GARMIN

GPSMAP® 176/176C

chartplotting receiver

owner's manual

INTRODUCTION

Thank you for choosing the Garmin® GPSMAP® 176/176C. The GPSMAP 176/176C utilizes the proven performance of Garmin GPS and full-featured mapping to create an unsurpassed portable GPS receiver. Please take a moment now to compare the contents of this package with the packing list on the outside of the box. If any pieces are missing, contact your Garmin dealer immediately.

About This Manual

To get the most out of your new navigation system, take time to read this manual and learn the operating procedures for your unit in detail. This manual is organized into the following chapters.

The Introduction chapter contains the Table of Contents as well as GPSMAP 176/176C care information.

The Getting Started chapter provides information such as an overview of unit features to help you get acquainted with your new GPSMAP 176/176C.

The Basic Operation chapter provides you with information about features such as using the Find Menu, navigating a route, and using waypoints. There are also step-by-step directions to assist you in these operations.

The Main Pages chapter provides detailed explanations about each page in the GPSMAP 176/176C and step-by-step directions on using the pages. The Main Menu chapter provides detailed explanations about the Main Menu and how to use it to configure your unit.

The Appendix contains information such as specifications, optional accessories, and maintenance information. You can also find warranty and FCC information in the Appendix. **Read the Safety Information to learn how to install and use your Garmin GPSMAP 176/176C safely and responsibly.** An Index is provided at the end of the manual for reference. Simply look up the topic you wish to learn about and read the page or pages listed.

Care Information

Cleaning the Unit

The GPSMAP 176/176C is constructed of high quality materials and does not require user maintenance other than cleaning. Clean the unit using a cloth dampened with a mild detergent solution and then wipe dry. Avoid chemical cleaners and solvents that may damage plastic components.

> ⚠️ **WARNING:** *The GPSMAP 176/176C lens is coated with a special anti-reflective coating which is very sensitive to skin oils, waxes, and abrasive cleaners. CLEANERS CONTAINING AMMONIA HARM THE ANTI-REFLECTIVE COATING. It is very important to clean the lens using an eyeglass lens cleaner that is specified as safe for anti-reflective coatings and a clean, lint-free cloth.*

Storing the GPSMAP 176/176C

Do not store the GPSMAP 176/176C where prolonged exposure to temperature extremes may occur (such as in the trunk of a car) as permanent damage may result. User information, such as waypoints and routes are 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 (transferring it to MapSource).

Immersing the Unit in Water

The GPSMAP 176/176C 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 wipe and air dry the unit before reuse.

To resolve problems that cannot be remedied using this guide, contact Garmin Product Support in the U.S. at 800/800.1020 or Garmin Europe at 44/0870.8501241.

Table of Contents

GETTING STARTED

Unit Basics

Antenna

*12-Level Gray scale LCD Display with Backlight (GPSMAP 176)
16 color Transflective Display with Backlight (GPSMAP 176C)*

Backlit keypad for easy night operation

Rotate Antenna to Down Position for Storage

External Power and Computer Data Port

Battery Compartment

Optional Data Storage Card Port

To remove the battery lid, turn the D-ring 1/4 turn counterclockwise, and pull away.

The GPSMAP 176/176C uses 4 AA batteries, which can be Alkaline, rechargeable, Lithium, or Ni-Cad. Immediately after installing new batteries, turn the unit on to ensure that the unit's power indicator shows a full charge. Replace all batteries at the same time. Do NOT mix new and used batteries. Do NOT mix Alkaline batteries with Lithium or Ni-Cad rechargeable batteries. When installing new batteries, observe the polarity markings in the case.

⚠ *NOTE: The GPSMAP 176/176C saves user data in non-volatile memory. Data is not lost when the batteries are removed.*

To reinstall the battery lid, place the locking pin into the unit and turn the D-ring 1/4 turn clockwise.

To remove the antenna:
1. Remove the external power cable from the connector on the back of the GPSMAP 176/176C.

2. Rotate the antenna to approximately a seven o'clock position. The alignment notches in the casing must line up with the notches on the antenna.

3. Pull the antenna away from the GPSMAP 176/176C.

Alignment Notches
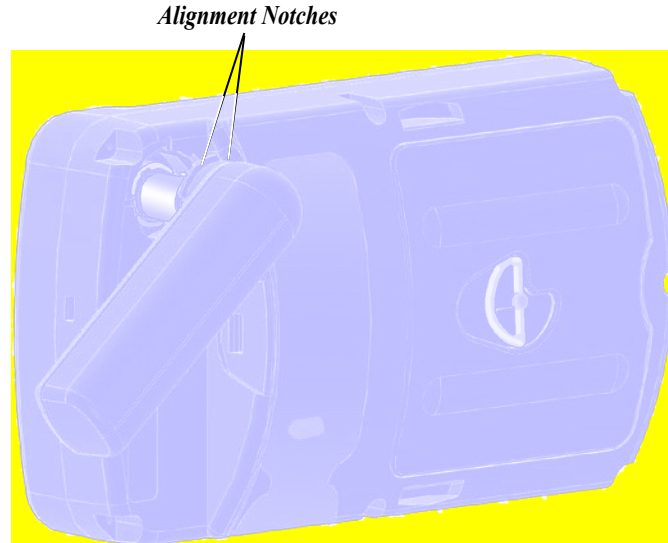
Interface Keys

PAGE Key

- Press to cycle through the Main pages.
- Press when using the on-screen keyboard to close.
- Press to end an operation in progress and return to the main page.

QUIT Key

- Press and release to cancel data entry or exit a page.

ENTER/MARK Key

- Press and release to enter highlighted options and data or confirm on-screen messages.
- Press and release at any time to mark your current location as a waypoint.

MENU Key

- Press and release to view options for a page.
- Press twice to view the Main Menu.

POWER Key

- Press and hold to turn unit On/Off.
- Press and release to adjust backlighting.

IN/OUT Zoom Keys

- From the Map page, press to zoom in or out.
- From any other page, press to scroll up or down a list.

ROCKER Key

- Move Up/Down or Right/Left to move through lists, highlight fields, on-screen buttons and icons, enter data, or move the map panning arrow.

NAV/MOB Key

- Press and release at any time to view the Find Menu page.
- Press and hold for MOB.

FIND Key

- Press to search for points such as user waypoints, cities, and services.

Basic Operation

Initializing the GPS Receiver

The GPSMAP 176/176C must be initialized before it can be used for navigation. The GPS receiver only needs to be initialized the first time the unit is used or if it has been stored for several months. This process is automatic and should only take a few minutes.

The GPSMAP 176/176C stores orbital data for each satellite in an Almanac. The orbital data is supplied in the satellite signals. Each time the unit receives satellite signals, the Almanac is updated. If the unit has not been used for several months or has moved over six hundred miles between uses, the Almanac can become "cold." If the Almanac is "cold," the orbital data is no longer valid and your unit may take longer to lock on to satellites while updating the Almanac.
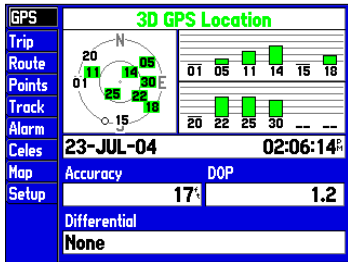
GPS Information Page

To initialize the GPS receiver:

1. Take the unit outside where it has an unobstructed view of the sky and turn it on. Make sure the antenna is pointed up. Following the screen prompts, press **ENTER** to display the GPS Information page.

2. The unit searches for satellite signals and begin to gather and save the information that it needs to become operational.

3. When the unit is able to navigate, the message **2D GPS Location** or **3D GPS Location** is displayed at the top of the GPS Information page, and the unit automatically switches to the Map page.

If the unit is unable to gather the necessary satellite information, an options menu appears. Select **New Location**, then **Automatic** and allow the unit to continue initializing. This selection forces the unit to search for all satellites. The unit may take a little longer to become operational using this method.

Initialization Options

If the GPSMAP 176/176C is unable to determine its location, an options menu appears. Depending on the situation, select the appropriate option to help the unit acquire satellites.
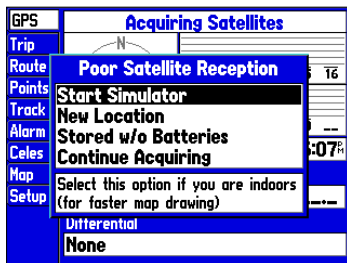
Start Simulator—turns the GPS receiver off for use indoors or practice. This options saves battery power and allows the map to redraw faster.

> ⚠️ **NOTE:** *Do not attempt to navigate using simulator mode. When the unit is set to simulator mode, the GPS receiver is turned off. Any satellite signal strength bars displayed are only simulations and do not represent the strength of actual satellite signals.*

New Location—if you have moved to another state, province, or country, and are having trouble locking on to satellites, select **New Location**. Another menu is displayed with the options **Automatic** or **Use Map**. If **Automatic** is selected, the unit switches to AutoLocate mode and begins searching for satellites. If **Use Map** is selected, use the pointer on the Map page to select your approximate location and the unit continues to acquire satellites normally. **Automatic** may take longer to acquire satellites.

Stored w/o Batteries—if you have stored the unit without batteries, the date stored in the GPS may be incorrect. To check the date, highlight **Stored w/o Batteries** and verify the date displayed below the options menu. If the date is incorrect, press **ENTER** and select **Stored w/o Batteries** to search for satellites.

Continue Acquiring—if you are in an area where the satellites are temporarily being blocked.

For more information on the GPS Information page, see page 50.

Using the Map Pointer

The map pointer allows you to pan away from your present location and scroll to other map areas around the world, even outside of your current detailed coverage area. As you pan past the edge of the current map display, the screen actively scrolls forward to provide continuous map coverage. Keep in mind that the boat icon moves with the scrolling map, and may not be visible on the display screen. Press the **ROCKER** up, down, left, or right direction to move the map pointer.

⚠ *NOTE: When the pointer reaches the edge of the map, the unit may pause as it loads new map data.*
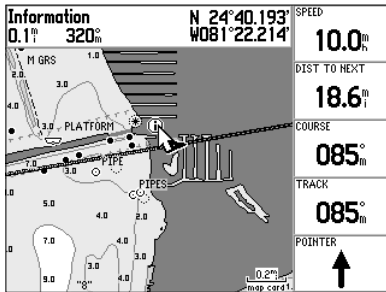
Position the pointer over an item on the map to highlight it.

As you move the pointer, the distance and bearing from your present location to the pointer are displayed in the data window, along with the pointer's location coordinates. When you zoom in pan mode, the pointer stays centered on the screen. Press **QUIT** to exit pan mode and re-center on your current location.

The pointer may also be used to highlight on-screen waypoints and map items, allowing you to review a selected location directly from the map display.

To highlight an on-screen map item with the pointer:
> Use the **ROCKER** to move the pointer to the desired waypoint or map item. If there are several waypoints grouped closely together, zoom in closer for a better view. When a waypoint or map item is highlighted, the name and location are displayed at the top of the screen.

To view additional details about an on-screen waypoint or map item:

1. With the waypoint or map item highlighted, press **ENTER**.

2. If the item is a waypoint, the Waypoint Review page appears. The waypoint name, symbol, coordinates, elevation, depth, and the options to **Delete**, **Show Map**, or **OK** are displayed. Use the **ROCKER** to highlight **OK** or press **QUIT** to exit the Waypoint Review page.

   If the item is a map feature or a feature of BlueChart or MapSource data, an Information page appears. In some cases, additional information tabs and option buttons appear. Use the **ROCKER** to highlight the individual tabs to display the additional information and options. Press **QUIT** to exit the Information page.

The pointer may also be used to create a new waypoint directly from the map. Refer to "Creating and Using Waypoints" on page 12.
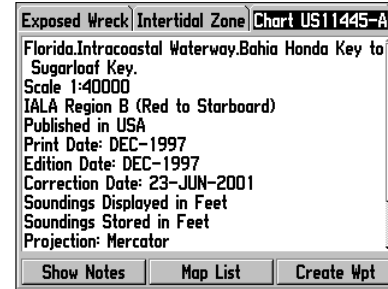
*Information tabs for BlueChart data (**Chart** tab shown). Select **Show Notes** to view additional notes about the chart or **Map List** to view the list of maps on your data card through the Data Card Information screen.*

Selecting Map Zoom Ranges

The map display has 28 available zoom ranges from 20 ft. to 800 mi. (5 m to 1,200 km). The zoom range is controlled by the **IN** and **OUT** keys, with the current range displayed at the bottom right of the data window. Press the **OUT** key to zoom out and the **IN** key to zoom in.

> ⚠️ *NOTE: The range value represents the distance from one end of the range bar to the other.*

Using Built-In Basemap

Using BlueChart/MapSource Data

Overzoom, no additional data

The GPSMAP 176/176C has a built-in worldwide database. More detailed coverage is available through optional BlueChart or MapSource data. The GPSMAP 176/176C displays cartography as long as chart information is available for the range you select.

Map coverage conforms to the following conditions:

- When the selected zoom range is covered by either the internal database, BlueChart, or MapSource data, mapping 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, an Overzoom warning appears below the range.

Creating and Using Waypoints

The Garmin GPSMAP 176/176C stores up to 3,000 alphanumeric waypoints with a user-defined icon, comment, and depth available for each waypoint. Waypoints can be created using three basic methods:

- **ENTER/MARK Key**—used primarily for marking your present location, the **ENTER/MARK** key also provides options that allow you to select a map location or map item from the map display. You may also use the **ENTER/MARK** key to create a waypoint projected from a user-defined location.

- **Graphically**—allows you to define a new waypoint location from the map display using the **ROCKER** key.

- **Text Entry**—allows you to enter a new waypoint's location coordinates manually.

Marking Your Present Location

The **ENTER/MARK** key lets you quickly create a new waypoint at your present location. You must have a valid location (2D or 3D) fix to mark your present location. This can be determined by looking at the GPS tab on the Main Menu. Refer to page 50 for more information on the Main Menu GPS tab.

To mark your present location:

1. Press and hold **ENTER/MARK** until the **New Waypoint** window appears. A default three-digit name and symbol for the new waypoint appears.

2. To accept the waypoint with the default name and symbol, highlight **OK** and press **ENTER/MARK**.

3. To enter a different name, highlight the name field and press **ENTER/MARK**. Then use the **ROCKER** to enter the new letter/numbers and press **ENTER/MARK** 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/MARK**. Then use the **ROCKER** to highlight the new symbol and press **ENTER/MARK**.

5. To enter optional comments, elevation, or depth, highlight the appropriate field and press **ENTER/MARK**. Then use the **ROCKER** to enter a value and press **ENTER/MARK**.

6. To manually enter a set of coordinates, highlight the coordinates and press **ENTER/MARK**. Then use the **ROCKER** to enter the new coordinates and press **ENTER/MARK** when done.

7. When done, use the **ROCKER** to highlight **OK** and press **ENTER/MARK** to save the waypoint.

Creating Waypoints Graphically

Waypoints may also be quickly created with the map pointer, which allows you to create a waypoint at any map location or map feature. When you move the pointer over a map item, you see a highlighted description of that item. The GPSMAP 176/176C 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 (not a map feature):

1. Use the **ROCKER** to move the pointer to the location where you wish to create a waypoint.

2. Press and release **ENTER/MARK**. (Pressing and holding **ENTER/MARK** marks your present location, not the map pointer's location.)

3. The **New Map Waypoint** page appears. To accept the waypoint with the default name and symbol, highlight **OK** and press **ENTER/MARK**.

4. To change the name, symbol, location, or enter comments, elevation, or depth, highlight the appropriate field and press **ENTER/MARK**. Make your changes and press **ENTER/MARK** when done. After entering and confirming your changes, highlight **OK** and press **ENTER/MARK**.

To create a new waypoint from a map feature or item:

1. Use the **ROCKER** to move the pointer and highlight the desired map feature.

2. Press **ENTER/MARK** to capture the pointer location. An Information page for that map feature appears. Highlight **Create Wpt** and press **ENTER/MARK**.

3. The **New Waypoint** page appears. To accept the waypoint with the default symbol and name based on the map feature, highlight **OK** and press **ENTER/MARK**.

4. To change the name, symbol, location, or enter comments, elevation, or depth, highlight the appropriate field and press **ENTER/MARK**. Make your changes and press **ENTER/MARK** when finished. After entering and confirming your changes, highlight **OK** and press **ENTER/MARK**.
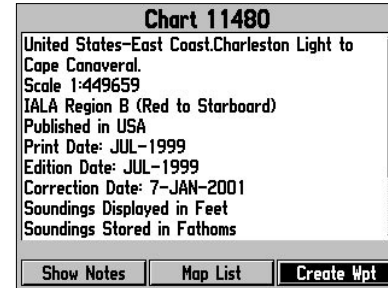
*Choose **Create Wpt** on the Information page to create a new waypoint at this map item's location.*

Entering Coordinates

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

*Highlight the location field and use the **ROCKER** to enter the desired position coordinates.*

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/MARK**. The **New Waypoint** page appears, with the next available waypoint number and the receiver's last know location as the default name and location.

3. Use the **ROCKER** to highlight the location field and press **ENTER/MARK**. Use the **ROCKER** to enter the desired location coordinates and press **ENTER/MARK** when finished.

4. To change the name, symbol, or enter comments, depth or elevation, highlight the appropriate field and press **ENTER/MARK**. Make your changes and press **ENTER/MARK**.

5. Use the **ROCKER** to highlight **OK** and press **ENTER/MARK** to save the waypoint.

Projecting Waypoints

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.
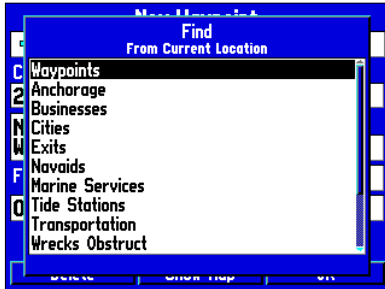
Select a point from which to project a new waypoint.

To create a new waypoint by projecting its location:

1. Create a new waypoint using one of the methods previously described. The New Waypoint page is now on your screen.

2. Verify the field to the right of the word **From** reads **Current Location**. If it does not, highlight the field and press **ENTER/MARK**, select **Current Location**, and press **ENTER/MARK**.

3. Highlight the distance and/or bearing fields below **From Current Location** and press **ENTER/MARK**. Use the **ROCKER** to enter the projected distance and bearing from your current location for the new waypoint and press **ENTER/MARK**.

4. Make any other desired changes to the new waypoint data, such as the name and symbol, highlight **OK**, and press **ENTER/MARK**.

Waypoint Menu Options

Two additional options are available by pressing **MENU** on the New Waypoint and New Map Waypoint pages: Average Location and Append To Route. These menu options also appear on the Waypoint Edit and Waypoint Review pages.

Waypoint Menu Options

Average Location—takes several sample location measurements for the waypoint and recalculates for a more accurate location reading.

Average Location Screen

To calculate the average location:
1. Select **Average Location** from the options menu.
2. The **Average Location** screen appears. Watch as the fields change as the unit calculates the average location of the waypoint. When you are satisfied with the average location, press **ENTER/MARK**.

Append to Route—adds the new waypoint to the end of a route.

To append a new waypoint to a route:
1. Select **Append To Route** from the options menu.
2. The **Select Route** screen appears. Highlight the desired route or select **New Route** and press **ENTER/MARK**.
3. Highlight **OK** press **ENTER/MARK** to save the waypoint.

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 **ROCKER** to highlight the desired waypoint on the Map page.

2. Press **ENTER/MARK** to display the Waypoint Review page. If the waypoint is located on a map feature or MapSource 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 **ROCKER** to highlight the **Points** tab, then highlight the desired waypoint from the **User** or **Proximity** lists.

2. Press **ENTER/MARK** to display the Waypoint Edit page. If the waypoint is located on a map feature, or 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, location coordinates, or depth for the selected waypoint. Once the changes have been made, highlight **OK** (Waypoint Review page) or **Next** (Waypoint Edit page) and press **ENTER/MARK** to save them.

*Select **OK** to exit/save changes and return to the Map page.*

To change the waypoint name:

1. Highlight the waypoint name field and press **ENTER/MARK**.

2. Use the **ROCKER** to enter a new name and press **ENTER/MARK** when done.

To change the waypoint symbol:

1. Highlight the waypoint symbol field to the left of the waypoint name and press **ENTER/MARK**.

2. Use the **ROCKER** to select the desired symbol and press **ENTER/MARK** when done.

To change the Comment, Location, Coordinates, Elevation, or Depth:

1. Highlight the desired field and press **ENTER/MARK**.

2. Use the **ROCKER** to edit/enter the data. To drop to the next line, press to the Right on the **ROCKER**. Press **ENTER/MARK** when done.

To change the distance/bearing from your current location or another location:

1. To select a different location, highlight the field next to **From**, select a location and press **ENTER/MARK**.

2. Highlight the distance and/or bearing field and use the **ROCKER** to edit the data. Press **ENTER/MARK** when finished. See "Projecting Waypoints" page 15.

You may also use the Waypoint Review and Waypoint Edit pages to delete the selected waypoint, view the waypoint on the map, and move the waypoint on the map. On the Waypoint Review/Waypoint Edit page, use the **ROCKER** to highlight **Delete** and press **ENTER/ MARK**. With **OK** highlighted, press **ENTER/MARK** again to confirm the deletion.

Waypoint Review page for a waypoint located on multiple map features. The tabs only appear when BlueChart data is being used.
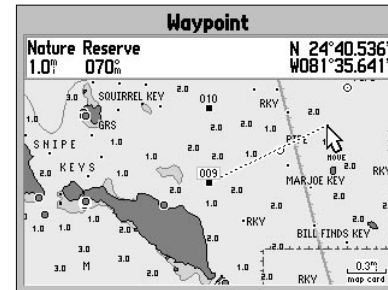
*Moving a waypoint on the map.
(BlueChart map data shown.)*

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 at the top that shows the waypoint name, location, distance, and bearing from your current location.
2. To move the waypoint, press **ENTER**. A **MOVE** label now appears under the map pointer. It may be necessary to use the **IN** and **OUT** keys to zoom in or out on the map.
3. Use the **ROCKER** to move the waypoint to a new location. As you move the pointer around the map display, the information window at the top changes to show the distance, bearing, and location of the map pointer (in relation to the waypoint's location) and a description of where the pointer is on the map. If you wish to stop the move process, press **QUIT**.
4. With the pointer at the desired location, press **ENTER**. To return to the Waypoint Edit/Waypoint Review page, press the **QUIT** button.

On the **Show Map** display, two additional options are available by pressing **MENU**:

Measure Distance—allows you to measure the distance and bearing between two points on the map. See page 43 for more information.

Point to on Main Map—exits the Waypoint Review/Waypoint Edit page and returns you to the highlighted waypoint on the Map page.

Waypoint Lists
The GPSMAP 176/176C's Main Menu page features three submenus of the Points tab, User, Proximity, and Recent, that let you manage a large number of waypoints quickly and efficiently. The submenu tabs also provide a continuously updated proximity waypoint alarm that can be used to define an alarm circle around points such as submerged hazards, shallow waters, and restricted waters. To access the waypoint submenus, press **MENU** twice and highlight the Points tab using the **ROCKER**, then highlight the desired submenu tab.
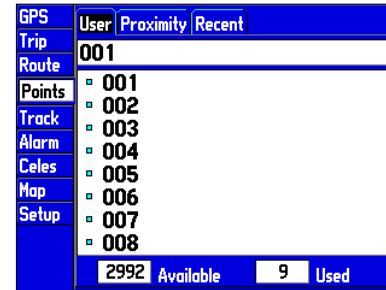
The Points tab of the Main Menu

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.
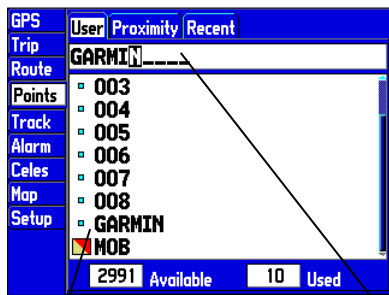
Waypoint List   *Name Field*

To scroll through and review the waypoint list:

1. With the **ROCKER,** highlight the **Points** tab on the Main Menu, then highlight **User**.

2. Use the **ROCKER** to scroll through the list.

3. Press **ENTER** to review the highlighted waypoint on the **Waypoint Edit** page. See page 17 for detailed information on reviewing and editing waypoints.

4. Highlight **Next** and press **ENTER** to return to the list. The cursor automatically highlights the next waypoint in the list.

To search for a waypoint by name:

1. Highlight the name field and press **ENTER**.

2. Use the **ROCKER** 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** to review the waypoint. When done, highlight **OK** and press **ENTER**.

User Waypoints List Options

The following options are available by pressing **MENU** while highlighting the Points tab, the User submenu, or one of the User waypoint names:
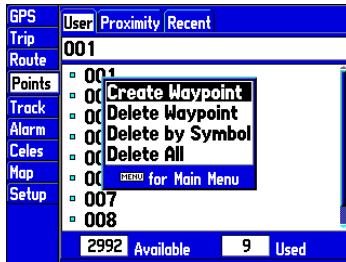
Create Waypoint—creates a new waypoint. (See page 12.)

Delete Waypoint—deletes selected waypoint from list and any route in which it was used.

Delete By Symbol—deletes all waypoints that use the same symbol.

Delete All—deletes all waypoints from the unit.

⚠ *NOTE: 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 the optional PC cable and interface software or write them down by hand.*

To delete an individual waypoint from the User list:
1. Use the **ROCKER** to highlight the waypoint you want to delete.
2. Press **MENU**, then highlight **Delete Waypoint** and press **ENTER**.

   OR

   Press **ENTER**, then highlight **Delete** and press **ENTER**.
3. Press **ENTER** to confirm.

To delete waypoints by symbol:
1. Highlight the waypoint you want to delete and press **MENU**. Select **Delete By Symbol** and press **ENTER**.
2. Use the **ROCKER** 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 **MENU**.
2. Highlight **Delete All** and then press **ENTER**.
3. Highlight **OK** 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 location, which 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 miles, statute miles, or kilometers. If a proximity alarm circle overlaps with an existing alarm circle, a "Proximity Overlaps Another Proximity Waypoint" message 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.

Proximity Waypoint List
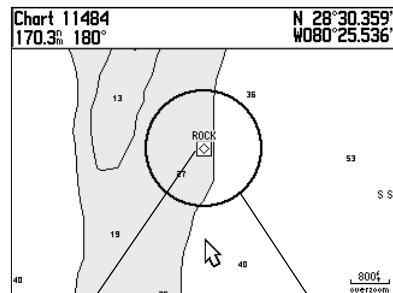
Proximity Waypoint　　　　*Proximity Circle*

To add a proximity waypoint:

1. Use the **ROCKER** to highlight an empty space on the Proximity List and press **ENTER**. The **Find** screen appears. Highlight **Waypoints** and press **ENTER**.

2. Highlight the desired waypoint from the **By Name** or **Nearest** tab lists. The **Waypoint Review** page now 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 **ROCKER** to enter a distance (up to 99.99 units) and press **ENTER**.

To turn proximity alarms on or off:
1. Use the **ROCKER** 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:

To clear one or all proximity waypoint(s) from the list:
1. Use the **ROCKER** to highlight the proximity waypoint to clear and press **MENU**.
2. To clear a single alarm, highlight the **Remove Point** option and press **ENTER**.
3. To clear all proximity waypoints, select the **Remove All** option and press **ENTER**.
4. Use the **ROCKER** to highlight the **OK** prompt and press **ENTER** to confirm.

Recent Waypoint List

The GPSMAP 176/176C also contains a recent waypoint list. This list records your recent waypoint finds along with the bearing and distance from your current location. Pressing **MENU** activates a submenu allowing you to remove one or all of the entries in this list.

Going to a Destination

The GPSMAP 176/176C provides four ways to navigate to a destination: Go To Point, Navigate Route, Navigate Track (TracBack), and MOB (Man OverBoard) navigation. Once you are actively navigating, a straight line that always runs from your current location to the destination appears on the Map page. The easiest method of navigation is a **Go To**, which lets you select a destination point and quickly sets a direct course from your present location. When you press **NAV**, **Go To <point name>** appears in addition to **Go To Point**.
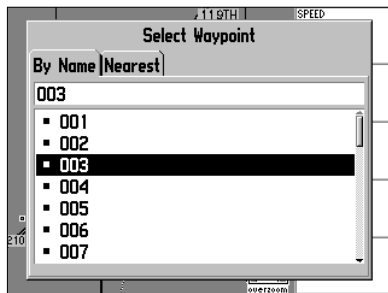
*Choose a waypoint from either the **By Name** or **Nearest** tab list.*

To activate a Go To from the points list:
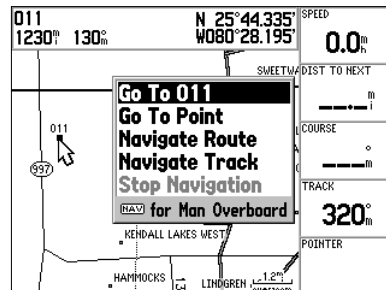
The waypoint or map item name automatically appears when you highlight the point and press NAV.

1. Press the **NAV** key.

2. Highlight **Go To Point** and press **ENTER**.

3. From the **Find** menu, highlight **Waypoints** and press **ENTER**. You can also go to other points from this list, such as cities, tide stations, and navaids.

4. Select a waypoint from the **By Name** or **Nearest** and press **ENTER**. This displays the Waypoint Review page.

5. With **Go To** highlighted, press **ENTER** to begin navigation.

To stop navigation:
1. Press the **NAV** key.
2. 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 feature, such as roads, rivers, cities, and navaids, or a new map point. If you are selecting a map item as a destination, the GPSMAP 176/176C 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 features. If you are selecting a new map point as the **Go To** destination, the GPSMAP 176/176C automatically creates or move a waypoint named **MAP** at the pointer position.

To Go To a waypoint or map feature on the map:
1. Use the **ROCKER** key to highlight the waypoint or map item on screen and press **NAV**.
2. Highlight **Go To <waypoint name>** and press **ENTER**.
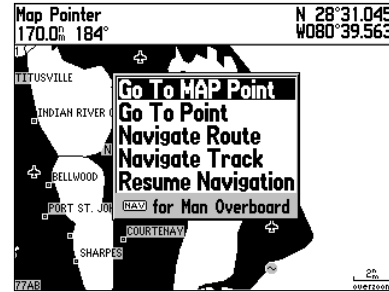
Go To MAP Point allows you to navigate to a spot on the map that is not a waypoint or map item.

To Go To a point on the map:
1. Move the map pointer to the desired position.
2. Press **NAV**, highlight **Go To MAP Point,** and press **ENTER**.

TracBack Navigation (Navigating a Track)

TracBack allows you to retrace your path using the track log automatically stored in the receiver's memory. This eliminates the need to store waypoints along the way. TracBack routes are created by reducing your track log to 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 is a good idea to clear the existing track log before you of your current trip. Refer to the "Track Tab" on page 55 for more information.

Default Track name

Total Distance

Check this box to display track

Total number of points

Changes the display color of the track. (GPSMAP 176C only)
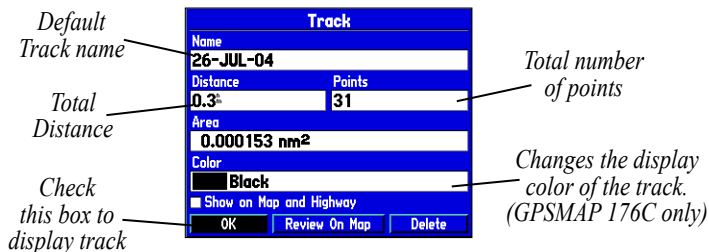
To clear the track log and define a starting point for a TracBack route:

1. Press **MENU** twice to display the Main Menu.
2. Using the **ROCKER**, highlight the Track tab, then highlight the **Active** tab to the right.
3. Select the **Clear** button and press **ENTER**.
4. Highlight **OK** and press **ENTER**. Press **QUIT** to exit.

You must first save a track log before you can use the Navigate Track option. The Save feature allows you to store up to 15 track logs from certain times and dates.
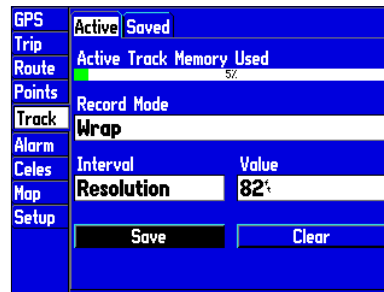
*Highlight **Save** and press **ENTER** to save an active track log.*

To save a track log:
1. From the Main Menu, use the **ROCKER** to highlight the **Track** tab and then highlight the **Active** tab.

2. Select **Save** and press **ENTER**.

3. From the **Save Back Through** window, highlight the desired time, date, or Entire Log and press **ENTER**. The track begins saving and then displays the **Save Track** window when done. The default name, distance, and number of points (500 max) is displayed.

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

   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**. Pressing **MENU** on this page activates the options to **Measure Distance** (see page 43) and **Point to on Main Map**, which exits the Save Track dialog. Press **QUIT** to return to the Save Track dialog.

4. Highlight **OK** and press **ENTER** to save the track. Press **QUIT** to exit.

To activate a TracBack using the NAV key:
1. Press **NAV**, highlight **Navigate Track**, and press **ENTER**.

2. Highlight the track you wish to navigate and press **ENTER**.

3. Choose either **Original**, which navigates from the start to the end of your trip, or **Reverse**, which navigates from the end to the start of your trip (TracBack) and press **ENTER**.
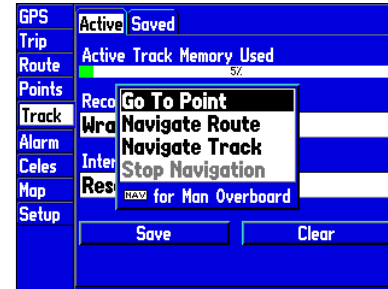
*You must first save a track before using the **Navigate Track** option. If there are no saved tracks, the **Navigate Track** option is disabled.*

Once a TracBack has been activated, the GPSMAP 176/176C takes the track currently stored in memory and divides it into segments called "legs." Up to 50 temporary "turns" are created to mark the most significant features of the track in order to duplicate your path as closely as possible.

To get the most out of the TracBack feature, remember these navigating tips:

- Always clear the track log at the point that you want to return to, such as the camp site or dock.
- Set the **Record Mode** option on the track log setup page to **Fill** or **Wrap**.
- At least two track log points must be stored in memory to create a TracBack route.
- If the track log interval is set to **Time**, the route may not navigate 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, TracBack draws a straight line between any point where coverage was lost and where it resumed.
- If your track'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, press **NAV**. Highlight **Stop Navigation** and press **ENTER**. For more information on setting up the Track options and saving tracks, see pages 55-56.

MOB

Man OverBoard (MOB) allows you to simultaneously mark your current position and set a course to a location for quick response to emergency situations.
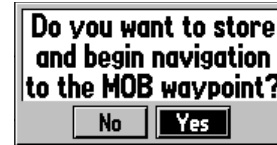
*Highlight **Yes** and press **ENTER** to start navigation.*

To activate the MOB function:
1. Press and hold **MOB**, or press **MOB** twice.
2. Press **ENTER** to confirm and begin navigating to the MOB.

Once a MOB has been activated, a MOB waypoint with an international MOB symbol is created and the unit is on an active navigation to that point. Use any of the Navigation pages to guide you back to the MOB point. The MOB waypoints are stored in the waypoint list and may be deleted like any other waypoint. To stop navigation to the MOB location, press **NAV**, highlight **Stop Navigation**, and press **ENTER**.

Creating a Route

The last way to navigate to a destination is to create a user-defined route. The Garmin GPSMAP 176/176C lets you create and store up to 50 reversible routes with up to 50 waypoints each. Routes can be created in two ways. The first is by selecting waypoints or map items from the Map page, allowing you to see each route point graphically on-screen as you create the route. The second is to select waypoints from the Find menu, allowing you to see a list of the route points as you create the route. Access the Main Menu to start creating a route.

Route Tab and Route Options Menu

To create a route graphically:

1. Press **MENU** twice to display the Main Menu page. Use the **ROCKER** to highlight the **Route** tab.

2. Press **MENU** to display the Route Options page. Select **New Route** and press **ENTER**.

   Or

   Highlight the first blank slot in the Route List page and press **ENTER**.

3. To add an existing waypoint or map item to the route, use the **ROCKER** to highlight the desired item on the map and press **ENTER**. Map items added to your route do not appear in the waypoint list. See page 13 to create a waypoint from a map feature.
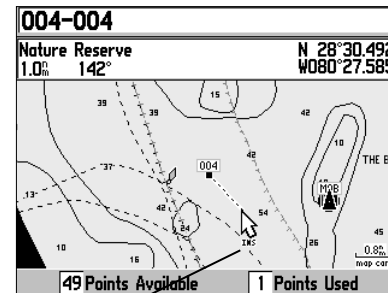
INS appears below the pointer as you add points.

4. To add a new waypoint to the route, use the **ROCKER** to select the desired map location and press **ENTER**. The New Waypoint page appears. With **OK** highlighted, press **ENTER** again to confirm the new waypoint. You may also change the name, symbol, and other properties of the new waypoint. (See page 17.)

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 the coordinates of the pointer. 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 from the last route waypoint to the map pointer location.

5. Repeat steps 3 and 4 until you finish adding all route points.

6. When finished, press **QUIT** twice to return to the Route List; or press **MENU**, highlight **Edit as Text**, and press **ENTER** to view the Route Review page.

To edit a route on the map from the Route Review page, press **MENU**, highlight **Use Map** and press **ENTER**.

To create a route using text:

1. Press **MENU** twice to display the Main Menu. Use the **ROCKER** to highlight the **Route** tab.

2. Press **MENU** to display the Route Options page. Select **New Route** 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 **ROCKER** to highlight the first blank field under the word **Waypoint** and press **ENTER**.
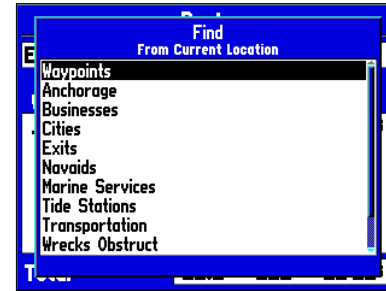
Choose the type of point to add to the route.

5. From the **Find** menu, highlight **Waypoints** and press **ENTER**. You may also choose from other points, such as Cities, Exits, and Tide Stations. Select the desired waypoint and press **ENTER**.
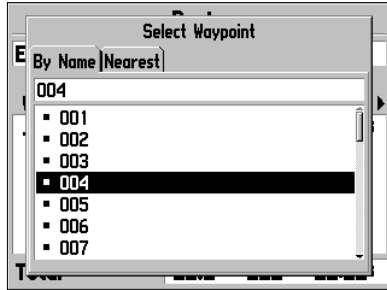
*Choose a waypoint from either the **By Name** or **Nearest** tab list.*

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 Review page. With **OK** highlighted, press **ENTER** to add the point to the route.

7. Repeat steps 4-6 until you finish adding route points. Press **QUIT** to return to the Route List page.

Following a Route

The **NAV** key activates the route for navigation. You can navigate the route in the same sequence as it was originally created, or inverted and navigated from the end waypoint back to the beginning waypoint.

To activate and follow a route:

1. From any page, press **NAV**, use the **ROCKER** to highlight **Navigate Route**, and press **ENTER**. (If you highlight a route name on the Route List or Route Review page and press **NAV**, the window automatically displays, **Navigate <the route name>**.)

2. Highlight the route you wish to navigate and press **ENTER**.

3. Choose **Activate** or **Reverse and Activate** and press **ENTER**. **Activate** uses the route as is; **Reverse and Activate** inverts and activates it. The Active Route page appears. See the "Active Route Page" section on page 39.

4. Press **NAV**, highlight **Stop Navigation**, and press **ENTER** to deactivate (stop following) the route.

Route List Page

The GPSMAP 176/176C Route List page, the Route tab of the Main Menu, displays all the routes currently stored in memory, along with a descriptive name for each route. By pressing the **MENU** button on the Route List page, the following menu options appear: Navigate, Go To Point, Navigate Route, Navigate Track, and Stop Navigation.

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

To select and follow a route:

1. On the Route List page, use the **ROCKER** to highlight the desired route from the list and press **NAV**.

2. With **Navigate <route name>** highlighted, press **ENTER**. The Active Route page appears. See page 39.

3. To stop navigation, press **NAV**, highlight **Stop Navigation,** and press **ENTER**.
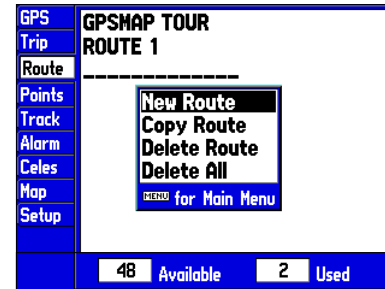
Route List Options Menu

To copy or delete a route:

1. From the Route List, use the **ROCKER** to highlight the route you want to copy or delete and press **MENU**.

2. Choose either **Copy Route** or **Delete Route** and press **ENTER**. With **OK** highlighted, press **ENTER** again to delete (there is no confirmation window for copying a route). **Copy** uses the same route name with an additional number at the end of the route name or creates a new route name based on names of the first and last route points.

To delete all routes:

1. From the Route List, press **MENU**.

2. Highlight **Delete All** and press **ENTER**. Highlight **OK** and press **ENTER** again to confirm.

Route Review Page

Once you have created a route, you can edit a selected route from the Route Review page.

Route Name

Data Fields

Route Points

Data Totals

To get to 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 allows you to enter a 15-character name for any listed route. The GPSMAP 176/176C creates a default route name using the first and last waypoint names.

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 **ROCKER** 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** to highlight the next point on the route list, **Show Map** to show the point on a map window, or **Delete** to permanently delete the waypoint from the unit. Press **ENTER** to select an option. If the route point is a user waypoint, you may edit any of the waypoint properties on the Waypoint Review page. See page 17 for information on the Waypoint Review page.

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 pressing **ENTER** repeatedly.

Route Review Menu Options

By pressing **MENU** on the Route Review page, the following menu options are available: Use Map, Add Waypoint, Remove Waypoint, Reverse Route, Plan Route, and Delete Route.

Route Review Menu Options

Use Map—allows you to review and modify the route displayed for each point (waypoint or map item) on a Map page. You may also use the pointer to insert a new route point on a route leg, review the waypoint, or map item.

Add Waypoint—allows you to insert a waypoint or point from the Find Menu before a waypoint that is highlighted on the route list, or add a point(s) onto the end of the route.

Remove Waypoint—allows you to remove a point (waypoint or map item) from a route. This option is available from both the Route Review and Active Route pages.

Reverse Route—reverses the order of the route making the last point the first.

Plan Route—displays trip-planning information for each leg or the entire route. Available information includes ETA, Fuel (to point), Leg Distance, Leg Fuel, Leg Time, Sunrise and Sunset (at point location), and Time To (point).

Delete Route—deletes a route from the Route List. Waypoints and map items in the route are not be deleted from unit memory.

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

To review a route point:
1. Highlight the point and press **ENTER**. The Review page now appears on the screen.

2. Press **QUIT** to return to the same point on the map. Highlight **Next** and press **ENTER** to return to the map with the next route point highlighted.

To edit a route point:
1. Use the **ROCKER** to highlight the desired route waypoint on the map and press **MENU**.

2. Highlight the field you wish to change, press **ENTER**, make the desired changes, and press **ENTER** again.

To add points to the beginning or end of the route:
1. With the map pointer, highlight 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 **Add** and press **ENTER**.

3. Move the pointer to the new location and press **ENTER**.

4. If you are not inserting an existing waypoint, press **ENTER** to confirm the new waypoint.

5. Repeat steps 3 and 4 to insert additional waypoints, or press **QUIT** to finish.
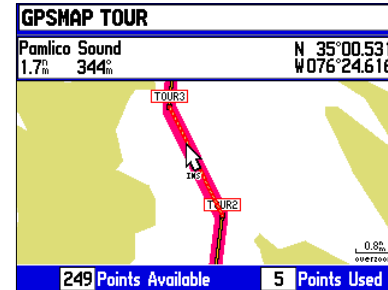
*Highlight the route leg on which you wish to insert a waypoint and press **ENTER**.*

To insert a new point between two existing route waypoints:

1. Use the **ROCKER** to highlight 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. Then press **ENTER**.

2. Move the pointer to the new map location, existing waypoint, or map item. **INS** is now displayed below the pointer and the route lines moves with the pointer. 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.
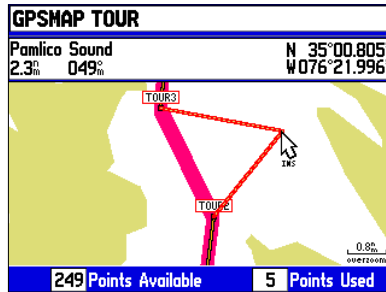
Drag the route leg to an existing waypoint (shown), map item, or a blank spot on the map to create a new route point.

To insert a point into the route or add a point to the end:

1. On the Route Review page, use the **ROCKER** to highlight the point you wish to insert the new point before. To add a point to the end, highlight the blank field at the bottom of the list. Then press **MENU**.

2. Highlight **Insert Waypoint** or **Add Waypoint** 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, and Marinas, from this list. From either the **By Name** or **Nearest** tab lists, choose the waypoint you want and press **ENTER** twice.

*Press Left or Right on the **ROCKER** to change the data field.*

To remove a point from a route:

1. On the Route Review or Active Route pages, use the **ROCKER** to highlight a point and press **MENU** to remove.

2. Highlight **Remove Waypoint** and press **ENTER**.

To reverse the route:

1. From either the Route Review page, press **MENU**.

2. Highlight **Reverse Route** and press **ENTER**.

To delete a route:

1. From the Route Review page press **MENU**.

2. Highlight **Delete Route** and press **ENTER**, then press **ENTER** again to confirm.

Plan Route

Speed	Depart Time
0.0ᵏ	11:07ᴬ
Fuel Flow	**Depart Date**
0.0/hr	26-JUL-04

Trip Planning Data Fields

⚠️ *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 from your vehicle's operator's manual performance specifications and make note of the desired units of measure (gallons or liters).*

To use the Trip Planning feature:

1. To select the desired planning figure, 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. Use the Left/Right keys on the **ROCKER** to view the desired item.

3. To enter planning information, from the Route Review page only, press **MENU** and select **Plan Route**. Enter the figures for Speed, Fuel Flow, Departure Time, and Departure Date. Press **QUIT** to return to the Route Review page.

Active Route Page

Whenever you have activated a route in the GPSMAP 176/176C, the Active Route page shows each point (waypoint or map feature) of the active route. It also shows the point name, Distance, Course, ETA, Fuel to point, Leg Distance, Leg Fuel, Leg Time, Sunrise and Sunset at point location, and Time To point for each point from your present location. The current destination point, the "active" point, is marked with an arrow icon. As you navigate a route, the waypoint list automatically updates to indicate the next active point first. The Active Route and Route Review pages share many of the same features and options.

The following route options are available from the Active Route page:

- Use Map—see pages 35 for instructions.
- Insert/Add Waypoint—see page 36-37 for instructions.
- Remove Waypoint—see page 38 for instructions.
- Reverse Route—see page 38 for instructions.
- Plan Route—see page 38 for instructions.

Find

FIND allows you to search the unit for user waypoints, map items and any optional BlueChart or MapSource information loaded on a data card. The unit searches for items from your current location or from another location on the map. When you press **FIND**, a list of available items to search from appears. The default items are Waypoints, Cities, Exits, Tide Stations, and Transportation. Additional items are displayed depending on the optional BlueChart or MapSource data card inserted into the unit. Your location or the map pointer must be within the map outline area to search for information from the BlueChart or MapSource data.
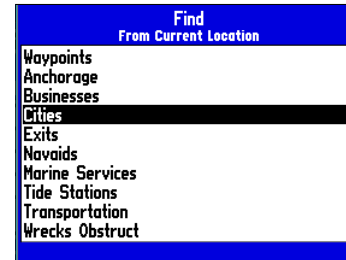
Find Menu

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

1 From any page, press **FIND**.

2. Using the **ROCKER**, highlight the desired category from the list and press **ENTER** until a search results list appears.

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

1. Once the search results list for a particular item is displayed, press **MENU**. 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**.

2. Select a reference location on the map and press **ENTER**. The search results list changes to list items nearest to the new map location.

OR:

1 From the Map page, use the **ROCKER** to pan to the desired location and press **FIND**.

2. Using the **ROCKER**, highlight the desired category from the list and press **ENTER**.

The Find option also supports a "find from" feature which allows you to center your search around an item which you have just found. For example, you search for "Restricted Areas" and you find a point named "Anchoring Prohibited." 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.
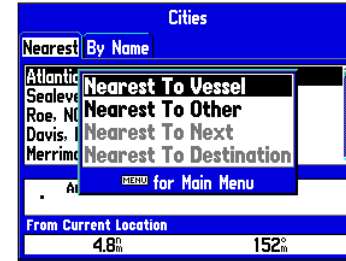
Finding items from another reference point.

To view details about an item:

With the desired item highlighted in the search results list, press **ENTER**. An Information page appears with details about the item 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 the list of maps on your data card, and viewing the next item in the search results list.

MAIN PAGES

The GPSMAP 176/176C contains five main pages: Map, Compass, Highway, Active Route/Go To, and Numbers. You can access these pages by pressing **PAGE** to cycle forward through the pages or **QUIT** to cycle backward until the page you wish is displayed.

Each of the main pages has an options menu, allowing you to customize the page to your preferences and perform tasks that specifically relate to that page. The data window, located at the right side of the display, 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 customized to change the actual size of the data displayed.

Map Page

The 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 location 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 pointer lets you pan and scroll to other map areas, determine the distance and bearing to a position, and perform various route and waypoint functions.

Map Page with optional BlueChart Marine data.

Two basic map operating modes, position mode and pan 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 pan mode pans the cartography to keep the pointer within the display area. The GPSMAP 176/176C always powers up in the position mode, with the last known location centered on the map display. When you press the **ROCKER**, the GPSMAP 176/176C enters pan mode. For more information on Map page setup options, see pages 63-68.

The Map page options menu provides access to functions and features relating to the Map page and options for layout of the page. Press **MENU** to display the Map page options: Measure Distance, Show/Hide Next Street, Setup Page Layout, Change Data Fields, Setup Map, and Declutter On/Off. Use the **ROCKER** to highlight the option and press **ENTER** to select.
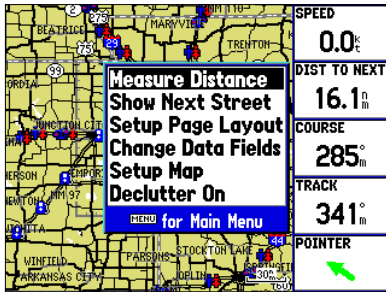
Map Page Options

Measure Distance—allows you to measure the bearing/distance between two points on the map.

Show Next Street/Hide Next Street—displays the next cross street in a window at the top of the display. This option is only available if MapSource data is loaded. Highlight the **Show Next Street** option and press **ENTER** to show the next street. Highlight the **Hide Next Street** option and press **ENTER** to hide the next street window.

Setup Page Layout—allows you to choose the size of text and number of data fields.

Change Data Fields—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.

Set Up Map—jumps to the Map tab of the Main Menu, allowing you to configure the map display to your preferences, including map detail, map orientation, automatic zoom, and various map items and points. The map setup option uses a file tab feature, organizing the various settings for ease of use.

Declutter On/Declutter Off—toggles between showing spot soundings and map outlines for easier viewing.
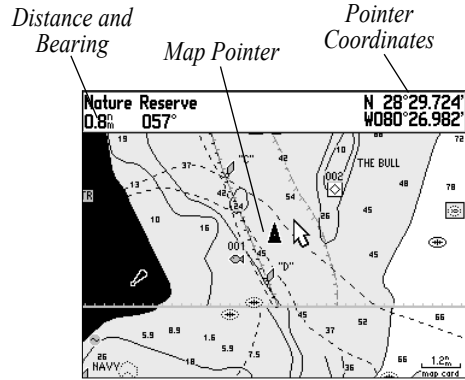
Full screen map shown (with BlueChart data)

To measure the Bearing/Distance between two points:

1. From the Map page, press **MENU**. Highlight **Measure Distance** and press **ENTER**. An on-screen pointer appears on the map display at your present position.

2. Move the pointer to the desired reference point (the point that you want to measure from) and press **ENTER**.

3. Move the pointer to the point you want to measure to. The bearing and distance from the reference point and pointer coordinates are displayed in the data window at the top of the display.

4. Press **QUIT** to finish.
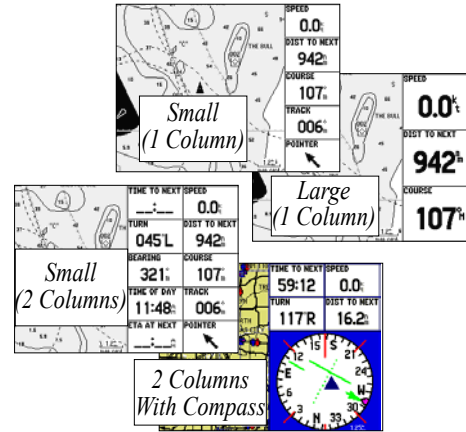
Page Layout Setup Options

To setup the page layout:

1. From the Map page, press **MENU**. Highlight **Setup Page Layout** and press **ENTER**.

2. Select the desired option, None, Small (1 Column), Small (2 Columns), 2 Columns With Compass, or Large (1 Column), and press **ENTER**.
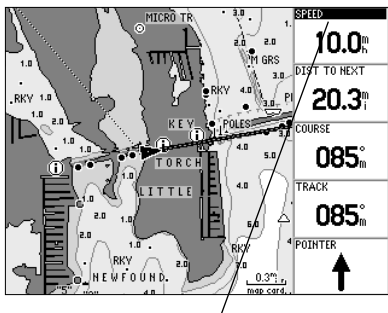
Highlight the data field you wish to change.

Choose the type of data you wish to display.

To change a data field:

1. From the Map page, press **MENU**. Highlight **Change Data Fields** and press **ENTER**.

2. Move the field highlight to the data field you want to change and press **ENTER**.

3. Move up or down on the list using the **ROCKER** . Select the data you want to display, and press **ENTER**. To exit, press **QUIT**.

To change a map setup feature:

1. From the Map page menu, highlight **Set Up Map** and press **ENTER**.

2. Use the **ROCKER** to highlight the desired file tab, highlight the setting you want to change, and press **ENTER**.

3. Press Up or Down on the **ROCKER** to highlight to the desired setting and press **ENTER**.

4. To exit, press **QUIT**.

Compass Page

Whenever a **Go To**, **Navigate Track** (TracBack), or **Navigate Route** is activated, the Compass page guides you to your destination with digital readouts and a graphic compass display, which includes a bearing pointer. Use this page when travelling at slower speeds, making frequent directional changes, or where straight-line navigation is not possible due to obstructions or terrain.

The middle of the page features a rotating compass ring that shows your course over ground (track) while you are moving. Your present course over ground is indicated at the top of the compass ring. A bearing pointer, in the middle of the compass ring, 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.

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

Compass Page Options

The 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 can be configured to display several data options. The data window layout can also be changed to display more/less data fields and change the actual size of the data displayed. Press **MENU** to display the Compass page options. To select a menu option, use the **ROCKER** to highlight the desired option and press **ENTER**. See pages 43-44 for detailed instructions on changing the data fields and layout.

Compass Page Options
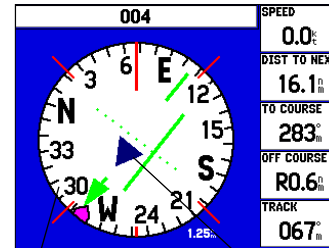
Compass Ring— indicates current direction of travel

Pointer—points toward destination while moving
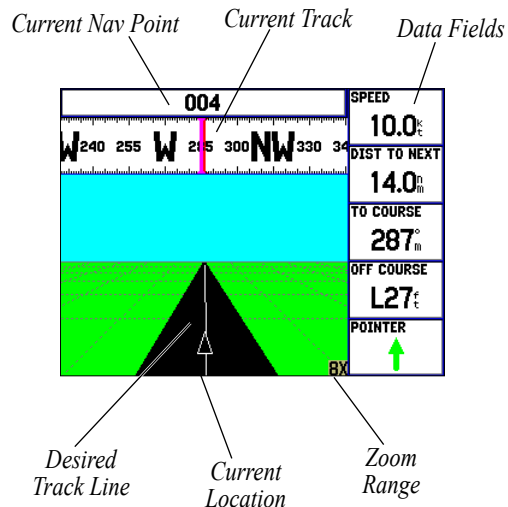
Highway Page

Whenever a **Go To**, **TracBack,** or **Route** is activated, Highway page provides digital and graphic steering guidance to the destination. The right side of the Highway page features user-selectable data fields that display useful navigation information. A compass ribbon is displayed at the top of the page to show your current heading along with a dark, vertical bar which indicates the bearing to your course. To stay on course, steer towards the dark, vertical indicator (or arrows) until it lines up with the lighter gray bar in the middle. 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 heading.

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 black road with a white line down the middle, which is your desired track line. Nearby waypoints not in the active route can also be displayed. The highway perspective range 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. Press the **IN** or **OUT** key to change the highway perspective range.

Current Nav Point *Current Track* *Data Fields*

Desired Track Line *Current Location* *Zoom Range*

The Highway page options allow you to define the data fields and select which waypoints and tracks are displayed on screen. The data window, located along the right side 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. Press **MENU** to display the

Highway page options. To select a menu option, use the **ROCKER** to highlight the desired option and press **ENTER**.

The following options are available from the Highway page menu:

Setup Page Layout—allows you to choose the size of text and number of data fields on the page.

Change Data Fields—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 the Appendix for a listing of the data fields.

Set Up Highway—displays an option menu with two tabs: Line, and Waypoint. Each tab has On/Off settings for several options. The Line tab determines if the **Active Leg**, **Active Route**, **Track Log**, or **Saved Tracks** are displayed on the Highway page. The Waypoint tab determines if the **Next**, **Route**, or **Other Waypoints** are displayed on the Highway page.

Highway Page Options Menu

To setup the page layout:
1. Highlight the **Setup Page Layout** option and press **ENTER**.
2. Select the desired option from the following and press **ENTER**.

To change a data field:
1. From the menu, use the **ROCKER** key to highlight **Change Data Fields** and press **ENTER**.
2. Highlight the data field you want to change and press **ENTER**.
3. Use the **ROCKER** to highlight the data you want to display and press **ENTER**. To exit, press **QUIT**.

Setup Highway Line Tab
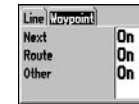
Setup Highway Waypoint Tab

Active Route Page

Whenever you have activated a route in the GPSMAP 176/176C, the Active Route page shows each waypoint of the active route, along with various, user-selectable types of data. For additional information about the Active Route page, see page 39.

Numbers Page

The Numbers page provides a quick reference for important data you want to display. The default page displays four large, user-selectable data fields showing speed, track, the current location and GPS accuracy. You may also choose to show the one data field in large lettering for better readability. For detailed instructions on changing the data fields and layout of the Numbers page, see pages 43-44.
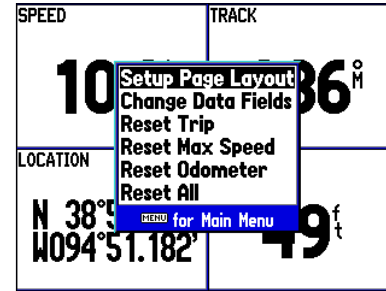
Numbers Page Options

MAIN MENU PAGE

The 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 system. To access the Main Menu page, press **MENU** twice. The Menu tabs are divided into categories by function.
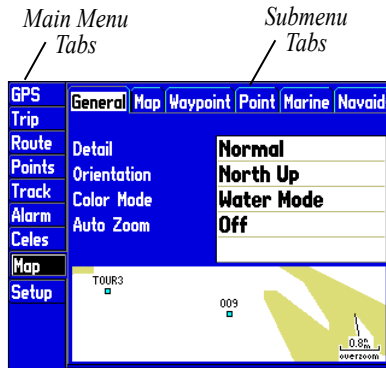

Main Menu Page

To select a menu tab from the Main Menu page:

1. Press the **ROCKER** 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 tab items, press the **ROCKER** to select individual items.

2. Press **MENU** for additional submenu options or press **ENTER** to make changes to the highlighted item. Press the **ROCKER** to get back to the menu tab list. Press **QUIT** to exit the Main Menu page.

GPS Tab

The GPS tab provides a visual reference of satellite acquisition, receiver status, and position accuracy. The status information shows what the receiver is doing at any given moment. The sky view and signal strength bars give 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, with the appropriate satellite number underneath each bar.

The progress of satellite acquisition is shown in three stages:

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

As soon as the GPSMAP 176/176C has collected the necessary data from the best satellites in view to calculate a fix, the status field indicates 2D or 3D status. The unit then updates the position, date, and time.

You can use the sky view to help determine whether 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 45º 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 176/176C 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 geostationary 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 or mountains. WAAS satellites are numbered 33 or higher. Initial reception of the WAAS signal may take up to 15-20 minutes. 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 176/176C 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. The unit does not search for WAAS satellites if the unit is in Battery Saver mode. To disable/enable WAAS capability from the System tab, highlight the **WAAS** field and press **ENTER**. Select either **Enabled** or **Disabled** and press **ENTER**.
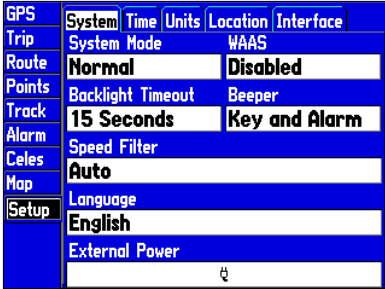
*From the Main Menu **System** tab, highlight the **WAAS** field and press **ENTER** to **Enable** or **Disable** WAAS.*

The status field shows one of the following conditions:

- **Searching the Sky**—the receiver is looking for all satellites.
- **AutoLocate**—the receiver is looking for any satellite it has an almanac for. This process can take up to five minutes.
- **Acquiring Satellites**—the receiver is looking for and collecting data from satellites that were visible at its last known or initialized position, but has not collected enough data to calculate a fix.
- **2D GPS Location**—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 WAAS or DGPS corrections in 2D mode and a **D** shows on the strength bar of satellites being corrected.
- **3D GPS Location**—at least four satellites with good geometry have been acquired and your position is now being calculated in latitude, longitude, and altitude. **3D Differential** appears when you are receiving DGPS corrections in 3D mode and a **D** shows on the strength bar of satellites being corrected.
- **Lost Satellite Reception**—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 GPS**—the receiver is in simulator mode.
- **GPS Off**—the GPS receiver is turned off.

The Differential Receiver status shows one of the following:

- **None**—no optional beacon receiver is attached or enabled in the Interface tab (Main Menu) or WAAS is turned Off.
- **Searching for WAAS**—WAAS is enabled and the receiver is searching for WAAS signals.
- **Using WAAS**—WAAS capability is enabled and the unit is receiving WAAS corrections.
- **Check Beacon Wiring**—the DGPS setting is enabled in the Interface tab (Main Menu), but no DGPS device is detected.
- **No Beacon Signal**—DGPS receiver is attached, but not transmitting RTCM data to GPS.
- **Tuning Beacon**—receiver is tuning manual DGPS frequency.
- **Using Differential**—unit is receiving DGPS corrections.
- **Scanning for Beacon**—DGPS receiver is scanning for an available frequency.

NOTE: *If a DGPS receiver is attached to the unit and Garmin DGPS, RTCM In/NMEA Out, or Other DGPS is enabled on Port 2, WAAS is automatically disabled (WAAS Off). It is not possible for the GPSMAP 176/176C to receive WAAS and DGPS corrections at the same time.*

The Differential SNR (Signal to Noise Ratio) indicates, on a range to 0–30db with 30 db being the best, the strength of the DGPS signal being received. If no optional DGPS receiver is used with the GPSMAP 176/176C, the **DGPS Rcvr** field displays **Off**. The SNR depends upon the mounting of your DGPS receiver and the distance from the DGPS transmitting station.

GPS Info tab features an options page that provides access to functions and features relating to the GPS Info tab. To display the GPS tab options with the GPS information displayed, press **MENU**.

GPS Tab (Main Menu) Options

The following options are available:

- **Start/Stop Simulator**—toggles the unit simulator 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 tab only.
- **New Location**—allows you to initialize the receiver graphically on the Map page to help the receiver acquire more quickly.
- **New Elevation**—allows you to manually enter the altitude when in 2D or Simulator mode only. Any altitude entered is automatically calculated when the GPS is in 3D mode.

Trip Tab

The Trip tab displays the Trip Odometer, Moving Average Speed, Total Average Speed, Maximum Speed, Stopped Time, Moving Time, Total Time, and Odometer. To reset the trip data, press **MENU**, then select the desired option and press **ENTER**.

Trip Tab

Route Tab

The Route tab contains a list of available routes. For detailed information on routes, see pages 32-35.

Points Tab

The Points tab contains the **User**, **Proximity**, and **Recent** waypoint lists. For detailed information on the Points tab, see pages 19-23.

Track Tab

The Track tab's multiple features are divided in two tabs: the Active tab and the Saved tab. You can specify whether or not to record a track log (an electronic bread crumb trail recording of your path), define how it is recorded, or save track log data for future use. The Track tab also displays the memory used for the active track log and allows you to clear the track memory or start a TracBack route. See pages 26-28 for TracBack information.

Active Tab

The Active tab displays information about the active track log (the log currently being recorded). It displays track memory used and current settings.
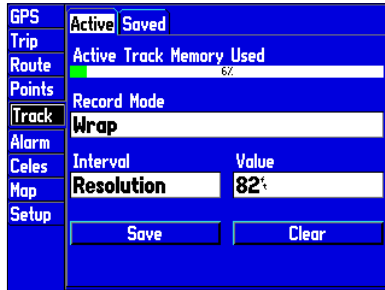
Track Menu—Active Tab

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 turning recording Off 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, replacing the oldest track data with new data.

- **Interval**—defines the frequency at which the track is recorded. Three interval settings are available:

  Distance: Records track based on a user-defined distance between points.

  Time: Records track based on a user-defined time interval.

  Resolution: Records track 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.

- **Save**—allows you to save the current active track log.

- **Clear**—allows you to clear the active track log.

Saved Tab

The Saved tab displays and manages a list of any saved track logs, allows TracBack activation, and a map display of saved logs. The active log stores up to approximately 2,500 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 500 track log points in each saved log.

For the Saved tab, the following menu options are available:

- **Review On Map**—displays the saved track on a Track Map page.
- **Delete Track**—deletes highlighted saved track from memory.
- **Delete All**—deletes all saved tracks from memory.
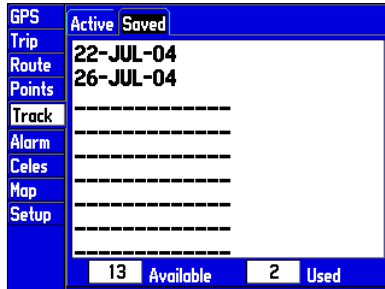
Track Menu—Saved Tab

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 **ROCKER**, highlight the track you wish to use for a TracBack and press **NAV**.
2. **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**.

Alarm Tab

Allows you to define the alarm setting for Anchor Drag, Arrival, Off Course, Clock, Shallow Water, Deep Water, DGPS, and Accuracy.

Nav

- **Next Turn**—sets an alarm for the next turn in your route. Select **Off** for no Next Turn alarm. Select **Dist** to enter a specific distance before the next turn for Next Turn alarm to go off. Select **Time** to enter a specific time before the turn for the alarm to go off. Select **Auto** for the unit to provide a Next Turn alarm at its discretion.

- **Arrival**—sets an alarm to sound when you are a specified distance or time away from a destination waypoint. Enter a distance radius or time for sounding the alarm.

- **Off Course**—sets an alarm to sound when you are off your 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.

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

System

- **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 are using for your system. The unit must be on for the clock alarm to work.

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

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

Sonar

- **Shallow Water/Deep Water**—set alarms to sound when you enter an area of specified depth that is too shallow and/or too deep. Enter a depth in the distance fields and use the control fields to turn the alarms on and off. You must be receiving NMEA depth data for this function to work.

- **Water Temp**—sets an alarm to indicate whether the water temperature has exceeded or dropped below a specific temperature, or fallen outside/inside a specific temperature range. Select **Above** or **Below** and then enter a specific temperature, or select **Inside** or **Outside** and enter a range of temperatures. You must be receiving NMEA temperature data for this function to work.

- **Drift**—sets an alarm to sound when you have exceeded a specified drift distance. Select **On** to turn this alarm on and then enter a distance.

To set an alarm:
1. Use the **ROCKER** to highlight the field to the right of the alarm name you wish to activate and press **ENTER**.
2. Change the mode to **On** (**Dist** or **Time** for the **Arrival** alarm) and press **ENTER**.
3. Highlight the next field to the right and press **ENTER**, then enter the desired settings and press **ENTER** to finish.

Celestial (Celes) Tab

Tide Tab
The Tide tab shows a graphical chart which displays tide station information in a 24-hour span starting at midnight station time. You can choose from different dates and over 3,000 tide stations around the USA coastline, Alaska, Hawaii, Western Canada, and several of the Caribbean Islands.
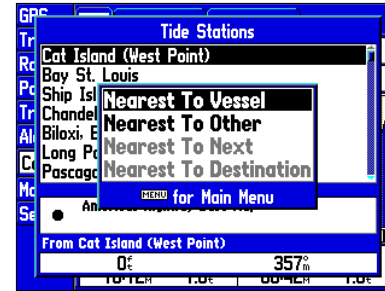

Station Name
Date
Tide Chart
Event Times
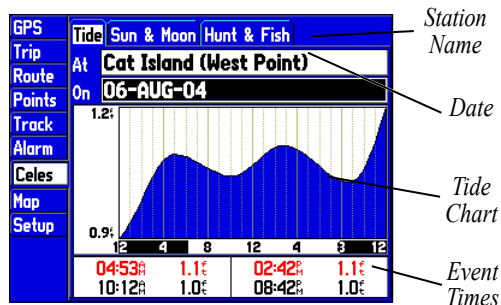
Tide Tab

The top of the page displays the tide station being referenced and the date. The chart shows a 24-hour block of local time (LCL) for your position, with the reported station time (STA) appearing at the bottom. Daytime (light bar) and nighttime (dark bar) show across the time range, and the time progressing from left to right (local

time ranges and sunrise/sunset info may not be available for a few stations). The solid, light vertical lines represent 4-hour increments, and the light, dotted vertical lines represent 1-hour increments. A gray, vertical line (with a block at the top displaying time) indicates the time of day when using current date and intersects the tide graph to show their relation.

The tide curve appears as a shaded area; higher tides are taller and lower tides are shorter. The gray, horizontal line (with a block at the left displaying depth) indicates the current tide height. The Mean Lower Low Water (MLLW) appears as a solid, horizontal line near the bottom of the chart (this line only appears if the tide ranges to zero or below). The numbers directly below/above LCL and STA indicate the maximum/minimum levels, respectively. The four data fields below the chart indicate event times and levels at which the tide changes.

Searching for Tide Stations

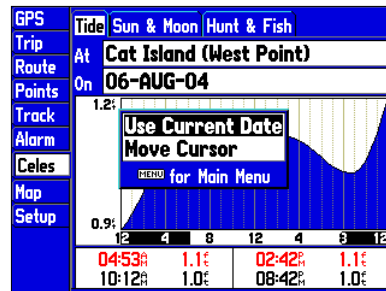**To view the chart for a tide station near your current location:**

1. From the **Tide** tab, press **FIND**, select **Tide Stations** and press **ENTER**.
2. Press **MENU** and select **Nearest to Vessel**. Select the desired station from the list and press **ENTER**.
3. Highlight **Show Chart** and press **ENTER**. Selecting **Next** returns to the list with the next station highlighted.
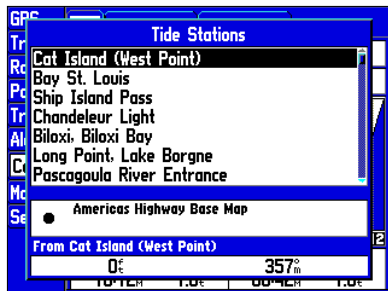
Select from a list of tide stations.

Tide Tab Menu Options

To view a tide chart for another station:

1. Highlight the name of the current tide chart displayed and press **ENTER**.

2. A list of stations near that station is displayed. Use the **ROCKER** key to highlight the desired station from the list and press **ENTER**.

3. Highlight **OK** or **Show Chart** and press **ENTER** to view the chart.

To find the chart for a tide station nearest to a location on the map:

1. Press **FIND**, select **Tide Stations**, and press **ENTER**.

2. Press **MENU**, select **Nearest to Other**, and press **ENTER**.

3. Use the **ROCKER** to select a position on the map with the Map Pointer and press **ENTER**.

4. Select the desired station from the list and press **ENTER** to view the Information page for the chart. This shows the station's distance and bearing from the selected map location, and the station's position coordinates.

5. Highlight **Show Chart** and press **ENTER** to view the chart.

To view the tide chart for another date:

1. With the desired chart displayed, highlight the **On** (date) field and press **ENTER**.

2. Enter the desired date with the **ROCKER** and press **ENTER**.

3. To return to the current date, press **MENU**, then highlight **Use Current Date** and press **ENTER**.

To view a chart's details for another time during the day (other than current time):

1. With the desired chart displayed, press **MENU** and select **Move Cursor**.

2. Press the **ROCKER** key Right or Left to view the chart at another time.

3. To return to the current time, press **MENU** and select **Stop Moving Cursor**.

Sun & Moon Tab

The Sun & Moon tab displays celestial data for Sun and Moon rise/set, Moon phases, and approximate skyview location of the sun and moon. The moon phase displays the current visible portion of the moon. You can display this data for your current position, a position from the map, or a waypoint location. Also, you can also select a different date and time, or use the current data.
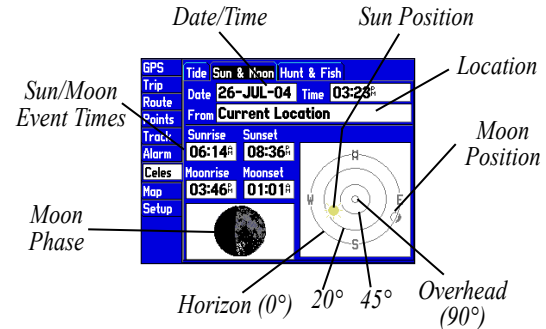
Celestial Tab

To choose another position:

1. From the Celes tab, highlight the **Location** field and press **ENTER**.

2. The **Find** window appears. Make a selection and press **ENTER** until the information for that location is displayed on the Celes tab. See page 39 for more information on using the **Find** feature.

The location the unit is using appears in the Date/Time/Position field. The timetables displayed are based upon your current time zone. When using a position from another location outside of your time zone, you need to set the Time Zone for that location under the Setup-Time tab on the Main Menu. (See page 70.)

To change the time or date:

1. From the Celes tab, use the **ROCKER** to highlight the date or time field and press **ENTER**.

2. Enter a new date or time and press **ENTER**.

To use current date and time from the Celes tab, press **MENU**, then use the **ROCKER** to highlight **Use Current Date and Time** and press **ENTER**.

To change the skyview orientation from the Celes tab, press **MENU**, then use the **ROCKER** to highlight **North Up** or **Track Up**, and press **ENTER**.

Hunt & Fish Tab

The Hunt & Fish tab displays good and best times and a condition prediction for hunting. The predictions are based on the date and location of your choice.

To enter another date:

1. Highlight the **Date** field and press **ENTER**.

2. Enter a new date and press **ENTER**.

To choose another location:

1. Highlight the **Location** field and press **ENTER**.

2. The **Find** window appears. Make a selection and press **ENTER** until the information for that location is displayed on the **Hunt** tab. See page 39 for more information on using the **Find** feature.

Map Tab

General Tab


Map Tab of Main Menu

Detail—Most, More, Normal, Less, Least: controls how much map detail you see. This setting only applies to any map feature set to **Auto**. Those features which have a specified range or are turned **Off** are unaffected by this setting.

Orientation—North Up: fixes the top of the map display to a north heading; Track Up: fixes the top of the map display to the current track heading; Course Up: fixes the map so the direction of navigation is always "up" and turns the navigation leg line vertical on the screen.

Color Mode—Water Mode or Land Mode: when in **Water Mode**, land appears dark and water is light. In **Land Mode**, land appears light and water is dark. If using optional BlueChart data, **Water Mode** is recommended.

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

Map Tab
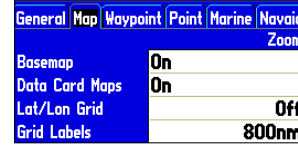
Basemap—On/Off: turns the built-in basemap on or off.

Data Card Maps—On/Off: turns all optional BlueChart/MapSource data on or off.

Lat/Lon Grid—Off, Auto, 20 ft–800 mi: sets the maximum range at which the feature appears on the screen. Some types of data are only displayed at certain zoom ranges.

Grid Labels—Off, Auto, 20 ft–800 mi: sets the maximum range at which the feature appears on the screen. Some types of data are only displayed at certain zoom ranges.

Waypoint Tab

The Waypoint Tab contains Text and Zoom settings that control how Waypoints, Active Routes, and Proximity Circles are displayed on the Map page.

- **Text—**Off, Small, Medium, and Large: controls the screen size of the name.

- **Zoom—**Auto, Off, 20 ft–800 mi: sets the maximum range at which the feature appears on the screen. Some types of data are only displayed at certain zoom ranges.

Point Tab

The Point tab contains Text and Zoom settings that control how Businesses, Facilities, Geo, and Exit features are displayed on the Map page.

- **Text**—Off, Small, Medium, and Large: controls the screen size of the name.

- **Zoom**—Auto, Off, 20 ft–800 mi: sets the maximum range at which the feature appears on the screen. Some types of data are only displayed at certain zoom ranges.

Marine Tab

The Marine tab contains Text and Zoom settings that control how Marine Services, Spot Soundings, and Tide Stations features are displayed on the Map page.

- **Text**—Off, Small, Medium, and Large: controls the screen size of the name.

- **Zoom**—Auto, Off, 20 ft–800 mi: sets the maximum range at which the feature appears on the screen. Some types of data are only displayed at certain zoom ranges.
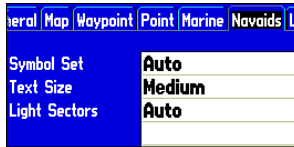
Navaids Tab

Symbol Set—controls which symbol set to use:

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

- **Garmin**: maps are drawn using traditional Garmin symbols.

- **NOAA**: maps are drawn using the NOAA/NIMA symbol set.

- **International**: maps are drawn using the IALA symbol set.

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

Light Sectors—Off, Auto, On: controls the display of lighted navigation aids.

Line Tab
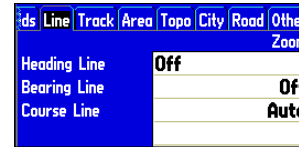
Heading Line—On/Off: turns the Heading Line on or off. The Heading Line projects your current heading.

Bearing Line—Auto, Off, 20 ft–800 mi: controls the maximum zoom range at which the Bearing Line appears on the screen. The Bearing Line shows the bearing from your current location to a destination waypoint.

Course Line—Auto, Off, 20 ft–800 mi: controls the maximum range at which the Course Line appears on the screen. The Course Line shows a direct navigation line from the point where navigation was initiated to a destination waypoint.

Track Tab

The Track tab contains Zoom settings that control how Track Logs and Saved Tracks are displayed on the Map page.

Zoom—Auto, Off, 20 ft–800 mi: sets the maximum range at which the feature appears on the screen. Some types of data are only displayed at certain zoom ranges.

Area Tab

The Area Tab contains Text and Zoom setting that control how River/Lake, Park, Other, and Metro areas are displayed on the Map page.

- **Text**—Off, Small, Medium, and Large: controls the screen size of the name.
- **Zoom**—Auto, Off, 20 ft–800 mi: sets the maximum range at which the feature appears on the screen. Some types of data are only displayed at certain zoom ranges.

Topo Tab

The Topo tab contains Text and Zoom settings that control how Major Contour, Inter Contour, Minor Contour, and Land Cover are displayed on the Map page.

- **Text**—Off, Small, Medium, and Large: controls the screen size of the name.
- **Zoom**—Auto, Off, 20 ft–800 mi: sets the maximum range at which the contours appear on the screen. Some types of data are only displayed at certain zoom ranges.

City Tab

The City tab contains Text and Zoom settings that control how Large City, Medium City, Small City, and Small Town names are displayed on the Map page.

- **Text**—Off, Small, Medium, and Large: controls the screen size of the name.
- **Zoom**—Auto, Off, 20 ft–800 mi: sets the maximum range at which the cities appear on the screen. Some types of data are only displayed at certain zoom ranges.

Road Tab

The Road tab contains Text and Zoom settings that control how Freeway, Highway, Local Road, and Local Road Names are displayed on the Map page.

- **Text**—Off, Small, Medium, and Large: controls the screen size of the name.
- **Zoom**—Auto, Off, 20 ft–800 mi: sets the maximum range at which the roads appear on the screen. Some types of data are only displayed at certain zoom ranges.

Other Tab

- **Railroad**—Auto, Off, 20 ft-800 mi: sets the maximum range at which railroads appear on the screen.

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

- **Lock to Roads**—On/Off: This feature is only available if MapSource MetroGuide or City Navigator data is loaded. When the feature is active, the triangle icon locks to the road that you are traveling.

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

Setup Map Menu Options

From the Map Setup page (Map tab of the Main Menu), the following options are available by pressing **MENU**: Defaults, All Map Defaults, and Data Card Information.

To restore defaults for map settings:

1. From the Map setup page, highlight the desired tab or setup feature you want to restore settings for and press **MENU**.

2. Highlight **Defaults** (highlight **All Map Defaults** if you want all tabs restored) and press **ENTER**.
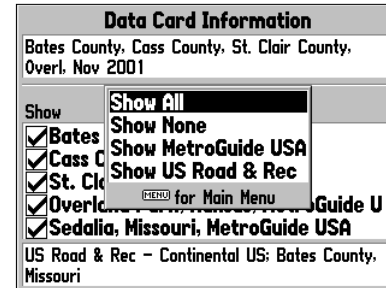
Data Card Information Screen Options

To review/change data card information:

1. From the Map setup page, press **MENU**, highlight **Data Card Information**, and press **ENTER**.

2. Use the **ROCKER** to scroll through the list of map coverage areas available. Only those with a check mark in the box to the left of the name are displayed on the Map page.

3. To select/deselect a map for display, use the **ROCKER** to highlight the box next to the desired map, and press **ENTER** to check/uncheck the box.

   OR

   Press **MENU**, select one of the options (**Show All**, **Show None**, or **Show <MapSource product name>**), and press **ENTER**.

4. To view details about a map, highlight the map name and press **ENTER**. Highlight **Next** or **Map List** to return to the map list.

5. Press **QUIT** when finished to return to the Map setup page.

Setup Tab

The Setup tab contains general unit options for the basic unit features. These setup options include: backlight, language, time zone, measurement units, and communication settings.

System Tab

The System tab controls system settings for the system mode, WAAS, backlight timeout, beeper, speed filter, languages, and current power status (external power or battery range).

System Tab

The following settings are available:

- **System Mode**—select from Normal (Normal Navigation) or Simulator (for practice ONLY).

- **WAAS**—enable/disable the search for WAAS satellites.

- **Beeper**—controls audible beep. Select from Off, Alarms Only (sounds for alarms/messages), and Key and Alarm (sounds for key presses and alarms/messages).

- **Backlight Timeout**—setting are Stays On, 15 Seconds, 30 Seconds, 1 Minute, or 2 Minutes.

- **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.

- **Power Source**—displays battery power or shows that an external power source is in use.

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.

- **System Information**—displays the unit's software, basemap version, and electronic serial number.

Time Tab

The Time 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.

Time Tab

The following menu options are available:

- **Time Format**—choose from 12 or 24 hour time format.

- **Time Zone**—choose your correct time zone to show correct local time or enter a UTC Offset. The UTC offset (also called Greenwich Time) is how many hours you are ahead or behind the time line.

- **Daylight Savings**—choose from **Auto**, **On**, or **Off** to adjust for daylight savings.

Units Tab

The Units tab defines units of measure for Elevation, Depth, Distance and Speed, Temperature, and Direction Display.

- **Elevation**—select Feet (ft) or Meters (m).

- **Depth**—select Feet (ft), Fathoms (fa) or Meters (m).

- **Distance and Speed**—select Nautical (nm, kt, ft), Statute (mi, mh, ft), or Metric (km, kh, m).

- **Temperature**—select Fahrenheit (°F) or Celsius (°C). This setting is only available when the GPSMAP 176/176C is interfaced with a depth finder, and the transducer must have a temperature sensor in the water.

- **Direction Display**—select Numeric Degrees or Cardinal Letters. This setting is used in all fields that relate to direction throughout the unit.

Location Tab

The Location tab defines settings for Location Format, Map Datum, Heading, and Magnetic Variation.

Location Tab

NOTE: The Location tab settings affect how navigation information is displayed on the GPSMAP 176/176C. When in doubt, seek assistance. If you are using a map or chart in conjunction with your GPS, make sure the settings under the Location tab of the GPSMAP 176/176C 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.

The following settings are available:

- **Location 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.ddddd°	• MGRS
• hddd°mm'ss.s"	• New Zealand
• UTM/UPS	• Qatar Grid
• British Grid	• RT 90
• Dutch Grid	• Swedish Grid
• Finnish KKJ27	• Swiss Grid
• German Grid	• Taiwan Grid
• Irish Grid	• Loran TD
• India Zone Grids	• User Grid
• Maidenhead	• W Malayan RSO

For additional information on Loran TD setup, see the Appendix.

- **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 in the Appendix), 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. When in doubt, use the default WGS 84 datum for best overall performance.*

• **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. **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.
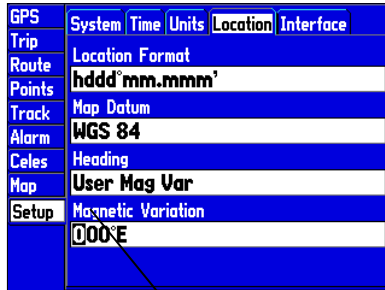
Enter a magnetic variation.

To enter a user-defined magnetic variation:

1. With the **Heading** field set to **User Mag Var**, highlight the **Magnetic Variation** field and press **ENTER**.

2. Use the **ROCKER** to enter the magnetic variation at your current position and press **ENTER**.

*To enter a Magnetic Variation manually, highlight the **Heading** field, press **ENTER**, select **User Mag Var** and press **ENTER** again.*

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.*

Interface Tab

The Interface tab allows you control the input/output format used when connecting your GPSMAP 176/176C to external NMEA devices, a DGPS beacon receiver, a personal computer, or another Garmin GPSMAP 176/176C.
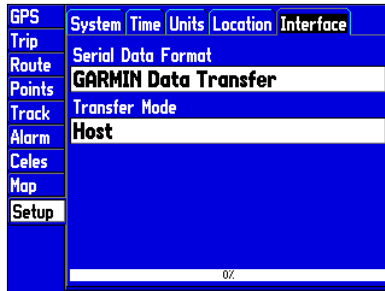
Interface Tab

⚠ *NOTE: If a DGPS receiver is used, WAAS capability is automatically turned **Off**.*

- **Garmin Data Transfer**—the proprietary format used to upload/download MapSource data, and exchange waypoint, route, track, almanac, and proximity data with a PC or another Garmin GPSMAP 176/176C. 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.

- **Garmin DGPS**—used to connect the GPSMAP 176/176C with a Garmin DGPS beacon receiver.

- **NMEA In/NMEA Out**—supports the input/output of standard NMEA 0183 version 2.3 data and sonar NMEA input support for the DPT, MTW, and VHW sentences.

- **Text Out**—allows the unit to output simple text data that includes, data, time, position and velocity. The Baud can be set to 1200, 2400, 4800, or 9600bps.

- **RTCM In**—allows Differential GPS (DGPS) input using a standard RTCM format.

- **RTCM In/NMEA Out**—allows Differential GPS (DGPS) input using a standard RTCM format and also provides NMEA 0183 version 2.3 output.
- **RTCM In/Text Out**—allows Differential GPS (DGPS) input using a standard RTCM format and also outputs simple text data that includes, data, time, position, and velocity.
- **None**—provides no interfacing capabilities.

To select a transfer mode:
1. Using the **ROCKER,** highlight the **Transfer Mode** field and press **ENTER**.
2. Select the desired setting and press **ENTER**.
3. To revert to **Garmin Data Transfer**, press **MENU**, highlight **Defaults**, and press **ENTER**.

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 176/176C. 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. 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 **ROCKER** to highlight the **Beacon** field and press **ENTER**.
2. Highlight **Scan** and press **ENTER**. The numbers in the **Frequency** field change as the unit scans from **284 kHz** to **325 kHz**, 200 bit rate, then 100, at 6-second intervals.
3. To restart the scan, press **MENU**, highlight **Restart Scan**, and press **ENTER**.
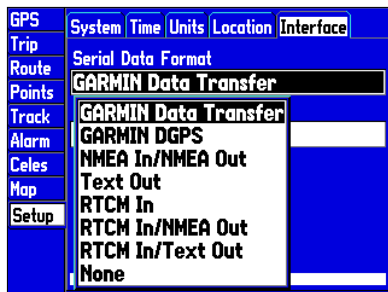
*If you select **Garmin DGPS** or **RTCM In/NMEA Out**, additional data fields are provided allowing you to control the frequency and bit rate that the DGPS receiver uses.*

To manually enter a frequency and bit rate:

1. With the unit set to **Garmin DGPS** or **RTCM In/NMEA Out**, use **ROCKER** to highlight the **Beacon** field and press **ENTER**.
2. Highlight **User** and press **ENTER**.
3. Highlight the **Frequency** or **Bit Rate** field, press **ENTER**, then enter a frequency or bit rate. Press **ENTER** when done.

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 the DGPS receiver.

When the unit is receiving a DGPS signal, the "SNR" (Signal to Noise Ratio) and Distance fields show data. The SNR range is 0 dB to 30 dB, 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 visit their Web site at http://www.navcen.uscg.mil/.

NMEA Interface

If you are going to interface the GPSMAP 176/176C with another piece of equipment (such as a radar or autopilot), the unit needs to be set to output NMEA data. The NMEA data can be customized to shorten the update time from the unit. If too many NMEA sentences are activated, the unit may take longer than two seconds to update.

To activate the NMEA data:
1. With the GPSMAP 176/176C turned on, press **MENU** twice to display the Main Menu. Use the **ROCKER** to select the Setup-Interface tab.
2. Highlight the **Serial Data Format** field and press **ENTER**.
3. Select **NMEA In/NMEA Out** and press **ENTER**.

Advanced NMEA Output Setup

The GPSMAP 176/176C NMEA data transmission can be customized to 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. You can also change the precision of the Lat/Lon minutes.

Advanced NMEA Setup Page

To set up the Advanced NMEA page:
1. With **NMEA In/NMEA Out** selected, press **MENU**. Select **Advanced NMEA Setup** and press **ENTER**.
2. To turn a field On/Off, highlight the desired field and press **ENTER**. Make a selection and press **ENTER** again.

GPSMAP 176/176C NMEA Sentence Output

(NMEA version 2.3 compliant)

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

Switchable sentences: GPGSA, GPGSV, GPWPL, GPRTE

Garmin proprietary: PGRME, PGRMZ, PGRMM

Appendix

Specifications

Physical Specifications

Size: 6.18"W x 3.4"H x 2.22"D (15.7 x 8.64 x 5.72 cm)

Weight: 12 oz (0.34 kg)

Display:
GPSMAP 176—3.8" diagonal (9.65 cm) high-contrast, FSTN display with backlighting (320 x 240 pixels)

GPSMAP 176C—3.8" diagonal (9.65 cm) Transflective, 16 color display with backlighting (320 x 240 pixels)

Case: Fully gasketed, high-impact plastic alloy, waterproof to IEC 529-IPX-7

Temp. Range: 5°F to 158°F (-15°C to 70°C)

Performance

Battery Life: Up to 13 hours in Battery Saver Mode

Receiver: Differential-ready 12 parallel channel receiver

Acquisition Times: Approx. 15 seconds (warm start)
Approx. 45 seconds (cold start)
Approx. 5 minutes (First Time/AutoLocate®)

Update Rate: 1/second, continuous

GPS Accuracy: *< 15 meters (49 feet) RMS 95% typical

DGPS (USCG) Accuracy: 3–5 meters (10–16 ft), 95% typical

DGPS (WAAS) Accuracy: 3 meters (10 ft) 95% typical with DGPS corrections

Velocity Accuracy: 0.1 knot RMS steady state

Dynamics: 6g's

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

Power

Batteries: Four 1.5-volt AA batteries*

Source: 8–35V DC

Fuse: AGC/3AG - 2.0 Amp

* Alkaline batteries lose a significant amount of their capacity as the temperature decreases. Use lithium batteries when operating the GPSMAP 176/176C in below freezing conditions. Extensive use of screen backlighting significantly reduces battery life. Different battery brands vary in useful life.

Connecting the Power/Data

The power/data cable connects the GPSMAP 176/176C to a 8–35 volt 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 - 1.5 Amp fuse.
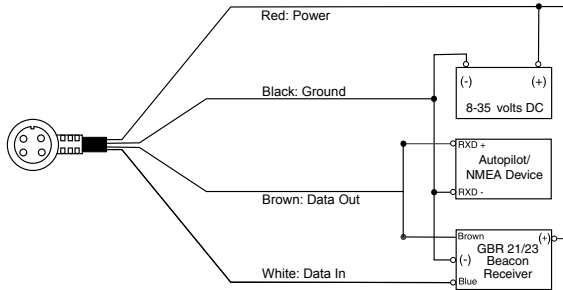
Interfacing

The following formats are supported for connection of external devices:

Garmin proprietary Differential GPS (DGPS), NMEA 0183 versions 2.3, ASCII Text Output, RTCM SC-104 input (version 2.0).

The following are the sentences for NMEA 0183, version 2.3 output:

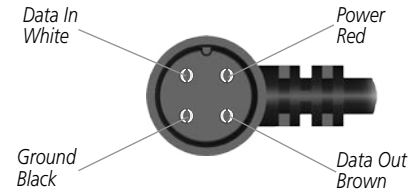**Approved sentences**—GPRMC, GPGGA, GPGSA, GPGSV, GPGLL, GPBOD, GPRTE, and GPWPL.
Proprietary sentences—PGRME, PGRMZ, and PSLIB. The GPSMAP 176/176C accepts NMEA input with support for the DBT, DPT, MTW, and VHW sentences.

You can download a copy of Garmin's proprietary communication protocol on the Help and Support section of our Web site at www.garmin.com.
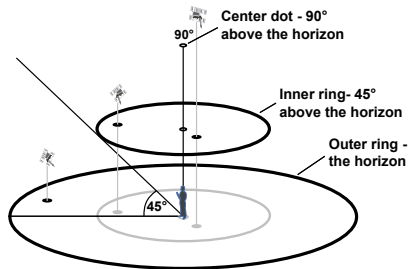

Unit View
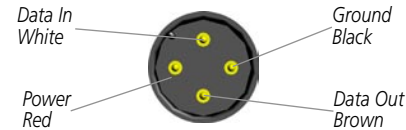
Cable View

Satellite Information

Satellite Sky View

Satellite Location

The location of each available satellite is displayed over two location rings on the Satellite Information page. The outer ring represents the horizon, the inner ring represents 45° above the horizon, and the center represents directly overhead. When the unit is using a satellite for navigation, the satellite number becomes highlighted on the location rings. The unit can be set to display satellite location with North or your current track at the top of the display.

Satellite Strength Indicator Bars

The Satellite Strength Indicator Bars not only show the strength of the signal being received, they also show the status of the signal. The bars are either shaded or filled. The gray bar means the GPS is in the process of storing orbital data it is receiving from the satellite signal. When the bar turns solid, the GPS is using the satellite signal for navigation. A "D" in or above the bar means that differential corrections (WAAS or DGPS) are being applied to that satellite.

Date, Time, and Current Location

The GPS gets date and time information from the satellite's on-board atomic clock. When the GPS receiver has achieved a 2D or 3D GPS location, the current location is displayed in the selected location format.

What is WAAS?

The Wide Area Augmentation System (WAAS) is an F.A.A. funded project to improve the overall integrity of the GPS signal. It is a space-based system that broadcasts integrity information and correction data as determined by ground reference stations. WAAS testing completed in September of 2003 confirmed an accuracy of 2 to 3 vertical meters throughout the majority of the continental U.S. and portions of Alaska. For more information, go to http://gps.faa.gov/Programs/WAAS/waas.htm.

⚠️ *NOTE: If you are using the GPSMAP 176/176C outside of the U.S., we recommend that you turn off WAAS for the most accurate location fix.*

What is Differential GPS (DGPS)?

The U.S. and Canadian governments (among others) have set up Differential GPS (DGPS) stations to transmit correction signals. They are operational in coastal areas and on many navigable river systems. The DGPS system is available for use without a fee.

Please refer to the U.S. Coast Guard's Web site, http://www.navcen.uscg.gov/ for locations and the status of the differential sites. Using DGPS requires additional equipment.

Map Datums

Adindan	Adindan- Ethiopia, Mali, Senegal, Sudan
Afgooye	Afgooye- Somalia
AIN EL ABD '70	AIN EL ANBD 1970- Bahrain Island, Saudi Arabia
Anna 1 Ast '65	Anna 1 Astro '65- Cocos I.
ARC 1950	ARC 1950- Botswana, Lesotho, Malawi, Swaziland, Zaire, Zambia
ARC 1960	Kenya, Tanzania
Ascnsn Isld '58	Ascension Island '58- Ascension Island
Astro Dos 71/4	Astro Dos 71/4- St. Helena
Astro B4 Sorol	Sorol Atoll- Tern Island
Astro Bcn "E"	Astro Beacon "E"- Iwo Jima
Astr Stn '52	Astronomic Stn '52- Marcus Island
Aus Geod '66	Australian Geod '66- Australia, Tasmania Island
Aus Geod '84	Australian Geod '84- Australia, Tasmania Island
Austria	Austria
Bellevue (IGN)	Efate and Erromango Islands
Bermuda 1957	Bermuda 1957- Bermuda Islands
Bogota Observ	Bogata Obsrvatry- Colombia
Campo Inchspe	Campo Inchauspe- Argentina
Canton Ast '66	Canton Astro 1966- Phoenix Islands
Cape	Cape- South Africa
Cape Canavrl	Cape Canaveral- Florida, Bahama Islands
Carthage	Carthage- Tunisia
CH-1903	CH 1903- Switzerland

Chatham 1971	Chatham 1971- Chatham Island (New Zealand)
Chua Astro	Chua Astro- Paraguay
Corrego Alegr	Corrego Alegre- Brazil
Croatia	Croatia
Djakarta	Djakarta (Batavia)- Sumatra Island (Indonesia)
Dos 1968	Dos 1968- Gizo Island (New Georgia Islands)
Dutch	Dutch
Easter Isld 67	Easter Island 1967
European 1950	European 1950- Austria, Belgium, Denmark, Finland, France, Germany, Gibraltar, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland
European 1979	European 1979- Austria, Finland, Netherlands, Norway, Spain, Sweden, Switzerland
Finland Hayfrd	Finland Hayford- Finland
Gandajika Base	Gandajika Base- Republic of Maldives
GDA	Geocentric Datum of Australia
Geod Datm '49	Geodetic Datum '49- New Zealand
Guam 1963	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
Johnston Island	Johnston Island NAD27 Central
Kandawala	Kandawala- Sri Lanka
Kerguein Islnd	Kerguelen Island
Kertau 1948	West Malaysia, Singapore
L.C. 5 Astro	Cayman Brac Island
Liberia 1964	Liberia 1964- Liberia
Luzon Mindanao	Luzon- Mindanao Island
Luzon Philippine	Luzon- Philippines (excluding Mindanao Isl.)
Mahe 1971	Mahe 1971- Mahe Island
Marco Astro	Marco Astro- Salvage Isl.
Massawa	Massawa- Eritrea (Ethiopia)
Merchich	Merchich- Morocco
Midway Ast '61	Midway Astro '61- Midway
Minna	Minna- Nigeria
NAD27 Alaska	North American 1927- Alaska
NAD27 Bahamas	North American 1927- Bahamas
NAD27 Canada	North American 1927- Canada and Newfoundland
NAD27 Canal Zn	North American 1927- Canal Zone
NAD27 Caribbn	North American 1927- Caribbean (Barbados, Caicos Islands, Cuba, Dominican Republic, Grand Cayman, Jamaica, Leeward and Turks Islands)
NAD27 Central	North American 1927- Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua)

NAD27 CONUS	North American 1927- Mean Value (CONUS)	Potsdam	Potsdam-Germany
NAD27 Cuba	North American 1927- Cuba	Prov S Am '56	Prov So Amrcn '56- Bolivia, Chile, Colombia, Ecuador, Guyana, Peru, Venezuela
NAD27 Grnland	North American 1927- Greenland (Hayes Peninsula)	Prov S Chln '63	So. Chilean '63- S. Chile
NAD27 Mexico	North American 1927- Mexico	Ptcairn Ast '67	Pitcairn Astro '67- Pitcairn
NAD27 San Sal	North American 1927- San Salvador Island	Puerto Rico	Puerto Rico & Virgin Isl.
NAD83	North American 1983- Alaska, Canada, Central America, CONUS, Mexico	Qatar National	Qatar National- Qatar South Greenland
Naparima BWI	Naparima BWI- Trinidad and Tobago	Qornoq	Qornoq- South Greenland
Nhrwn Masirah	Nahrwn- Masirah Island (Oman)	Reunion	Reunion- Mascarene Island
Nhrwn Saudi A	Nahrwn- Saudi Arabia	Rome 1940	Rome 1940- Sardinia Isl.
Nhrwn United A	Nahrwn- United Arab Emirates	RT 90	Sweden
Obsrvtorio '66	Observatorio 1966- Corvo and Flores Islands (Azores)	Santo (Dos)	Santo (Dos)- Espirito Santo
Old Egyptian	Old Egyptian- Egypt	Sao Braz	Sao Braz- Sao Miguel, Santa Maria Islands
Old Hawaiian	Old Hawaiian- Mean Value	Sapper Hill '43	Sapper Hill 1943- East Falkland Island
Oman	Oman- Oman	Schwarzeck	Schwarzeck- Namibia
Ord Srvy GB	Old Survey Great Britain- England, Isle of Man, Scotland, Shetland Isl., Wales	SE Base	Southeast Base- Porto Santo and Madiera Islands
		South Asia	South Asia- Singapore
Pico De Las Nv	Canary Islands	Sth Amrcn '69	S. American '69- Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Venezuela, Trin/Tobago

SW Base	Southwest Base- Faial, Graciosa, Pico, Sao Jorge and Terceira
Taiwan	Taiwan
Timbalai 1948	Timbalai 1948- Brunei and E. Malaysia (Sarawak and Sabah)
Tokyo	Tokyo- Japan, Korea, Okinawa
Tristan Ast '68	Tristan Astro 1968- Tristan da Cunha
Viti Levu 1916	Viti Levu 1916- Viti Levu/Fiji Islands
Wake-Eniwetok	Wake-Eniwetok- Marshall
WGS 72	World Geodetic System 72
WGS 84	World Geodetic System 84
Zanderij	Zanderij- Surinam (excluding San Salvador Island)
User	User-defined custom datum

Navigation Terms

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

Bearing (BRG)—The compass direction from your current location to a destination.

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

Depth—the depth below transducer. This field is only active if there is a transducer connected to the GPSMAP 176/176C.

Distance (Dist)—The distance from current location to a destination.

Dist to Destination—The distance from current location to a Goto destination, or the final waypoint in a route.

Dist to Next—The distance from current location to a Goto destination, or the next waypoint in a route.

DOP—Dilution of Precision reflects the quality of the GPS signals and satellite geometry.

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 current location to the indicated route waypoint.

GPS Accuracy—estimated accuracy of the GPS position.

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.

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.

Pointer—an arrow pointing to your destination.

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

Sunrise—the current day's time of sunrise.

Sunset—the current day's time of sunset.

Time Of Day—the current time.

Time To—The estimated time required to reach a Goto destination, or the next waypoint in a route. Also known as "estimated time en route."

Time to Dest—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. See also "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.

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.

Voltage—Current voltage reading being received by unit.

Water Speed—the speed through the water. This field is only active if the GPSMAP 176/176C is receiving speed readings from a NMEA device.

Water Temp—the water temperature. This field is only active if the GPSMAP 176/176C is receiving speed readings from a NMEA device.

Waypoint Destination—The final waypoint in the route, or the destination waypoint.

Waypoint Next—The next waypoint in the route.

Messages

Approaching Turn—You are nearing a turn in a route.

Arriving at Destination—You are nearing your destination.

Batteries Low—You have less than 10 minutes of battery left.

Can't Unlock Maps—No applicable unlock code for one or more maps was found.

Cannot display all found, use city or postal code—The unit found too many items to display. Narrow the search using the city or postal code.

Database Error—Internal problem with the unit. Contact your dealer or Garmin Product Support to have the unit repaired.

Deep Water—The water is deeper than the amount set in the Deep Water Alarm.

Dragging Anchor—The distance set in the Anchor Alarm is exceeded.

Lost Satellite Reception—The unit is unable to continue receiving satellite signals.

Memory Full—Unit memory is full; no further data can be saved.

Near Proximity Point—You are nearing a proximity waypoint.

No Diff GPS Location—RTCM is selected but no DGPS data is being received.

No Tide Stations for that Area—No tide stations within 100 miles of the area.

None Found—No data matched the search criteria.

Off Course—You are off course the distance set in the "Off Course" alarm.

Proximity Memory Full—No additional proximity waypoints can be saved.

Proximity Radius Overlaps—The radii of two proximity waypoints overlap.

Route Already Exists—You have entered a route name that already exists.

Route Memory Full—No additional routes can be saved.

Route Truncated—Uploaded route from another device has more than 50 waypoints.

Route Waypoint Memory Full—No additional route waypoints can be saved.

Shallow Water—The water is shallower than the depth set in the Shallow Water Alarm.

Track Already Exists—A saved track with the same name already exists.

Track Memory Full—No more track data can be stored without deleting old data.

Track Log Full—The track log is full and track recording has been turned off. To record more track points, you need to clear the track log and turn track recording on. This is only displayed when the track recording setting is set to "Stop When Full."

Track Truncated—A complete uploaded track will not fit in memory. The oldest track log points have been deleted.

Transfer Complete—Data transfer has been completed.

Waypoint Already Exists—A waypoint with the same name already exists.

Waypoint Memory Full—The unit has stored the maximum number of waypoints.

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. 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 or change the secondary stations or offsets in the Setup TD field, the active waypoint information reflects those changes. Since the GPSMAP 176/176C 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 Setup–Location 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.

```
LORAN TD Setup
LORAN Chain Number
GRI_8970

TD Station 1    TD Offset 1
W               0.0

TD Station 2    TD Offset 2
Y               0.0

        Save
```
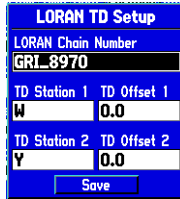
To set up Loran TD from the Main Menu:

1. Press **MENU** twice to display the Main Menu.

2. Using the **ROCKER**, highlight the **Location Format** field on the **Setup–Location Tab** and press **ENTER**.

3. Highlight **Loran TD** and press **ENTER**.

4. Highlight **Setup** and press **ENTER**.

5. To change the settings of any of the five fields, highlight the field, press **ENTER** select/enter the desired setting, then press **ENTER**.

6. When done, highlight **Save** and press **ENTER**.

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. You must 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 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.

You must know your GRI chain number and secondary stations to create a LORAN TD position. For more information please read our LORAN TD Position Format Handbook, available at the Garmin Web site (www.garmin.com/support/userManual.jsp.)

Optional Accessories

The following optional accessories are designed to enhance the operation of the GPSMAP 176/176C.

To obtain replacement parts and optional accessories, contact your Garmin Dealer, Garmin Product Support in the U.S.A. at 800-800-1020, or Garmin Europe at 44-0870-8501241.

⚠ **WARNING:** *Garmin accessories have been designed and specifically tested for use with Garmin products. Accessories offered by other manufacturers have not been tested or approved for use with Garmin products. Use of such accessories could cause damage to the GPSMAP 176/176C and void the warranty.*

MapSource Software CD-ROMs—Enhance the basemap, create waypoints and routes from your PC. MapSource offers several detailed mapping options that are compatible with the GPSMAP 176/176C, including MetroGuide, BlueChart, and Fishing Hot Spots.

Programmable Data Cards—Blank data cards are available in 8 MB, 16 MB, 32 MB, 64 MB, and 128 MB sizes. Download street-level map detail, points of interest, business addresses and phone numbers, marine data, topographical information and more from MapSource CD-ROMs to a data card, either directly through your GPSMAP 176/176C using the PC Interface Cable, or with the Data Card Programmer.

USB Data Card Programmer—Programs blank data cards at high speed through a PC.

Pre-Programmed Data Cards—Data cards pre-programmed with either Garmin BlueChart or Fishing Hot Spots map data.

A/C Adapter—Allows you to operate the unit using a standard AC house current.

Automotive Mounting Bracket—Requires the Marine Mount. Kit includes the mounting base, temporary and permanent adhesive pads and a swivel bracket.

Non-Skid Friction Mount—Portable vehicle mount, no installation required.

Carrying Case—Protects the GPSMAP 176/176C when not in use and includes storage for data cards.

Vehicle Power Adapter—Allows the GPSMAP 176/176C to operate from the vehicle's power system through the 12 V adapter.

PC Interface Cable with vehicle Power Adapter—Allows you to connect the GPSMAP 176/176C to a vehicle's electrical system on one end, and a PC, beacon receiver, marine autopilot or other compatible device on the other end.

Software License Agreement

BY USING THE GPSMAP 176/176C, 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.

Product Registration

Help us better support you by completing our online registration today! Have the serial number of your GPSMAP 176/176C handy and connect to our Web site (http://www.garmin.com). Look for the Product Registration link on our Home page.

Use this area to record the serial number (8-digit number located on the back of the box) in case your GPSMAP 176/176C unit 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: ___ ___ ___ ___ ___ ___ ___ ___

Contact Garmin

If you should encounter any difficulty while using your GPSMAP 176/176C, or if you have any questions, in the U.S.A. contact Garmin Product Support by phone: 913-397-8200 or 800-800-1020, Monday–Friday, 8 AM–5 PM Central Time, or by e-mail at sales@garmin.com.

In Europe, contact Garmin (Europe) Ltd. at 44-0870.8501241.

Limited Warranty

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. 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.

Garmin International, Inc.
1200 E 151st Street, Olathe, Kansas 66062 U.S.A.
Tel. 913/397.8200
Fax. 913/397.8282

Garmin (Europe) Ltd.
Unit 5, The Quadrangle, Abbey Park Industrial Estate, Romsey, SO51 9DL U.K.
Tel. 44/0870.8501241
Fax 44/0870.8501251

Online Auction Purchases: 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.

International Purchases: A separate warranty is provided by international distributors for units purchased outside the United States. This warranty is provided by the local in-country distributor and this distributor provides local service for your unit. Distributor warranties are only valid in the area of intended distribution. Units purchased in the United States or Canada must be returned to the Garmin service center in the United Kingdom, the United States, Canada, or Taiwan for service.

The Garmin GPSMAP 176/176C has no user-serviceable parts. Should you ever encounter a problem with your unit, please take it to an authorized Garmin dealer for repairs.

The GPSMAP 176/176C is fastened shut with screws. Any attempt to open the case to change or modify the unit in any way will void your warranty and may result in permanent damage to the equipment.

FCC Compliance

The GPSMAP 176/176C 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 may cause harmful interference to radio communications if not installed and used in accordance with the instructions. 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 GPSMAP 176/176C 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.

Safety Information

CAUTION: Use the GPSMAP 176/176C 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 Simulator Mode prior to actual use. When in actual use, carefully compare indications from the GPSMAP 176/176C to all available navigation sources, including 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. THIS PRODUCT SHOULD NOT BE USED TO DETERMINE GROUND PROXIMITY FOR AIRCRAFT NAVIGATION.

CAUTION: 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 save navigation—and, as always, the user is responsible for their prudent use.

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: The Global Positioning System (GPS) 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 176/176C is a precision electronic NAVigation AID (NAVAID), any NAVAID can be misused or misinterpreted, and therefore become unsafe.

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.

Because the Garmin GPSMAP 176/176C can be used for vehicular navigation, important safety considerations must be followed. Please read and observe the following instructions.

Do Not Mount Where Driver's Field of Vision is Blocked
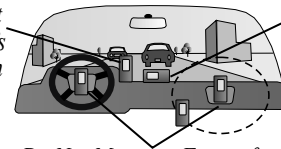
Do Not Place Unsecured on the Vehicle Dash

Do Not Mount in Front of an Airbag Field of Deployment

WARNING: For use in vehicles, it is the sole responsibility of the owner/operator of a vehicle with the GPSMAP 176/176C installed to place and secure the device so it will not interfere with the vehicle operating controls and safety devices, obstruct the driver's view of driving conditions, or cause or personal injury in the event of an accident.

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For the latest free software updates (excluding map data) throughout the life of your Garmin products, visit the Garmin Web site at www.garmin.com.