the compass ring, indicate the direction of the destination (bearing) relative to the course over ground. The compass ring and pointer arrow work independently to show—at a glance—the direction of your movement and the direction to your destination. For instance, if the arrow points up, you are going directly to the waypoint. If the arrow points any direction other than up, turn toward the arrow until it points up, then continue in that direction.



*The bearing pointer, bearing bug and/or compass ring may point in various directions when you are stationary or at very low speeds. Once you start moving, the pointer is correct.*

The GPSMAP 172/172C's Compass Page features a menu page that provides access to layout and data field options. The data window, located at the top of the page, provides a user-selectable layout of various types of useful data. Each data field may be configured to display several data options.

### To display the Compass Page options:

1. Press **MENU**.

### To select a menu option:

1. Use the **ARROW KEYPAD** to highlight the desired option and press **ENTER**. For detailed instructions on changing the data fields and layout of the Compass Page, see pages 25-26.

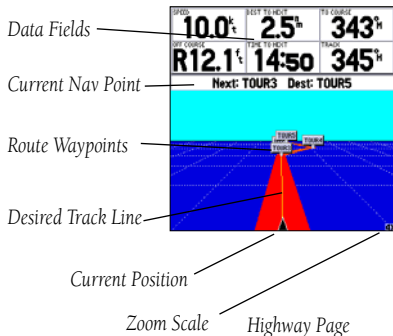
For detailed instructions on changing the data fields and layout of the Compass Page, see pages 25-26.

## Compass Page



## Reference

### Highway Page



### Highway Page

Whenever a Go To, TracBack or route has been activated, the GPSMAP 172/172C's Highway Page provides digital and graphic steering guidance to the destination with the Navigation Page. The top half of the Highway Page features user-selectable data fields that display useful navigation data. The bottom section of the screen provides visual guidance to the waypoint on a graphic highway display. The line down the center of the highway represents your desired track line.

As you head toward your destination, the highway perspective moves to indicate your progress to the waypoint and which direction you should steer to stay on course. If you are navigating a route, the Highway Page shows each route waypoint in sequence connected by a red "road" with a yellow line down the middle, which is your desired track line. Nearby waypoints not in the active route can also be displayed. The highway perspective scale may also be zoomed in or out to display a larger or smaller view of the highway. Five settings are available from 1X to 16X, with a default setting of 8X.

#### To change the highway perspective scale:

1. Press the **IN** or **OUT** key to select the desired setting.

The GPSMAP 172/172C's Highway options page allows you to define the data fields and select which waypoints and track are displayed on screen. The data window, located at the top of the page, provides a user-selectable layout of various types of useful data. Each data field may be configured to display several data options. The data window layout may also be changed to display additional data fields and change the actual size of the data displayed.

The GPSMAP 172/172C's Highway Page features a menu options page that provides access to functions and features relating to the Highway Page and the layout options.

#### To display the Highway Page options:

1. Press **MENU**.

## To select a menu option:

1. Using the **ARROW KEYPAD**, highlight the desired option and press **ENTER**.

The following options are available from the Highway Page menu:

- **Set Up Highway**— allows you to select what waypoints and tracks are shown on the Highway display. Use the **ARROW KEYPAD** and **ENTER** key to select/deselect the desired options. Four options are available:
  - Active Route Waypoints— all active route waypoints
  - User Waypoints— only nearby waypoints
  - Track Log— current active track log
  - Saved Tracks— any saved track logs
- **Set Up Page Layout**— allows you to change the layout of the data fields to show more fields (with a smaller number size) or less fields (with a larger number size). See page 25.
- **Change Numbers**— allows you to specify the type of data displayed in each data field used on the map display. For detailed instructions on changing the data fields and layout of the Highway page, see pages 25-26.

## Active Route Page

Whenever you have activated a route in the GPSMAP 172/172C system, the Active Route page shows each waypoint of the active route, along with various, user-selectable types of data. For additional details on the Active Route Page, see page 50.

## Highway Page Options

Check or uncheck the options you wish to show/hide on the Highway Page.

Preview Window



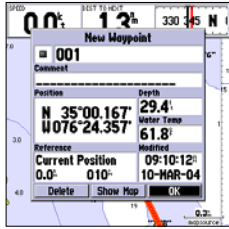
Selecting the 'Setup Highway' option takes you to the Highway tab of the Main Menu.

Waypoint	Distance	Course
TOUR1		
TOUR2		
TOUR3	2.1	344°
TOUR4	5.2	015°
TOUR5	15.0	339°
	15.0	351°

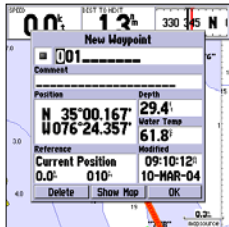
Active Route Page

## Reference

### Creating Waypoints



Highlight 'OK' and press **ENTER** to use the default name and symbol.



Highlight a field and press **ENTER** to enter a new symbol, name, comment or depth.

### Creating and Using Waypoints

The Garmin GPSMAP 172/172C stores up to 3000 alphanumeric waypoints with a user-defined icon, comments, depth, and water temperature available for each waypoint. Waypoints can be created using three basic methods:

- **ENTER/MARK** key– used primarily for marking your present position, the **ENTER/MARK** key also provides options that allow you to select a map position or map item from the map display.
- Graphically– allows you to define a new waypoint position from the map display using the **ARROW KEYPAD**.
- Text Entry– allows you to enter a new waypoint's coordinates manually (from a chart, etc.).

### Marking Your Present Position

The Garmin GPSMAP 172/172C's **ENTER/MARK** key lets you quickly capture your present position (or cursor or map item position) in order to create a new waypoint. You must have a valid position (2D or 3D) fix to mark your present position. This can be determined by looking at the GPS tab on the Main Menu.

#### To mark your present position:

1. Press and hold the **ENTER/MARK** key until the 'New Waypoint' window appears, then release it. You see a default three-digit name and symbol for the new waypoint.
2. To accept the waypoint with the default name and symbol, press **ENTER** to confirm the highlighted 'OK' prompt.
3. To enter a different name, highlight the name field and press **ENTER**, then use the **ARROW KEYPAD** to enter the new letters/numbers and press **ENTER** when done. You may use up to 10 alphanumeric characters for the name.
4. To enter a different symbol, highlight the symbol field to the left of the name and press **ENTER**, then use the **ARROW KEYPAD** to highlight the new symbol and press **ENTER**.
5. To enter optional comments, depth, or water temp, highlight the appropriate field and press **ENTER**, then use the **ARROW KEYPAD** to enter a value and press **ENTER**.



- To manually enter a set of coordinates, highlight the coordinates and press **ENTER**, then use the **ARROW KEYPAD** to enter the new coordinates and press **ENTER** when done.
- When done, use the **ARROW KEYPAD** to highlight the 'OK' prompt and press **ENTER** to save the waypoint into memory.

### Creating Waypoints Graphically

Waypoints may also be quickly created with the Map Page cursor, which allows you to 'point and shoot' at any map position or map feature to create a new waypoint. When you move the cursor over a map item, you see a highlighted description of that item. The GPSMAP 172/172C uses the map item text shown on the cartography as the default name and symbol for the new waypoint.

#### To create a new waypoint on an open map location:

- Use the **ARROW KEYPAD** to move the cursor to the desired map position.
- Press and quickly release the **ENTER/MARK** key to capture the cursor position (press and hold **ENTER/MARK** to mark your present location, not the map cursor's position).
- The 'New Map Waypoint' page appears. To accept the waypoint with the default name and symbol, press **ENTER**.

To change the name, symbol, position, or add a comment, depth, or water temp, highlight the appropriate field and press **ENTER**. Make your changes and press **ENTER** when done. After entering and confirming your changes, highlight 'OK' and press **ENTER**.

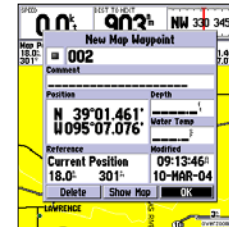
#### To create a new waypoint from a map feature:

- Use the **ARROW KEYPAD** to move the cursor and highlight the desired map feature.
- Press **ENTER/MARK** to capture the cursor position. An Information page for that map feature appears. Use the **ARROW KEYPAD** to highlight 'Create Wpt' and press **ENTER**.
- The 'New Waypoint' page appears. To accept the waypoint with the default name and symbol (based on the map feature), highlight 'OK' and press **ENTER**.

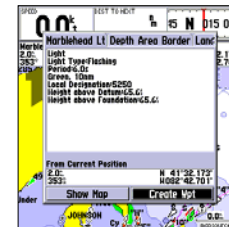
To change the name, symbol, position, or enter comments, depth, or water temp, highlight the appropriate field and press **ENTER**. Make your changes and press **ENTER**. After entering and confirming your changes, use the **ARROW KEYPAD** to highlight 'OK' and press **ENTER**.

## Reference

### Creating Waypoints



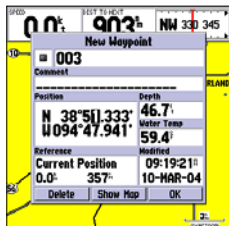
*Creating a waypoint on an open map location.*



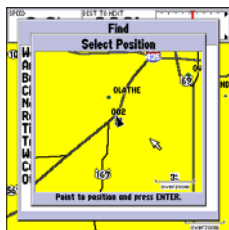
*Using a map item to create a new waypoint.*

## Reference

### Creating Waypoints



Highlight the position field and use the **ARROW KEYPAD** to enter the desired position coordinates.



Select a point from which to project a new waypoint.

### Additional Options For Creating Waypoints

Waypoints may also be created by manually entering position coordinates through the Points tab of the Main Menu. This method can be useful for creating a waypoint at a specific latitude/longitude position from a chart.

#### To create a new waypoint by entering location coordinates:

1. Press **MENU** twice to display the Main Menu. Highlight the 'Points' tab and press **MENU**.
2. Highlight 'Create Waypoint' and press **ENTER**. The 'New Waypoint' page appears, with the next available waypoint number and the receiver's last known position as the default name and position.
3. Use the **ARROW KEYPAD** to highlight the position field and press **ENTER**. Use the **ARROW KEYPAD** to enter the desired position coordinates and press **ENTER** when finished.
4. To change the name, symbol, or enter comments, depth, or water temp, highlight the appropriate field and press **ENTER**. Make your changes and press **ENTER** when finished.
5. Use the **ARROW KEYPAD** to highlight 'OK' and press **ENTER** to save the waypoint.

A waypoint may also be created by "projecting" the distance and bearing from a specific location to a new location. Start by accessing the 'New Waypoint' page or the 'New Map Waypoint' page.

#### To create a new waypoint by projecting its location:

1. To project the waypoint from your current location, be sure the field to the right of the word 'From' reads 'Current Position' (if not, highlight the field and press **ENTER**, highlight 'Current Position' and press **ENTER**).
2. To select a map location from which to project a waypoint, highlight the field next to 'From' and press **ENTER**. The 'Find' screen appears. Highlight 'Other Position' and press **ENTER**. Use the zoom **IN** key and **ARROW KEYPAD** to highlight the desired position on the map and press **ENTER**.

- To select another location from which to project a waypoint, highlight the field next to 'From' and press **ENTER**. The 'Find' screen appears. Highlight the desired type of location (waypoints, cities, etc.) and press **ENTER**. Use the submenus to narrow down your search (for more information see 'Find' on pages 51-52). Highlight the desired location and press **ENTER**. With 'OK' highlighted, press **ENTER** again.
- Highlight the distance and/or bearing fields below 'From Current Position' and press **ENTER**. Use the **ARROW KEYPAD** to enter the projected distance and/or bearing from your current position for the new waypoint and press **ENTER**.
- Make any other desired changes to the new waypoint data (name, symbol, etc.), then highlight 'OK' and press **ENTER** to save the waypoint.

### Waypoint Menu Options

Two additional options are available by pressing **MENU** on the New Waypoint and New Map Waypoint Pages: Append To Route and Move Waypoint. (these menu options also appear on the Waypoint Edit and Waypoint Review pages).

- Append to Route— Adds the new waypoint to the end of a route.
- Move Waypoint— Allows you to move the waypoint to a new location on the map display.

#### **To append a new waypoint to a route:**

- Select 'Append To Route' from the options menu.
- The 'Select Route' screen appears. Highlight the desired route or select 'New Route' and press **ENTER**.
- With 'OK' highlighted, press **ENTER** to save the waypoint.

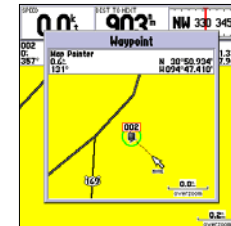
#### **To move a waypoint:**

- Select 'Move Waypoint' from the options menu.
- The selected waypoint is centered and highlighted on a map display. Use the **ARROW KEYPAD** to move the waypoint to the new position and press **ENTER**. Press **QUIT** to exit.

## Creating Waypoints



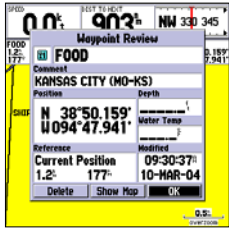
Waypoint Options Menu



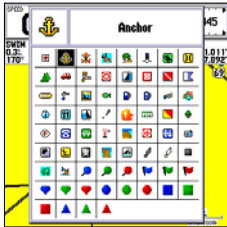
Use the **ARROW KEYPAD** to move the waypoint to a new position on the map.

## Reference

### Reviewing/Editing Waypoints



Waypoint Review Page— Highlight 'OK' and press **ENTER** to exit/save changes.



Changing a Waypoint symbol.

### Reviewing and Editing Waypoints

Once you have created and stored a waypoint, it may be modified, reviewed, renamed, moved, or deleted at any time through the Waypoint Review and Waypoint Edit pages.

#### To access the Waypoint Review page:

1. Use the **ARROW KEYPAD** to highlight the desired waypoint on the Map Page.
2. Press **ENTER** to display the Waypoint Review page. If the waypoint is located on a map feature, or on a MapSource or BlueChart feature, the Waypoint Review page includes additional information tabs about the other features at that location.

#### To access the Waypoint Edit page:

1. Press **MENU** twice to view the Main Menu. Use the **ARROW KEYPAD** to highlight the 'Points' tab, then highlight the desired waypoint from the 'User' or 'Proximity' lists.
2. Press **ENTER** to display the Waypoint Edit page. If the waypoint is located on a map feature, or on a MapSource or BlueChart feature, the Waypoint Edit page does NOT display the details of the other map features.

From the Waypoint Review and Edit pages, you may change the name, symbol, comment, position coordinates, depth, or water temp for the selected waypoint. Once the changes have been made, highlight 'OK' (Waypoint Review Page) or 'Next' (Waypoint Edit Page) and press **ENTER** to save them.

#### To change the waypoint name:

1. Highlight the waypoint name field and press **ENTER**.
2. Use the **ARROW KEYPAD** to enter a new name and press **ENTER** when done.

#### To change the waypoint symbol:

1. Highlight the waypoint symbol field to the left of the waypoint name and press **ENTER**.
2. Use the **ARROW KEYPAD** to select the desired symbol and press **ENTER** when done.

**To change the comment/position coordinates/depth/water temperature:**

1. Highlight the desired field and press **ENTER**.
2. Use the **ARROW KEYPAD** to edit/enter the data. To drop to the next line, press to the right on the **ARROW KEYPAD**. Press **ENTER** when done.

On the Waypoint Review and Waypoint Edit pages, you may also delete the selected waypoint, view the waypoint on the map, and move the waypoint on the map.

**To delete a waypoint:**

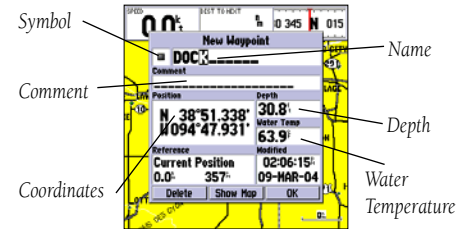
1. On the Waypoint Review/Waypoint Edit page, use the **ARROW KEYPAD** to highlight 'Delete' and press **ENTER**.
2. With 'OK' highlighted, press **ENTER** again to confirm the deletion.

**To view and move a waypoint on the map:**

1. From the Waypoint Review/Waypoint Edit page, highlight 'Show Map' and press **ENTER**. The waypoint is highlighted on a map screen with an information window that shows the waypoint name, position and distance and bearing from your current position.
2. To move the waypoint, press **ENTER**. A 'MOVE' label now appears under the cursor arrow. It may be necessary to use the **IN** and **OUT** keys to zoom the map.
3. Use the **ARROW KEYPAD** to move the waypoint to a new position. As you move the cursor around the map display, the information window at the top changes to show the distance, bearing, and position of the map cursor (in relation to the waypoint's original position), and a description of where the cursor is on the map. If you wish to stop the move process, press **QUIT**.
4. With the pointer at the desired position, press **ENTER**. To return to the Waypoint Edit/Waypoint Review page, press **QUIT**.

On the 'Show Map' map display, an additional option is available by pressing **MENU**:

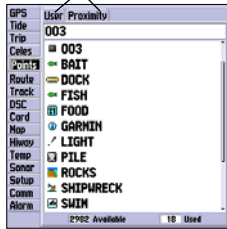
- Point to on Map Page— returns to the highlighted waypoint on the main Map Page (exits the Waypoint Review/Waypoint Edit Page).

**Editing Waypoints**

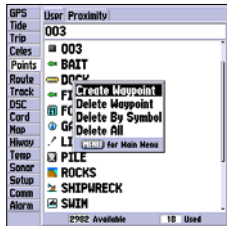
Waypoint Edit Page

## Waypoint Lists

Submenu Tabs



Main Menu—Points Tab



Options Menu

### Waypoint Lists

The GPSMAP 172/172C's Main Menu Page features two waypoint submenu tabs, 'User' and 'Proximity', that let you manage a large number of waypoints quickly and efficiently. The submenu tabs also provide a continuously updated proximity waypoint alarm function that can be used to define an alarm circle around submerged hazards, shallow waters, etc.

#### To access the waypoint submenus of the Main Menu:

1. Press **MENU** twice, highlight the 'Points' tab using the **ARROW KEYPAD**, then highlight the desired submenu tab.

#### User Waypoint List

The 'User' submenu of the Points tab displays a master list of all waypoints currently stored in memory. From the User list, you may review, edit, rename or delete individual waypoints, or delete all user waypoints. The total number of stored and available waypoints is displayed at the bottom of the User page, with the stored waypoints arranged in numerical/alphabetical order.

#### To scroll through and review the waypoint list:

1. With the **ARROW KEYPAD**, highlight the 'Points' tab on the main menu, then highlight 'User'.
2. Use the **ARROW KEYPAD** to scroll through the list in the desired direction.
3. Press **ENTER** to review the highlighted waypoint on the 'Waypoint Edit' page (see page 34 for detailed information on reviewing and editing waypoints).
4. With 'Next' highlighted, press **ENTER** to return to the list. The field highlight automatically moves to the next waypoint in the list.

The following options are available by pressing **MENU** while highlighting the Points tab, the User submenu or one of the User waypoint names:

- Create Waypoint— allows you to create a waypoint. (See page 30)
- Delete Waypoint— deletes selected waypoint from list and any route in which it was used.
- Delete By Symbol— deletes waypoints that use the same symbol.
- Delete All— deletes all waypoints from the unit.



Once a waypoint is deleted from the list, it cannot be recovered from the unit. It is advisable to backup important waypoints to a computer using an optional PC cable and interface software, save them to a data card, or write them down by hand.

### To delete an individual waypoint from the 'User' list:

1. Use the **ARROW KEYPAD** to highlight the waypoint to be deleted.
2. Press **MENU**, highlight 'Delete Waypoint' and press **ENTER**.

OR, press **ENTER**, highlight 'Delete' and press **ENTER**.

3. Press the **ENTER** key to confirm the deletion warning.

### To delete waypoints by symbol:

1. From the 'User' tab, highlight the waypoint to be deleted and press **MENU**, then select 'Delete By Symbol' and press **ENTER**.
2. Use the **ARROW KEYPAD** to highlight the symbol of the waypoint(s) to be deleted and press **ENTER**.
3. Press **ENTER** to confirm. Choose 'Cancel' or press **QUIT** to stop the deletion.

### To delete all user waypoints:

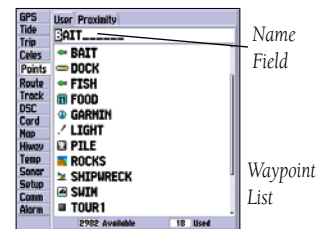
1. Press the **MENU** key to select the options window.
2. Use the **ARROW KEYPAD** to highlight 'Delete All' and then press **ENTER**.
3. Highlight the 'OK' prompt and press **ENTER** to confirm.

### Proximity Waypoint List

The 'Proximity' submenu of the Points tab lets you define an alarm circle around a stored waypoint position, and can be used to help you avoid reefs, rocks, or restricted waters. Up to ten waypoints may be listed, with a maximum alarm radius of 99.99 nautical or statute miles or kilometers. If a proximity alarm circle overlaps with an existing alarm circle, the message 'Proximity Overlaps Another Proximity Waypoint' appears. Since the unit only alerts for one of the overlap points, use caution when navigating in these areas. If you enter an alarm circle overlap, you are only alerted to the closest proximity waypoint.

## Reference

### Waypoint Lists



You can also search for a waypoint by name:

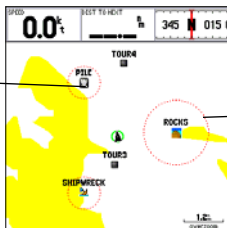
1. Highlight the name field and press **ENTER**.
2. Use the **ARROW KEYPAD** to select the first letter of the name.
3. Move to the **RIGHT** and enter the second letter if you do not see it on the list below.
4. Repeat this until the name appears. Press **ENTER** when you see the name.
5. Highlight the name on the list and press **ENTER** again to review the waypoint. When done, highlight 'OK' and press **ENTER**.

## Reference

### Waypoint Lists

Waypoint	Distance
PILE	0.50
ROCKS	1.00
SHIPWRECK	0.50

Proximity Waypoints List



Proximity  
Waypoint

Proximity  
Circle

A dashed circle appears showing the alert boundary for the proximity waypoints.

### To add a proximity waypoint:

1. Use the **ARROW KEYPAD** to highlight an empty space on the Proximity list and press **ENTER**. The 'Find' screen appears. Highlight 'Waypoints' and press **ENTER**.
2. Use the **ARROW KEYPAD** to highlight the desired waypoint from the 'By Name' or 'Nearest' tab lists. The Waypoint Review page appears for the selected waypoint.
3. With 'OK' highlighted, press **ENTER** to confirm. The distance field is now highlighted.
4. Press **ENTER** to begin entry of the proximity radius.
5. Use the **ARROW KEYPAD** to enter a distance value (to 99.99 units) and press **ENTER**.

### To turn proximity alarms on or off:

1. Use the **ARROW KEYPAD** to highlight the field below "Proximity Alarm" and press **ENTER**.
2. Select the desired 'ON' or 'OFF' setting and press **ENTER**.

The following options are available from the 'Proximity' submenu of the 'Points' tab:

- Delete Alarm— removes selected waypoint from proximity list.
- Delete All— removes all waypoints from proximity list.

### To display the waypoint menu options:

1. Using the **ARROW KEYPAD**, highlight the 'Proximity' tab and press **MENU**.

### To clear one or all proximity waypoint(s) from the list:

1. Use the **ARROW KEYPAD** to highlight the proximity waypoint to clear and press **MENU**.
2. To clear a single alarm, highlight the 'Delete Alarm' option and press **ENTER**.
3. To clear all proximity waypoints, select the 'Delete All' option and press **ENTER**.
4. Use the **ARROW KEYPAD** to highlight the 'OK' prompt and press **ENTER** to confirm.



## Going to a Destination

Using the **NAV** key, the GPSMAP 172/172C provides three ways to navigate to a destination: Go To Point, Follow Route, and Follow Track (TracBack). Once you are actively navigating, you see a straight line that always runs from your current location to the destination on the Map Page. The easiest method for selecting a destination is the 'Go To' function, which lets you select a destination point, then quickly sets a direct course from your present position. If you highlight a point on a list or the map and press **NAV**, 'Go To <point name>' appears in addition to 'Go To Point'. The 'Go To' function can be accessed from any list of points or graphically from the map display.

### To activate a 'Go To' from a point list:

1. Press the **NAV** key.
2. Use the **ARROW KEYPAD** to highlight 'Go To Point' and press **ENTER**.
3. From the 'Find' menu, highlight 'Waypoints' and press **ENTER**. (You may also choose to go to other points, such as Cities, Tide Stations, etc. from this list.)
4. Select a waypoint from the 'By Name' or 'Nearest' list, then press **ENTER**. To display the Waypoint Review page for the selected waypoint.
5. With the 'Go To' button highlighted, press **ENTER** to begin navigation.

### To stop navigation:

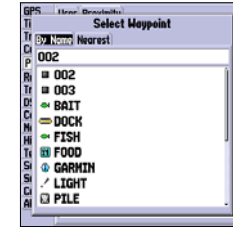
1. Press the **NAV** key. Use the **ARROW KEYPAD** to highlight 'Stop Navigation' and press **ENTER**.

## Selecting a 'Go To' Graphically

A graphical 'Go To' may be used to select one of three items from the map display: an existing waypoint, an on-screen map item (roads, rivers, cities, nav aids, etc.), or a new map point (non-map item). If you select a map item as the 'Go To' destination, the GPSMAP 172/172C automatically uses the name of the map item, but the point is not stored in the waypoint list (see page 13 for creating waypoints using map items). If you select a new map point (non-map item) as the 'Go To' destination, the GPSMAP 172/172C automatically creates or moves a waypoint named 'MAP' at the cursor position.

## Reference

### Going to a Destination



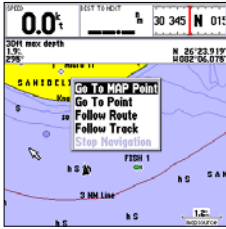
*Choose a waypoint from either the 'User' or 'Nearest' tab list.*



*The waypoint or map item name automatically appears when highlighted and **NAV** is pressed.*

## Reference

### Going to a Destination/ TracBack Navigation



'Go To MAP Point' allows you to navigate to a spot on the map that is not a waypoint or map item.



Highlight 'Save' and press **ENTER** to save an active track log.

To activate an existing waypoint or map item as a 'Go To' from the map display:

1. Use the **ARROW KEYPAD** to highlight the waypoint or map item on the screen and press **NAV**.
2. With 'Go To <waypoint name>', press **ENTER**.

To activate a new map point (non-map item) as a 'Go To' from the map display:

1. Use the **ARROW KEYPAD** to move the arrow cursor to the desired position and press **NAV**.
2. With 'Go To MAP Point' highlighted, press **ENTER**.

To stop navigation:

1. Press the **NAV** key. Use the **ARROW KEYPAD** to highlight 'Stop Navigation' and press **ENTER**.

### TracBack Navigation (Follow Track)

The TracBack function allows you to retrace your path using the track log automatically stored in the receiver's memory, which eliminates the need to store waypoints along the way. TracBack routes are created by reducing your track log into a route of up to 50 turns and activating an inverted route along those points. Once activated, a TracBack route leads you back to the oldest stored track log point, so it's a good idea to clear the existing track log before you start your current trip.

To clear the track log and define a starting point for a TracBack route:

1. Press **MENU** twice to display the Main Menu page.
2. Using the **ARROW KEYPAD**, highlight the 'Track' tab, then highlight the 'Active' tab to the right.
3. Use the **ARROW KEYPAD** to highlight 'Erase' and press **ENTER**.
4. Highlight 'OK' and press **ENTER**.

You must first save the track log before you can use the 'Follow Track' feature. The Save feature allows you to store up to 15 track logs from certain times and dates.

To save a track log:

1. From the Main Menu, use the **ARROW KEYPAD** to highlight the 'Track' tab, then highlight the 'Active' tab to the right.

- Use the **ARROW KEYPAD** to select 'Save' and press **ENTER**.
- On the 'Save Back Through' window, highlight the desired time, date, or 'Entire Log' and press **ENTER**.
- Next, the track begins saving and then display the 'Saved Track' window when done. The default name, distance, and number of points (700 maximum) are displayed.

To change the name of the saved track, highlight the name field and press **ENTER**, make your changes and press **ENTER** again.

To choose a color/style that is used to display the saved track line, highlight the field and press **ENTER**, choose a Color and press **ENTER** again.

To display the track on the Map and Highway pages, highlight the check box to the left of 'Show on Map and Highway' and press **ENTER**.

To view the track on the map, highlight 'Review on Map' and press **ENTER**. Press **QUIT** to exit the Track Map window.

- Highlight 'OK' and press **ENTER** to save the track.

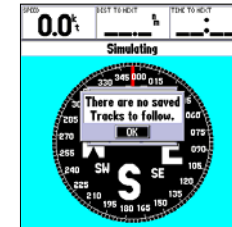
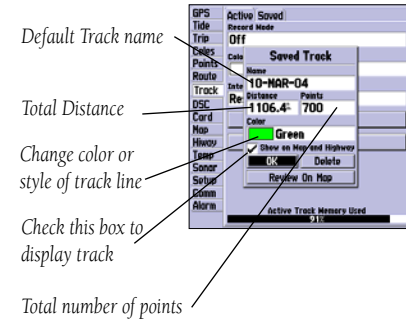
### To activate a TracBack using the NAV key:

- Press the **NAV** key, then highlight the 'Follow Track' option and press **ENTER**.
- Highlight the track you wish to follow and press **ENTER**.
- Choose either 'Original', which navigates you from the start to the end of your trip, or 'Reverse', which navigates you from the end to the start of your trip and press **ENTER**.

Once a TracBack has been activated, the GPSMAP 172/172C takes the track log currently stored in memory and divides it into segments called 'legs'. Up to 50 temporary 'turns' (BEGIN, TURN 1, TURN 2, TURN 3, ..., TURN X, END) are created to mark the most significant features of the track log in order to duplicate your exact path as closely as possible. To get the most out of the TracBack feature, remember the following tips:

- Always clear the track log at the point that you want to go back to (dock, etc.).
- The 'Record Mode' option on the track log setup page must be set to 'Fill' or 'Wrap'.
- There must be at least two track log points stored in memory to create a TracBack route.

## TracBack Navigation



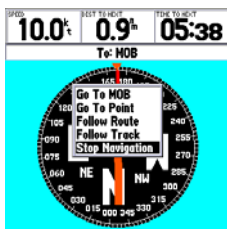
You must first save a track before using the 'Follow Track' option. If there are no saved tracks, the message "There are no saved Tracks to follow" appears after you select 'Follow Track.'

## Reference

### TracBack Navigation/ MOB: Man OverBoard



The MOB function allows you to quickly activate a course back to a location.



Highlight 'Stop Navigation' and press **ENTER** to stop navigating.

- If the track log interval is set to the 'Time' option, the route may not follow your exact path (keep the interval set to 'resolution' for best performance).
- If the receiver is turned off or satellite coverage is lost during your trip, the TracBack draws a straight line between any point where coverage was lost and where it resumed.
- If your track log's changes in distance and direction are too complex, 50 waypoints may not mark your path accurately. The receiver then assigns the 50 waypoints to the most significant points of your track, and simplifies segments with fewer changes in direction.

#### To stop TracBack navigation:

1. Press the **NAV** key, highlight 'Stop Navigation' and press **ENTER**.

For more information on setting up the Track options and saved tracks, see pages 61.

#### MOB Key

The GPSMAP 172/172C's Man OverBoard function (MOB) lets you simultaneously mark and set a course to a position for quick response to emergency situations.

#### To activate the MOB function:

1. Press and hold the **MOB** key for two seconds.
2. Press **ENTER** to confirm and begin navigating to the MOB position.

Once a MOB has been activated, a 'MOB' waypoint with an international MOB symbol is created and the unit is set on an active navigation to that point. Use any of the Navigation Pages to guide you back to the MOB point. The MOB waypoint is stored in the waypoint list and may be deleted like any other waypoint (see page 17).

#### To stop navigation to the MOB position:

1. Press the **NAV** key, highlight 'Stop Navigation' and press **ENTER**.

## Routes

The last way to navigate to a destination is to create a user-defined route. The Garmin GPSMAP 172/172C system lets you create and store up to 50 reversible routes (numbered 1-50), with up to 50 waypoints each. Routes can be created and modified in two ways. The first way is to 'Edit on Map' from the Route Edit map page, allowing you to see each route graphically on-screen as you create, review, or modify the route. The second way is to 'Edit as Text' from the Route Review page, allowing you to see a list of the waypoints as you create, review, or modify the route. All of the GPSMAP 172/172C's route functions are accessed through the Main Menu page or the **NAV** key.

### To create a route graphically from the Route Edit map page:

1. Press the **MENU** key twice to display the Main Menu page. Use the **ARROW KEYPAD** to highlight the 'Route' tab.
2. Press the **MENU** key to display the route options page. Select 'New Route' and press **ENTER**.

Or, highlight the first available blank slot in the Route List and press **ENTER**.

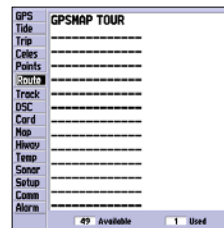
3. To add an existing waypoint or map item to the route, use the **ARROW KEYPAD** to highlight the desired waypoint or map item on screen and press **ENTER**. Map items do not appear in the waypoint list. To create a waypoint from a map item, see page 13.
4. To add a new waypoint to the route, use the map cursor to select the desired map position and press **ENTER**. Press **ENTER** again to confirm the new waypoint. You may also change the name, symbol and other properties of the new waypoint (see pages 34).

As you add each new waypoint to the route, the data window at the top of the map display shows the waypoint/map item name, bearing and distance from your location, and coordinates of the cursor. The bottom of the display shows you the number of available and used points. A route line appears on the map to indicate each completed leg, and a dotted line appears to indicate the distance and bearing to the arrow cursor from the last route waypoint.

5. Repeat steps 3 and 4 until you have finished defining all route waypoints.
6. When finished press **QUIT** twice to return to the Route List page; or press **MENU**, highlight 'Edit as Text' and press **ENTER** to return to the Route Review page.

## Reference

### Creating Routes



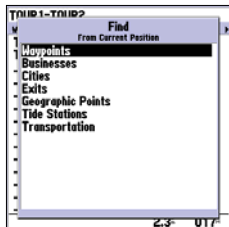
Main Menu—Route Tab and  
Route Options Menu



You see 'ADD' below the  
cursor as you add points.

## Reference

### Creating a Route/ Following a Route



Choose the type of point you want to add to the route.



Choose a waypoint from either the 'By Name' or 'Nearest' tab list.

#### To create a route using text from the Route Review page:

1. Press the **MENU** key twice to display the Main Menu page. Use the **ARROW KEYPAD** to highlight the 'Route' tab.
2. Press the **MENU** key to display the route options page. Select the 'New Route' option and press **ENTER**.  
Or, highlight the first available blank route slot and press **ENTER**.
3. Press **MENU**, select 'Edit as text' and press **ENTER**.
4. Use the **ARROW KEYPAD** to highlight the first field under the word "Waypoint" and press **ENTER**.
5. From the Find menu, highlight 'Waypoints' and press **ENTER**. (You may also choose from other points, such as Cities, Tide Stations, etc. from this list.) Select a waypoint from either the "By Name" or "Nearest" list and press **ENTER**. (See page 37 for searching for waypoints by name.)
6. On the Point Review or Waypoint Review page, 'OK' is automatically highlighted. Choose 'Show Map' and press **ENTER** to view the point on the map, then press **QUIT** to return to the Waypoint/Point Review page. With 'OK' highlighted, press **ENTER** to add the point to the route.
7. Repeat steps 4-6 until the desired route points have been entered. Press **QUIT** to return to the Route List page.

#### Following a Route

Once a route has been created, it can be activated and used for navigation with the **NAV** key. A route may be followed in the same sequence as it was originally created, or inverted and followed from the end point back to the beginning point.

#### To activate and follow a route:

1. From any page, press the **NAV** key, then using the **ARROW KEYPAD**, highlight 'Follow Route' and press **ENTER**. (If you highlight a route from the Route List or Route Review page and press **NAV**, the window automatically displays, 'Follow <the route name>'.)

- Highlight the route you wish to navigate and press **ENTER**.
- Choose 'Activate' or 'Invert and Activate' and press **ENTER**. ('Activate' uses the route as is, 'Invert and Activate' reverses the route then activate it.)

#### To deactivate (stop navigation) of a route:

- Press the **NAV** key, highlight 'Stop Navigation' and press **ENTER**.

### Route List Page

The GPSMAP 172/172C Route List page ('Route' tab of the Main Menu) displays all the routes currently stored in memory, along with a descriptive name for each route. By pressing **MENU** while on the Route List page, the following menu options appear: 'New Route' (page 44), 'Copy Route', 'Delete Route', or 'Delete All'.

#### To select and follow a route:

- On the Route List page, use the **ARROW KEYPAD** to highlight the desired route and press **NAV**.
- With 'Follow <route name>' highlighted, press **ENTER**. Highlight 'Activate' or 'Invert and activate' and press **ENTER**.

#### To deactivate (stop following) the route:

- Press the **NAV** key, highlight 'Stop Navigation' and press **ENTER**.

#### To copy or delete a route:

- From the Route List, using the **ARROW KEYPAD**, highlight the route you want to copy or delete and press **MENU**.
- Choose either 'Copy Route' or 'Delete Route' and press **ENTER** and with 'OK' highlighted, press **ENTER** again to confirm a deletion. Copy uses the same route name with an additional number, starting at 1, at the end of the route name.

#### To delete all routes:

- From the Route List, press **MENU**.
- Highlight 'Delete All' and press **ENTER**. With 'OK' highlighted, press **ENTER** again to confirm.

### Route List Page

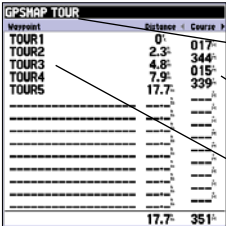


If you highlight a route name from the Route List and press **NAV**, the name automatically appears.



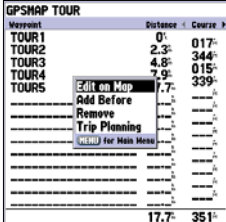
Route List Options Menu

### Route Review Page



Waypoint	Distance	Course
TOUR1	0'	017'
TOUR2	2.3'	344'
TOUR3	4.8'	015'
TOUR4	7.9'	015'
TOUR5	17.7'	339'
		17.7'
		351'

Route Name  
Data Fields  
Route Points  
Data Totals



Waypoint	Distance	Course
TOUR1	0'	017'
TOUR2	2.3'	344'
TOUR3	4.8'	015'
TOUR4	7.9'	015'
TOUR5	17.7'	339'
		17.7'
		351'

Edit on Map  
Add Before  
Remove  
Trip Planning  
For Main Menu

Route Review  
Options Menu

### Route Review Page

Once you have created a route, the Route Review page allows you to edit a selected route.

#### To access the Route Review page:

1. Press **MENU** twice and highlight the 'Route' tab.
2. Highlight the name of the route you wish to review and press **ENTER**.

The Route Review page also allows you to enter a 15-character name for any listed route. By default the name includes the first and last waypoints in the route.

#### To enter a custom route name:

1. From the Route Review page, highlight the name field and press **ENTER** to begin editing.
2. Use the **ARROW KEYPAD** to enter the desired name and press **ENTER** when finished.

Once you are on the Route Review page, you may review the route points (waypoints or map items) one at a time from the list.

#### To review individual route points:

1. Highlight the desired point and press **ENTER**.
2. On the Point Review window, you may choose 'Next' (highlight the next point on the route list), 'Show Map' (show the point on a map window), or 'Delete' (permanently delete the waypoint from the unit) and press **ENTER**. If the route point is a user waypoint, you may edit any of the waypoint properties on the Waypoint Review page (see pages 34 for details).

Once you are back on the Route Point List, the next point in the route is automatically highlighted. This allows you to review each point on the route by repeatedly pressing **ENTER**.

### Route Review Options Menu

By pressing **MENU** on the Route Review page, the following options are available: Edit on Map, Add Before, Remove, and Trip Planning.



- **Edit on Map** — review and modify the route displayed for each point (waypoint or map item) on a map page. You may also use the cursor to insert a new route point on a route leg, review the waypoint or map item.

**To edit a route on the map:**

1. From the Route Review page, press **MENU**, highlight 'Edit on Map' and press **ENTER**.

**To review a route point:**

1. Highlight the point and press **ENTER**. The Review page appears. Highlight 'Next' and press **ENTER** to return to the map with the next route point highlighted.

**To edit a route point:**

1. Use the **ARROW KEYPAD** to highlight the desired route waypoint and press **MENU**.

A pop-up menu of editing choices appears, with the following options: Edit as Text (return to the Route Review page), Remove, Move (user waypoints only), and Add.

**To remove a route waypoint:**

1. Highlight the 'Remove' option and press **ENTER**.

**To move a route waypoint:**

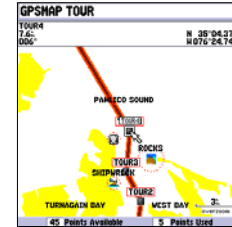
1. Highlight the 'Move' option and press **ENTER**.
2. Move the cursor to the new map position and press **ENTER**.

**To add points to the beginning or end of the route:**

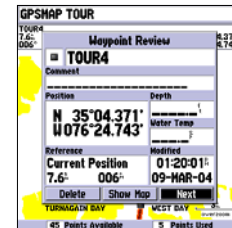
1. With the map cursor, select the first route waypoint (to add waypoints to the beginning of the route) or last (to add waypoints to the end of the route) and press **MENU**.
2. Highlight the 'Add' option and press **ENTER**.
3. Move the cursor to the new point or position and press **ENTER**.
4. If you are not adding an existing waypoint, press **ENTER** to confirm the new waypoint.
5. Repeat steps 3 and 4 to add additional waypoints or press **QUIT** to finish.

## Reference

### Editing Routes



Highlight a route point and press **ENTER** to review it.



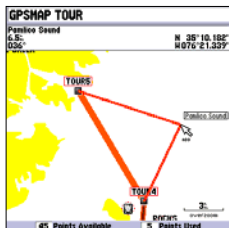
Choose 'Next' to center the map on the next point in the route. You can step through the points by repeatedly pressing **ENTER**.

## Reference

### Editing Routes



Highlight the route leg on which you wish to insert a waypoint and press **ENTER**.



Drag the route leg to an existing waypoint, map item, or an open spot on the map (shown) to create a new route point.

The GPSMAP 172/172C's route edit mode also allows you to insert a new route point in any route leg using the map cursor.

#### To insert a new point between two existing route waypoints:

1. Use the **ARROW KEYPAD** to select the leg in which you want to insert the new waypoint (the route line highlights and changes to a dotted line when the leg is selected) and press **ENTER**.
2. Move the cursor to the new map position, existing waypoint, or map item (You see 'ADD' below the arrow and the route lines moves with the arrow) and press **ENTER**.
3. If you are not inserting an existing point, press **ENTER** to confirm the new waypoint.
4. Press **QUIT** to return to the Route Review page.

• **Add Before** — Insert a waypoint into the route points list.

#### To insert a point into the route:

1. From either the Route Review or Active Route pages, use the **ARROW KEYPAD** to highlight the point you wish to insert the new point before and press **MENU**.
2. Highlight 'Add Before' and press **ENTER**.
3. From the 'Find' menu, highlight 'Waypoints' and press **ENTER**. (You may also choose from other points, such as Cities, Tide Stations, etc. from this list.) Select the point you want and press **ENTER** twice. (See page 37 for searching for waypoints by name.)

• **Remove** — Remove a point (waypoint or map item) from a route. This option is available from both the Route Review and Active Route Pages.

#### To remove a point from a route:

1. From either the Route Review or Active Route pages, use the **ARROW KEYPAD** to highlight the point to remove and press **MENU**.
2. Highlight 'Remove' and press **ENTER**.

Editing Routes

- **Trip Planning** — The Route Review and Active Route pages also display trip-planning information for each leg or the entire route. Available information includes Course, ETA, Fuel (to point), Leg Distance, Leg Fuel, Leg Time, Sunrise and Sunset (at point location) and Time To (point).

To use the trip planning feature:

1. Highlight the desired route from the Route List and press **ENTER** to display the Route Review page.
2. One of nine available planning figures appears to the right of each route waypoint and its distance. Use the **LEFT**/**RIGHT** keys on the **ARROW KEYPAD** to select the desired item.
3. To enter planning information (from the Route Review Page only), press **MENU** and select 'Trip Planning' from the options list. Enter the figures for Speed, Fuel Flow, Departure Time, and Departure Date.
4. Press **QUIT** to return to the Route Review Page.




---

**NOTE:** Fuel flow rates on your unit are measured in "units per hour". System setting changes for units of measure (statute, nautical or metric) do not affect the fuel flow measure. You should enter fuel flow rates based upon available information for your vehicle (operator's manual, performance specifications, etc.) and make note of the desired units of measure (gallons, liters, etc.).

---

GPSMAP TOUR			
Waypoint		Distance	Leg Dist #
TOUR1	0'	2.3'	2.3'
TOUR2	2.3'	2.5'	2.5'
TOUR3	4.8'	3.1'	3.1'
TOUR4	7.9'	9.8'	9.8'
TOURS	17.7'		
-----			
-----			
-----			
-----			
-----			
-----			
-----			
-----			
-----			
-----			
		17.7'	17.7'

Press **LEFT** or **RIGHT** on the **ARROW KEYPAD** to change the data field.

GPSMAP TOUR			
Waypoint		Distance	Leg Dist #
TOUR1	0'	2.3'	2.3'
TOUR2	2.3'	2.5'	2.5'
TOUR3	4.8'	3.1'	3.1'
TOUR4	7.9'	9.8'	9.8'
TOURS	17.7'		
-----			
-----			
-----			
-----			
-----			
-----			
-----			
-----			
		17.7'	17.7'

Trip Planning	
Speed	03:00
Fuel Flow	0.0%
Depart Time	05:00P
Depart Date	10-MAR-04

Trip Planning Data Fields



## Find Key

The **FIND** key allows you to search the unit for user waypoints, map items, and any optional BlueChart or MapSource information loaded on a data card. Press the **FIND** key to search for items from your current location by default. You may also search from other locations. When you press **FIND**, a list of available items to search for appears. The default items are Waypoints, Cities, Tide Stations, and Transportation. Additional items, such as Anchorages, Businesses, Exits, Nav aids, Restricted Areas, Wrecks, Obstructions, etc., are displayed depending on the optional BlueChart or MapSource data card inserted into the unit. If you pan around on the Map Page and press **FIND**, the unit centers its search from the point where the cursor is located. When using BlueChart or MapSource data, your position or the map pointer must be within the map outline area to search for information from that area.

### To find a waypoint or other item from your current location:

1. From any page, press **FIND**.
2. Using the **ARROW KEYPAD**, highlight the desired category from the list and press **ENTER**.
3. For Waypoints and Cities, you may search using 'By Name' or 'Nearest'. Use the **ARROW KEYPAD** to highlight the desired tab. For 'By Name', you may use the top field to spell out the name or scroll down through the list.

### To find a waypoint or item from another location:

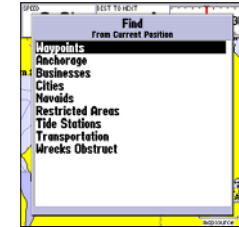
1. Once the search results list is displayed for a particular item, press **MENU**.
2. Highlight 'Nearest to Other' and press **ENTER**. If you are actively following a route, you may also choose 'Nearest to Next' or 'Nearest to Destination'.
3. Select a reference point on the map and press **ENTER**. The search results list changes to list items nearest to the new map position.

### To find a waypoint or item from another location on the map:

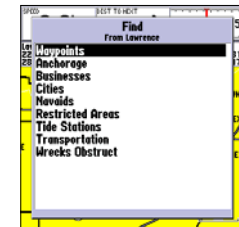
1. From the Map Page, use the **ARROW KEYPAD** to pan to the desired location and press **FIND**.
2. Using the **ARROW KEYPAD**, highlight the desired category from the list and press **ENTER**.

## Reference

### Find Key



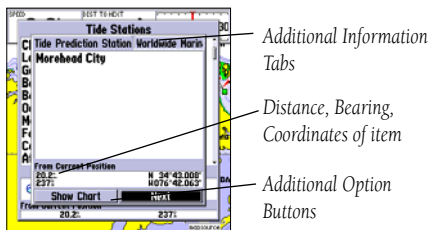
*Find Items List From the Current Location*



*You may also start a 'Find' from items found on the Find List or from another location on the map.*

## Reference

### Find Options



Additional Information Window



### To view details about an item:

1. With the desired item highlighted in the search results list, press **ENTER**.
2. An Information page appears with details about the item organized in a tabbed format. Depending on the type of item, additional options are available for viewing the item on the map, viewing notes on a MapSource or BlueChart map, viewing a tide chart, viewing a list of maps on your data card, and viewing the next item in the search results list.

The Find option supports a “find from” feature, which allows you to center your search around an item that you have just found. For example, you search for “Restricted Areas” and the search shows an “Anchoring Prohibited” search result. If you press **FIND** again, you see “From Anchoring Prohibited” as the new search from point. You may also use the Find feature to center your search from any waypoint, route list entry, map item or tide station. Highlight the item you want to Find ‘from’, and press the **FIND** key.

### Find Options

Using the Find options, you may search from various map data and utilize variety of nearest criteria for all items, except waypoints. Available Find options are:

- Nearest To Boat— centers search from your boat’s current location
- Nearest To Other— allows you to choose another map location from which to search.
- Nearest To Next— centers search from the next point of your active route.
- Nearest To Destination— centers search from the last point of your active route.

### To find an item using the find options:

1. From any page, press **FIND**.
2. Using the **ARROW KEYPAD**, highlight the desired category from the list and press **ENTER**.
3. From the search results list, press **MENU**, then highlight the desired option and press **ENTER**.

## Main Menu Page

The GPSMAP 172/172C's Main Menu Page provides access to various waypoint, system, navigation and interface management, and setup menus in an easy to use "tab" format. The Main Menu page is available from any page in the GPSMAP 172/172C's system, and is accessed through the **MENU** key. See pages 2-3 for additional instructions changing settings and entering data.

### To access the Main Menu Page:

1. Press **MENU** twice. The 16 Menu tabs are divided into categories by function.

### To select a Menu tab from the Main Menu page:

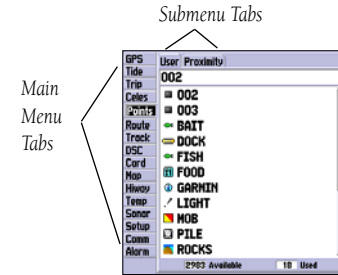
1. Move the **ARROW KEYPAD** UP or DOWN to highlight the tab you want to view. The information for the highlighted tab automatically appears to the right. If you want to highlight any of the sub-menu tab items, press to the RIGHT on the **ARROW KEYPAD**, then move UP or DOWN to select individual items.
2. Press either **MENU** for additional submenu options or press **ENTER/MARK** to make changes to the highlighted item. Press LEFT on the **ARROW KEYPAD** to get back to the Menu tab list. Press **QUIT** to return to the Main Menu page.

The Main Menu tabs are:

- GPS – shows satellite status, accuracy, initialize position.
- Tide – shows 24 hour tide chart with levels and times.
- Trip – provides trip speeds, odometers, averages, and trip timers.
- Celes – shows sun/moon time cycles and positions.
- Points – allows you to create, edit or delete waypoints. See pages 30.
- Route – allows you to create, edit, activate or delete routes. See pages 43.
- Track – lets you record a track, define how it is recorded and displayed.
- DSC— allows you to control the Digital Selective Calling (DSC) interface.
- Card – interface control for saving waypoints, routes and tracks to a data card.
- Map – sets up Map Page features, zooms, and text size. See pages 21.
- Hiway – sets up Highway Page features. See pages 29. (continued)

## Reference

### Main Menu Tabs

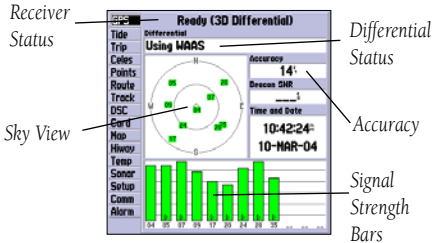


Main Menu Page

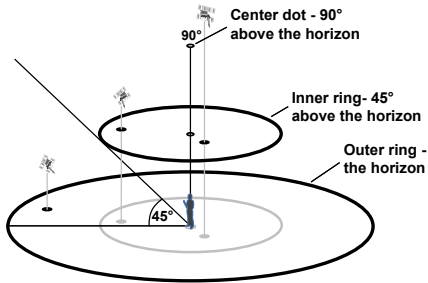
\* See the "GSD 20 Sounder Module with Garmin Chartplotters" (190-00241-03) for operational instructions.

## Reference

### Main Menu: GPS Tab



Main Menu—GPS Tab



- Temp\* – sets up and shows the water temperature log. (if equipped with GSD 20 or NMEA compatible device)
- Sonar\* – sets up Sonar Page features, speeds and calibrations. (if equipped with GSD 20)
- Setup – defines System, Units, and Time settings.
- Comm – interface settings for use with a PC or second device.
- Alarm – sets up alarms for anchor drag, arrival, off course, and clock.

**GPS Tab**— provides a visual reference of satellite acquisition, receiver status, and accuracy. The status information gives you an idea of what the receiver is doing at any given moment. The sky view and signal strength bars give you an indication of what satellites are visible to the receiver and whether or not they are being tracked. The signal strength is shown on a bar graph for each satellite, with the satellite number below. As the receiver locks onto satellites, a signal strength bar appears for each satellite in view. The progress of satellite acquisition is shown in three stages:

- No signal strength bars— the receiver is looking for the satellites indicated.
- Light/White signal strength bars— the receiver has found the satellite(s) and is collecting data.
- Dark/Green signal strength bars— the receiver has collected the necessary data and the satellite(s) are ready for use.

As soon as the GPSMAP 172/172C has collected the necessary data from the best satellites in view to calculate a fix, the status field indicates a 2D or 3D status. The unit then updates the position, date and time.

You can use the sky view to help determine if any satellites are being blocked, and whether you have a current position fix (indicated by a '2D', '2D Differential', '3D', or '3D Differential' in the status field). The sky view shows a bird's-eye view of the position of each satellite relative to the receiver's last known position. The outer circle represents the horizon (north up), the inner circle 45° above the horizon, and the center point a position directly overhead. You can also set the sky view to a 'Track Up' configuration, causing the top of the sky view to align along your current track heading.



## WAAS Capability

The GPSMAP 172/172C is capable of receiving WAAS (Wide Area Augmentation System) satellite signals. WAAS is an FAA (Federal Aviation Administration) funded project to improve the overall accuracy and integrity of the GPS signal for aviation use, but land/sea based users may also benefit from this system. At this time, the system is still in the development stage and is not fully operational. There are currently two WAAS satellites that can be received in the U.S.A., one over the Atlantic Ocean and one over the Pacific Ocean, in a geo-stationary orbit over the equator. Effective use of the WAAS satellite signal may be limited by your geographic location in relation to those satellites, now in developmental service. WAAS satellite signal reception requires an absolute clear view of the sky and works best when there are no nearby obstructions such as buildings, mountains, etc. WAAS satellites are numbered 33 or higher when viewing the sky view on your GPSMAP 172/172C. Initial reception of the WAAS signal may take up to 15-20 minutes, then 1-2 minutes afterwards. When WAAS differential correction has been received for GPS satellites (numbers 32 or below), a 'D' appears in the signal bar of the sky view and '2D or 3D Differential' appears in the receiver status. To learn more about the WAAS system, its satellite positions and current state of development, visit the FAA web site (<http://gps.faa.gov>). Since WAAS requires CPU resources of the GPSMAP 172/172C to search for and track the satellites, you may disable the WAAS feature to improve unit performance if WAAS reception is not available in your area.

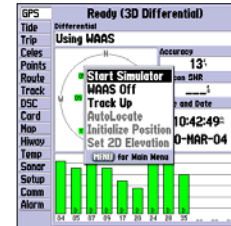
### To disable/enable WAAS capability:

1. From the GPS tab, press **MENU**, then use the **ARROW KEYPAD** to highlight 'WAAS Off' or 'WAAS On' and press **ENTER**.

## Receiver Status and Accuracy

Receiver status is indicated at the top field of the page, with the current Accuracy and Dilution Of Precision (DOP) to the right of the sky view. Accuracy uses DOP and other factors to calculate horizontal position accuracy in feet or meters.

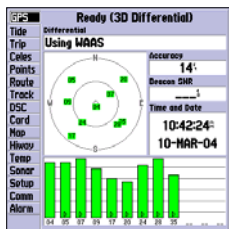
## Main Menu: GPS Tab



Highlight 'WAAS Off' and press **ENTER** to disable the WAAS capabilities.

## Reference

### Main Menu: GPS Tab



When the GPSMAP 172/172C is using a differential correction signal (either WAAS or DGPS), a “D” is displayed at the bottom of the signal strength indicator bars for the satellites that are corrected.

The status field shows one of the following conditions:

- Looking For Satellites – the receiver is looking for any satellites.
- AutoLocate – the receiver is looking for any satellite whose almanac has been collected. This process can take up to five minutes.
- Acquiring Satellites – the receiver is looking for and collecting data from satellites visible at its last known or initialized position, but has not collected enough data to calculate a fix.
- 2D – at least three satellites with good geometry have been acquired and a 2 dimensional position fix (latitude and longitude) is being calculated. ‘2D Differential’ appears when you are receiving DGPS corrections in 2D mode and a ‘D’ shows on the strength bar of satellites being corrected.
- 3D – at least four satellites with good geometry have been acquired and your position is now being calculated in latitude, longitude and elevation. ‘3D Differential’ appears when you are receiving DGPS corrections in 3D mode and a ‘D’ shows on the strength bar of satellites being corrected.
- Poor GPS Coverage – the receiver is no longer tracking enough satellites for a 2D or 3D fix.
- Receiver Not Usable – the receiver is unusable, possibly due to interference or abnormal satellite conditions. Turn the unit off and back on to reset.
- Simulating – the receiver is in simulator mode.

The Differential Receiver status shows one of the following:

- Off – No optional beacon receiver attached or enabled in the Comm menu or WAAS Off
- Searching For WAAS – WAAS is enabled and receiver is searching for WAAS signal
- Using WAAS – WAAS capability enabled and unit receiving WAAS corrections
- No Beacon Signal – DGPS receiver attached, but not transmitting RTCM data to GPS
- Tuning Beacon – Receiver is tuning manual DGPS frequency
- Receiving Beacon – Unit is receiving DGPS corrections
- Scanning Beacon – DGPS receiver is scanning for available frequency
- Using DGPS – Indicates a Differential signal is being received (only displays when the Serial Data Format is set to “Other DGPS” on the Comm Tab of the Main Menu)

The Differential SNR (Signal to Noise Ratio) indicates, on a scale to 0-30db with 30db being the best, the strength of the DGPS signal being received. The SNR depends upon the mounting of your DGPS receiver and the distance from the DGPS transmitting station.

The GPS Info tab features an options menu that provides access to functions and features relating to the GPS Info display.

The following options are available by pressing **MENU** on the GPS Info Tab of the Main Menu:

- **Start/Stop Simulator**— toggles the unit simulator on or off. Retail Demo mode restores factory settings to the unit if left unattended for over two minutes. This mode should only be used for display purposes. User waypoints are NOT deleted.
- **WAAS On/WAAS Off**— toggles the WAAS capability of the receiver on or off.
- **Track Up/North Up**— allows you to select between a north up or track up sky view display for the GPS Info display only.
- **AutoLocate**— allows the receiver to locate your position automatically. This process can take up to five minutes.
- **Initialize Position**— allows you to initialize the receiver graphically on the Map Page to initially help the receiver acquire more quickly. See page 4 for instructions on initialization.
- **Set 2D Elevation**— allows you to manually enter the elevation when in 2D or Simulator mode only. Any elevation entered is automatically calculated when the GPS is in 3D mode.

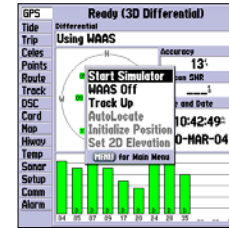
#### To select a menu option:

1. Using the **ARROW KEYPAD**, highlight the desired option and press **ENTER**.



**NOTE:** If a DGPS receiver is attached to the unit and Garmin DGPS, RTCM In/NMEA Out, or Other DGPS is enable on Port 2, WAAS is automatically disabled (WAAS Off). It is not possible for the GPSMAP 172/172C to receive WAAS and DGPS corrections at the same time.

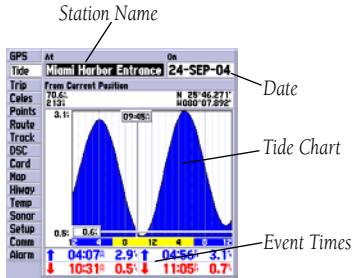
## Main Menu: GPS Tab Options



GPS Tab Options Menu

## Reference

### Main Menu: Tide Tab



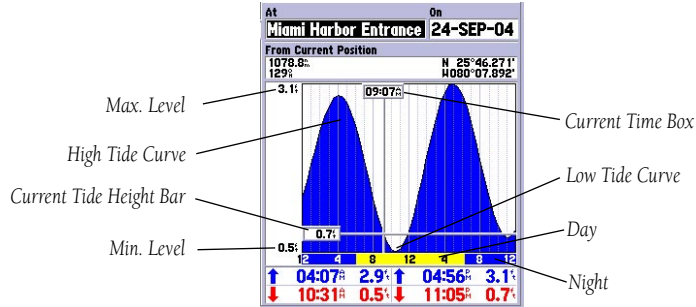
Main Menu—Tide Tab



You can select from a list of nearest stations.

**Tide Tab**— shows a graphical chart which displays tide station information in a 24 hour span starting at midnight. You can choose from different dates and over 3000 tide stations around the USA coastline, Alaska, Hawaii, western Canada and several of the Caribbean islands.

The top of the page displays the tide station being referenced, and the date. The bottom of the chart shows a 24-hour block of local time for your position. Daylight (light bar or yellow on 172C) and nighttime (dark bar or blue on 172C) show across the time scale, with the time progressing from left to right. (Local time scales and sunrise/sunset info may not be available for a few stations). The solid, light vertical lines are in 4-hour increments, and the light, dotted vertical lines are in 1-hour increments. A solid, vertical line (with the current time box at the top) will indicate the time of day when using current date and will intersect the tide graph to show their relation.



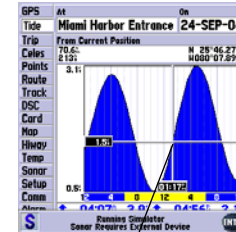
The tide curve shows as a shaded area, with higher tides being taller (blue on 172C) and lower tides shorter (red on 172C). The solid, horizontal line (with the current tide box on the left) indicates the current tide height. The figure to the left of the line will show the current tide level. The Mean Lower Low Water (MLLW) appears as a solid, horizontal line near the bottom of the chart (This line will only appear if the tide ranges to the zero value or below). The numbers on the top and bottom of the left side indicate the maximum/minimum levels, respectively. The four data fields below the chart, indicate event times and levels at which the tide changes starting in the upper left field, going downward, then to the upper right and down again. When comparing with other tide tables, be sure the depth unit value is the same for both sources.

## Main Menu: Tide Tab



### Tide Station List Menu Options

Press **MENU** on the Tide Station list to access additional search options. The 'Nearest to Next' and 'Nearest to Destination' options are enabled when you are actively going to a destination (following a Go To or a Route, for example). You must select a location within 100 nm. of a tide station.



You may move the cursor to see tide heights at different times. Tide data shows in a black box when in cursor mode.

### To select the nearest tide station from your current location:

1. From the "Tide" tab, highlight the 'At' field and press **ENTER/MARK**.
2. Highlight the desired station on the list and press **ENTER/MARK** twice.

If you are not within this range, you will see a message "None Found". Use the 'Nearest To Other' Find option and select a location closer to a tide station.

### To select a tide station from the map:

1. Press **FIND**, select 'Tide Stations' and press **ENTER/MARK**.
2. Press **MENU** after the search results appear.
3. Highlight 'Nearest To Other' and press **ENTER/MARK**.
4. Select a position on the map and press **ENTER/MARK**.
5. A list is displayed showing up to nine of the nearest tide stations. Highlight the desired station and press **ENTER/MARK**. Select the 'Show Chart' button and press **ENTER/MARK**. If the "None Found" message appears, repeat steps 1-4 until you find a station.

You may also change the date to see tide charts for other days.

### To change the date for the tide chart:

1. Using the **ARROW KEYPAD**, highlight the "On" field and press **ENTER/MARK**.
2. Enter the desired date and press **ENTER/MARK**.

### To use the current date:

1. Press **MENU**, then highlight 'Use Today's Date' and press **ENTER/MARK**.

You may move the time bar on the tide chart in 5 minute increments to show tide heights at various times on the chart.

### To see tide heights at various times on the chart:

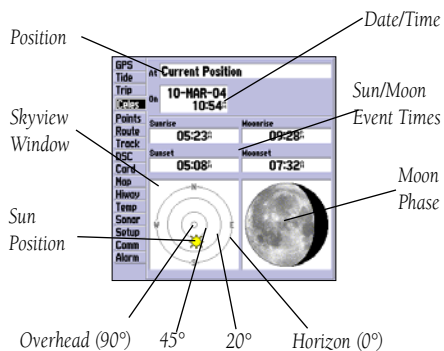
1. Move the highlight to the chart.
2. Press LEFT or RIGHT on the **ARROW KEYPAD** to change the time. Press **QUIT** when done.

## Reference

### Main Menu: Trip/ Celes (Celestial) Tab

GPS	Trip Odometer	Stopped Time
Tide	32'	00:23:33
LiF	Moving Average	Moving Time
Celes	1.0'	00:00:18
Points	Total Average	Total Time
Route	0.0'	00:23:51
Track	Maximum Speed	Odometer
DSC	1.3'	32'
Card	Reset Trip	
Map	Reset Max Speed	
Hiway	Reset Odometer	
Temp	Reset All	
Sonar		
Startup		
Comm		
Alarm		

Main Menu— Trip Tab



Main Menu— Celestial Tab

**Trip Tab**— displays data for Trip Odometer, Moving Average speed, Total Average speed, Maximum Speed, Stopped Time, Moving Time, Total Time, and Odometer. You may reset the data by choosing from 'Reset Trip', 'Reset Odometer', 'Reset Max Speed', or 'Reset All' and pressing **ENTER**.

**Celes (Celestial) Tab**— displays celestial data for sun and moon rise/set, moon phase, and approximate skyview location of the sun and moon. The moon phase displays the current visible portion of the moon as a light color. You may display this data for your current position, a position from the map, or a Find item location. Also, you may select a different date and time, or use the current data.

#### To choose another position:

1. From the Celestial tab, highlight the 'At' field and press **ENTER**.
2. The Find menu appears. Make a selection and press **ENTER** until the information for that location is displayed on the Celestial tab. See page 51 for more information on using the Find feature. List highlight any category, except Other Location, and press **ENTER**. If you wish to reference a Find item, select from the Find list, and press **ENTER**.

The location the unit is using appears in the Date/Time/Position field. The timetables displayed is based upon your current time zone. You may change your time zone to view times from another zone. Keep in mind this changes the time settings for the entire unit. (see page 61).

#### To change the time or date:

1. Use the **ARROW KEYPAD** to highlight the date or time field and press **ENTER**.
2. Enter a new date or time and press **ENTER**.
3. To return to the current date and time, press **MENU**, use the **ARROW KEYPAD** to highlight 'Use Current Date and Time' and press **ENTER**.

#### To change the skyview orientation:

1. From the Celestial tab, press **MENU**, then use the **ARROW KEYPAD** to highlight 'North Up' or 'Track Up' and press **ENTER**.

**Points Tab**— contains the 'User' and 'Proximity' waypoint lists. See page 30.

**Route Tab**— contains a list of available routes. See pages 43.

**Track Tab**— lets you specify whether or not to record a track log (an electronic ‘breadcrumb trail’ recording of your path), define how it is recorded, or save track log data for future use. The Track Tab also provides an indicator of the memory used for the active track log and options to clear the track memory or start a TracBack route. See page 40 for TracBack information. The Track submenu is divided in two tabs: ‘Active’ tab and the ‘Saved’ tab.

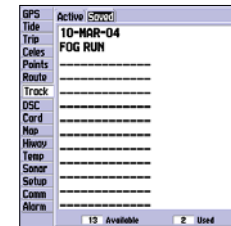
**Active Submenu Tab**— is for the active log (the log currently being recorded). It displays track memory used and current settings. For the ‘Active’ tab, the following settings are available:

- **Record Mode**— lets you select one of three track recording options:
  - Off— No track log is recorded. Note that selecting the ‘Off’ setting prevents you from using the TracBack feature.
  - Fill— a track log is recorded until the track memory is full.
  - Wrap— A track log is continuously recorded, wrapping through the available memory (replacing the oldest track data with new data).
- **Color (172C)** — lets you choose a color that is used to display the active track log.
- **Style (172)** — choose from 17 different track styles used to display the active track log.
- **Interval**— defines the frequency at which the track plot is recorded. Three interval settings are available:
  - Distance— records track based on a user-defined distance between points.
  - Time— records track plot based on a user-defined time interval.
  - Resolution— records track plot based upon a user-defined variance from your course over ground. The resolution option is the default setting and is recommended for the most efficient use of memory and TracBack performance. The distance value (entered in the value field) is the maximum error allowed from the true course before recording a track point.
- **Value**— defines the distance or time used to record the track log.
- **Save**— allows you to save the current active track log.
- **Erase**— allows you to clear the active track log currently stored in memory.

## Main Menu: Track Tab



Main Menu— Active Track Tab (172/172C)



Main Menu— Saved Track Tab

## Reference

### Main Menu: Track Tab



Reviewing a saved track  
(172 C shown)



The track name automatically appears when highlighted on the 'Saved' list and **NAV** is pressed.

**Saved Submenu Tab**—manages a list of any saved track logs, allows TracBack activation, map display of saved logs. The active log stores up to approximately 10,000 track log points, based upon the criteria specified in the Track settings. Up to 15 track logs may be saved in memory, with up to 700 track log points in each saved log.

On the 'Saved' tab, the following options are available by highlighting a track and pressing **MENU**:

- Review On Map – displays the saved track log on a Track Map page.
- Delete Track – deletes highlighted saved track log from memory.
- Delete All – deletes all saved track logs from memory.

#### To review and edit a track:

1. On the 'Saved' Track tab of the Main Menu, highlight the desired track and press **ENTER**. The Saved Track window appears.
2. You may rename the track, choose to show the track on the Map and Highway pages, delete the track, or view the track on a map window.
3. To exit, press **QUIT** or highlight 'Next' and press **ENTER**.

You may also activate a TracBack from any of the saved tracks on this tab.

#### To activate a TracBack from the 'Saved' tab list:

1. Using the **ARROW KEYPAD**, highlight the track you wish to use for a TracBack and press **NAV**.
2. The 'Follow <track name>' automatically appears highlighted. Press **ENTER**.
3. Choose either 'Original', which navigates you from the end to the start of your trip, or 'Reverse', which navigates you from the start to the end of your trip and press **ENTER**.



**DSC Tab**— allows to control and set up DSC (Digital Selective Calling) features on the unit.

### **What is Digital selective calling (DSC)?**

Digital Selective Calling (DSC) uses marine VHF radio and Global Positioning System (GPS) technologies to transmit and receive location information. DSC is used by mariners to assist them in two major areas: Distress Calls and Position Reporting.

An emergency DSC Distress Call allows a vessel in trouble to transmit a substantial amount of information in a single transmission or “call,” without the need for voice communication. When any nearby rescuer receives the DSC signal, an alarm sounds and they immediately receive the position of the caller. The rescuer may then choose to navigate (Go To) the caller’s position to assist or forward the call on to the Coast Guard. When the Coast Guard receives the call, they can immediately access the caller’s information (such as who they are and the type of vessel) in their database while they are in transit to the caller’s position.

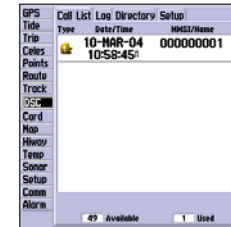
A non-emergency DSC Position Report allows mariners to exchange and display the positions of one another. Once a DSC position is received, the mariner may choose to create a waypoint or to show the received position on an electronic map.

Any time a vessel receives a DSC call, they can store that location and quickly navigate to that position using a Go To. This makes DSC a time-saver, especially in an emergency situation. In order to use DSC, users must first register their VHF radio with the FCC and receive a Maritime Mobile Service Identity (MMSI) number.

### **What is A Maritime mobile service identity (MMSI)?**

Maritime Mobile Service Identity (MMSI) basically allows a VHF radio to act like a phone. In order to make a “call” on a phone, you first need a phone number to dial. The 9-digit MMSI number acts like a phone number when used in a Position Report and as a unique identifier to the Coast Guard when used in an emergency Distress Call. In order to obtain a Maritime Mobile Service Identity (MMSI) number, users must register their VHF radio with the FCC (Form 605). **Garmin does not supply this number!**

## Main Menu: DSC Tab



DSC Tab

#### **HOW ARE MMSI ASSIGNMENTS OBTAINED?**

Non-commercial users (e.g. recreational users who remain in domestic waters and only carry VHF, EPIRB (Emergency Position Indicating Radio Beacons), and Radar) are not required to have a FCC ship station license. The FCC and Coast Guard have authorized some second and third party vendors to assign MMSI numbers. This service is limited to registering recreational vessels only.

**To receive information on how to obtain a recreational MMSI number please contact:**

*<http://www.uscg.mil/rescue21/links/mmsi.htm> or <http://wireless.fcc.gov/marine/>.*

**U.S Non-Federal User:** Commercial users, or those who travel outside the U.S. or Canada, must apply for a ship station license, or an amendment to a ship station license. **To find out if you require a Ship Station license contact:** *<http://wireless.fcc.gov/marine/fctsht14.html>*. If your vessel requires licensing by the FCC you will obtain a MMSI during the application/licensing process when you file FCC Forms 159 and 605.

**U.S. Federal User:** Federal users can obtain MMSI assignments from their agency radio spectrum management office. These procedures are currently under review by the NTIA (National Telecommunications and Information Administration).

**Outside the U.S.:** Users can obtain an MMSI assignment from their telecommunications authority or ship registry, often by obtaining or amending their ship station license.

**In Canada:** Industry Canada is responsible for assigning MMSI numbers to commercial and recreational vessels. Information is available at the following web site: *<http://apollo.ic.gc.ca/english/mmsi.html>*.

**For more information on MMSI's visit:** *<http://www.navcen.uscg.gov/marcomms/gmdss/mmsi.htm>*.

#### **HOW CAN GARMIN HELP YOU WITH DSC?**

To receive *Distress Calls* or *Position Reports*, you must have a DSC-equipped chartplotter as well as a VHF radio with DSC support. During normal, non-emergency *Position Report* communication, Channel 70 (156.525 MHz) has been set aside as the VHF/DSC digital call channel. For a *Distress Call*, a mariner presses the MayDay button on their VHF radio. The call transmits on an emergency channel with the

MMSI number attached to the call (if you have DSC support). Any DSC-equipped mariner (on sea or land) within range can receive the call.

When the Garmin GPSMAP 172/172C is connected to a VHF with DSC support, the GPS unit displays a Call List, Log, and a Directory available to store incoming information received from another user's DSC capable VHF/GPS combination. Basic wiring is required for the Garmin unit and VHF radio to send and receive NMEA data from each other (pg. 92).

### **DSC Distress Call**

With a Garmin DSC capable chartplotter/sounder properly connected to a VHF radio with DSC output, you may receive any DSC Distress Call within range. A window pops up and a message displays when a Distress Call is received. To notify you a Distress Call has been received, an alarm sounds (if enabled). The alarm only sounds on a Distress Call, and it does not sound on a Position Report. Distress Calls are broadcasted to all DSC users in radio range.

#### **Options available from this screen are:**

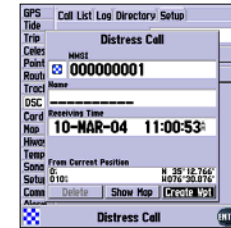
- Show on Map: If you immediately want to see the caller's position they select 'Show on Map'.
- Create Waypoint: If you want to create a waypoint of that position, highlight 'Create Waypoint' and press **ENTER/MARK**.

You also have the ability to input a caller's name, if it is known. (The caller's name replaces the MMSI number as a reference once it is entered.)

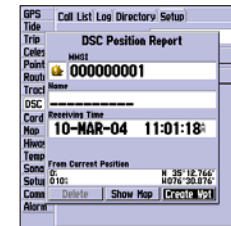
### **DSC Position Report**

The Position Report operates similarly to the Distress Call. Remember this type of contact is like a phone call, but no emergency alarms are set off and the call is specific to the receiver. Position Reports are not broadcasted to all DSC users.

## Main Menu: DSC Tab



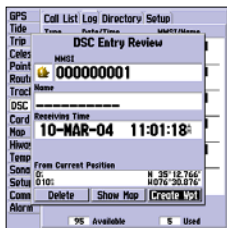
*Distress Call Message*



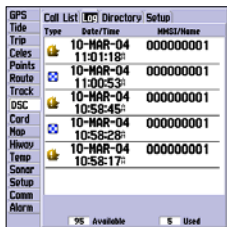
*Position Report Message*

## Reference

### Main Menu: DSC Tab



DSC Entry Review



DSC Log

### DSC Call List

The DSC Call List displays the current calls received. The GPS can manage up to 50 calls. When 'calls' are received, they are updated constantly to give the most current information, even if the unit is left unattended. Any entry from the Call List can be selected to show an Entry Review.

### DSC Log

When DSC calls are received, they are automatically stored in the Log, with the latest call at the top. The unit may store up to 100 logs. Once 100 logs are received, the oldest log file is removed when a new call is received. The Log displays information of call Type, Date/Time, Position, and MMSI/Name. Pressing **MENU** from this page allows you to 'Sort By Time', 'Sort By Name', 'Sort By (Call) Type', 'Delete' (only after highlighting a particular call), and 'Delete All'.

#### To Review a Call:

1. From the DSC tab of the Main Menu and the **Log** or **Call List** tab highlighted, press **DOWN** Arrow Keypad until the call you want to review is highlighted.
2. Press **ENTER** to select the call.

### DSC Entry Review

The DSC Entry Review operates similarly to the Distress Page and Position Report Page. This page has the additional option to 'Delete' the displayed call. From the DSC Entry Review, you can 'Delete' the entry, 'Show on map', or 'Create Waypoint' and create a name for the entry.

### DSC Directory

The DSC Directory acts much like a phone book. A user can save up to 50 contacts. The directory lists by Name and MMSI number. Pressing **MENU** from this page allows you to create a 'New Item', 'Delete Item', or 'Delete All'.

There are two ways to add a new entry into the directory.

### To add a new Directory entry:

1. Press Menu, then highlight 'New Item' and press **ENTER**.
2. Or, with the Directory Tab highlighted press the Arrow Keypad **DOWN**, highlight an empty field and press **ENTER** to access the New Directory Item window.

The New Directory Item window allows you to input information of a known contact.

### To add the MMSI number, Name, or Comment:

1. Press **UP/DOWN** on the Arrow Keypad to highlight the MMSI, Name, or Comment field.
2. Press **ENTER** to highlight the first digit on that field.
3. Press **UP/DOWN** on the Arrow Keypad to enter the numbers/letters.
4. Press **LEFT/RIGHT** on the Arrow Keypad to move to the next position.
5. Press **ENTER** to accept the entry.
6. Press **UP/DOWN** on the Arrow Keypad, highlight the 'Delete' button and press **ENTER** to delete the entry, or highlight the 'OK' button and press **ENTER** to accept the entry.

After creating a New Directory Item entry, the name created is attached to that particular MMSI number. If you return to the Log, the new name is displayed under the corresponding MMSI number. Another way to input a name is from the Entry Review page or the DSC Distress Call or DSC Position Report pages. The Name field is only available in the GPS. Names cannot be sent like the MMSI numbers to other DSC users.

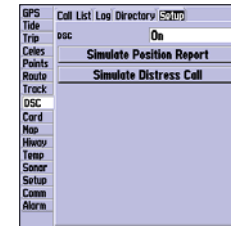
### **DSC Setup**

Garmin chartplotters have the ability to turn DSC 'On' or 'Off'. This option is beneficial for users who have more than one GPS chartplotter. If you want only DSC to display on a particular chartplotter, turn DSC off on the remaining Garmin chartplotters that support DSC.

## Main Menu: DSC Tab



*Adding a Directory Entry*



*DSC Setup*

*"Simulate.." options only appear while in Simulator mode..*

## Reference

### Main Menu: DSC/Card Tabs



Card Tab

A user also has the ability to simulate a Distress Call or a Position Report on this page. This is helpful for practice before connecting to the real system. The Distress Call simulator also helps to check if alarms are working properly.

#### To run a simulation:

1. Place the chartplotter into simulation (see pg. 7).
2. From the Main Menu, select the DSC tab, then highlight the Setup tab.
3. Highlight which simulation you wish to run and press **ENTER**.

#### Using the NAV Key

The receiver of a Distress Call or Position Report can quickly navigate to the caller using the NAV button. Once the call is logged, press the NAV button and select to Go To the MMSI number or the Name of the caller.

**Card Tab**— interface control for saving waypoints, routes and tracks to a data card. When data is saved to a data card, it may be exchanged with other compatible units and Garmin's MapSource PC program.

#### To transfer data to/from a data card:

1. Insert the data card. If there is already user data on the card, highlight 'User Card' and press **ENTER**. From the 'Card' tab, select the checkbox next to each type of item you want to transfer. You may also press **MENU** and choose to 'Select All' or 'Clear All'.
2. Highlight 'Save To Card' and press **ENTER** to save the selected items to the data card.
3. If transferring data from the card to the unit, highlight 'Merge From Card' and press **ENTER** to combine the selected items with those of your GPS. highlight 'Replace From Card' and press **ENTER** to overwrite all selected items on your GPS.
4. A 'Transfer Complete' message appears once the data has been transferred. Press **ENTER**.

**Map Tab**— contains setup options for the Map Page. See page 21.

**Hiway Tab**— contains setup options for the Highway Page. See page 29.

**Temp (Temperature) Tab**— displays the water temperature log (if equipped with a temperature transducer/sensor). The chart reads from right to left, so that the most recent temperature measured is displayed on the far right side of the chart. The dotted lines within the chart indicate intervals in the temperature scale and the duration of time.

The following settings are available:

- Temperature Scale – sets the temperature range (in degrees) for displaying the log. Select 'Auto' to have the unit automatically determine the best range, or select a span of 2, 4, 6, 8 or 10 degrees.
- Time Duration – sets how fast or slow the temperature log scrolls; the shorter the time duration, the faster the temperature log scroll. Select a duration from 1 minute to 2.5 hours.

**Sonar Tab**— contains setup options for the Sonar Page. See pages 53.

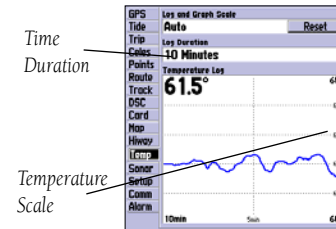
**Setup Tab**— consists of three submenu tabs; System, Units, and Time.

**System Submenu Tab**— controls system settings for beeper, speed filter, languages, system mode, simulator controls, restores factory settings, and displays software version.

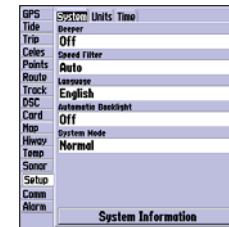
The following settings and options are available:

- Beeper – controls audible beep. Select from 'Off', 'Alarms Only' (sounds for alarms/messages), or 'Key and Alarm' (sounds for key presses and alarms/messages).
- Speed Filter – averages speed-readings. Choose from 'Off', 'Auto' (automatically controls filtering), or 'On' (allows you to enter a value from 1 to 255 seconds).
- Language – select from various languages for the unit's on-screen display.
- System Mode – select from 'Normal' (Normal Navigation) or 'Simulator' (For practice ONLY),  
Set Position\* – allows to set your location while in simulator mode. See page 11, starting with step 2, for additional instructions.

## Main Menu: Temp Tab/ Setup Tab



Main Menu—Temp Tab



Main Menu—System Tab  
(Normal Mode)

## Reference

### Main Menu: System Tab/ Units Tab



Main Menu—System Tab  
(Simulator Mode)



Main Menu—Units Tab

Track Control\* – ‘Auto Track’ steers to the current navigation point. ‘User Track’ allows you to enter a heading in the ‘Track’ field.

Track\* – lets you enter a heading.

Speed\* – lets you enter a speed.

Transducer\* – lets you simulate using a Depth Only, Temp Only, or Temp/Speed transducer.

\* These fields only appear when the unit is in Simulator Mode.

- System Information – displays the unit’s software, basemap version, and electronic serial number.

Press **MENU** for the following options:

- Defaults – restores settings on System page to default values.
- All Unit Defaults – restores all settings to Garmin’s original setup values for the entire unit.

**Units Submenu Tab**— defines settings for Position Format, Map Datum, Heading, Distance, Speed, Elevation, Depth, and Temperature.

The following settings are available:

- Position Format – is used to change the coordinate system in which a given position reading is displayed. You should only change the position format if you are using a map or chart that specifies a different position format or wish to use a format you are familiar with. The default format is latitude and longitude in degrees, minutes, and thousandths of a minute (hddd°mm.mmm’). The following additional formats are available:
  - hddd.dddd° – latitude/longitude in decimal degrees only
  - hddd°mm’ss.s” – latitude/longitude in degrees, minutes, seconds
  - UTM/UPS – Universal Transverse Mercator / Universal Polar Stereographic grids
  - British Grid
  - Dutch Grid
  - Finnish KKJ27
  - German Grid
  - India Zones
  - Irish Grid
  - Loran TD
  - Maidenhead
  - MGRS
  - New Zealand
  - Qatar Grid
  - RT90
  - Swedish Grid
  - Swiss Grid
  - Taiwan Grid
  - User Grid
  - W Malayan RSO



For additional information on Loran TD setup, see page 78.

- Map Datum – allows you to manually select the datum reference used to determine a given position. The default setting is ‘WGS 84’. The unit automatically chooses the best datum depending upon your chosen position format. Datums are used to describe geographic positions for surveying, mapping, and navigation and are not actual maps built in the unit. Although over 100 datums are available (as listed on pages 83-84), you should only change the datum if you are using a map or chart that specifies a different datum.



**WARNING:** *Selecting the wrong map datum can result in substantial position errors.*

- Heading – lets you select the reference used in calculating heading information. You can select from ‘Auto Mag Var’, ‘True’, ‘Grid’ and ‘User Mag Var’. ‘Auto Mag Var’ provides magnetic north heading references which are automatically determined from your current position. ‘True’ provides headings based upon a true north reference. ‘Grid’ provides headings based on a grid north reference (and is used in conjunction with the grid position formats described on page 70). ‘User Mag Var’ allows you to specify the magnetic variation at your current position and provides magnetic north heading references based upon the variation you enter.

#### To enter a user defined magnetic variation:

1. With the Heading field set to ‘User Mag Var’, highlight the heading reference field (immediately to the right) and press **ENTER**.
  2. Use the **ARROW KEYPAD** to enter the magnetic variation at your current position and press **ENTER**.
- Distance, Speed and Elevation – lets you select the desired units of measure for distance, speed and elevation readouts in ‘Nautical’ (nm, kt, ft), ‘Nautical’ (nm, kt, m), ‘Statute’ (mi, mh, ft) or ‘Metric’ (km, kh, m) terms.
  - Depth – lets you select the desired units of measure for depth in Feet (ft), Fathoms (fa) or Meters (m).
  - Temperature – lets you select the desired units of measure for temperature in Fahrenheit (°F) or Celsius (°C).

## Main Menu: Units Tab



The Units tab settings affect how navigation information is displayed on the GPSMAP 172/172C. When in doubt, seek assistance.

*If you are using a map or chart in conjunction with your GPS, make sure the settings under the ‘Units’ tab of the GPSMAP 172/172C match that of the map or chart. This information should be displayed somewhere on the map or chart. If the information is not present, contact the map or chart maker to determine what position format, datum, heading and units of measure are being used for the map or chart.*



**WARNING:** *If ‘User Mag Var’ is selected, you must periodically update the magnetic variation as your position changes. Using this setting, the unit does not automatically calculate and update the magnetic variation at your present position. Failure to update this setting may result in substantial differences between the information displayed on your unit and external references, such as a magnetic compass.*

## Reference

### Main Menu: Time/ Comm Tab



Main Menu—Time Tab



Data Transfer Progress

Main Menu—  
Comm Tab

**Time Submenu Tab**— displays the current time and date, allows you to adjust the 12 or 24-hour time format, enter a time zone, and adjust for daylight savings to show correct local time.

The following options are available:

- Time Format – 12 hour, 24-hour (military) or UTC time (also called Greenwich Time).
- Time Zone – choose your time zone to show correct local time or choose ‘Other’ and enter a UTC Offset. The UTC offset is how many hours you are ahead or behind the time line. See the table on page 80 for time offsets.
- Daylight Savings – choose from ‘Auto’, ‘On’, or ‘Off’ to adjust for daylight savings.

**Comm (Communications) Tab**— lets you control the input/output format used when connecting your GPSMAP 172/172C to external NMEA devices, a DGPS beacon receiver, a personal computer, another Garmin GPSMAP 172/172C, etc. If a DGPS receiver is used, WAAS capability is automatically turned to ‘Off’. The unit supports two input/output ports. See page 92 for more information on wiring and NMEA information. Individual Port settings are:

Port 1:

- Garmin Data Transfer – the proprietary format used to upload/download MapSource data, exchange waypoint, route, track, almanac, and proximity data with a PC or another Garmin GPSMAP 172/172C. When you select ‘Garmin Data Transfer’, there are 11 Transfer Modes to choose from: Host, Request Almanac, Request Proximity, Request Routes, Request Tracks, Request Waypoints, Send Almanac, Send Proximity, Send Routes, Send Tracks and Send Waypoints.
- NMEA In/NMEA Out – supports the input/output of standard NMEA 0183 data, DSC, and sonar NMEA input support for the DPT, MTW and VHW sentences.

- None – provides no interfacing capabilities.

#### Port 2:

- Garmin DGPS – used to connect the GPSMAP 172/172C with a Garmin DGPS beacon receiver.
- Other DGPS – allows DGPS input using a standard RTCM format, without any output capabilities.
- NMEA In/NMEA Out – supports the input/output of standard NMEA 0183 data, DSC, and sonar NMEA input support for the DPT, MTW and VHW sentences. You may also adjust the NMEA output.
- RTCM In/NMEA Out – allows Differential GPS (DGPS) input using a standard RTCM format and also provides NMEA 0183 output.
- None – provides no interfacing capabilities.

#### To select an input/output format:

1. Select the desired Port tab, then highlight the 'Serial Data Format' field and press **ENTER**.
2. Use the **ARROW KEYPAD** elect the desired setting and press **ENTER**.

#### To select a transfer mode:

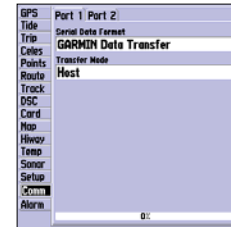
1. Use the **ARROW KEYPAD** to select 'Garmin Data Transfer' in the 'Serial Data Format' field.
2. Highlight the 'Transfer Mode' field and press **ENTER**.
3. Use the **ARROW KEYPAD** to select the desired setting and press **ENTER**.

You may also adjust the NMEA output to enable/disable certain sentences and adjust the number of Lat/Lon output precision digits. You must have one of the ports set to NMEA In/NMEA Out to use this option. Settings affects both Port 1 and Port 2 NMEA outputs.

#### To restore the Serial Data Format settings to the default 'Garmin Data Transfer':

1. From the Comm tab, press **MENU**, highlight 'Defaults' and press **ENTER**.

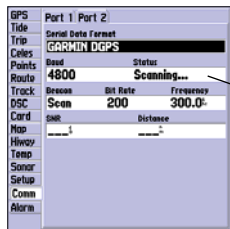
## Main Menu: Comm Tab



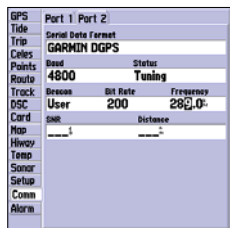
*When transferring data between two Garmin units, be sure to always set one to 'Host' and use the other unit to either Send or Request the desired data.*

## Reference

### Main Menu: Comm Tab



SNR and Distance shows data when signal is received.



You may also manually enter a frequency and bit rate.

If 'Garmin DGPS' or 'RTCM In/NMEA Out' format is selected, additional fields are provided to control a Garmin differential beacon receiver directly from your GPSMAP 172/172C. You may have the unit automatically scan for the DGPS beacon signal or you can enter the beacon frequency and bit rate on the unit and the information is used to tune the beacon receiver.

#### To have the unit automatically scan for a frequency:

1. With the unit set to 'Garmin DGPS' or 'RTCM In/NMEA Out', use the **ARROW KEYPAD** to highlight the "Beacon" field and press **ENTER**.
2. Highlight 'Scan' and press **ENTER**. The numbers in the 'Frequency' field changes as the unit scans from 284 kHz to 325 kHz, 200 bit rate, then 100, at 6-second intervals.

#### To restart the scan:

1. Press **MENU**, highlight 'Restart Scan' and press **ENTER**. The "Status" field shows one of the following:
  - Tuning – unit is attempting to tune to the specified frequency and bit rate.
  - Scanning – unit is automatically scanning through the frequencies and bit rates.
  - Receiving – unit is receiving DGPS signal and ready for operation.
  - Check Wiring – unit is not making connection with DGPS receiver.

When the unit is receiving a DGPS signal, the "SNR" (Signal to Noise Ratio) and "Distance" fields shows data. The SNR range is 0dB to 30dB, with 30 being the best. The Distance may or may not show data, depending upon the signal being broadcast from the DGPS site.

The DGPS beacon transmitters are operated by the U.S. Coast Guard (or similar government agency in other countries), which is responsible for their accuracy and maintenance. For DGPS transmitter problems or to find the most updated list of frequencies and coverage areas, contact your local USCG, or see their web site at <http://www.navcen.uscg.mil/>.

**NMEA Interface**

If you are going to interface the GPSMAP 172/172C with another piece of equipment (such as a radio or autopilot), the unit needs to be set to output NMEA data. More information on wiring and NMEA data may be found on page 92.

**To activate the NMEA data:**

1. On either port of the Comm Tab, highlight the 'Serial Data Format' field and press **ENTER**.
2. Select 'NMEA In/NMEA Out' and press **ENTER**.

**Advanced NMEA Output Setup**

The GPSMAP 172/172C NMEA data transmission can be customized to change the precision of the Lat/Lon minutes, set up the waypoint IDs, and keep the output rate at two seconds. If the unit is set up to output all of the available NMEA sentences, the output rate may exceed two seconds. The 'Advanced NMEA Output Setup' page allows you to turn on/off the GPS status (GSA, GSV), Waypoint/Route (WPL, RTE), and the Garmin Proprietary sentences. See page 92 for more information on wiring and NMEA data.

Lat/Lon Minutes Precision allows you to adjust the number of digits to the right of the decimal point for transmission of NMEA Output, either 2, 3 or 4 digits. The Waypoint ID setting lets you choose to output the waypoint identifiers as names or numbers.

**To set up the Advanced NMEA page:**

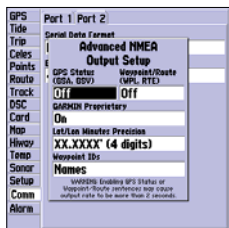
1. Highlight 'NMEA In/NMEA Out' in the Serial Data Format field, and press **MENU**. Select 'NMEA Setup' and press **ENTER**.
2. To change the settings, place the highlight over the desired field and press **ENTER**. Make a selection and press **ENTER** again to accept the selection.

**Main Menu: Comm Tab**

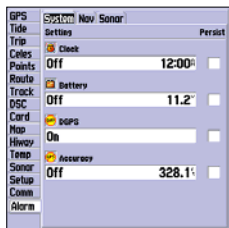
Activating NMEA data

## Reference

### Main Menu: Comm Tab/ Alarm Tab



Advanced NMEA  
Setup Page



Main Menu—Alarm Tab  
(System Submenu)

### GPSPMAP 172/172C NMEA Sentence Output (NMEA version 3.01 compliant)

**Always transmitted:** GPRMC, GPGGA, GPGLL, GPBWC, GPVTG, GPXTE, GPRMB, GPBOD

**Switchable sentences:** GPGSA, GPGSV, GPWPL, GPRTE

**Garmin proprietary:** PGRME, PGRMZ, PGRMM

**Alarm Tab**— contains setting for the unit's alarms. The Alarm tab is divided into three submenus: System alarms, Nav alarms, and Sonar alarms.

#### System Submenu Tab

**Clock** – provides an alarm for the system clock. Enter a time in the time field and turn the alarm on and off from the control field menu. Remember to enter alarm times in the same time format (UTC or local) you're using for your system. The unit must be on for the clock alarm to work.

**Battery** – sets an alarm to sound when the battery is reaching a critical state of discharge.

**DGPS** – sets an alarm to sound when the unit loses a differential fix.

**Accuracy** – sets an alarm to sound when the GPS position accuracy falls outside the user-set value.

#### Nav Submenu Tab

**Anchor Drag** – sets an alarm to sound when you've exceeded a specified drift distance. Enter a value in the distance field and use the control field to turn the alarm on and off.

**Arrival** – sets an alarm to sound when you're a specified distance or time away from a destination waypoint. Enter a distance radius or time for sounding the alarm and use the control field to set the alarm to 'Off', 'Dist' (Distance), or 'Time'.

**Off Course** – sets an alarm to sound when you're off a desired course by a specified distance. Enter a distance in the distance field and use the control field to turn the off course alarm on and off.

**Sonar Submenu Tab\***

Shallow Water/Deep Water – set alarms to sound when you enter an area of specified depth that is too shallow and/or too deep. You must be receiving sonar data for this function to work.

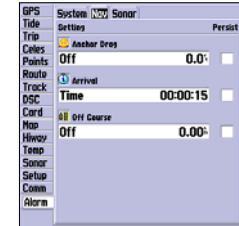
Water Temperature – sets an alarm to sound when the transducer reports a temperature either above, below, inside or outside the specified values.

Fish – sets an alarm to sound when the unit detects a fish of the specified size symbol(s).

**To set an alarm:**

1. Use the **ARROW KEYPAD** to highlight desired submenu tab of the Alarm Tab.
2. Highlight the field below the alarm name you wish activate and press **ENTER**.
3. Change the mode to the desired setting and press **ENTER**.
4. Highlight the next field to the right and press **ENTER**, then enter the desired settings and press **ENTER** to finish.
5. If you want the alarm to display and beep until acknowledged, highlight the 'Persist' box and press **ENTER** to place a check mark in the box.

\*You must be receiving NMEA Sonar data or using a Garmin GSD 20 Sonar Module for the Sonar alarms to function. Fish Alarm will only function while using a Garmin GSD 20 Sonar Module.

**Main Menu: Alarm Tab**

Main Menu—Alarm Tab  
(Nav Submenu)



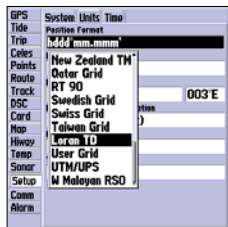
Main Menu—Alarm Tab  
(Sonar Submenu)

## Appendix A

### Loran TD



On the Units Tab of the Main Menu, press **MENU**, then highlight 'Loran TD On' and press **ENTER** to select Loran TD.



Or, highlight the Position Format field, highlight 'Loran TD' and press **ENTER** to select Loran TD.

### Loran TD System

LORAN-C is a radio navigation aid operated and maintained in the United States by the United States Coast Guard. The name LORAN is an acronym for "Long RAnge Navigation". The LORAN system covers the entire United States and the U.S. Coastal Confluence Zone. From the perspective of a mariner, the system is used for ocean and coastal navigation. It can be used as a supplemental system for harbor and harbor approach navigation, and it is used for inland navigation by recreational vehicles.

### LORAN TD Feature

The LORAN TD (Time Delay) feature eases the transition from using LORAN to using GPS. The GPSMAP unit automatically converts GPS coordinates to LORAN TDs for those who have a collection of LORAN fixes for favorite fishing spots and other waypoints recorded as TDs. You can display your position as a TD or enter waypoints as TDs. The accuracy to be expected from this conversion is approximately thirty meters. When the unit is placed in the LORAN TD format mode, it simulates the operation of a LORAN receiver. Position coordinates may be displayed as TDs, and all navigation functions may be used as if the unit was actually receiving LORAN signals.

### Using the LORAN TD Format

When creating new waypoints using LORAN TD coordinates, you must set the correct LORAN chain number and secondary stations in the Setup TD field before storing the waypoint. You must have the correct chain number as well as the secondary station identifiers to use this option correctly. These values varies per coordinate set or geographical location. Failure to enter correct information could result in inaccuracies for the desired destination. After the waypoint is stored in unit memory, it always references the LORAN chain number and secondary stations currently selected in the Setup TD field. If you enter a different LORAN chain number, change the secondary stations or offsets in the Setup TD field, the active waypoint information reflects those changes. Since the GPSMAP unit does not rely on the LORAN signal for navigation, it can reference a different GRI chain and/or secondary stations and still navigate to the location stored in memory.



The LORAN Position Format field is located under the Units tab in the Main Menu. The 'LORAN TD Setup' window contains the fields to select the Loran GRI-Chain Number, Primary and Secondary Stations, and TD Offsets.

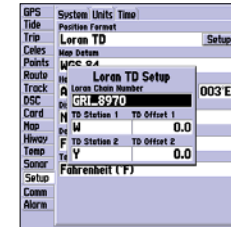
### To setup Loran TD from the Main Menu:

1. Using the **ARROW KEYPAD**, highlight the 'Setup tab, then press RIGHT to highlight the 'Units' submenu tab. Highlight the "Position Format" field and press **ENTER**. You may also press **MENU** from the "Units" tab to display the 'Loran TD On' option. (If you use 'Loran TD On', skip to step 3.)
2. Highlight 'Loran TD', press **ENTER**, then highlight 'Setup' and press **ENTER**.
3. To change the settings of any of the five fields, highlight the field, press **ENTER**, select/enter the desired setting and press **ENTER**.
4. When done, press the **QUIT** key to return to the Main Menu.

If the active GRI Chain, secondary stations or offsets have been changed since the waypoint was created, the waypoint now references the active GRI-chain and secondary stations and adjust the TD coordinates accordingly. Remember that the GPS is not relying on the LORAN signal for navigation and actually converts the TD coordinate to a useful LAT/LON coordinate (in the background) before storing the waypoint to memory or using it for navigation. Because of this the unit can navigate to a TD coordinate anywhere in the world.

For more information on Loran TDs, you may download Garmin's "Loran TD Position Format Handbook" from the Garmin web site.

## Loran TD Setup



*Loran TD Setup Window*

## Appendix B

### Time Offsets



A simple way to determine your local time offset is how many hours you are behind or ahead of UTC (also called 'Greenwich' or 'zulu' time).

Example: EST (Eastern Standard Time) is 5 hours behind UTC, so your offset would be -5. Adding one hour for daylight savings would make EDT (Eastern Daylight Time) -4. Subtract an hour for each time zone as you travel west.

Offsets for Continental U.S. would be:

EST	-5	EDT	-4
CST	-6	CDT	-5
MST	-7	MDT	-6
PST	-8	PDT	-7

The chart below gives an approximate UTC (Universal Time Coordinate) time offset for the various longitudinal zones. Check with local charts for more detailed information. If you are in daylight savings time, add one hour to the offset.

Longitudinal Zone	Offset	Longitudinal Zone	Offset
W180.0° to W172.5°	-12	E007.5° to E022.5°	+1
W172.5° to W157.5°	-11	E022.5° to E037.5°	+2
W157.5° to W142.5°	-10	E037.5° to E052.5°	+3
W142.5° to W127.5°	-9	E052.5° to E067.5°	+4
W127.5° to W112.5°	-8	E067.5° to E082.5°	+5
W112.5° to W097.5°	-7	E082.5° to E097.5°	+6
W097.5° to W082.5°	-6	E097.5° to E112.5°	+7
W082.5° to W067.5°	-5	E112.5° to E127.5°	+8
W067.5° to W052.5°	-4	E127.5° to E142.5°	+9
W052.5° to W037.5°	-3	E142.5° to E157.5°	+10
W037.5° to W022.5°	-2	E157.5° to E172.5°	+11
W022.5° to W007.5°	-1	E172.5° to E180.0°	+12
W007.5° to E007.5°	0		

### Messages

The GPSMAP 172/172C uses an on-screen pop-up message system to alert you to unit operating characteristics. Press the **ENTER** key to acknowledge and return to the page you were viewing.

**Alarm Clock**— The alarm clock has sounded.

**Alarm Voltage Set Too High**— Voltage range must be between 10.0 and 35.0 volts for the GPSMAP 172/172C.

**Alarm Voltage Set Too Low** — Voltage range must be between 10.0 and 35.0 volts for the GPSMAP 172/172C.

**Anchor Drag Alarm**— You have drifted out of the specified distance range.

**Antenna Input Shorted To Ground**— Check antenna wiring/connections or antenna replacement.

**Approaching Waypoint**— You are a specified alarm distance from a destination waypoint.

**Arrival At Waypoint**— You have arrived at the destination waypoint.

**Basemap Failed Unit Needs Repair**— Internal problem with the unit. Contact your dealer or Garmin Customer Service (pg. iv) to have the unit serviced.

**Battery Alarm**— Specified amount of input voltage has been detected.

**Battery Voltage High Please Check Connection**— Input DC voltage is too high for unit.

**Battery Voltage Low Please Check Connection**— Input DC voltage is too low for unit.

**Boat is Not Moving Fast Enough to Calibrate**— Speed wheel is not turning. Check for debris or boat speed is too slow.

**Database Error**— Internal problem with the unit. Contact your dealer or Garmin Customer Service (pg. iv) to have the unit serviced.

**Deep Water Alarm**— Specified deep water alarm depth has been detected below transducer.

**Lost Satellite Reception**— The unit has lost satellite signals. Check antenna connections or try moving to a location with a clear view of the sky.

**Memory (RAM) Failed Unit Needs Repair**— Internal problem with the unit. Contact your dealer or Garmin Customer Service (pg. iv) to have the unit serviced.

**Memory (ROM) Failed Unit Needs Repair**— Internal problem with the unit. Contact your dealer or Garmin Customer Service (pg. iv) to have the unit serviced.

**No DGPS Position**— No differential correction data is available or not enough data is available to compute a DGPS position.

**No Tide Stations For That Area**— There are no tide stations within 100 miles of the specified point. Try another area.

**Off Course Alarm**— You have exceeded the specified off-course distance.

**Processor Failed Unit Needs Repair**— Internal problem with the unit. Contact your dealer or Garmin Customer Service (pg. iv) to have the unit serviced.

## Appendix C

### Messages

**Proximity Alarm List is Full**— You have used all ten proximity waypoints.

**Proximity Alarm Waypoint**— You have entered the alarm radius for the proximity waypoint indicated.

**Proximity Overlaps Another Proximity Waypoint**—The alarm radius specified overlaps the area specified for another proximity waypoint. Adjust the distance.

**Route Already Exists: <route name>**— You have entered a route name that already exists in memory. Modify the route name or delete the previous route name.

**Route Does Not Exist: <route name>**— Route has been renamed or removed from memory and cannot be used.

**Route Is Full**— You have attempted to add more than 50 points to a route. Reduce the number of points or create a second route.

**Route Memory Is Full Can't Create Route**— Maximum amount of 50 routes is already in the unit's memory and no additional routes can be added until existing ones are removed.

**Route Truncated**— An uploaded route from another device has more than 50 points. Reduce the number of points.

**Running Simulator**— The unit is in simulator (practice) mode.

**Shallow Water Alarm**— Specified shallow water alarm depth has been detected below transducer.

**Sonar Failed Unit Needs Repair**— Internal problem with the unit. Contact your dealer or Garmin Customer Service (page. iv) to have the unit serviced.

**Track Already Exists: <track name>**— You have entered a saved track name that already exists in memory. Modify the track name or delete the previous track name.

**Track Memory Is Full Can't Create Track**— Track log memory is full. No additional track log data can be stored without deleting old data to create memory space.

**Track Truncated**— A complete uploaded track does not fit into memory. The oldest track log points were deleted to make space for the most recent data.

**Transducer Disconnected Sonar Turned Off**— No transducer attached or bad cable/transducer.

**Transfer Complete**— The unit has finished uploading/downloading information to the connected device.

**Water Speed Sensor is Not Working**— Speed sensor is not detected. Check connections.

**Waypoint Already Exists: <waypoint name>**— You have entered a waypoint name that already exists in memory. Modify the waypoint name or delete the previous waypoint name.

**Waypoint Memory Is Full Can't Create Waypoint**— You have used all 3000 waypoints available. Delete unwanted waypoints to make space for new entries.

Adindan Adindan- Ethiopia, Mali, Senegal, Sudan	Chua Astro	Chua Astro- Paraguay
Afgooye Afgooye- Somalia	Croatia	Croatia
AIN EL ABD '70	AIN EL ANBD 1970- Bahrain Island, Saudi Arabia	Corrego Alegre
Anna 1 Ast '65	Anna 1 Astro '65- Cocos I.	Corrego Alegre- Brazil
ARC 1950	ARC 1950- Botswana, Lesotho, Malawi, Swaziland, Zaire, Zambia, Zimbabwe	Djakarta Djakarta (Batavia)- Sumatra Island (Indonesia)
ARC 1960	Kenya, Tanzania	Dos 1968
Ascnsn Isld '58	Ascension Island '58- Ascension Island	Dos 1968- Gizo Island (New Georgia Islands)
Astro B4 Sorol	Sorol Atoll- Tern Island	Dutch
Astro Bcn "E"	Astro Beacon "E"- Iwo Jima	Dutch
Astro Dos 71/4	Astro Dos 71/4- St. Helena	Easter Isld 67
Astr Stn '52	Astronomic Stn '52- Marcus Island	Easter Island 1967
Aus Geod '66	Australian Geod '66- Australia, Tasmania Island	European 1950
Aus Geod '84	Australian Geod '84- Australia, Tasmania Island	European 1950- Austria, Belgium, Denmark, Finland, France, Germany, Gibraltar, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland
Austria	Austria	European 1979
Bellevue (IGN)	Efate and Erromango Islands	European 1979- Austria, Finland, Netherlands, Norway, Spain, Sweden, Switzerland
Bermuda 1957	Bermuda 1957- Bermuda Islands	Finland Hayfrd
Bogata Observ	Bogata Observatry- Colombia	Finland Hayford- Finland
Campo Inchspe	Campo Inchauspe- Argentina	Gandajika Base
Canton Ast '66	Canton Astro 1966- Phoenix Islands	Gandajika Base- Republic of Maldives
Cape	Cape- South Africa	GDA
Cape Canavrl	Cape Canaveral- Florida, Bahama Islands	Geocentric Datum of Australia
CarthageCarthage- Tunisia		Geodetic Datum '49-New Zealand
CH-1903	CH 1903- Switzerland	Guam 1963
Chatham 1971	Chatham 1971- Chatham Island (New Zealand)	Guam 1963- Guam Island
		Gux 1 Astro
		Guadalcanal Island
		Hjorsey 1955
		Hjorsey 1955- Iceland
		Hong Kong '63
		Hong Kong
		Hu-Tzu-Shan
		Taiwan
		Indian Bngldsh
		Indian- Bangladesh, India, Nepal
		Indian Thailand
		Indian- Thailand, Vietnam
		Indonesia 74
		Indonesia 1974-Indonesia
		Ireland 1965
		Ireland 1965- Ireland
		ISTS 073 Astro
		ISTS 073 ASTRO '69- Diego Garcia

## Appendix D

### Map Datums



*The 'User' datum is based on a WGS-84 Local datum and is an advanced feature for unlisted or custom datums. To learn more, check your local library or on the world wide web for educational materials on datums and coordinate systems.*

# Appendix D

## Map Datums

Johnston Island	Johnston Island Kandawala Kandawala- Sri Lanka	NAD27 Central	North American 1927-Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua)	Qornoq Qornoq- South Greenland
Kerguelen Islnd	Kerguelen Island	NAD27 CONUS	North Am. 1927- Mean Value (CONUS)	Reunion Reunion- Mascarene Island
Kertau 1948	West Malaysia, Singapore	NAD27 Cuba	North American 1927- Cuba	Rome 1940 Rome 1940- Sardinia Isl.
L. C. 5 Astro	Cayman Brac Island	NAD27 Grnland	North American 1927- Greenland (Hayes Peninsula)	RT 90 Sweden
Liberia 1964	Liberia 1964- Liberia	NAD27 Mexico	N. American 1927- Mexico	Santo (Dos) Santo (Dos)- Espirito Santo
Luzon Mindanao	Luzon- Mindanao Island	NAD27 San Sal	North American 1927- San Salvador Island	Sao Braz Sao Braz- Sao Miguel, Santa Maria Islands
Luzon Philippine	Luzon- Philippines (excluding Mindanao Isl.)	NAD83 North American 1983- Alaska, Canada, Central America, CONUS, Mexico		Sapper Hill '43 Sapper Hill 1943- East Falkland Island
Mahe 1971	Mahe 1971- Mahe Island	Nhrwn Masirah	Nahrwn- Masirah Island (Oman)	Schwarzeck Schwarzeck- Namibia
Marco Astro	Marco Astro- Salvage Isl.	Nhrwn Saudi A	Nahrwn- Saudi Arabia	Sth Amrcn '69 S. American '69- Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Venezuela, Trin/Tobago
Massawa	Massawa- Eritrea (Ethiopia)	Nhrwn United A	Nahrwn- United Arab Emirates	South Asia South Asia- Singapore
Merchich	Merchich- Morocco	Naparima BWI	Naparima BWI- Trinidad and Tobago	SE Base Southeast Base- Porto Santo and Madera Islands
Midway Ast '61	Midway Astro '61- Midway	Obsrvtorio '66	Observatorio 1966- Corvo and Flores Islands (Azores)	SW Base Southwest Base- Faial, Graciosa, Pico, Sao Jorge and Terceira Islands
Minna	Minna- Nigeria	Old Egyptian	Old Egyptian- Egypt	Taiwan Modified Taiwan
NAD27 Alaska	North American 1927- Alaska	Old Hawaiian	Old Hawaiian- Mean Value	Timbalai 1948 Timbalai 1948- Brunei and E. Malaysia (Sarawak and Sabah)
NAD27 Bahamas	North American 1927- Bahamas (excluding San Salvador Island)	Oman	Oman- Oman	Tokyo Tokyo- Japan, Korea, Okinawa
NAD27 Canada	North American 1927- Canada and Newfoundland	Ord Srvy GB	Old Survey Grt Britn- England, Isle of Man, Scotland, Shetland Isl., Wales	Tristan Ast '68 Tristan Astro 1968- Tristan da Cunha
NAD27 Canal Zone	North Am. 1927- Canal Zone	Pico De Las Nv	Canary Islands	User User-defined custom datum
NAD27 Caribbn	North American 1927- Caribbean (Barbados, Caicos Islands, Cuba, Dom. Rep., Grd. Cayman, Jamaica, Leeward and Turks Islands)	Potsdam Potsdam-Germany		Viti Levu 1916 Viti Levu 1916- Viti Levu/Fiji Islands
		Ptcairn Ast '67	Pitcairn Astro '67- Pitcairn	Wake-Eniwetok Wake-Eniwetok- Marshall
		Prov S Am '56	Prov So Amrcn '56- Bolivia, Chile, Colombia, Ecuador, Guyana, Peru, Venezuela	WGS 72 World Geodetic System 72
		Prov S Chln '63	So Chilean '63- S. Chile	WGS 84 World Geodetic System 84
		Puerto Rico	Puerto Rico & Virgin Isl.	Zanderij Zanderij- Surinam
		Qatar	Qatar National- Qatar	

### Navigation Terms

**Avg Speed**— The average of all second-by-second speed readings since last reset.

**Bearing (BRG)**— The compass direction from your present position to a destination waypoint.

**Course**— The desired course between the active 'from' and 'to' waypoints.

**Distance (Dist)**— The 'great circle' distance from present position to a destination waypoint.

**Distance to Destination**— The 'great circle' distance from present position to a GOTO destination, or the final waypoint in a route.

**Distance to Next**— The 'great circle' distance from present position to a GOTO destination, or the next waypoint in a route.

**Elevation**— Height above mean sea level (MSL).

**ETA**— Estimate Time of Arrival. The estimated time you will reach your destination waypoint, based on current speed and track.

**ETA at Destination**— The estimated time you will reach a GOTO destination, or the final waypoint in a route.

**ETA at Next**— The estimated time you will reach a GOTO destination, or the next waypoint in a route.

**Fuel**— The fuel required to travel from present position to the indicated route waypoint.

**Leg Dist**— The distance between two route waypoints.

**Leg Fuel**— The fuel required to travel from a route waypoint to the next waypoint (in sequence) in the route.

**Leg Time**— The time required to travel from a route waypoint to the next waypoint (in sequence) in the route.

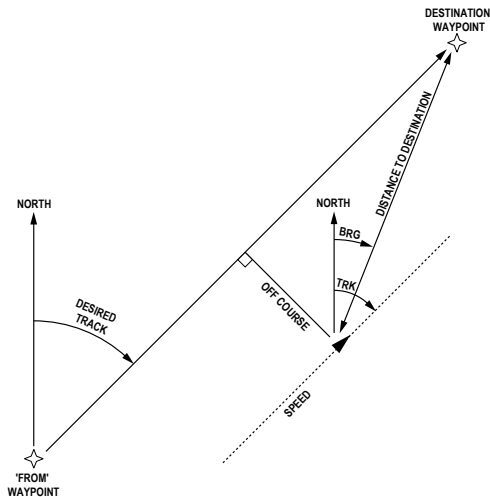
**Max Speed**— The maximum second-by-second speed recorded since last reset.

**Moving Average Speed**— Average speed while the unit is moving.

**Moving Trip Timer**— Total time the unit has been moving.

## Appendix E

### Navigation Terms



**Odometer**— A running tally of distance travelled, based upon the distance between second-by-second position readings.

**Off Course**— The distance you are off a desired course in either direction, left or right. Also referred to as ‘cross-track error’ or ‘course error’.

**Speed**— The current velocity at which you are travelling, relative to a ground position. Also referred to as ‘ground speed’.

**Time To**— The estimated time required to reach a GOTO destination, or the next waypoint in a route. Also referred to as ‘estimated time en route’.

**Time to Destination**— The estimated time required to reach a GOTO destination, or the final waypoint in a route.

**Time to Next**— The estimated time required to reach a GOTO destination, or the next waypoint in a route.

**To Course**— The recommended direction to steer in order to reduce course error or stay on course. Provides the most efficient heading to get back to the desired course and proceed along your route.

**Track**— The direction of movement relative to a ground position. Also referred to as ‘ground track’.

**Trip Odometer**— A running tally of distance travelled since last reset. Also see ‘Odometer’.

**Total Average Speed**— Average speed of unit for both moving and stopped speeds since last timer reset.

**Total Trip Timer**— Total time the unit has been in operation since last reset of the trip timers.

**Turn**— The angle difference between the bearing to your destination and your current track. ‘L’ indicates you should turn left, ‘R’ indicates you should turn right. The degrees indicate the angle you are off course.

**VMG**— Velocity Made Good. The speed you are closing in on a destination along a desired course. Also referred to as the ‘vector velocity’ to your destination.



## Physical Specifications

Size:	4.9" H x 6.3" W x 3.7" D (122.5mm x 157.5mm x 92.5mm)
Weight:	1.0 lb 1oz. (.481Kg)
Display: (172C)	3.2" W x 3.2" H (81.28mm) CSTN (Color Super Twist Nematic) with adjustable CCFL (Cold Cathode Fluorescent Lamp) backlighting; (320x320 pixels)
(172)	3.2" W x 3.2" H (81.6 mm) 10 level grayscale FSTN (Film Super Twist Nematic) with adjustable CCFL (cold cathode) backlighting; (320x320 pixels)
Case:	Fully gasketed, high-impact plastic alloy, waterproof to IEC 60529-IPX-7
Temp. Range:	5°F to 158°F (-15°C to 55°C)

## Performance

Receiver:	Differential-ready 12 parallel channel WAAS capable receiver
Acquisition Times:	
Warm:	Approx. 15 seconds
Cold:	Approx. 45 seconds
AutoLocate:	Approx. 2 minutes
Update Rate:	1/second, continuous
GPS Accuracy:	Position*: <15 meters (49 feet), 95% typical*
	Velocity: 0.05 meters/sec steady state
DGPS (USCG) Accuracy:	
	Position: 3-5 meters (10-16 feet) with optional Garmin DGPS receiver, 95% typical*
	Velocity: 0.05 meters/sec steady state
DGPS (WAAS) Accuracy:	
	Position: <3 meters (10 feet), 95% typical*
	Velocity: 0.05 meters/sec steady state
Dynamics:	6g's

\* Subject to accuracy degradation to 100m 2DRMS under the U.S. DOD-imposed Selective Availability Program.

## Power

Source:	10-35 vDC
Usage:	6 watts max. at 13.8 vDC
Fuse:	AGC/3AG - 2.0 Amp

## Appendix F

### Specifications/ Unit Care

#### UNIT CARE

**Cleaning** - The unit's case is constructed of high quality material and does not require user maintenance other than cleaning. Clean the unit housing using a cloth lightly dampened with a mild detergent solution and then wipe dry. Avoid chemical cleaners and solvents that may damage plastic components. Do not apply cleaner to electrical contacts on the back of the unit.

The 172C has an anti-reflective coating on the lens that can be damaged by ammonia based cleaners. When cleaning the lens use a soft lint free cloth. Don't apply the cleaner directly to the lens, apply a small amount of cleaner to the cloth and then wipe the lens.

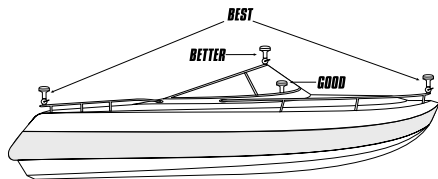
**Storage** - Do not store the unit where exposure to temperature extremes may occur (see left), as permanent damage may result. User information, such as waypoints, routes, etc. is retained in the unit's memory, without the need for external power. It is always a good practice to back up important user data by manually recording it or downloading it to a PC (see pg. 72).

**Water Immersion** - The GPSMAP 172/172C is waterproof to IEC Standard 60529 IPX7. It can withstand immersion in 1 meter of water for 30 minutes. Prolonged submersion can cause damage to the unit. After submersion, be certain to remove the data card and dry the compartments before reuse.

To resolve problems that cannot be remedied using this guide, contact Garmin Customer Support in the U.S.A. at 800-800-1020 or Garmin Europe at 44/0870.8501241

## Appendix G

### Antenna Installation



Suggested locations for mounting the GA 29 antenna.



*It is possible to route the coaxial cable either through, or outside the antenna mount. It is possible to remove the BNC connector on the coaxial cable and the coaxial cable shortened to ease installation, however, doing so voids the antenna warranty. If the BNC connector is removed it must be replaced with a new solder-on or crimp BNC connector.*

### Installing the GPSMAP 172/172C

The GPSMAP 172/172C must be properly installed according to the following instructions to get the best possible performance. If you have the GPSMAP 172/172C with the built-in internal antenna, you may skip this section and proceed to the next page. For units purchased with the remote GA 29 antenna, follow the instructions below. To complete the installation, you'll need the appropriate fasteners and a 1" x 14-thread marine antenna mount available at most marine dealers. **When in doubt, seek professional assistance.**

### Mounting the GPS Antenna

The antenna should be mounted in a location that has a clear, unobstructed view of the sky in all directions to ensure the best reception. Avoid mounting the antenna where it is shaded by the boat's superstructure, a radome antenna, or mast. Sailboat users should avoid mounting the antenna high on the mast to prevent inaccurate speed readings caused by excessive heeling. Most marine VHF and LORAN antennas should not seriously degrade the GPS antenna's reception. Never paint the antenna or clean it with harsh solvents.

The Garmin antenna screws directly onto any standard 1" x 14-thread antenna mount. If you need to raise the antenna to avoid shading, try using a 1" x 14-thread extension mast available at most marine dealers.

#### **To install the GPS antenna:**

1. Screw the antenna directly onto the 1" x 14-thread mount.
2. Route the cable to the mounting location of the display unit. Use the appropriate tie-wraps, fasteners and sealant to secure the cable along the route and through any bulkhead or deck.
3. Once the GPSMAP 172/172C unit has been installed, connect the cable to the antenna connector on the back of the display unit. Make sure that you turn the antenna cable connector 1/4 turn clockwise to lock the cable into place.

## Mounting the GPSMAP 172/172C Unit

The GPSMAP 172/172C's compact, waterproof case is suitable for mounting in exposed locations or at the nav station. The unit comes with a single-knob tilt & swivel bracket that can be used for surface or overhead mounting. When choosing a location for the display unit, make sure you consider the following conditions:

- There should be at least a 3" (7 cm) clearance behind the case to allow connection of the antenna (external antenna only), power/data cables.
- The mounting surface should be heavy enough to support the unit and protect it from excessive vibration and shock.
- For GPSMAP 172/172C unit's with the built-in internal antenna, it should be mounted in a location that has the clearest, most unobstructed view of the sky in all directions to ensure the best reception. Avoid mounting the unit where it is blocked by the boat's superstructure, a radar arch, or mast.



*The temperature range for the GPSMAP 172/172C is 5°F to 158°F (-15°C to 55°C). Extended exposure to temperatures exceeding this range (in storage or operating conditions) may cause failure of the LCD screen. This type of failure and related consequences are NOT covered by the manufacturer's limited warranty.*

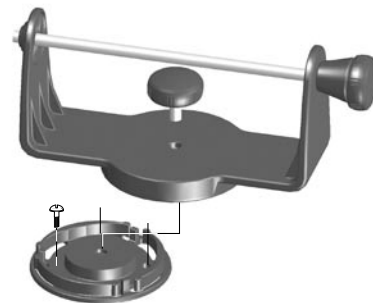
### To swivel mount the GPSMAP 172/172C display:

**Tools (not included)** — Drill, Screwdriver (Phillips or Standard), three #8 (4mm) pan head machine bolts with matching nuts and washers and a 5/32" (5mm) drill bit, OR three #8 pan head self-tapping screws and an appropriately-sized drill bit for drilling starter holes. Always wear safety goggles, ear protection, and a dust mask when drilling, cutting or sanding.

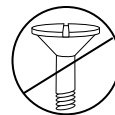
1. Using the swivel base as a template, mark the location of the three holes that are used to secure the bracket to the mounting surface.
2. If securing the base with machine bolts, drill three 5/32" (5mm) holes at the locations you marked. OR, if securing the base with self-tapping screws, drill starter holes at the locations you marked. Starter holes should generally be no deeper than half the screw length.
3. Secure the swivel base with three bolts or screws. DO NOT OVERTIGHTEN.
4. Place the rest of the mount over the swivel base and secure with the short knob.

## Appendix G

### Unit Installation



Secure the base and attach the mount



*The swivel base is designed to be secured using a pan head screw or machine bolt. If you use a screw with a countersunk head, you risk damaging the Mounting Base.*

## Appendix G

### Unit Installation

#### **Installing the Unit on the Mounting Bracket**

1. Align the slot on the back of the unit with the long mounting knob and slide in place. It may be necessary to adjust the long mounting knob to spread the bracket arms apart. (Turn counter-clockwise to widen the bracket arms, clockwise to tighten.)
2. Adjust the unit angle and tighten the long mounting knob until snug.
3. To tilt the unit, loosen the long mounting knob on the right side of the bracket assembly.
4. To rotate the entire bracket, twist it left or right. The bracket clicks as you turn it.
5. Tighten all knobs once the desired viewing angle is obtained.



*Slide the unit onto the bracket*



*Adjust for optimal viewing*

## **Flush Mounting the GPSMAP 172/172C External Antenna Unit**

The GPSMAP 172/172C External Antenna only can be flush mounted on a flat panel. When flush mounting the GPSMAP 172/172C, be sure to choose an appropriately sized location for the unit. Check that all cables reach the unit mounting location before beginning installation. Use the Flush Mount Template provided in the box to determine a location. Always wear safety goggles, ear protection, and a dust mask when drilling, cutting or sanding.

### **To flush mount the GPSMAP 172/172C (External Antenna ONLY):**

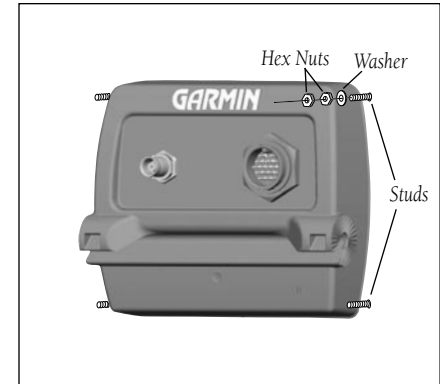
**Included Mounting Hardware** — 4 - 3mm Studs, 4 - Flat Washers, 8 - 3mm Hex Nuts.

**Tools (not included)** — Center Punch, Drill, 1/8" (3mm) Drill Bit, 3/8" (6mm) Drill Bit, Jig Saw, 1/16" (2mm) Allen Wrench, 9/35" (7mm) Wrench.

1. Trim the Flush Mount Template and tape in the desired location.
2. Using a Center Punch, indent the center of each Mounting Hole location.
3. Using a 1/8" (3mm) drill bit, drill the four Mounting Holes.
4. Using a 3/8" (6mm) drill bit, drill a hole for a location to begin cutting the mounting surface.
5. Using the Jig Saw, cut the mounting surface along the inside of the dashed line indicated on the template. **Be very careful when cutting this hole, there is only a small amount of clearance between the unit and the Mounting Holes.** It may be prudent to cut slightly inside the indicated line and then sand or file the panel as needed to obtain the best fit.
6. Install the four Mounting Studs into the unit by screwing the shorter section into the back of the unit. Use a 1/16" (2mm) Allen Wrench to tighten the Mounting Studs until the stops contact the case. Be careful not to overtighten as this may damage the Mounting Stud. The studs have a reusable thread-locking patch pre-applied from the factory.
7. Place the unit in position inside the cutout area of the mounting surface.
8. Place washers over the Mounting Studs, then thread on one Hex Nut per Mounting Stud. Tighten all four Hex Nuts until the unit is snug against the mounting surface. Install and tighten the second Hex Nut on all four Mounting Studs to lock the first Hex Nut in place.

## Appendix G

### Unit Installation



## Appendix G

### Wiring and Interfacing

You can download a copy of Garmin's proprietary communication protocol from the Help and Support section of our web site at [www.garmin.com](http://www.garmin.com).

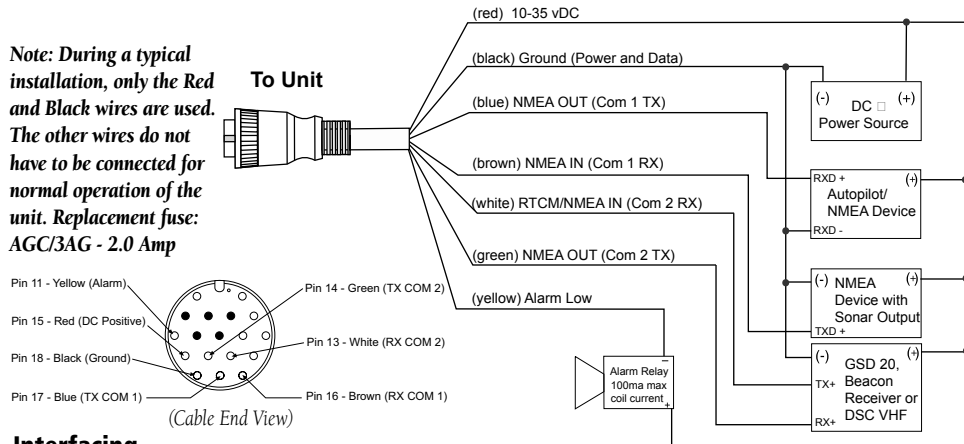
Documentation concerning NMEA &-RTCM formats and sentences are available for purchase from:

National Marine Electronics Association (NMEA)  
Seven Riggs Avenue  
Sewer Park, MD 21146  
U.S.A.  
410-975-9425  
410-975-9450 FAX  
[www.nmea.org](http://www.nmea.org)

Radio Technical Commission For Maritime Services (RTCM)  
1800 Diagonal Road, Suite 600  
Alexandria, VA 22314-2480  
U.S.A.  
703-684-4481 (Info Only)  
703-836-4229 FAX  
[www.rtcmm.org](http://www.rtcmm.org)

### Connecting the Power/Data

The power/data cable connects the GPSMAP 172/172C to a DC system and provides interface capabilities for connecting external devices. The color code in the diagram below indicates the appropriate harness connections. Replacement fuse is a AGC/3AG 2.0 Amp fuse. For wiring the GPSMAP to a GSD 20 Sonar Module, refer to the "GSD 20 Installation Guide" (190-00255-00).



### Interfacing

The following formats are supported for connection of external devices: Garmin proprietary GSD 20 Sonar Module and Differential GPS, NMEA 0183 version 3.01, RTCM SC-104 input (version 2.0).

The following are the sentences for NMEA 0183, version 3.01 and later output:

Approved sentences— GPBWC, GPRMC, GPGGA, GPGSA, GPGSV, GPGLL, GPBOD, GPRMB, GPRTE, GPVTG, GPWPL and GPXTE. Proprietary sentences— PGRME, PGRMM, PGRMZ, and PSLIB.

The GPSMAP 172/172C also includes NMEA input with support for the WPL sentence, DSC, and sonar NMEA input with support for the DPT (Depth), MTW (Water Temp) and VHW (Water Speed & Heading) sentences. If connecting to COM2 for sonar NMEA input, the unit interface must be set to NMEA In/NMEA Out (see page 72). If connecting to COM1, the unit must be set to NMEA In/NMEA Out.

## Installing and Removing Data Cards

The GPSMAP 172/172C uses optional Garmin marine BlueChart and MapSource data cards to display digital charts and maps on-screen. Data cards are installed in the card slot located at the bottom right of the unit. Data cards may be installed or removed at any time, whether the unit is on or off.

### To install a data card:

1. Open the card door by pressing together on the two handles at the bottom of the door and lifting it up and open.
2. Insert the card into the slot, with the label facing top and the handle towards you.
3. Firmly push the card into the unit. It is not necessary to force the card and about 1/2" is still exposed when it is properly inserted. If the unit is on, a confirmation tone sounds and a message displays on the screen noting the card details when the card has been properly installed and accepted.
4. Close the cover.

If you insert a data card and get a 'card format not recognized' message, try removing the card and reinserting it. If the card is still not recognized, contact the Garmin or your Garmin dealer for assistance. Data cards are not waterproof, should not be exposed to moisture or excessive static charges, and should be stored in the case supplied with the card.

### To remove a data card:

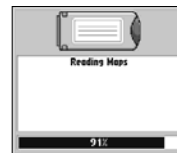
1. Open the card door by pressing together on the two handles at the bottom of the door and lifting it up and open.
2. Grasp the card handle and pull out firmly.
3. If the unit is on, a confirmation tone sounds when the data card has been removed.

## Appendix G

### Installing and Removing Data Cards



*The first time you insert a data card, the unit takes a few seconds to read the card.*



*Once the data card has been read, a summary screen appears. Press **ENTER/** **MARK** to acknowledge.*



## Appendix H

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