

# **GlobalNav 200<sup>TM</sup>**

**INSTALLATION AND  
OPERATION INSTRUCTIONS**

**L<sup>®</sup> LOWRANCE**

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### **WARNING!**

**USE THIS UNIT ONLY AS AN AID TO NAVIGATION. A CAREFUL NAVIGATOR NEVER RELIES ON ONLY ONE METHOD TO OBTAIN POSITION INFORMATION.**

**Never use this product while operating a vehicle.**

### **CAUTION**

When showing navigation data to a position (waypoint), this unit will show the shortest, most direct path to the waypoint. It provides navigation data to the waypoint regardless of obstructions. Therefore, the prudent navigator will not only take advantage of all available navigation tools when travelling to a waypoint, but will also visually check to make certain a clear, safe path to the waypoint is always available.

The storage temperature for your unit is from -4 degrees to +167 degrees Fahrenheit (-20 to +75 degrees Celsius). Extended storage temperatures higher or lower than specified will cause the liquid crystal display to fail. Neither this type of failure nor its consequences are covered by the warranty. For more information, consult the factory customer service department.

All features and specifications subject to change without notice.

Lowrance Electronics may find it necessary to change or end our policies, regulations, and special offers at any time. We reserve the right to do so without notice.

All screens in this manual are simulated.

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## **INTRODUCTION**

Welcome to the exciting world of GPS! Whether you're a first-time user or a professional navigator, you'll find the GlobalNav 200 is a full-featured GPS receiver at a price that was impossible just a few years ago. The Rockwell® receiver built inside has 12 channels that will track all of the satellites that are in view of your location. It's acquisition time and tracking ability are second to none in its class.

The Global Positioning System (GPS) was developed by the United States Department of Defense as a 24-hour a day, 365 days a year global navigation system for the military. Civilian availability was added with less accuracy using the same satellites. Twenty-four satellites orbit the Earth. Three of these satellites are spares, unused until needed. The rest virtually guarantee that at least four satellites are in view of anyplace on Earth at all times.

The system requires three satellites in order to determine a position. This is called a 2D fix. It takes four satellites to determine both position and elevation, (your height above sea level - also called altitude.) called a 3D fix.

Remember, the unit must have a clear view of the satellites in order to receive their signals. Unlike radio or television, GPS works at very high frequencies. The signals can be blocked easily by trees, buildings, even your body. Fortunately, they do travel through glass and plastic, so your receiver will work in the car, if it has a clear view of the satellites through the windshield or side windows. Let someone else drive if you use it in a car or other vehicle.

### **Never use this GPS receiver while operating a vehicle!**

The first time you use this unit, walk outside and turn it on in your backyard, an open field or park. Once it locks onto the satellites, you can experiment with it around buildings and trees. This will give you some idea of its sensitivity to blockage.

Like most GPS receivers, this unit doesn't have a compass or any other navigation aid built inside. It relies solely on the signals from the satellites to calculate a position. Speed, direction of travel, and distance are all calculated from position information. Therefore, in order for it to determine direction of travel, you must be moving and the faster, the better. This is not to say that it won't work at walking speeds - it will. There will simply be more "wandering" of the data shown on the display.

## **S/A - What is it?**

Another factor that greatly influences the receiver's ability to determine position is SA. The United States government intentionally degrades the satellites signal for civilian users. They introduce small errors into the satellite's signals that makes the GPS receiver less accurate. These errors are called selective availability, or SA. How bad is it? They guarantee that the position reported by a GPS receiver that meets their specifications is within 100 meters horizontally and 150 meters vertically 95% of the time. (The position can be better than that or worse than that the other 5% of the time.) In other words, the position shown on your receiver is within 100 meters of your actual position, 95% of the time. That's over 300 feet! Not exactly pinpoint accuracy, but then few people need positioning accuracy greater than this. However, if you do want better performance, (and who doesn't?) many manufacturers (including Lowrance) sell a DGPS receiver that attaches to your GPS receiver. The DGPS system transmits correction signals that nullify the effects of SA. The DGPS receiver takes signals from these land-based transmitters and gives them to the GPS receiver which then uses them to show a more accurate position. The ironic part is the federal government implemented SA and is also operating many DGPS transmitters. (You can use the signals from all of the Coast Guard DGPS stations for free, by the way.) The downside to this is it requires another piece of electronic gear (the DGPS receiver) which usually isn't small enough to carry with you, but will work nicely on a vehicle. And you have to be close enough to a station to receive the DGPS signals.

## **Don't Get Lost**

Generally, you find that using your GPS receiver without DGPS is both easy and amazingly accurate. It's easily the most accurate method of electronic navigation available to the general public today. Remember, however that this receiver is only a tool. Always have another method of navigation available, such as a chart or map and a compass. It's a good idea to carry spare batteries with you, especially if you're venturing into unknown territory.

Also remember that this unit will always show navigation information in the shortest line from your present position to a waypoint, regardless of terrain! It only calculates position, it can't know what's between you and your camp, for example. It's up to you to safely navigate around obstacles, no matter how you're using this product.

## GETTING STARTED

### Power

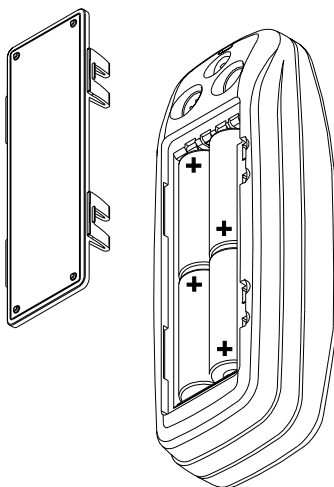
This unit operates from four AA batteries, or one DURACELL® NiMH rechargeable battery, or from 5 to 16 volts DC using a CA-2 external power cable (not included). If the power cable is used, the unit automatically switches to it if the external power is greater than the battery voltage. If for any reason the external power fails, the unit automatically switches to the batteries.

### BATTERIES

The unit requires four AA batteries. We recommend you use alkaline batteries for the best trade-off between battery life and cost. However, you can use nickel-cadmium (ni-cad), or lithium batteries. You can also use rechargeable alkaline batteries such as RayOVac® Renewals®. With the exception of lithium, none of the above batteries will last as long as standard alkaline batteries. We recommend DURACELL® brand, but others will work. Do not use “heavy-duty” batteries or any type other than the ones listed above. Do not mix different types of batteries. (For example, don’t use both alkaline and ni-cad batteries at the same time.)

### Battery Installation

First turn the unit so that its back is facing you. Push the two tabs to the left and remove the battery cover as shown at right. Install the batteries according to this diagram. (There’s a decal in the battery compartment showing the correct polarity, also.) Replace the battery compartment cover and the unit is ready for use.



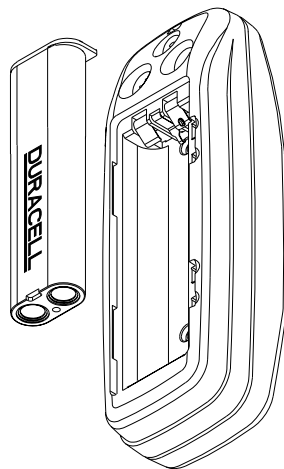
### NiMH Battery

The DURACELL® DR-121 nickel-metal hydride (NiMH) battery replaces the four standard batteries. It is sold as an accessory, model BR-1 which includes a charger custom designed for the DR-121. The battery never needs to be removed from the unit, since the charger connects to the GPS receiver and charges the DR-121. You can even use the receiver while the battery is charging!

To install the NiMH battery, remove the battery cover and place the battery into the compartment as shown on the next page. It will only fit one way, so if it’s difficult to install, simply turn it over and drop it into place.

Replace the compartment cover and follow the charging instructions included with the BR-1.

(Note: The DR-121 is the only battery that can be recharged in this unit! Using the external power cable alone does not charge the battery! You must use a charger supplied by Lowrance in order to charge the battery. Also, this charger will only charge a DR-121. It will not charge any other type of battery, including nicads or rechargeable alkalines.)



### External Antenna

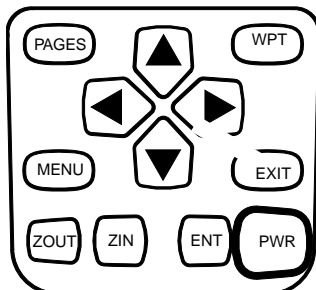
Although this GPS receiver is extremely sensitive, it can be used in locations where the built-in antenna simply cannot receive signals from enough satellites. A second connector on the back of the unit is for an external antenna. The Lowrance model EA-2 antenna plugs directly into this connector. Other antennas may work. If you use an antenna other than Lowrance, it will need to be a passive antenna. This unit does not supply power to the antenna.

### KEYBOARD

The keyboard has twelve keys. The arrow keys are tied to most of the features, letting you easily move the plotter's cursor, navigate through the menus, make selections from menus, and other tasks.

The WPT key lets you create, save, and recall waypoints and routes. The PAGES key switches the unit between the three major displays: windows, navigation, and plotter. To select different features, or to modify functions, press the MENU key. The Z-IN and Z-OUT keys zoom-in and zoom-out your view on the plotter screen. The ENT and EXIT keys let you enter or erase selections. The PWR key turns both the Global-Nav 200 and it's lights on and off.

Note: To prevent an accidental power shut-down, you must hold the PWR key down for a few seconds in order to turn the unit off.





## OPERATION

### Turning Power On

To turn the GlobalNav 200 on, simply press the PWR key. A screen similar to the one at right appears. Read the message on the screen, then press the EXIT key to erase it. The GlobalNav 200 is now ready for use.



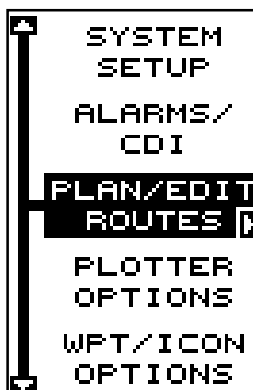
DO NOT  
RELY ON  
THIS  
PRODUCT  
AS YOUR  
PRIMARY  
SOURCE OF  
NAVIGATION  
  
PRESS EXIT

### MENUS

Most of the GlobalNav 200's adjustments and features are found on "menus". Pressing the MENU key lets you view the menus. Different menu items are added to the basic list, depending on which page (plotter, navigation, or windows) the unit is on. This gives you the features that are specific to the page you are on, but also has items that are used on all pages.

Pressing the up or down arrow keys moves the black box to highlight different menus on the list. Pressing the right arrow key selects the highlighted menu item.

To erase a menu, press the EXIT key.



SYSTEM  
SETUP  
  
ALARMS/  
CDI  
  
PLAN/EDIT  
ROUTES  
  
PLOTTER  
OPTIONS  
  
WPT/ICON  
OPTIONS

## Finding Your Position

### Cold Start

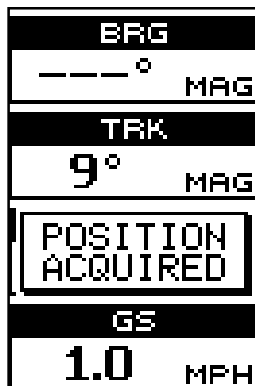
When the GlobalNav 200 is turned on for the very first time, it doesn't know where it is, nor what the local time or date is. If you tell it your position, time, and date, the unit should take less time to lock-on to the satellites and give you a fix or position.

However, if you don't want to push buttons at this time, that's fine. The GlobalNav 200 will lock onto the satellites and give you a position without any input from you. This is called a "cold-start". It simply means that the unit is searching without help for the satellites that are in orbit. A cold-start can take over two minutes to acquire enough satellite data to determine your position, although it typically takes less time than that.

To use your GlobalNav 200, first make certain you have a clear view of the sky, free from any obstructions such as trees or buildings. Also, don't

try to use it under a carport, covered boat dock, or inside a building. Turn the power on, press the EXIT key to erase the opening message and watch the display.

As you wait for the GlobalNav 200 to find your position, you'll see numbers flashing on the display. Anytime you see flashing numbers, it means the GlobalNav 200 does not have a position! Do not rely on any data that is flashing! Once the GlobalNav 200 locks on to the satellites and finds your position, it shows a "Position Acquired" message on the screen. It also stores the satellite data in its memory. The next time you use the unit, it should take much less time to lock on.



That's all you have to do to find your position. Your local time display may not be correct when the cold start method is used. See the initialization section for details on changing the time.

## Finding Your Position

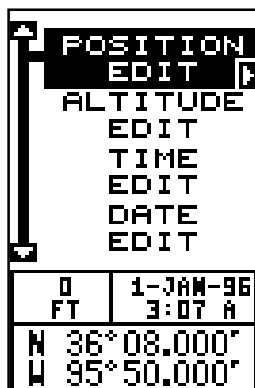
### Initialization

A cold-start as described above can take over two minutes to find your position. A faster method is to initialize the GlobalNav 200 manually. To do this, first press the PWR key. Next, read the message on the screen and press the EXIT key to erase it. Now press the MENU key.

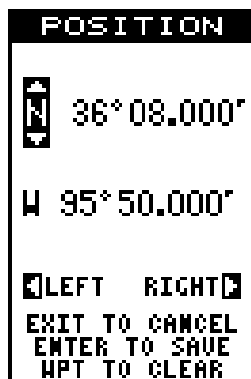
Press the up or down arrow keys until the "GPS SETUP" menu is highlighted. Now press the right arrow key. Next, using the down arrow key, highlight the "INIT GPS" (initialize GPS) menu, then press the right arrow key. The screen shown at right appears.

This is the GPS initialization screen. The position, altitude, time, and date the GlobalNav 200 is currently using to find the satellites is shown at the bottom of this screen. Changing these values to your local position and time will speed the position lock.

To change the position, press the right arrow key while the "POSITION" box is highlighted. The screen shown at right appears.



If your latitude is south, press the up or down arrow key to change it. If it is north, press the right arrow key to move the change box to the first number in the latitude. Now press the up arrow key to increase the number or the down arrow key to decrease it. Once the first number in the latitude is set, press the right arrow key once to move to the next number in the latitude.



Keep pressing the arrow keys until the latitude and longitude are set to your local position. (Note: This position does not have to be very accurate. If you can get it within one degree of your actual position, that will be fine.) When it's set, press the ENT key. The GlobalNav 200 accepts your entry and returns to the GPS setup menu.

Now change the local time and date (if they're incorrect) on this screen. (Don't worry about altitude.) When everything is acceptable, press the EXIT key repeatedly to return to a page screen. The GlobalNav 200 will instantly use the data you entered to find the satellites in the sky. (The unit knows which satellites will be available at the position, date, and time you entered. Therefore, it will only look for those satellites, making the search time much shorter than a cold start which looks for all of the satellites until it finds three.)

Once the GlobalNav 200 finds and locks on to three satellites, it stops flashing the numbers on the display. (Note: Altitude will still flash until the unit locks on to the fourth satellite. It takes four satellites to determine altitude.)

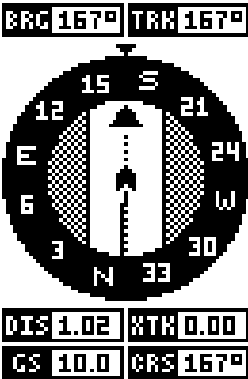
### **IMPORTANT!**

If the data shown in digital numbers on any screen is flashing, it means that data is invalid. **DO NOT RELY ON ANY NUMBERS THAT ARE FLASHING!** Usually, this happens when the GlobalNav 200 has lost its lock on the satellites. The data that is flashing was the last known when the unit lost its navigational capability.

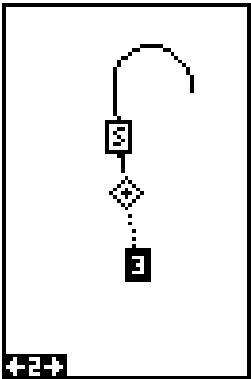
**DO NOT NAVIGATE WITH THIS UNIT UNTIL THE DATA STOPS FLASHING!**

**POSITION/NAVIGATION DISPLAYS**

The GlobalNav 200 has navigation, plotter, and windows group pages. These screens were designed to show data that is used most often. The three default screens are shown below.



NAV-1



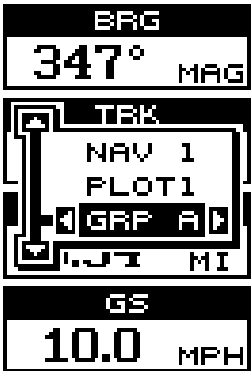
PLOT-1



GROUP A

To change screens, simply press the PAGES key. A screen similar to the one at right appears. Now press the up or down arrow keys to change pages. (The windows display is shown as "GRP" (groups). For example, Group A is the first windows group on the PAGES menu.) Press the right arrow key to see more screens on each page. When the desired screen appears, press the EXIT key to clear the menu.

Note: For a list of abbreviations used on the displays, see the back of this manual.

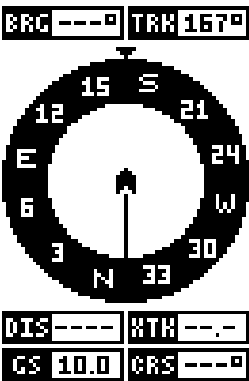


**Navigation Screens**

There are two navigation screens. Nav screen number one shows a graphical view of your trip, the other screen shows all navigation details in large digital numbers. You can customize the navigation screens to show different data than the ones chosen by Lowrance. See the "Customize Screen" section for more details.

**Nav Screen #1**

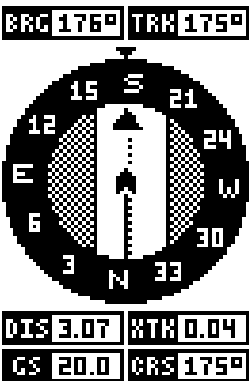
This screen is dominated by a compass rose (See the screen at right.) Your position is in the center of the circle, designated by an arrow that always points straight up. Your track (direction of travel) is indicated by an arrow pointing down toward the compass rose at the top center of the screen. Your track in digital numbers is also shown to the right of the arrow. On the screen shown at right, the track is 167°. The line extending behind the arrow in the center shows your track history, or path you've travelled.



NAV-1

Your speed over ground or Ground Speed (GS) shows in the digital box in the bottom left corner of the screen. The screen looks like the one above when you're not navigating to a waypoint. (See page 28 for information on waypoint navigation.) If you navigate to a waypoint, the screen looks like the one at right.

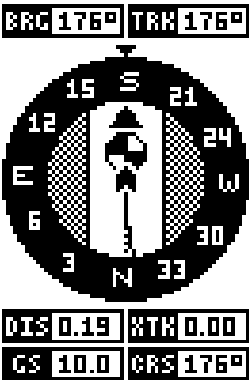
The bearing to the destination waypoint is shown in the upper left corner of the screen. Bearing is also shown by the large arrow pointing up to the compass. The bearing is 176° on the screen at right.



The lines on either side of the present position arrow show the cross track error range. In other words, (using the screen above as an example) if the arrow crosses the line on either side, you are .10 miles to the left or right of the desired course.

A circle depicting your destination appears on the screen as you approach the waypoint as shown on the screen at right.

The digital boxes on the bottom of the screen show your distance to go to the destination (DIS), ground speed (GS), cross track error (XTK), and course (CRS).



Course (CRS) is the bearing from your starting location to your destination. (Remember, course

has nothing to do with your present position, except for your starting location.) It's shown as a dotted line on the NAV 1 display. This is shown as a reminder so that if you deviate from your original course, you can easily return to it. (A "course" is a proposed path over the ground. A "track" is your actual path over ground.)

## Nav Screen #2

This navigation screen shows navigation information in large digital numbers. To view this screen, press the PAGES key, then press the up arrow key until the "NAV 1" label is highlighted. Now press the right arrow key. A screen similar to the one at right appears. Press the EXIT key to erase the page menu.

This screen is composed of eight digital display boxes, showing your track (TRK), and ground speed (GS). The other boxes show navigation data when a waypoint is recalled, including bearing to the waypoint (BRG), course (CRS), distance to waypoint (DIS), estimated time en route (ETE), and cross track error (XTK) along with a CDI. See below for more information on the CDI.

BRG 171°	DIS 10.2
TRK 163°	GS 10.0
ETE 1:02:19	CRS 170°
CDI 0.25 · · 0   ·	XTK 0.18

## Course Deviation Indicator (CDI)

The CDI shows your distance to the left or right of the desired course. You must recall a waypoint or run a route to use the CDI. The vertical line in the center of the box shows the direction to the destination. For example, if you're travelling straight towards the destination, the line stays in the center of the CDI. If you turn to the right, the line moves to the left, showing that the destination is to your left. The CDI's range shows in the upper left corner. The default is 0.25 mile. The dots at the far right and left side of the CDI represent 0.25 mile. If the line is on either of these dots, then you are 0.25 miles off course. Remember, if the bar moves to the left, then you are too far to the *right* of the desired course line, and vice-versa. On the indicator shown above, we are almost 0.2 mile to the left of the desired course. You can adjust the CDI's range through the "ALARMS/CDI" menu.

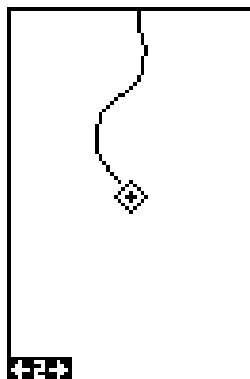
CDI 0.25 · · 0   ·
-----------------------

Using the CDI with the plotter helps you visualize your position in relation to the course. The CDI is on several of the GlobalNav 200's windows.

## Plotter

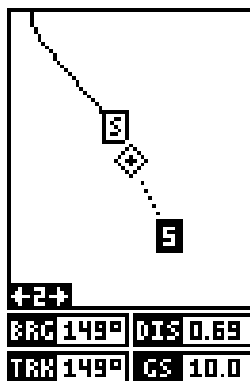
The plotter lets you see your course and track from a “birds-eye” view. If you’ve recalled a waypoint, the plotter shows your starting location, present position, and destination. However, you don’t have to recall a waypoint to use the plotter.

To use the plotter, simply press the **PAGES** key, then press the up or down arrow keys until the “Plot” label is highlighted. Press the **EXIT** key to erase the page menu. A screen similar to the one at right appears. This is plot-1. The diamond flashing in the center of the screen is your present position. The solid line extending from the diamond is your plot trail, or path you’ve travelled. The plotter’s range is shown in the lower left corner of the screen. In this example, the plotter’s range is two miles from the left edge of the screen to the right.



There are two different plotter screens available. Plot screen number 1 shows by default. Your current position displays at the center of the screen as a cross surrounded by a flashing diamond.

To view the other plotter screen, press the **PAGES** key. Press the up or down arrow key to move the black box to the “PLOT” label. Now press the right arrow or left arrow key to select plot-2. This screen (as shown at right) has navigation data displayed at the bottom of the screen in digital numbers. This data is active whenever you’ve recalled a waypoint. Press the **EXIT** key to erase the page menu.



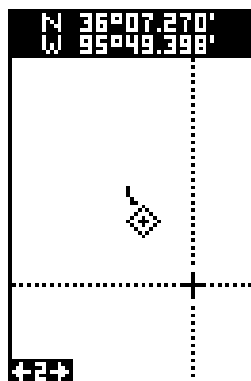
This screen shows bearing to waypoint (**BRG**), distance to waypoint (**DIS**), ground speed (**GS**), and track (**TRK**).

Use the **Z-IN** and **Z-OUT** keys to enlarge or reduce the plotter area. This changes the plotter’s range. The available ranges are: 0.1, 0.15, 0.2, 0.3, 0.4, 0.6, 0.8, 1, 1.5, 2, 3, 4, 5, 6, 8, 10, 15, 20, 30, 40, 60, 80, 100, 150, 200, 300, 400, 600, 800, 1000, 1500, and 2000 miles.

## Cursor

Pressing an arrow key while the plotter is on shows two dotted lines that intersect at your present position. These dotted lines are called a “cursor” and have a variety of uses.

You can move the cursor around the display by pressing the arrow keys in the direction you want it to move. This lets you view different areas of the plotter, away from your present position. When it's turned on, the zoom-in and zoom-out keys work from the cursor's position - not the present position, so you can zoom in on any detail, anywhere while navigating. The latitude/longitude of the cursor shows in the box at the top of the plot-1 screen whenever the cursor is activated. The cursor is also used to place and erase icons and waypoints. Press the EXIT key to erase the cursor.



## PLOTTER OPTIONS

The GlobalNav 200 lets you customize the plotter using the "Plotter Options" menu. To use this menu, first press the MENU key, then use the up or down arrow keys to highlight the "Plotter Options" label. Finally, press the right arrow key. The screen shown at right appears.

### Record Trail On / Off

The line extending from the present position diamond on the plotter is called the plot trail. As each dot on the trail is placed on the screen, it's also saved in memory. The plot trail recording can be turned off, if desired. To turn it off, press the up or down arrow key until the "Plot Trail" menu is highlighted and press the left arrow key.



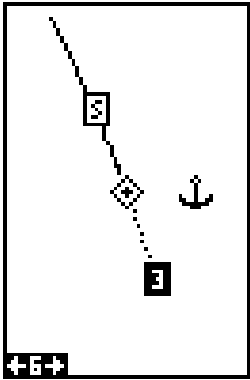
### Plotter Orientation

Normally, the GlobalNav 200 shows the plotter with north always at the top of the screen. This is the way most maps and charts are printed on paper. This is fine if you're always travelling due north. Waypoints you see to your left corresponds to the left side of the plotter, to your right is shown on the right side of the plotter, and so on. However, if you travel any other direction, the plotter doesn't line up with your view of the world.

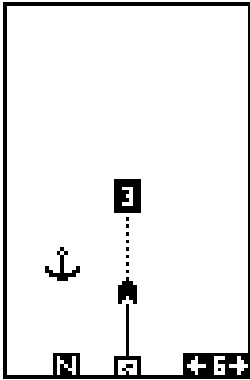
To correct this problem, the GlobalNav 200 has a track-up mode that rotates the plotter as you turn. Thus, what you see on the left side of the screen should always be to your left, and so on. It also has a course-up mode that keeps the plotter at the same orientation as your initial bearing to the waypoint.



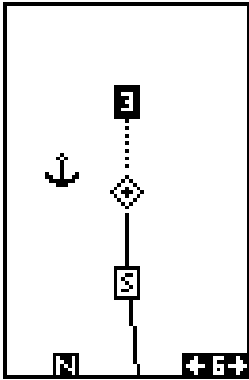
In the examples shown below, we're travelling southeast (about 150° magnetic). In the north-up view, the present position indicator appears to move towards the lower right corner of the screen. The anchor icon shown on the right side of the screen is actually on our left. North is always at the top center of this screen.



NORTH-UP MODE



TRACK-UP MODE



COURSE-UP MODE

In the track-up view, the present position symbol (which has changed to an arrow) moves straight towards the top of the display. As you can see, the anchor icon is now shown in its proper orientation - to our right. A "N" shows to help you see which direction is north when the track-up mode is on. Remember, in the track-up mode, the screen rotates as you change direction. It always keeps your direction of travel (track) heading towards the top of the screen.

In the course-up mode, the screen is locked into your original bearing to the recalled waypoint, regardless of your track.

To select the desired mode, highlight the "ROTATE" label on the "Plotter Options" menu, then press the left or right arrow keys until the desired mode appears. Press the EXIT key to leave this menu

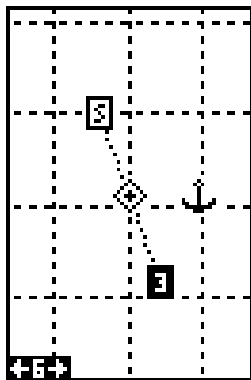
**Clear Current Plot Trail**

The line extending from the present position diamond on the plotter shows the path you've taken, This is the plot trail. To erase the plot trail, highlight the "ClearTrail" label on the Plotter Options menu, then press the right arrow key. A message box appears, asking you if you really want to erase the plot trail. Follow the directions on this message box. The GlobalNav 200 returns to the plotter screen with the plot trail erased from the screen.

## Grid Lines

The GlobalNav 200 can place grid lines on the plotter to help you see your position, or the position of waypoints and icons.

To do this, highlight the “Grid” label on the “Plotter Options” menu, then press the right arrow key to turn them on. Press the EXIT key to exit this menu. A plotter screen similar to the one at right appears. The grid lines appear as vertical and horizontal dashed lines.



GRID LINES

## Plotter Update

The plotter places a dot on your trail as you move. It determines when to place a dot depending on either time or distance. By default, it places a dot every three seconds.

To change the update method from time to distance, highlight the “Update By” label, then press the right arrow key. This moves the label from “TIME” to “DIST”.

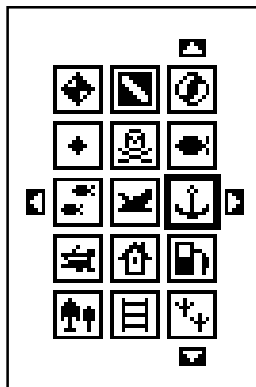
If you want to change the update time or distance, simply highlight either the “UPDT RATE” to change the update time or the “UPDT DIST” to change the update distance, then press the left or right arrow keys until the desired setting appears. Press the EXIT key to erase the plotter menu.

## ICONS

The GlobalNav 200 has fifteen symbols or “icons” available. These icons can be placed anywhere on the plotter screens. These can be used to mark fishing or hunting spots, boat ramps, rest stops, or whatever. You can place an icon at your present position, or at the cursor location.

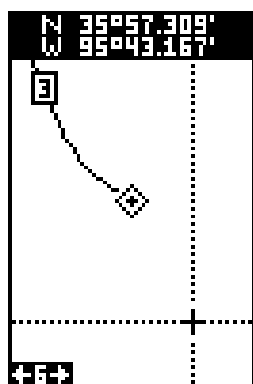
### Place Icon - Present Position

To place an icon at your present position, simply press the ENT key. The screen shown at right appears. Use the arrow keys to move the black box to the desired icon. Now press the ENT key. The plotter screen appears with the icon you selected placed at your position when you first pressed the ENT key, not your present position.

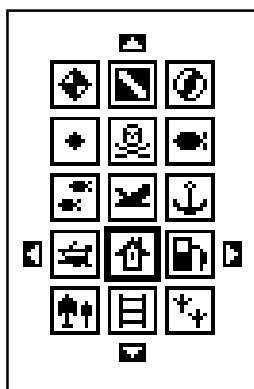


## Place Icon - Cursor Location

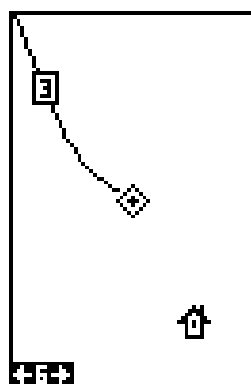
To place an icon at cursor's location, first use the arrow keys to move the cursor to the position that you want to place the icon. Next, press the ENT key. Now select the desired icon using the arrow keys. When it's selected, press the ENT key again. The plotter screen reappears with the icon at the cursor's location. Press the EXIT key to erase the cursor. On the screens shown above, the house icon was selected and placed at the cursor location.



PLACE CURSOR



PRESS ENT KEY  
AND SELECT ICON



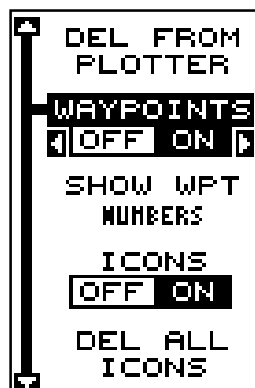
ICON ON PLOTTER

## Erase Icons

To erase an icon from the screen, first press the MENU key, then select the "WPT/Icon Options" menu. A screen similar to the one at right appears.

There are three methods used to erase icons from the screen. You can delete all of the icons, regardless of their position on the display, delete all of the icons of a certain type, or selectively erase individual icons. You can also simply turn all of the icons off without erasing them.

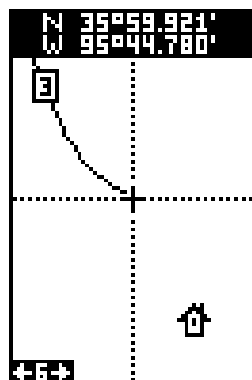
To turn all of the icons off, without erasing them, highlight the **"ICONS OFF ON"** label, then press the left arrow key. To erase all of the icons, highlight the **"DEL ALL ICONS"** menu, then press the right arrow key. A message appears, asking you if you want to delete all icons. Press the right arrow key to erase them. The unit returns to the plotter screen with all icons deleted.



To remove only icons of a certain type, highlight the “DEL ICON TYPE” label. Press the right arrow key. The icon selection menu appears. Use the arrow keys to highlight the icon style that you wish to erase. Press the ENT key when you’re ready to erase the icons. A message appears, asking you if you want to delete the icons of that type. Press the left arrow key to erase them. The unit returns to the plotter screen with all icons of the type you selected erased.



To remove only certain icons, highlight the “DEL FROM PLOTTER” label. Press the right arrow key. The unit returns to the plotter screen with the cursor centered on your present position as shown at right. Use the arrow keys to move the cursor to the icon on the map that you wish to erase. Press the ENT key to erase the icon. If you wish to delete another icon, move the cursor over it and press the ENT key. When you’re finished, press the EXIT key to erase the cursor.



## WINDOWS

This feature gives you 15 different groups of windows so you can use the best navigation display for your situation.

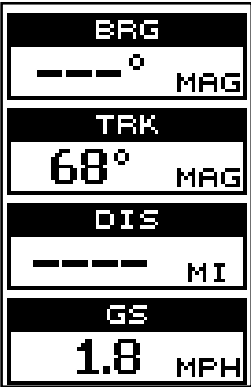
To use the windows feature, press the PAGES key, then highlight the “GROUP A” label as shown at right. Group “A” is visible in the background when you switch to the windows groups. To view each group, simply press the right or left arrow key while the pages menu is showing. Each group shows in the background as you press the arrow keys. When you see the group you want to use, simply



**REPROGRAM WINDOW GROUPS**

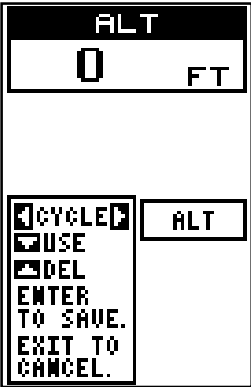
You can customize the window groups to meet your own needs. The GlobalNav 200 gives you 35 different windows that can be rearranged into many combinations.

To reprogram a group, first go to the pages menu and select the group that you wish to change. In this example, we're reprogramming group "A", shown at right.



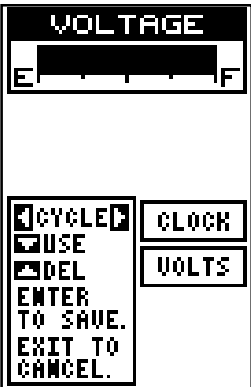
Next, press the MENU key, highlight the "Reprogram Groups" label and press the right arrow key. A screen similar to the one shown at right appears.

The altitude window appears at the top of the screen. To view a different window, press the left or right arrow key. When the desired window appears, press the down arrow key to select it. In this example, we selected the digital clock. The GlobalNav 200 will add this window to the selected group. It then shows the selected window's position, as shown at right. If you want to delete this window from the group, simply press the up arrow key.

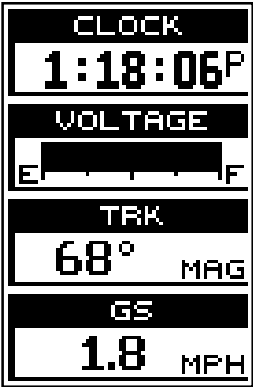


The next window selected was the voltmeter.

Continue selecting windows in this manner until all of the desired windows have been added to the group.

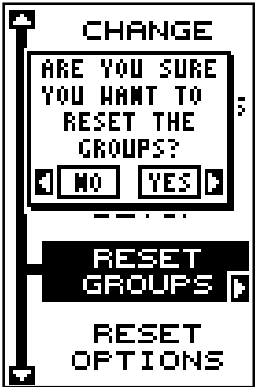


When the last window has been added, the GlobalNav 200 returns to normal operation with your reprogrammed group showing on the screen, as shown at right.



**RESET GROUPS**

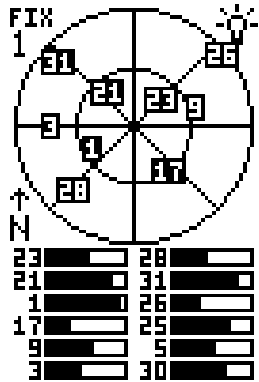
To restore all windows groups to their factory settings, first press the MENU key, then highlight the “System Setup” label and press the right arrow key. Now highlight the “Reset Groups” label on this menu. Press the right arrow key. A message appears, asking if you really want to do this. Press the right arrow key to continue, or the left arrow key to exit without resetting the groups.



press the EXIT key to erase the pages menu.

**Satellite Information Screen (Group O)**

This screen shows technical information about the status of the GPS receiver. The receiver has twelve channels. Data for each channel is shown as bar graphs on the right side of the display. Every satellite in the constellation has a number assigned to it, called the PRN. The bar graph is beside each satellite's number. The higher the bar on the graph, the better the signal is being received from the satellite.



Each satellite is also shown on the circular graph at the top of the screen. This shows you not only which satellites are in your area, but also their direction from your position, and their elevation (distance above the horizon.) The small inner circle represents 45° above the horizon and the large outer circle represents the horizon. A satellite is straight above you when it is at the intersection of the horizontal and vertical lines that pass through the circles. The "N" on the left center of the screen shows the direction of north relative to the satellite graph.

The FIX number in the top left of the screen shows the quality of fix. If the FIX is 9, then it's the best you can get. A FIX of 1 is the worst. The light bulb in the top right corner of the screen shows when the backlight is on.

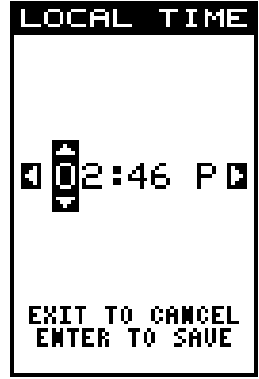
**CLOCK**

Whenever a clock, timer, or alarm is showing on a display, new items appear in the list when you press the MENU key. These items let you set the clock's time, alarms, or the timers.

**Set Local Time**

If the time shown on the clock display is not your local time, change it using the "Set Local Time" function. To do this, press the MENU key, then highlight the "Set Clock" label. Press the right arrow key. The screen at right appears.

Using the right and left arrow keys, move the black box to the first number in the time that you want to change. Now press the up or down arrow keys until the desired number shows. Continue until the time shown in the display is correct, then press the ENT key. This enters the new time and erases



the set local time menu.

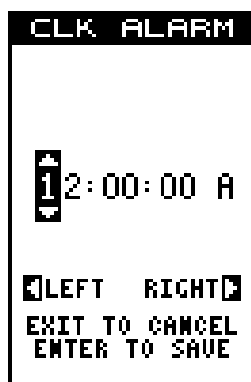
### Clock Alarm

You can set the alarm by using the “Clock Alarm” menu. To set this alarm, press the MENU key while group “J” is showing, then highlight the “Clk Alm Set” label. Press the right arrow key. The screen shown below appears. Using the right and left arrow keys, move the black box to the first number in the time that you want to set. Now press the up or down arrow keys until the desired number shows. Continue until the time shown in the display is correct, then press the ENT key. The alarm is now set.



To turn the alarm on, press the MENU key, then highlight the “CLK ALM” menu. Press the right arrow key. The alarm is now activated.

When the alarm goes off, a message flashes on the screen. Press the EXIT key to turn the alarm off.

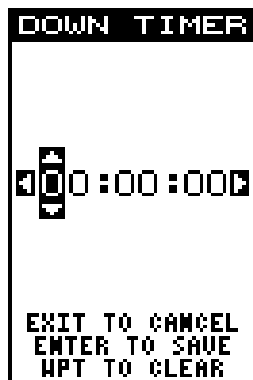


Note: The GlobalNav 200 must be on in order for the alarms to work. In other words, if you set the alarm to go off at 7:00 a.m., then the GlobalNav 200 will have to be on at 7:00 a.m., also.

### Timers

The GlobalNav 200 has two timers built in. One is a countdown timer and the other is a count-up timer. The countdown timer counts down from the time you put in to zero. The count-up timer starts at zero and counts up to the time you entered.

To set either timer, first switch to a window group with a timer. Next, press the MENU key, then highlight the desired timer set menu. In this example, we’re setting the countdown timer. Now press the right arrow key. A screen similar to the one at right appears.

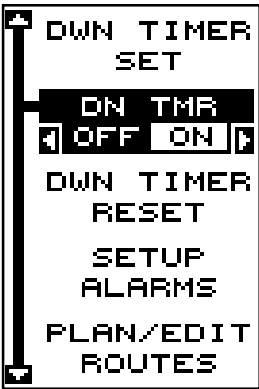


Using the right and left arrow keys, move the black box to the first number in the time that you want to set. (The time is in hours, minutes, and seconds) Now press the up or down arrow keys until



the desired number shows. Continue until the time shown in the display is correct, then press the ENT key.

To start the timer, press the MENU key, then move the black box to the “Dn Tmr Off On” label. Press the right arrow key to start the timer. The timer continues counting until you stop it. If you turn the up timer’s alarm on (press the right arrow key when the black box is on the (Up ALM...Off/On label), it will flash a message when it reaches the time you entered in the up timer set menu. Press the EXIT key to erase the message.



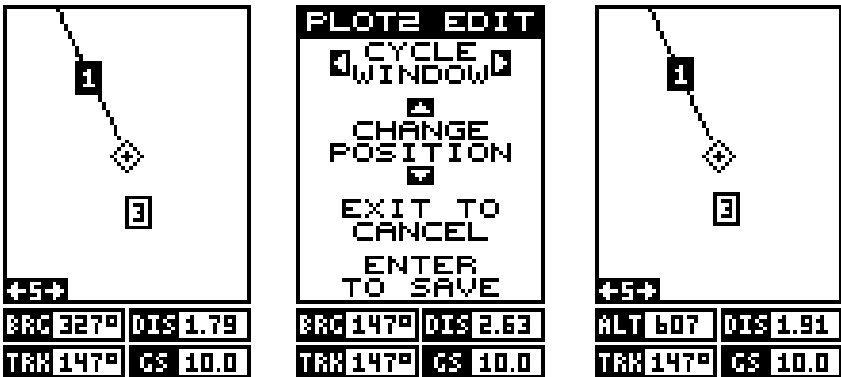
You can reset either alarm to the time you originally set by pressing the MENU key, then moving the black box to either the “Up Tmr Reset” or “DN Tmr Reset” label, then press the right arrow key.

**REPROGRAM BOXES**

The digital boxes on the PLOT-2 and both NAV screens can be reprogrammed. The changes you make to the screen will remain in memory, even if all power is removed from the unit. You can, however, return to the factory settings from the “Preset Groups” item in the “System Setup” menu.

To customize a screen, first switch to the screen that you want to customize. In this example, we’ll change Plot-2. Next, press the MENU key, then highlight the “Reprgr Boxes” menu. Press the right arrow key. The screen shown below center appears.

This is the plot-2 edit screen. The “BRG” box near the left corner flashes,



which means it's ready for change. If you don't want to change this box, simply press the up or down arrow key to move to the box that you do want to change. In this example, we will change the BRG box to altitude (ALT). To do this, simply press the left or right arrow key while the box is flashing. The box changes each time the arrow key is pressed. When the desired box appears, then you can change another box or save your changes by pressing the ENT key. If you want to leave this screen without saving the changes, simply press the EXIT key. In this example, we simply changed the BRG to ALT, then pressed the ENT key. The screen on the right on the previous page is the final version. Use this same method to change the NAV screens.

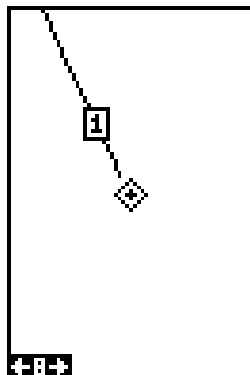
## WAYPOINTS

The GlobalNav 200 gives you the capability of creating your own database of locations, called "waypoints". You can save your present position, cursor position, or enter a latitude/longitude and save it as a waypoint. The GlobalNav 200 can store up to 999 waypoints.

### Saving Your Present Position as a Waypoint (Quick Save Method)

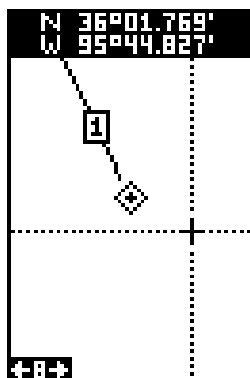
To save your present position, simply press the WPT key *twice*. The GlobalNav 200 puts your current position into the first available waypoint number on the list. A message appears on the display telling you the waypoint number it just used. This also momentarily places you in the database menu. Anytime a database menu is showing, simply press the WPT key once and the unit will store your present position in the waypoint list.

Every time you save a waypoint, the date and time are logged along with the position data. It's position is also placed on the plotter as shown above. In this case, waypoint number one was assigned when we quick-saved our position.

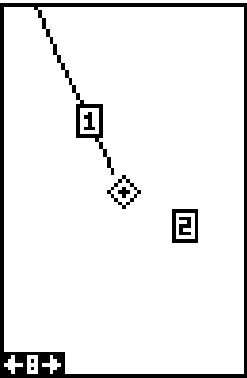


### Saving The Cursor Position as a Waypoint

When the cursor is showing on the plotter and you press the WPT key twice, the GlobalNav 200 puts the *cursor's* position into the first available waypoint number. In the example screen shown at right, the cursor is placed at the desired location. Pressing the WPT twice causes waypoint number two to be placed at the cursor's crosshairs.



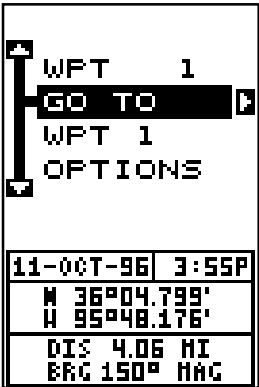
(See the screen at the top of the next page.) A message appears on the display telling you the waypoint number it just used. Wait a few seconds and the menu will clear automatically. Press the



EXIT key to erase the cursor.

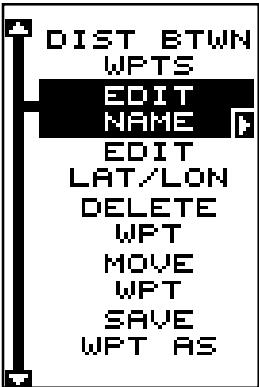
**Saving Your Present Position as a Waypoint  
(Select Number Method)**

The method shown above doesn't let you choose the waypoint number. You can pick the waypoint number, then save your present position. To do this, first press the WPT key once. A screen similar to the one at right appears.



Now press the up arrow key once. This is the waypoint number selection menu. Press the left or right arrow keys until the waypoint number appears that you wish to store your present position. In this example, we're going to store a position as waypoint number 6.

Now press the down arrow key until the "WPT Options" label is highlighted. Press the right arrow key. A screen similar to the one shown at right appears.



Highlight the "SaveWPT As" label (shown at the bottom of the menu) and press the right arrow key when you're at the location you wish to save. This saves your present position under the waypoint number you selected on the first page.

**Saving Cursor Position as a Waypoint**

## (Select Number Method)

To save the cursor position under a specific waypoint number, first position the cursor at the desired position. Then follow the previous instructions for saving your present position as a waypoint using the select number method. Remember, the *method* of saving your present position and the cursor's position is identical.

### Edit Lat/Lon

The GlobalNav 200 lets you enter any latitude/longitude using the keyboard and save it under any waypoint number, from 1 to 750. You can also change any waypoint's position using this method. To do this, first select the waypoint number that you want to save a position under from the waypoint menu. In this example, we'll use waypoint number 10. Next, highlight the "Options" menu and press the right arrow key. Now highlight the "Edit Lat/Lon" menu and press the right arrow key. The screen shown at right appears. Using the left and right arrow keys, highlight each number in the position and change it using the up and down arrow keys. When you're ready to save this position and return to the waypoint screen, press the ENT key. The location you entered shows at the bottom of the screen under the waypoint number you selected. Note: You can also use this method to change the position of an existing waypoint.

LAT/LON	
N	0°00.000'
W	0°00.000'
◀LEFT RIGHT▶	
EXIT TO CANCEL	
ENTER TO SAVE	
WPT TO CLEAR	

## WAYPOINT NAMES

The GlobalNav 200 automatically assigns the waypoint number as a name when the waypoint position is saved. You can find a waypoint by highlighting the name on the waypoint menu as shown below left. Now press the right arrow key. The screen shown below right appears. Use the arrow

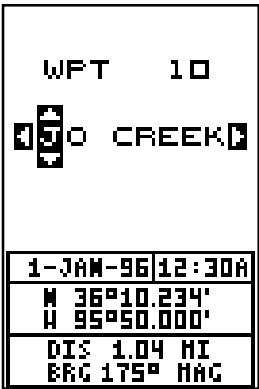
WPT	1
GO TO	
WPT 1	▶
OPTIONS	
11-OCT-96 3:55P	
M 36°04.799'	
W 95°48.176'	
DIS 6.87 MI	
BRG 161° MAG	

WPT	1
WPT 1	▶
11-OCT-96 3:55P	
M 36°04.799'	
W 95°48.176'	
DIS 8.66 MI	
BRG 164° MAG	

keys to scroll through the saved waypoints. Only waypoints that have a position will show using this method.

**Edit Name**

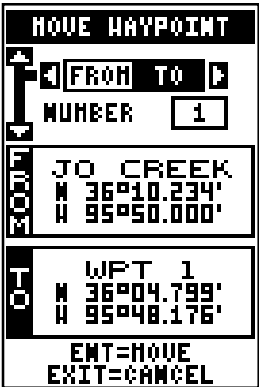
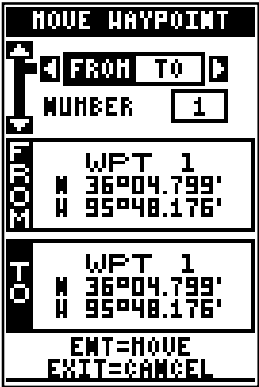
The GlobalNav 200 also lets you assign a name to each waypoint. The name can have up to eight characters. To name a waypoint, first select the waypoint number that you wish to name. Now highlight the “WPT Options” label and press the right arrow key. Finally, highlight the “EDIT NAME” label and press the right arrow key. A screen similar to the one at right appears.



Press the up or down arrow keys to select the first letter in the name. Press the right arrow key to move the black box to the next position in the name. Repeat this sequence until you’ve entered all of the letters in the waypoint name. Press the ENT key to accept this name, the WPT key to erase all characters in the name, or the EXIT key to leave this screen without saving any changes.

**MOVE A WAYPOINT**

You can move all information from one waypoint number to another. In this example, we’ll move all of the information in waypoint number 10 to waypoint number 20. To do this, highlight the waypoint options label on the waypoint screen and press the right arrow key. Now highlight the “Move WPT” label. Press the right arrow key. The screen shown at right appears. The black box is resting on the “From” label. Now press the down arrow key once to highlight the “Number” label. Press the left or right arrow key until the number 10 appears. Now highlight the “TO” label, as shown below. Highlight the “Number” label, then press the right arrow key until the desired waypoint number shows in the box. When everything on this page is correct, press the ENT key.



Note: The names in the “From” and “To” boxes are not the waypoint numbers - they are the waypoint names. When a waypoint is moved from one number to another, the new waypoint number gets the old waypoint name. For example, moving waypoint number 2 to waypoint number 5 deposits the name

“WPT 2” in waypoint 5’s name field.

### DISTANCE BETWEEN WAYPOINTS

The GlobalNav 200 can easily give you the distance between two user waypoints. To do this, first press the WPT key, highlight the “Options” menu and press the right arrow key, then highlight the “Dist Btwn WPTS” label and press the right arrow key. The screen at right appears.

DIST Btwn WPTS

WPT A WPT B

NUMBER 1

WPT 1

N 36°04.799'

W 95°48.176'

WPT 1

N 36°04.799'

W 95°48.176'

DIST- 0.00MI

BRC- 355°MAG

The black box is resting on the “WPT B” label. Now press the down arrow key to highlight the waypoint number label. Press the left or right arrow keys until the desired waypoint appears in the “WPT B” box.

Once you have the first waypoint showing on the screen, then you need to choose the other waypoint that you’re going to measure. Move the black box back to the “Select” label at the top of the screen, then press the left arrow key to select “A”. Now choose the waypoint that you wish to measure. The distance and bearing from the first waypoint “A” to the second waypoint “B” shows at the bottom of the screen. You can select more waypoints to measure at this time or press the EXIT key to erase this screen.

### WAYPOINT OPTIONS

You can customize the look of the waypoints on the plotter, or even turn them off. To do this, first press the MENU key, then highlight the “WPT/Icon Opts” label. Press the right arrow key. The screen shown at right appears.

To keep the waypoints from showing on the plotter, simply press the right arrow key when the “Waypoints” label is highlighted.

DEL ICON TYPE

DEL FROM PLOTTER

WAYPOINTS

OFF ON

SHOW WPT

NUMBERS

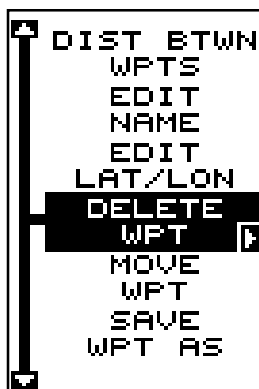
ICONS

OFF ON

To change the method waypoints show on the plotter, highlight the “SHOW WPT” label. The default is numbers. In other words, when the waypoint shows on the plotter, it’s number appears in a box, showing both its identity and location. You can change this from number to name, or simply an empty box (position) showing no identifiable name or number by pressing the left or right arrow keys until the desired method appears. Now press the EXIT key. This erases the menu and returns to the plotter with your selection.

## Delete a Waypoint

To erase all of the information in a waypoint, first press the WPT key, then select the waypoint you want to erase. Now highlight the “Options” label and press the right arrow key. Finally, highlight the “Delete WPT” label and press the right arrow key. A message appears, asking if you really want to delete this waypoint. Press the right arrow key to delete it, the left to exit without deleting the waypoint.



## ROUTES

You can connect several user waypoints together to form a route. When you recall the route, the GlobalNav 200 will show you navigation information to the first waypoint in the route, then when you reach that waypoint, it switches to the next waypoint, and so on until you reach the last waypoint in the route.

To create a route, first press the MENU key, highlight the “PLAN/EDIT ROUTES” label, and press the right arrow key. The screen shown at right appears.

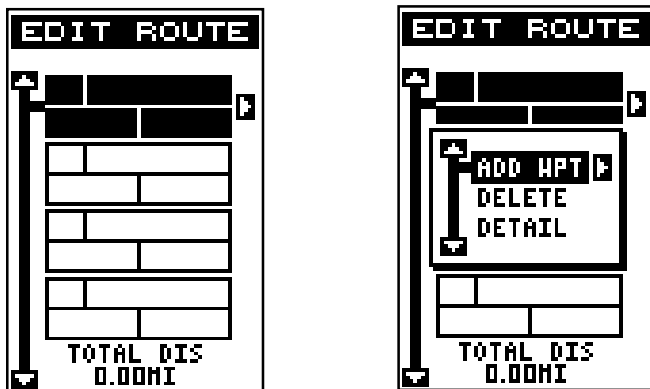
This unit can store up to 99 different routes. Route number one shows on this page. If you wish to create a route using a different number, simply press the left or right arrow keys until the desired route number appears. In this example, however, we'll use route number one.



At the bottom of this menu is the “Edit Name” label. If you wish to name the route, highlight that label, then press the right arrow key. Use the arrow keys to name the route, (you can use up to eight characters in the name) then press the ENT key when you're finished.

To add waypoints to the route, highlight the “Edit Route” label and press the right arrow key. The screen shown at the top of the next page appears. This is the waypoint list screen. This shows all of the waypoints that form

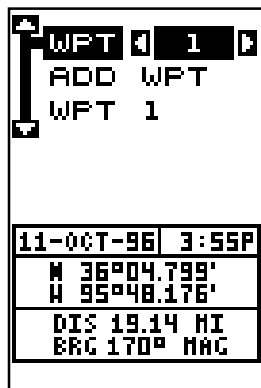
the route. To select the first waypoint in the route, press the right arrow key. A new menu appears as shown below right.



This menu lets you go to the waypoint selection menu, delete a waypoint from the route, or see details about any waypoint in the route. Since we want to add a waypoint to the route, press the right arrow key on the “Insert From WPTS” label. The screen shown below appears.

## Select Waypoints

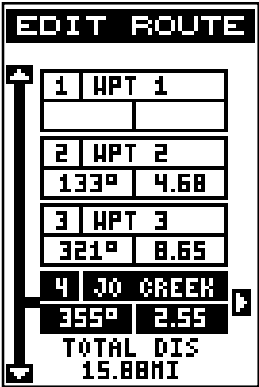
Select the first waypoint either by using the waypoint number at the top of the screen or waypoint name menus. As you move through the list of saved waypoints, their date and time saved, position, and distance and bearing from your present position show at the bottom of the screen. When the desired waypoint appears that you want to use as the first waypoint on the route, move the black box to the "Add WPT" label, then press the right arrow key. The unit returns to the route planning screen with this waypoint placed in the first location on the list.



To add more waypoints to the route, simply press the down arrow key to the next position on the list and press the right arrow key. Continue until all of the waypoints have been added to the route.



As you add waypoints to the list, their bearing and distance from each other is shown to the right of the waypoint name. On the screen at right, waypoint 2 is on a bearing of 133° and 4.68 miles from waypoint 1. The total route distance is shown at the bottom of this screen.



### Finishing the Route

When you've selected all of the waypoints for the route, simply press the EXIT key until you return to the navigation, plotter, or windows screen. Your route is saved in memory.

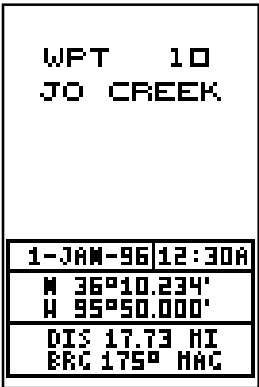
### Delete a Waypoint

To delete a waypoint from a route, first select the route, then highlight the EDIT ROUTE label and press the right arrow key. Now highlight the waypoint that you want to remove from the route's list. Press the right arrow key. The screen shown at right appears. Highlight the "Delete" label on this menu and press the right arrow key. The unit returns to the route list with the waypoint removed from the list. (Note: This doesn't delete the waypoint from the database, it only removes it from the route.)



### Waypoint Detail

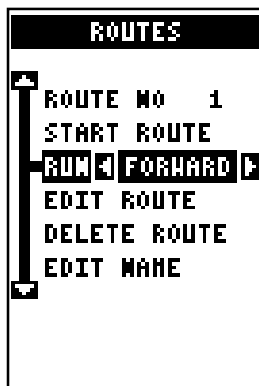
To view the position, bearing, distance, and other information about a waypoint saved in a route, first select the route, then highlight the desired waypoint from the route's list. Now press the right arrow key. The screen shown above appears. Move the black box to the "Detail" label and press the right arrow key. The screen at right appears.



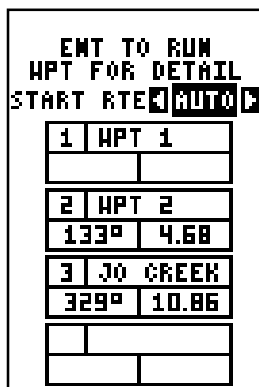
This screen shows the waypoint's name, number creation time and date, icon, position, distance, and bearing from your present position. When you're finished viewing this information, press the EXIT key to erase it.

## Following a Route

Before starting the route, you'll need to decide if you want to start at the beginning and travel forward or start at the last waypoint in the route and travel backwards (reverse) to the first waypoint. The default is forward. To change it, press the MENU key, then select the "PLAN/EDIT ROUTES" label and press the right arrow key. The screen shown at right appears. To run a route from the end to the beginning, highlight the "RUN" label, then press the right arrow key to change it.



To follow a route, first select the route number that you wish to follow by highlighting the "Route No" label, and pressing the left or right arrow keys until the desired route number appears. In this example we're using route number one. Now highlight the "START ROUTE" label and press the right arrow key. The screen shown at right appears.

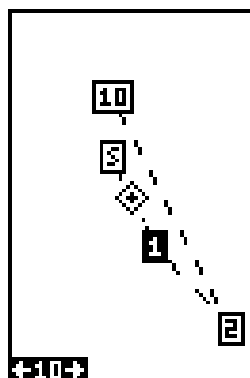


The black box is on the "Start RTE Auto" label. This starts the navigation to the waypoint that is closest to your present position. If you want to start the route with the first waypoint in the route, press the right arrow key until the number "1" appears.

If you want to see details about the highlighted waypoint, press the WPT key.

When you have everything on this screen set as desired, press the ENT key to start the GlobalNav 200 navigating to the first waypoint on the route.

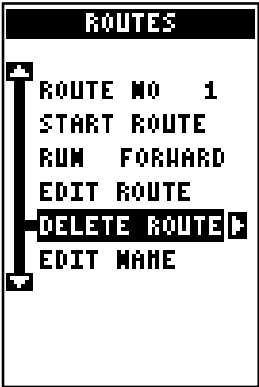
As you travel to the first waypoint, the unit shows navigation data to the waypoint. If you use the plotter, as shown at right, the unit draws a dotted line from your starting position (shown by the "S"), and a dashed line from the first waypoint to each of the other waypoints in the route. When you enter the radius set by the arrival alarm, the GlobalNav 200 automatically switches to the next waypoint on the list, showing navigation data to that waypoint, and so on until the last waypoint on



the route list has been reached. (Note: The arrival alarm does not have to be turned on in order to use the route feature.)

**Delete a Route**

To erase a route, first press the MENU key, then highlight the “Plan/Edit Routes” label and press the right arrow key. The screen shown at right appears. Now select the route you want to erase at the top of the screen, then highlight the “Delete Route” label and press the right arrow key. A message appears, asking if you really want to erase the route. If you press the right arrow key, the route will be erased.

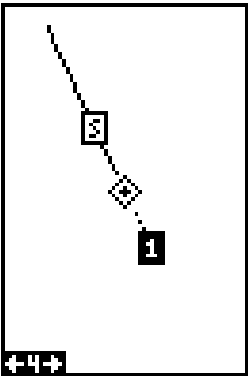


**NAVIGATION**

**Navigate To a Waypoint**

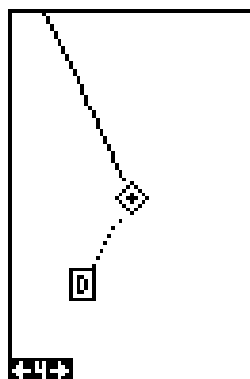
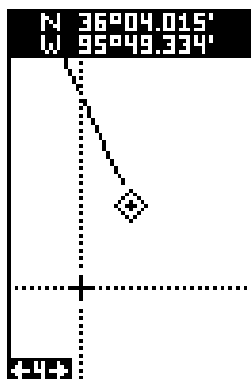
The GlobalNav 200 makes it easy to navigate to any waypoint. First, press the WPT key, then select the desired waypoint by first highlighting the waypoint number at the top of the screen, then pressing the left or right arrow keys until the desired waypoint number appears. Now highlight the “Go To ” label and press the right arrow key. The unit immediately returns to the navigation, plotter, or windows screen and shows navigation information to the selected location.

In this example, we recalled waypoint number 1. Switching to a plotter screen (shown at right) shows our starting location “S”, the recalled waypoint “1”, and our present position.



**Navigating to a cursor location**

The GlobalNav 200 lets you navigation to a location without storing it in the waypoint database by using the plotter and cursor. To do this, first switch to the plotter screen. Now move the cursor to the location that you want to navigate to. Next, press the MENU key. A new menu appears on the list: “Go To Cursor”. Press the right arrow key. The GlobalNav 200 shows nav data to the cursor location (shown as “D” on the plotter). See the screens at the top of the next page.



## Navigating to a Waypoint using the Plotter

The unique “birds-eye” view used by the plotter gives you an easy way to navigate to a waypoint. On the plotter screen shown on the previous page, the diamond with a cross in it is your present position. The box with the “S” in it was your starting location when you recalled the waypoint. The dotted line is called a track line and is the shortest path from the starting location to the destination. The number “1” is waypoint number one, which is the recalled waypoint and the destination. The “D” on the plotter screen at the top of this page is the cursor destination, when the cursor position is used as a destination. If you follow the track line, you’ll reach the destination, covering the shortest distance in the least time.

## CAUTION!

The GlobalNav 200 does NOT take land features, altitudes, restricted or prohibited areas, or any other feature into account when it projects the track line on the screen. Therefore, you must use care when navigating on the track line and avoid any object that may be in your path to the destination.

## CANCEL NAVIGATION

The GlobalNav 200 continues to navigate to a recalled waypoint, the last waypoint in a route, or the cursor position until you stop it.

To stop the navigation function, press the MENU key, then press the up or down arrow keys until the “Cancel Navigation” label is highlighted. Press the right arrow key. The unit stops showing navigation information.



## SYSTEM SETUP

The GlobalNav 200 has several menus and commands listed under the “System Setup” label on the main menu. These commands affect the basic operation of the unit. To use them, press the MENU key, then highlight the “System Setup” label. Press the right arrow key. The screen shown at right appears.

## BACKLIGHT

The GlobalNav 200's display has lights that can be turned on for night use. To turn the lights on, simply press the PWR key. To turn them off, press the PWR key again. An indicator on the satellite status screen (Group “O”) shows when the lights are on.

The GlobalNav 200 automatically turns the lights off after 30 seconds to preserve the battery power. It will do this even if the external power is applied to the unit.

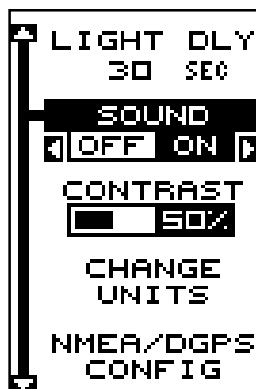
The time delay is adjustable from 5 to 240 seconds. You can also turn the lights on continuously from this menu. Use the “Light Dly” (light delay) menu to change this. Highlight this menu, then press the right arrow key to increase the time the lights are on, the left arrow key to decrease it. Press the EXIT key to erase this menu.

## SOUND

To turn the speaker off, highlight the “SOUND” label as shown above, then press the left arrow key. Note: This turns the speaker completely off. The unit will not sound a tone when a key is pressed, nor will any alarm sound. The alarm messages will still flash on the screen, however.

## CONTRAST

To adjust the display's contrast, highlight the “Contrast” label on the “System Setup” menu as shown above. Press the right or left arrow keys until the screen's contrast is best for the lighting conditions. Press the EXIT key to erase this screen.



## Units of Measure

The GlobalNav 200 can show its data in many different formats. For example, distance can be displayed in statute miles (MI), nautical miles (NM), or kilometers (KM). The following can be changed on the “Change Units” menu: (Defaults shown in **bold**)

Clock ..... **12-hour (a.m.-p.m.)**, 24 hour  
Distance ..... **miles**, nautical miles, kilometers  
Speed ..... **miles per hour**, knots,  
kilometers per hour  
Bearing ..... **magnetic**, true  
Altitude ..... **feet**, meters



To change a unit of measure, first select the “Change Units” label from the “System Setup” menu. The screen shown above appears. Highlight the desired selection, then press the left or right arrow key. You can change any or all of the settings on this page. When you’re finished, press the EXIT key.

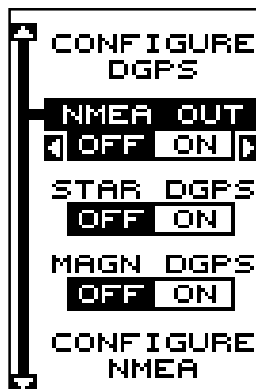
## NMEA / DGPS

The GlobalNav 200 transmits data through the data port in the back of the unit using NMEA 0183 format, version 1.5 or 2.0. This data is used by other electronic devices such as marine autopilots for position and steering information.

DGPS on the other hand, is a data input. DGPS is an acronym for Differential Global Positioning System. Currently, it relies on a system of ground-based transmitters that send correction signals to small DGPS receivers. DGPS gives you more accurate positions than is otherwise possible.

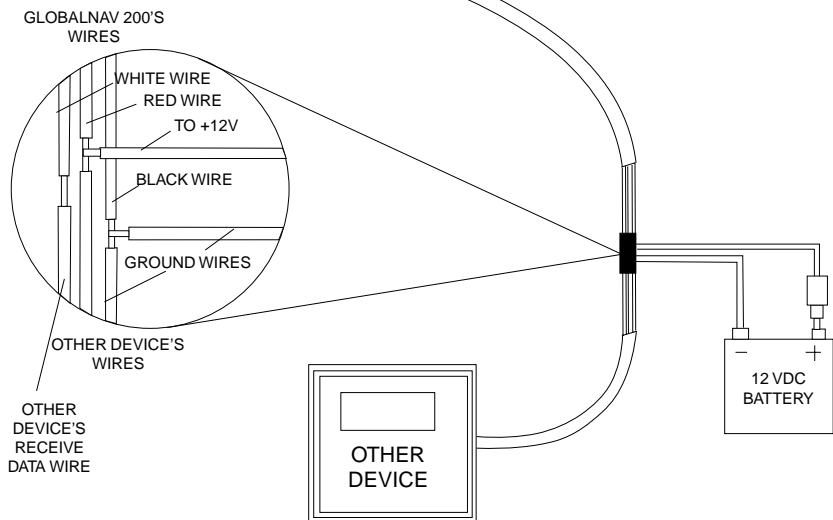
All wiring connections to the GlobalNav 200 are made to its power cable. See the sample wiring diagrams on the next page for general wiring procedures. Read your other product’s owner’s manual for more wiring information.

Once the cables are wired, turn the GlobalNav 200 on, press the menu key, and select NMEA / DGPS from the System Setup menu. A screen similar to the one at right appears.



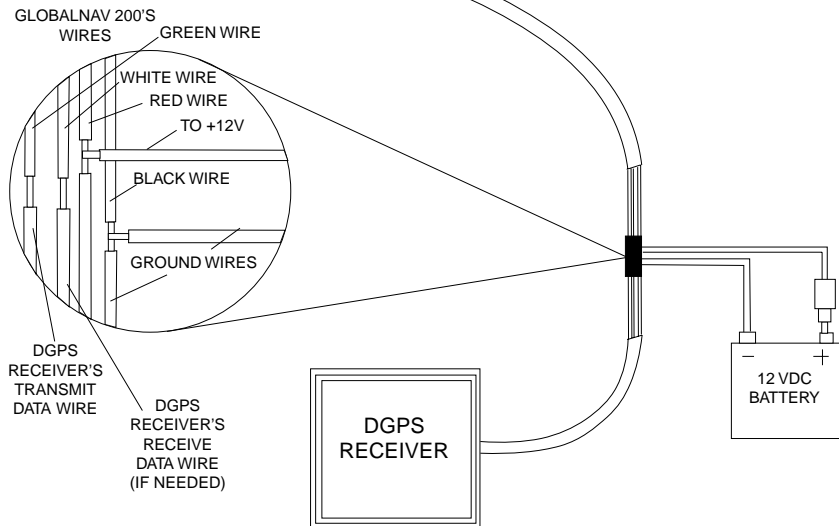
TO GLOBALNAV 200

GLOBALNAV 200  
TRANSMITTING NMEA  
DATA TO ANOTHER DEVICE



TO GLOBALNAV 200

GLOBALNAV 200  
RECEIVING DATA FROM  
A DGPS RECEIVER



## NMEA OUTPUT

To turn the NMEA output on, highlight the “NMEA OUTPUT” menu (shown at the bottom of the previous page), then press the right arrow key. If your other equipment works, then no setup will need to be performed. If your other equipment doesn’t recognize the NMEA data being sent by the GlobalNav 200 and the wiring is correct, then you may need to change the NMEA or the serial communication settings.

### Configure NMEA Output

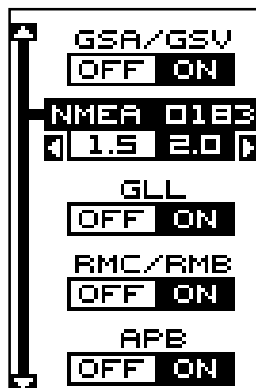
Highlight the “Configure NMEA Output” menu, then press the right arrow key. A screen similar to the one at right appears.

#### NMEA 0183 Version

There are two versions of the NMEA data, 1.5 and 2.0. If your other equipment requires 2.0, press the right arrow key to select it.

#### GLL, RMC/RMB, APB, GGA, GSA/GSV Sentences

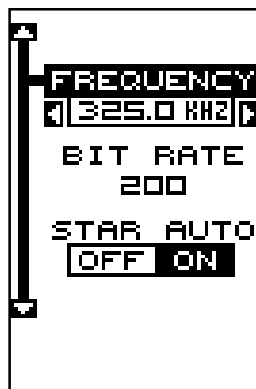
Some equipment requires different sentence. The GlobalNav 200’s default setting for these sentences is on. In other words, it automatically sends these sentences when NMEA is turned on. To turn any of these off, move the black box to the desired menu and press the left arrow key. Press the EXIT key when everything on this screen is the way you want it.



## DGPS

The GlobalNav 200 will recognize Starlink® and Magnavox® automatic DGPS receivers. If you have either one of these receivers, simply highlight the “Star DGPS” or “Magn DGPS” on the NMEA / DGPS menu and press the right arrow key to turn it on. (Note: If you have a Magnavox DGPS receiver connected, the GlobalNav 200 can’t send NMEA data.) With the exception of serial communications, typically no other setup needs to be made with these receivers.

If you have any other Magnavox or Starlink compatible DGPS receiver connected to the GlobalNav 200, you may need to change the settings. To do this, move the black box to the “Configure DGPS” label and press the right arrow key. A screen similar to the one at right appears.



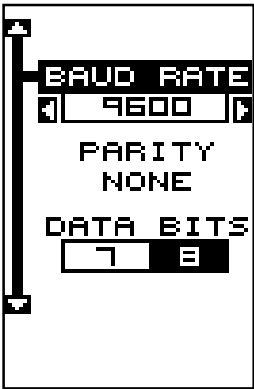


These menus select the beacon receiver's frequency and bit rate (in bits per second). To change one of these settings, simply highlight the menu item you wish to change, then press the right or left arrow key until the desired number appears. Press the EXIT key when you're finished.

**SERIAL COMMUNICATIONS SETUP**

To set the data port, move the black box to the "Com Port Setup" on the System Setup menu. Press the right arrow key. The screen shown at right appears.

Check your DGPS receiver's manual for the proper data settings. Highlight the menu item you need to change. Press the left or right arrow keys to change them. The serial port defaults are 4800 baud, no parity, and 8 data bits. Press the EXIT key to erase this menu.



**RESET OPTIONS**

To return the GlobalNav 200 to its original factory settings, highlight the "Preset Options" menu on the System Setup screen. Now press the right arrow key. A message appears, asking if you want to restore the original options. Press the right arrow key if you do, the left arrow key to quit.

If you restore the unit to the factory settings, all options such as contrast, alarms, and other system choices are returned to their default values. However, no waypoints, routes, or icons are erased.

**RESET GROUPS**

To return all groups on the navigation and plot-2 screens to their factory defaults, highlight the "RESET GROUPS" label on the "System Setup" menu. Finally, press the right arrow key. All digital boxes on these screens are reset to their factory settings.

**SYSTEM INFO**

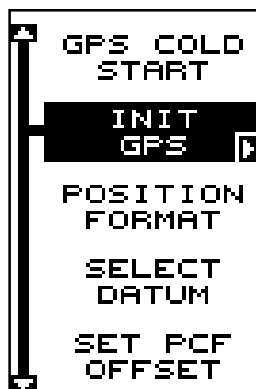
The system information screen shows the release date and the version number of the code stored inside the GlobalNav 200. To view this screen, highlight the "System Info" label on the "System Setup" menu. Now press the right arrow key. A screen similar to the one at right appears. Press the EXIT key when you're finished reading this screen.



## GPS SETUP

The GPS Setup menu has sub-menus that affect the GPS receiver. From these menus you can set the update rate, initialize the GPS receiver, do a self-test on the receiver, and do a cold-start. (Note: The “Initialize GPS receiver” is covered in the “Finding Your Position” section in the front of this manual.

To view these menu items, press the MENU key, then highlight the “GPS Setup” menu. Press the right arrow key. The screen at right appears.



## GPS Cold Start

When the GlobalNav 200 is turned on for the first time “out of the box”, it automatically sends a “cold-start” message to the GPS receiver. You can also send a cold start message to the receiver at any time.

If the unit can’t lock on to the satellites using the data you’ve given it, or if it has trouble finding the satellites, perhaps it is using the wrong data. This can happen if you’ve entered the wrong data by accident when initializing the receiver. For example, if you entered east longitude instead of west. Or if you’ve moved a long distance with the unit turned off.

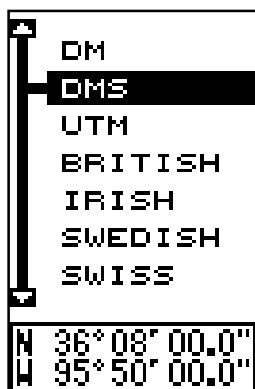
To send a cold start message to the receiver, highlight the “GPS Cold Start” label, then press the right arrow key. A message appears, asking you if you really want to do a cold start. Follow the instructions on this message page.

The unit will begin searching for the satellites. It can take as long as 5 minutes for it to lock on to the necessary satellites. Remember, when it does, your local time and possibly date can be wrong. Use the method shown in the initialization section at the front of this manual to change them, if needed. Once this is done, an internal clock will keep the correct time, even when the unit is turned off. The GPS system updates this clock when the unit is locked on to the satellites.

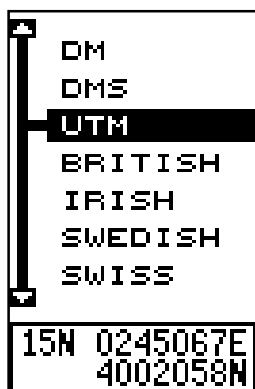
## Position Format

To change the position format, highlight the “Position Format” label on the “GPS Setup” menu (shown on the previous page), then press the right arrow key. A screen similar to the one at right appears.

The GlobalNav 200 can show the position in degrees, minutes, and thousandths of a minute ( $36^{\circ} 28.700'$ ) or degrees, minutes, seconds, and tenths of a second ( $36^{\circ} 28' 40.9''$ ). It can also show position in UTM (Universal Transverse Mercator) projection, British, Irish, Swedish, Swiss, Finnish, and Military Grid systems.



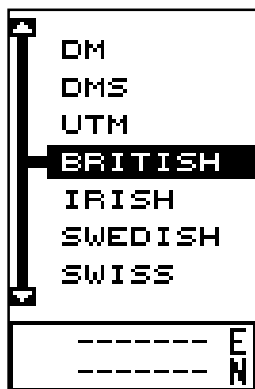
UTM's are marked on USGS topographic charts. This system divides the Earth into 60 zones, each 6 degrees wide in longitude. Their unit of measure is in meters. For example, 15N means that the position shown to the right of the “15N” is in zone 15, and it's north of the equator.



British, Irish, Swedish, Swiss, and Finnish grid systems are the national coordinate system used only in their respective countries.

Note: In order to use either the British, Irish, Swedish, Swiss, or Finnish grid systems, you must be in the respective country.

The GlobalNav 200 will pick the matching datum for you when you select the grid. See the Datums section for more information.



The GlobalNav 200 can use the military grid reference system (MGRS). It uses two grid lettering schemes, which are referred to as standard and alternate MGRS on the GlobalNav 200. Your position and datum in use determines which one to use. If you use the standard, and your position is off significantly, then try using the alternate.



Press the up or down arrow keys to highlight the desired position format. Press the EXIT key to both select the format and erase the position format menu.

## DATUM

Maps and charts are based on a survey of the area that's covered by the map or chart. These surveys are called "Datums". Maps that are created using different datums will show the same latitude/longitude in slightly different locations.

All datums are named. The GPS system is based on the WGS-84 datum, which covers the entire world. Other datums may also cover the entire world, or just a small portion. By default, the GlobalNav 200 shows your position on the map using the WGS-84 datum. However, it can show your position using one of 191 different datums.

To change the datum, first press the MENU key, then highlight the "GPS Setup" label and press the right arrow key. Now highlight the "Select Datum" label. Finally, press the right arrow key again. A screen similar to the one at right appears.



The WGS-84 label is highlighted. To change it, simply press the up or down arrow keys to highlight the desired datum, then press the ENT key. This selects the datum and erases the select datum menu. To erase the menu without changing the datum, simply press the EXIT key.

A list of the datums used by the GlobalNav 200 is in the back of this manual.

## PCF (Position Correction Factor)

Another method used to make your display match a chart or map is called “PCF” or Position Correction Factor. This unit gives you the capability to move or offset the position shown on the display to match one on the chart. The unit will add this offset to all position and navigation displays at all times.

Remember, the position error on any radio navigation system is very dynamic and the PCF offset should never be used in an attempt to cancel the error.

In general terms, PCF should only be used if your map indicates what the possible error is. **PCF should always be reset to zero when you’re finished with the chart.**

For example, suppose you are stopped at a location that is accurately marked on a chart. Your unit shows a longitude position that is .244 minutes east of the one on the chart and .047 minutes north latitude. Using the PCF feature, you can make the GlobalNav 200 match the chart you’re using. If you move, the unit will continuously add the change to all position, navigation, and mapping displays. This makes it more closely match the datum used by the chart. For this reason, you should be careful when entering the PCF offset. It’s saved in memory and doesn’t change when the unit is turned off. However, resetting the unit does erase the PCF offset.

To change the PCF offset, first press the MENU key, then highlight the “GPS Setup” label and press the right arrow key. Now highlight the “Set PCF Offset” label. Finally, press the right arrow key again. A screen similar to the one above right appears.

Now enter the correction for your location. Remember, this is the difference between the location shown on the present position display and the position shown on the chart. In this example, we entered 0 degrees, 0.047 minutes north latitude and 0 degrees, 0.244 minutes east longitude. That is the difference between the present position shown by the GlobalNav 200 and the one on our chart.



ENTER PCF

N 0°00.000'

W 0°00.000'

◀ LEFT RIGHT ▶

EXIT TO CANCEL  
ENTER TO SAVE  
WPT TO CLEAR



ENTER PCF

N 0°00.047'

E 0°00.244'

◀ LEFT RIGHT ▶

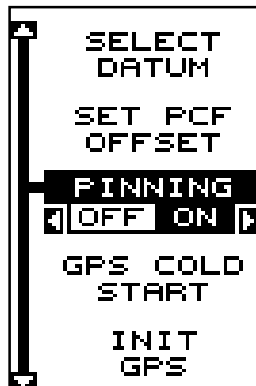
EXIT TO CANCEL  
ENTER TO SAVE  
WPT TO CLEAR

After you've entered the latitude/longitude correction, press the ENT key to accept it. The GlobalNav 200 erases the PCF entry screen and returns to the navigation or mapping screens with the correction factor applied.

## POSITION PINNING

When using a GPS receiver at extremely low speeds, it can have trouble determining your course over ground, or direction you're travelling. This is due in large part to SA, or selective availability. SA is small inaccuracies purposefully put into the GPS satellite's signal by the government. This cause wide variations in the track display and other navigation displays when using the unit at slow speeds.

If you're using the GlobalNav 200 without DGPS and stop, the position pinning feature locks the present position indicator on the plotter until you've moved a short distance or exceed a very slow speed. This prevents the "wandering" plot trail seen when you're stopped with position pinning turned off. This also affects the navigational displays.



The easiest way to see the effects of S/A is to stand still with the GlobalNav 200 turned on and watch your plot trail with position pinning turned off. You'll see the present position change, speed increase and decrease, and a random plot trail on the plotter's screen.

If you wish to turn the position pinning feature off, press the MENU key, then highlight the "GPS Setup" label and press the right arrow key. Now highlight the "Pinning" label. Finally, press the left arrow key.

## ALARMS

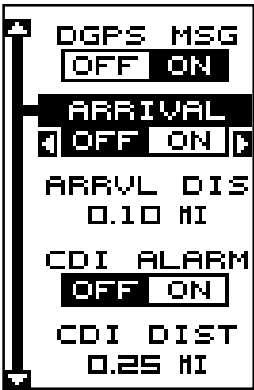
The GlobalNav 200 has several alarms. You can set an arrival alarm to flash a warning message when you cross a preset distance from a waypoint. For example, if you have the arrival alarm set to .1 mile, then the alarm will flash a message when you come within .1 mile of the recalled waypoint. The course deviation indicator alarm (CDI) can warns when your track drifts too far to the right or left of the line to the waypoint. For example, if the alarm is set to .1 mile, then the alarm flashes a message if you drift .1 of a mile or more to the right or left of the line to the waypoint. The anchor alarm is triggered when you drift outside of a preset radius. Again, using the .1 mile as an example, if you're anchored and your boat moves more than .1 of a mile, the alarm will flash a message.

To use any of these alarms, first press the MENU key, then select the

“ALARMS/CDI” menu. A screen similar to the one shown at right appears. Press the up or down arrow key to move the black box to the desired alarm, then press the right arrow key to turn it on.

To adjust an alarm’s distance, move the black box to the alarm’s “DIST” menu item, then press the right or left arrow keys to increase or decrease the alarm’s distance.

When you’re finished adjusting the alarms, press the EXIT key to erase this menu.



**Important Alarm Notes:**

Anchor Alarm - Since civilian users don’t receive the accuracy given to military users, the anchor alarm may be triggered even when you’re sitting still. This typically happens when using small (less than .05 mile) anchor alarm ranges. If you have a DGPS beacon receiver connected to the GlobalNav 200, smaller ranges may be usable.

Arrival Alarm - If you set the arrival alarm’s distance to a small number, and you run a route (see the routes section), the GlobalNav 200 may not show navigation data to the next waypoint, once you arrive at the first one, since you may not be able to come close enough to the first waypoint to trip the arrival alarm.

**MESSAGES**

The position and DGPS message selections are found on the Alarms/ CDI menu. When turned on, the position message appears for a few seconds whenever the GlobalNav 200 locks onto the satellites and shows a position. It also appears when the unit loses the lock onto the satellites and cannot navigate. Pressing the EXIT key erases these messages.

The DGPS message appears whenever the unit begins or stops using DGPS data to help determine your position.

The default setting for these messages is “on”. To turn either message off, select the “Setup Alarms” menu from the main menu, then move the black box to the desired message and press the left arrow key. Press the EXIT key to erase this screen.

## SIMULATOR

A simulator is built into the GlobalNav 200 that has several options. You can use nearly all of the unit's features - even save and recall waypoints. This is useful for trip planning.

To use the simulator, press the MENU key, then press the up or down arrow keys until the "Simulator Setup" menu is surrounded by the black box. Now press the right arrow key. The screen shown at right appears.

If you simply press the right arrow key, turning the simulator on, the GlobalNav 200 will start from your present position and follow a track of 355° at 100 miles per hour.

To change either the track or speed, highlight the one you want to change, then press the right or left arrow key. When the numbers are correct, press the EXIT key.

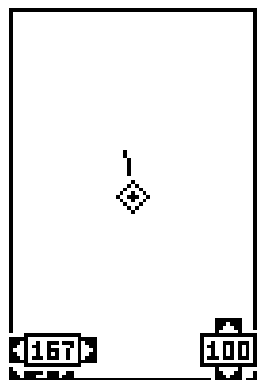
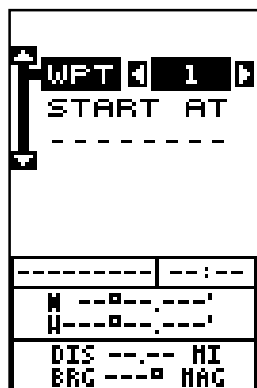
### Starting Position

Normally, the starting position for the simulator is your present position. If you want to change the starting position, highlight the "Set Starting Waypoint" label on the Simulator Setup menu, then press the right arrow key. The screen shown at right appears.

You can select any waypoint as the simulator's starting point. Select the starting point by pressing the right arrow key on the "WPT#" label until the desired starting waypoint number appears. Now highlight the "Start At" label and press the right arrow key. The GlobalNav 200 returns to the Simulator Setup menu using the waypoint you specified as the starting waypoint.

### Use Arrow Keys to Steer

This option lets you change both the course and speed on the screen as the simulator is running. To do this, highlight the "Steer With Arrows" label on the Simulator Setup screen, then press the right arrow key. The screen shown at right appears. Use the up and down arrow keys to increase or de-





crease the speed. Use the right and left arrow keys to change the track. Press the EXIT key to erase these menus.

When you're finished changing the track and speed, press the EXIT key to erase the menus.

To turn the simulator off, press the MENU key, then move the black box to the "Simulator Setup" label. Finally, press the left arrow key.

Note: Your plot trail will be erased when you turn the simulator on or off.

## DEFINITION OF TERMS/ABBREVIATIONS

Due to space considerations, the digital displays use abbreviations for some names. They are as follows:

- ALT ..... Altitude - Your height above sea level.
- BRG ..... Bearing - The direction from your present position to a waypoint.
- CLOCK ..... Your local time.
- TRK ..... Track - The direction you're travelling.
- DIS ..... Distance - Distance remaining between your present position and a waypoint.
- DNT/UPT ..... Countdown timer (DNT) and Count up timer (UPT)
- ETE ..... Estimated Time En route
- FIX ..... A measure of your receiver's position quality. A fix of 1 is bad, 9 is the best.
- ICON ..... A symbol you can place on the map, representing a landmark.
- POSITION .... Your present position.
- GS ..... Ground Speed - Your actual speed.
- TTG ..... Time To Go - Time remaining at your present speed until you reach a waypoint.
- VOLTS ..... Electrical system voltage.
- VMG ..... Velocity Made Good - Your ground speed towards a recalled waypoint, airport, etc.
- CDI ..... Course Deviation Indicator - Shows your distance to the **side** of the desired course line.

WINDOWS

The following is a listing of windows groups A through O.

BRG
141° MAG
TRK
141° MAG
DIS
4.05 MI
GS
20.0 MPH

GROUP "A"

BRG
141° MAG
TRK
141° MAG
DIS
8.45
GS
20.0
ETE
0:25:20
CDI 0.25
· · ↑ · ·

GROUP "B"

BRG
141° MAG
TRK
141° MAG
DIS
8.41 MI
ETE
0:25:14

GROUP "C"

BRG
141°
DIS
8.37
TRK
141°
GS
20.0
ETE
0:25:07
VMG
20.0
ETA
6:24:39
CDI 0.25
· · ↑ · ·

GROUP "D"

BRG
141° MAG
TRK
141° MAG
DIS
8.34 MI
VMG
20.0 MPH

GROUP "E"

BRG
141° MAG
DIS
8.31 MI
VMG
20.0 MPH
CDI
0.25 : ↑ : 0.25

GROUP "F"

POSITION
N 36°07.739'
W 95°49.783'
BRG
141°
DIS
8.27
TRK
141°
GS
20.0

GROUP "G"

POSITION
N 36°07.711'
W 95°49.760'
CDI
0.25 : ↑ : 0.25
DIS
8.23
ETE
0:24:42

GROUP "H"

CLOCK
6:00:04A
ETA
6:24:39A
BRG
141°
GS
20.0
DIS
8.20
CDI 0.25
· · ↑ · ·

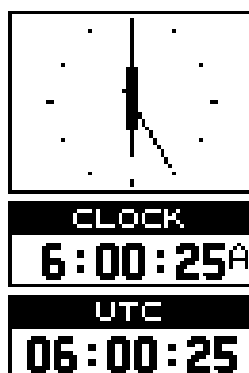
GROUP "I"



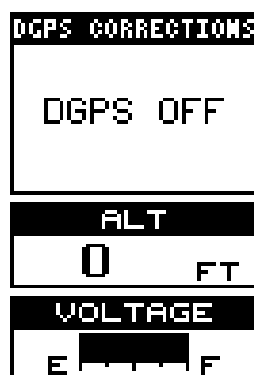
GROUP "J"



GROUP "K"



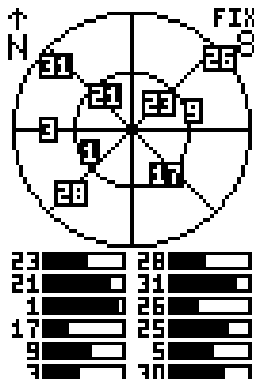
GROUP "L"



GROUP "M"



GROUP "N"



GROUP "O"

## DATUMS

WGS 84 .....	WGS 1984	ARC 1960 .....	Arc 1960 - Mean for Kenya,
DEFAULT	Default	MEAN	Tanzania
ADINDAN .....	Adindan	ASCENSION .....	Ascension Island 1958 -
MEAN	Mean for Ethiopia, Sudan	ISLAND	Ascension Island
ADINDAN .....	Adindan	ASTRO BEACON ..	Astro Beacon E 1945 - Iwo Jima
BURKINA	Burkina Faso	E 1945	
FASO		IWO JIMA	
ADINDAN .....	Adindan	ASTRO DOS 714 ..	Astro DOS 71/4 - St Helena Island
CAMEROON	Cameroon	ST HELENA	
ADINDAN .....	Adindan	ISLAND	
ETHIOPIA	Ethiopia	ASTRO TERN .....	Astro Tern Island (FRIG) 1961 -
ADINDAN .....	Adindan	ISLAND	Tern Island
MALI	Mali	1961	
ADINDAN .....	Adindan	ASTRONOMICAL ..	Astronomical Station 1952 -
SENEGAL	Senegal	STATION '52	Marcus Island
ADINDAN .....	Adindan	MARCUS ISLE	
SUDAN	Sudan	AUSTRALIAN .....	Australian Geodetic 1966 -
AFGOOYE .....	Afgooye	GEODETIC	Australia & Tasmania
SOMALIA	Somalia	1966	
AIN EL ABD .....	Ain el Abd 1970	AUSTRALIAN .....	Australian Geodetic 1984 -
1970	Bahrain	GEODETIC	Australia & Tasmania
BAHRAIN		1984	
AIN EL ABD .....	Ain el Abd 1970	AYABELLE .....	Ayabelle Lighthouse - Djibouti
1970 SAUDI	Saudi Arabia	LIGHTHOUSE	
ARABIA		DJIBOUTI	
ANNA 1 ASTRO ....	Anna 1 Astro 1965	BELLEVUE .....	Bellevue (IGN) - Efate &
1965 COCOS	Cocos Islands	(IGN) EFATE	Erromango Islands
ISLANDS		ERRAOMANGO	
ANTIGUA .....	Antigua Island Astro 1943	BERMUDA .....	Bermuda 1957 - Bermuda
ISLAND	Antigua (Leeward Islands)	1957	
ASTRO 1943		BISSAU .....	Bissau - Guinea-Bissau
ARC 1950 .....	Arc 1950	GUINEA	
MEAN	Mean for Botswana, Lesotho,	BOGOTA .....	Bogota Observatory - Colombia
	Malawi, Swaziland, Zaire, Zambia,	OBSERVATORY	
	Zimbabwe	COLOMBIA	
ARC 1950 .....	Arc 1950 - Botswana	BUKIT RIMPAH .....	Bukit Rimpah - Indonesia (Bangka
BOTSWANA		INDONESIA	& Belitung Islands)
ARC 1950 .....	Arc 1950 - Burundi	CAMP AREA .....	Camp Area Astro - Antarctica
BURUNDI		ASTRO	(McMurdo Camp Area)
ARC 1950 .....	Arc 1950 - Lesotho	ANTARCTICA	
LESOTHO		CAMPO .....	Campo Inchauspe - Argentina
ARC 1950 .....	Arc 1950 - Malawi	INCHAUSPE	
MALAWI		ARGENTINA	
ARC 1950 .....	Arc 1950 - Swaziland	CANTON ASTRO ..	Canton Astro 1966 - Phoenix
SWAZILAND		'66 PHOENIX	Islands
ARC 1950 .....	Arc 1950 - Zaire	ISLANDS	
ZAIRE		CAPE .....	Cape - South Africa
ARC 1950 .....	Arc 1950 - Zambia	SOUTH	
ZAMBIA		AFRICA	
ARC 1950 .....	Arc 1950 - Zimbabwe	CAPE .....	Cape Canaveral - Bahamas,
ZIMBABWE		CANAVERAL	Florida
		BAHAMAS FL	

CARTHAGE .....	Carthage - Tunisia	EUROPEAN .....	European 1950
TUNISIA		1950 ITALY	Italy (Sardinia)
CH-1903 .....	Switzerland	(SARDINIA)	
CHATHAM .....	Chatham Island Astro 1971	EUROPEAN .....	European 1950
ISLAND ASTRO	New Zealand (Chatham Island)	1950 ITALY	(Sicily)
NEW ZEALAND		(SICILY)	
CHUA ASTRO .....	Chua Astro	EUROPEAN .....	European 1950
PARAGUAY	Paraguay	1950	Malta
CORREGO .....	Corrego Alegre	MALTA	
ALEGRE	Brazil	EUROPEAN .....	European 1950
BRAZIL		1950 SPAIN	Portugal, Spain
DABOLA .....	Dabola	PORTUGAL	
GUINEA	Guinea	EUROPEAN .....	European 1979
DJAKARTA .....	Djakarta (Batavia)	1979	Mean for Austria, Finland,
(BATAVIA)	Indonesia (Sumatra)	MEAN	Netherlands, Norway, Spain,
INDONESIA			Sweden, Switzerland
DOS 1968 .....	DOS 1968	FORT THOMAS .....	Fort Thomas, 1955
NEW GEORGIA	New Georgia Islands	1955 NEVIS	Nevis, St. Kitts
ISLANDS	(Gizo Island)	ST. KITTS	(Leeward Islands)
EASTER .....	Easter Island 1967	GAN 1970 .....	Gan 1970
ISLAND	Easter Island	REPUBLIC OF	Republic of Maldives
1967		MALDIVES	
EUROPEAN .....	European 1950	GEODETIC .....	Geodeic Datum 1949
1950 MEAN	Mean for Austria, Belgium,	DATUM 1949	New Zealand
WESTERN	Denmark, Finland, France,	NEW ZEALAND	
	West Germany, Gibraltar, Greece,	GRACIOSA .....	Graciosa Base SW 1948
	Italy, Luxembourg, Netherlands,	BASE SW	Azores (Faial, Graciosa, Pico,
	Norway, Portugal, Spain, Sweden,	1948 AZORES	Sao Jorge, Terceira)
	Switzerland	GUAM .....	Guam 1963
EUROPEAN .....	European 1950	1963	Guam
1950 MEAN	Mean for Austria, Denmark,	GUNUNG .....	Gunung Segara
CENTRAL	France, West Germany,	SEGARA	Indonesia (Kalimantan)
	Netherlands, Switzerland	INDONESIA	
EUROPEAN .....	European 1950	GUX 1 ASTRO .....	GUX 1 Astro
1950 MEAN	Mean for Iraq, Israel, Jordan,	GUADALCANAL	Guadalcanal Island
MIDDLE EAST	Lebanon, Kuwait,	ISLAND	
	Saudi Arabia, Syria	HERAT NORTH .....	Herat North
EUROPEAN .....	European 1950	AFGHANISTAN	Afghanistan
1950	Cyprus	HJORSEY .....	Hjorsey 1955
CYPRUS		1955	Iceland
EUROPEAN .....	European 1950	ICELAND	
1950	Egypt	HONG KONG .....	Hong Kong 1963
EGYPT		1963	Hong Kong
EUROPEAN .....	European 1950	HU-TZU-SHAN .....	Hu-Tzu-Shan
1950 GREAT	England, Channel Islands, Ireland,	TAIWAN	Taiwan
BRITAIN	Scotland, Shetland Islands	INDIAN .....	Indian
EUROPEAN '50 .....	European 1950	BANGLADESH	Bangladesh
FINLAND	Finland, Norway	INDIAN .....	Indian
NORWAY		INDIA NEPAL	India, Nepal
EUROPEAN .....	European 1950	INDIAN 1954 .....	Indian - 1954
1950	Greece	THAILAND	Thailand, Vietnam
GREECE		VIETNAM	
EUROPEAN .....	European 1950	INDIAN 1975 .....	Indian - 1975
1950	Iran	THAILAND	Thailand
IRAN			

IRELAND .....Ireland 1965  
Ireland

ISTS 061 .....ISTS 061 Astro 1968  
ASTRO 1968 South Georgia Islands  
S GEORGIA

ISTS 073 .....ISTS 073 Astro 1969  
ASTRO 1969 Diego Garcia  
DIEGO GARCIA

JOHNSTON .....Johnston Island 1961  
ISLAND Johnston Island  
1961

KANDAWALA .....Kandawala  
SRI LANKA Sri Lanka

KERGUELEN .....Kerguelen Island 1949  
ISLAND Kerguelen Island  
1949

KERTAU 1948 .....Kertau 1948  
W MALAYSIA West Malaysia & Singapore  
SINGAPORE

KUSAIE ASTRO ...Kusaie Astro 1951  
CAROLINE 1951 Caroline Islands  
ISLANDS

L C 5 ASTRO .....L.C. 5 Astro 1961  
1961 CAYMAN Cayman Brac Island  
BRAC ISLAND

LEIGON .....Leigon  
GHANA Ghana

LIBERIA .....Liberia 1964  
1964 Liberia

LUZON .....Luzon  
PHILIPPINES Philipines  
(Excluding Mindanao)

LUZON .....Luzon  
PHILIPPINES Philipines (Mindanao)  
MINDANAO

MAHE ISLAND .....Mahe 1971  
1971 Mahe Island

MASSAWA .....Massawa  
ETHIOPIA Ethiopia (Eritrea)  
(ERITREA)

MERCHICH .....Merchich  
MOROCCO Morocco

MIDWAY ASTRO ...Midway Astro 1961  
1961 Midway Islands

MINNA .....Minna  
CAMEROON Cameroon

MINNA .....Minna  
NIGERIA Nigeria

MONTERRAT .....Montserrat Island Astro 1958  
ISLAND Montserrat  
ASTRO 1958 (Leeward Islands)

M'PORALOKO .....M'Poraloko  
GABON Gabon

NAHRWAN .....Nahrwan  
OMAN Oman (Masirah Island)

NAHRWAN .....Nahrwan  
SAUDI ARABIA Saudi Arabia

NAHRWAN .....Nahrwan  
UNITED ARAB United Arab Emirates  
EMIRATES

NAPARIMA BWI .....Naparima BWI  
TRINIDAD AND Trinidad & Tobago  
TOBAGO

N AMERICA .....North American 1927  
1927 MEAN Mean for Antigua, Barbados, Barbuda,  
CARRIBEAN Caicos Islands, Cuba, Dominican  
Republic, Grand Cayman, Jamaica,  
Turks Islands

N AMERICA .....North American 1927  
1927 MEAN Mean for Belize, Costa Rica,  
CENTRAL AMER El Salvador, Guatemala, Honduras,  
Nicaragua

N AMERICA .....North American 1927  
1927 MEAN Mean for Canada  
CANADA

N AMERICA .....North American 1927  
1927 MEAN Mean for CONUS  
CONUS (Continental United States)

N AMERICA .....North American 1927  
1927 MEAN Mean for CONUS (East of Mississippi  
CONUS EAST River) including Louisiana, Missouri,  
Minnesota

N AMERICA .....North American 1927  
1927 MEAN Mean for CONUS  
CONUS WEST (West of Mississippi River)

N AMERICA .....North American 1927  
1927 ALASKA Alaska

N AMERICA .....North American 1927  
1927 BAHAMAS Bahamas  
(NO SAN SALV) (Except San Salvador Island)

N AMERICA .....North American 1927  
1927 BAHAMAS Bahamas (San Salvador Island)

N AMERICAN .....North American 1927  
1927 CANADA Canada (Alberta, British Columbia)  
(WEST)

N AMERICAN .....North American 1927  
1927 CANADA Canada (Manitoba, Ontario)  
(CENTRAL)

N AMERICAN .....North American 1927  
1927 CANADA Canada (New Brunswick,  
EAST Newfoundland, Nova Scotia, Quebec)

N AMERICAN .....North American 1927  
1927 CANADA Canada (Northwest Territories,  
NORTH Saskatchewan)

N AMERICAN .....North American 1927  
1927 CANADA Canada (Yukon)  
YUKON

N AMERICAN ..... North American 1927  
1927 CANAL ..... Canal Zone  
ZONE

N AMERICAN ..... North American 1927  
1927 CUBA ..... Cuba

N AMERICAN ..... North American 1927  
1927 ..... Greenland (Hayes Peninsula)  
GREENLAND

N AMERICAN ..... North American 1927  
1927 MEXICO ..... Mexico

N AMERICAN ..... North American 1983  
1983 ALASKA ..... Alaska, Canada, CONUS  
CANADA CONUS

N AMERICAN ..... North American 1983  
1983 CENTRAL ..... Central America, Mexico  
AM MEXICO

OBSERVATORIA ... Observatorio Metereeo 1939  
METEEREO ..... Azores (Corvo & Flores Islands)  
1939 AZORES

OLD EGYPTIAN .... Old Egyptian 1907  
1907 EGYPT ..... Egypt

OLD HAWAIIAN .... Old Hawaiian  
MEAN ..... Mean for Hawaii, Kauai,  
Maui, Oahu

OLD HAWAIIAN .... Old Hawaiian  
HAWAII ..... Hawaii

OLD HAWAIIAN .... Old Hawaiian  
KAUAI ..... Kauai

OLD HAWAIIAN .... Old Hawaiian  
MAUI ..... Maui

OLD HAWAIIAN .... Old Hawaiian  
OAHU ..... Oahu

OMAN ..... Oman  
Oman

ORD SURVEY ..... Ordinance Survey  
G BRITAIN ..... Great Britain 1936 - Mean for  
1936 MEAN ..... England, Isle of Man, Scotland,  
Shetland Islands, Wales

ORD SURVEY ..... Ordinance Survey  
G BRITAIN ..... Great Britain 1936 - England  
1936 ENGLAND

ORD SURVEY G ... Ordinance Survey  
BRITAIN 1936 ..... Great Britain 1936 - England,  
ENGLND WALES ..... Isle of Man, Wales

ORD SURVEY G ... Ordinance Survey  
BRITAIN 1936 ..... Great Britain 1936 - Scotland,  
SCOTLAND ..... Shetland Islands

ORD SURVEY ..... Ordinance Survey  
G BRITAIN ..... Great Britain 1936 - Wales  
1936 WALES

PICO DE ..... Pico de las Nieves  
LAS NIEVES ..... Canary Islands  
CANARY ISLES

PITCAIRN ..... Pitcairn astro 1967  
ASTRO ..... Pitcairn Island  
1967

POINT 58 ..... Point 58  
BURKINA ..... Mean for Burkina Faso & Niger  
FASO NIGER

POINTE NOIRE ..... Pointe Noire 1948  
1948 CONGO ..... Congo

PORTO SANTO ..... Porto Santo 1936  
1936 MADEIRA ..... Porto Santo, Madeira Islands  
ISLANDS

PROVISIONAL ..... Provisional S. American 1956  
S AMERICA ..... Mean for Bolivia, Chile, Colombia,  
1956 MEAN ..... Ecuador, Guyana, Peru, Venezuela

PROVISIONAL ..... Provisional S. American 1956  
S AMERICA ..... Bolivia  
1956 BOLIVIA

PROVISIONAL ..... Provisional S. American 1956  
S AMERICA ..... Chile (Northern, Near 19°S)  
1956 N CHILE

PROVISIONAL ..... Provisional S. American 1956  
S AMERICA ..... Chile (Southern, Near 43°S)  
1956 S CHILE

PROV S AMER ..... Provisional S. American 1956  
1956 ..... Colombia  
COLOMBIA

PROVISIONAL ..... Provisional S. American 1956  
S AMERICA ..... Ecuador  
1956 ECUADOR

PROVISIONAL ..... Provisional S. American 1956  
S AMERICA ..... Guyana  
1956 GUYANA

PROVISIONAL ..... Provisional S. American 1956  
S AMERICA ..... Peru  
1956 PERU

PROVI S AMER ..... Provisional S. American 1956  
1956 ..... Venezuela  
VENEZUELA

PROVISIONAL ..... Provisional S. American 1956  
S CHILEAN ..... Chile (South, Near 53°S) (Hito XVIII)  
1963 S CHLIE

PUERTO RICO ..... Puerto Rico  
VIRGIN ..... Puerto Rico, Virgin Islands  
ISLANDS

QATAR ..... Qatar National  
NATIONAL ..... Qatar

QORNOQ ..... Qornoq  
GREENLAND ..... Greenland (South)  
(SOUTH)

REUNION ..... Reunion  
MASCARENE ..... Mascarene Islands  
ISLANDS

ROME 1940 ..... Rome 1940  
ITALY ..... Italy (Sardinia)  
(SARDINIA)

RT 90 .....Sweden

SANTO (DOS) .....Santo (DOS)  
'65 ESPIRITO 1965 Espirito Santo Island  
SANTO ISLAND

SAO BRAZ .....Sao Braz  
AZORES Azores (Sao Miguel,  
Santa Maria Islands)

SAPPER HILL .....Sapper Hill 1943  
1943 EAST East Falkland Island  
FALKLAND ISLE

SCHWARZECK .....Schwarzeck  
NAMIBIA Namibia

SELVAGEM .....Selvagem Grande  
GRANDE Salvage Islands  
SALVAGE ISLE

SOVIET .....SGS 85  
GEODETIC Soviet Geodetic System 1985  
SYSTEM 1985

S AMERICAN .....South American 1969  
1969 MEAN Mean for Argentina, Bolivia,  
Brazil, Chile, Colombia, Ecuador,  
Guyana, Paraguay, Peru,  
Trinidad & Tobago, Venezuela

S AMERICAN .....South American 1969  
1969 Argentina  
ARGENTINA

S AMERICAN .....South American 1969  
1969 BOLIVIA Bolivia

S AMERICAN .....South American 1969  
1969 BRAZIL Brazil

S AMERICAN .....South American 1969  
1969 CHILE Chile

S AMERICAN .....South American 1969  
1969 COLOMBIA Colombia

S AMERICAN .....South American 1969  
1969 ECUADOR Ecuador  
ECUADOR

S AMERICAN .....South American 1969  
1969 ECUADOR Ecuador (Baltra, Galapagos)  
GALAPAGOS

S AMERICAN .....South American 1969  
1969 GUYANA Guyana

S AMERICAN .....South American 1969  
1969 PARAGUAY Paraguay

S AMERICAN .....South American 1969  
1969 PERU Peru

S AMERICAN .....South American 1969  
1969 TOBAGO Trinidad & Tobago  
AND TRINIDAD

S AMERICAN .....South American 1969  
1969 VENEZUELA Venezuela  
VENEZUELA

SOUTH ASIA .....South Asia

SINGAPORE .....Singapore

TANANARIVE .....Tananarive Observatory 1925  
OBSERVATORY Madagascar  
1925  
MADAGASCAR

TIMBALAI .....Timbalai 1948  
1948 BRUNEI Brunei, East Malaysia  
E MALAYSIA (Sabah, Sarawak)

TOKYO .....Tokyo  
MEAN Mean for Japan, Korea, Okinawa

TOKYO .....Tokyo  
JAPAN Japan

TOKYO .....Tokyo  
KOREA Korea

TOKYO .....Tokyo

OKINAWA .....Okinawa

TRISTAN DA .....Tristan Astro 1968  
CUNHA Tristan da Cunha  
ASTRO 1968

VITI LEVU .....Viti Levu 1916  
1916 FIJI Fiji (Viti Levu Island)

WAKE .....Wake

ENIWETOK '60 .....Eniwetok 1960

MARSHALL ISL .....Marshall Islands

WAKE ISLAND .....Wake Island Astro 1952  
ASTRO 1952 Wake Atoll

WGS 1972 .....WGS 1972  
GLOBAL Global Definition  
DEFINITION

YACARE .....Yacare  
URUGUAY Uruguay

ZANDERIJ .....Zanderij  
SURINAME Suriname



## **LOWRANCE ELECTRONICS FULL ONE-YEAR WARRANTY**

"We", "our", or "us" refers to LOWRANCE ELECTRONICS, INC., the manufacturer of this product. "You" or "your" refers to the first person who purchases this product as a consumer item for personal, family, or household use.

We warrant this product against defects or malfunctions in materials and workmanship, and against failure to conform to this product's written specifications, all for one year (1) from the date of original purchase by you. **WE MAKE NO OTHER EXPRESS WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER CONCERNING THIS PRODUCT.** Your remedies under this warranty will be available so long as you can show in a reasonable manner that any defect or malfunction in materials or workmanship, or any non-conformity with the product's written specifications, occurred within one year from the date of your original purchase, which must be substantiated by a dated sales receipt or sales slip. Any such defect, malfunction, or non-conformity which occurs within one year from your original purchase date will either be repaired without charge or be replaced with a new product identical or reasonably equivalent to this product, at our option, within a reasonable time after our receipt of the product. If such defect, malfunction, or non-conformity remains after a reasonable number of attempts to repair by us, you may elect to obtain without charge a replacement of the product or a refund for the product. **THIS REPAIR, REPLACEMENT, OR REFUND (AS JUST DESCRIBED) IS THE EXCLUSIVE REMEDY AVAILABLE TO YOU AGAINST US FOR ANY DEFECT, MALFUNCTION, OR NON-CONFORMITY CONCERNING THE PRODUCT OR FOR ANY LOSS OR DAMAGE RESULTING FROM ANY OTHER CAUSE WHATSOEVER. WE WILL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO ANYONE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR OTHER INDIRECT DAMAGE OF ANY KIND.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty does NOT apply in the following circumstances: (1) when the product has been serviced or repaired by anyone other than us, (2) when the product has been connected, installed, combined, altered, adjusted, or handled in a manner other than according to the instructions furnished with the product, (3) when any serial number has been effaced, altered, or removed, or (4) when any defect, problem, loss, or damage has resulted from any accident, misuse, negligence, or carelessness, or from any failure to provide reasonable and necessary maintenance in accordance with the instructions of the owner's manual for the product.

We reserve the right to make changes or improvements in our products from time to time without incurring the obligation to install such improvements or changes on equipment or items previously manufactured.

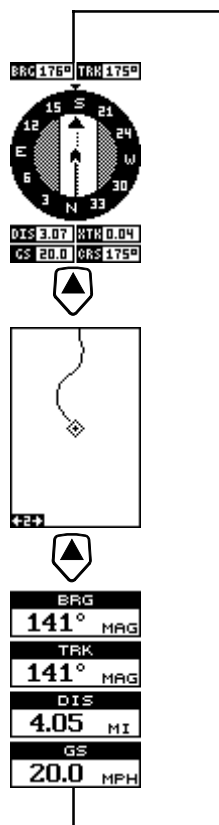
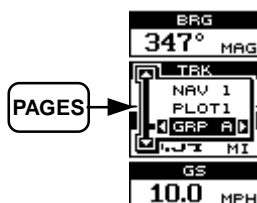
This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

**REMINDER:** You must retain the sales slip or sales receipt proving the date of your original purchase in case warranty service is ever required.

**LOWRANCE ELECTRONICS, INC.**  
12000 E SKELLY DRIVE TULSA, OK 74128  
(800) 324-1356

## PAGES

Press the PAGES key to view the pages menu, then using the up and down arrow keys to switch between nav, plot, and groups screens. Use the right or left arrow keys to switch between different screens on each page.



## GROUPS SCREENS



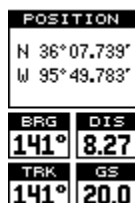
GRP A



GRP B



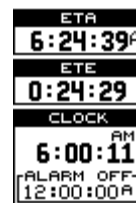
GRP C



GRP H



GRP I



GRP J



GRP K

## NAV SCREENS

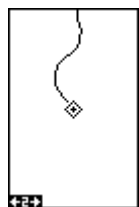


## NAV-1

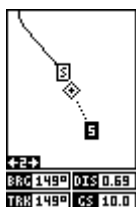


## NAV-2

## PLOT SCREENS



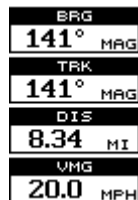
## PLOT-1



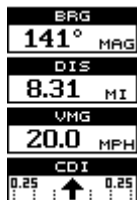
## PLOT-2



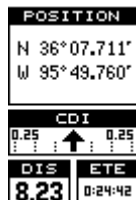
**GRP D**



**GRP E**



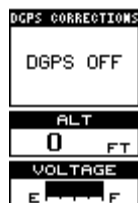
**GRP F**



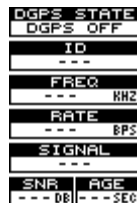
**GRP G**



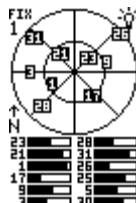
**GRP L**



**GRP M**



**GRP N**



**GRP O**

## **How to Obtain Service (Canadian Customers Only)**

We back your investment in quality products with quick, expert service and genuine Lowrance replacement parts. If you need service or repairs, contact the Lowrance Factory Customer Service Department at the toll-free number listed below. A technician may be able to solve the problem and save you the inconvenience of returning your unit. You will be asked for your unit's serial number.

**800-324-1356**

Canada Only. Monday through Friday 8:00 A.M. - 8:00 P.M. Central Time.

When sending a product for repair, please do the following:

1. Always use the original shipping container and filler material the product was packed in when shipping your product.
2. Always insure the parcel against damage or loss during shipment. Lowrance does not assume responsibility for goods lost or damaged in transit.
3. For proper testing, repair, and service, send a brief note with the product describing the problem. Be sure to include your name, return shipping address, and a daytime telephone number.

## **How to Obtain Service (International Customers Only - Except Canada)**

If you need service or repairs, contact the dealer in the country you purchased your unit.

**WARRANTY REPAIR WILL BE HONORED ONLY IN THE  
COUNTRY UNIT WAS PURCHASED.**

Please follow the shipping instructions shown below on this page if you have to mail your unit to the dealer. For proper testing, repair, and service, send a brief note with the product describing the problem. Be sure to include your name, return shipping address, and a daytime telephone number.

## **Accessory Ordering Information - All Countries**

To order accessories such as power cables or transducers, please contact:

1. Your local dealer. Most quality dealers that handle GPS navigation equipment should be able to assist you with these items. Consult your local telephone directory for listings.
2. Canadian customers only can write:  
Lowrance/Eagle Canada, 919 Matheson Blvd., E. Mississauga, Ontario L4W2R7  
or fax 416-629-3118

## **How to Obtain Service - U.S.A. Only**

We back your investment in quality products with quick, expert service and genuine Lowrance® replacement parts. If you're in the United States and you have questions, please contact the Factory Customer Service Department using our toll-free number listed below. You must send the unit to the factory for warranty service or repair. Please call the factory before sending the unit. You will be asked for your unit's serial number. Use the following toll-free number:

**800-324-1356**

Your unit is covered by a full one-year warranty. (See inside this manual for complete warranty details.) If your unit fails and the failure is not covered by the original warranty, Lowrance has a flat-rate repair policy that covers your unit and accessories packed with the unit at the factory. There is a 180-day warranty on all non-warranty repairs from the factory, which is similar to the original warranty, but is for 180 days rather than one year. For further details, please call us at the above number.

## **Accessory Ordering Information**

To order accessories such as power cables, please contact:

1) Your local marine dealer. Most quality dealers that handle marine electronic equipment should be able to assist you with these items. Consult your local telephone directory for listings.

2) LEI Extras, Inc. P.O. Box 129 Catoosa, OK 74015-0129  
or call  
800-324-0045  
(USA orders only.)

Lowrance Electronics may find it necessary to change or end our shipping policies, regulations, and special offers at any time. We reserve the right to do so without notice.