

# User Manual



**MAGELLAN**



## WARNINGS

### **FOR SAFETY REASONS, THE DRIVER SHOULD NOT USE THIS DEVICE IN A VEHICLE WHILE IN MOTION TO ASSIST THE DRIVER TO NAVIGATE.**

Please do not try and change any settings on the SporTrak while driving. Come to a complete stop or have your passenger make any changes. Taking your eyes off the road is dangerous and can result in an accident in which you or others could be injured.

### **USE GOOD JUDGEMENT**

This product is an excellent navigation aid, but does not replace the need for careful orienteering and good judgement. Never rely solely on one device for navigating.

### **USE CARE**

The Global Positioning System (GPS) is operated by the U.S. Government, which is solely responsible for the accuracy and maintenance of GPS.

The accuracy of position fixes can be affected by the periodic adjustments to GPS satellites made by the U.S. Government and is subject to change in accordance with the Department of Defense civil GPS user policy and the Federal Radionavigation Plan. Accuracy can also be affected by poor satellite geometry.

### **USE PROPER ACCESSORIES**

Use only Magellan cables and antennas; the use of non-Magellan cables and antennas may severely degrade performance or damage the receiver, and will void the warranty.

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# Introduction

Congratulations on your purchase of the Magellan SporTrak GPS receiver. Since introducing the world's first commercial, hand-held GPS receiver in 1989, Magellan has led the way with innovative GPS products to meet a wide range of positioning and navigation needs.

The receiver is designed to get you out into the "Great Outdoors" rather than spending hours reading the user's manual. In order to get you outdoors quickly, the manual is designed with key sequences rather than wordy sentences.

Before you begin, make sure that your package includes all of the items listed on the packing list. Magellan is a trademark name for Thales Navigation.

## SporTrak User Manual

The manual is divided into chapters: *Introduction*, *Getting Started*, *Basic Operation*, *Reference*, *Customizing*, *Troubleshooting* and *Glossary*. There are also subchapters that describe NMEA, Datums and Accessories.

It is very important that you read through the *Getting Started* chapter first as it prepares your receiver for use and provides basic instruction. The *Basic Operation* chapter describes the features found in your receiver including step-by-step instructions on their use.

The *Reference* section contains information to help you navigate using waypoints, routes and auxiliary functions. Following is the *Customizing* chapter, that allows you to establish options you want set in the receiver. The *Troubleshooting* chapter gives you a problem and answer series to guide you. The final chapter, *Glossary*, defines terms that may be unfamiliar to you.

# SporTrak GPS Receiver



**QUIT** key  
cancels the  
operation of the last  
key press and can be  
used to back through  
the NAV screens.



**NAV** key  
accesses  
the navigation  
screens.



**MARK** key  
creates  
waypoints  
and stores the  
current position.



**LIGHT** key turns  
the display  
backlight on and off.



**ENTER**  
key  
confirms data  
entries or menu  
selections.



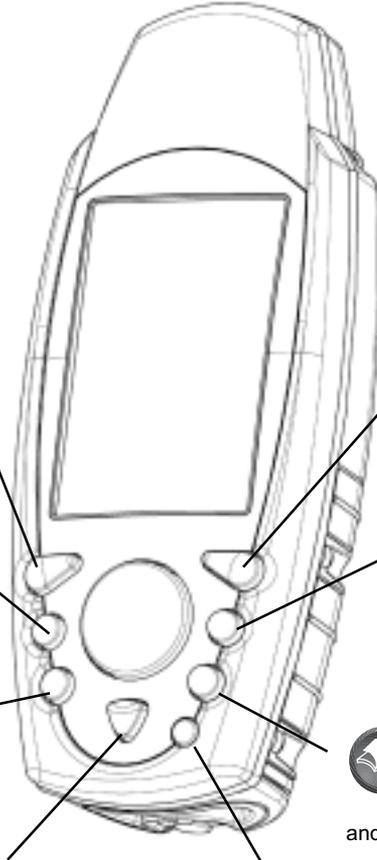
**GOTO**  
key  
creates a  
direct route  
to any waypoint  
stored in memory.



**MENU**  
accesses  
waypoint, route  
and setup functions.



**POWER** key  
turns the  
receiver on and  
off.



# Getting Started

This section shows you how to use your receiver for the first time and explains:

- Battery Installation
- Primary Usage
- Getting a Fixed Position

## Installing the Batteries

The Magellan SporTrak uses two AA batteries that are installed from the bottom through the battery cover. You can expect to get up to 15 hours of usage on two AA batteries with the backlight turned off.

To remove the battery compartment, loosen the retaining screw at the bottom of the battery compartment. The battery compartment will come free from the SporTrak and you can slide it out.

Install two AA batteries observing the correct polarity. Slide the battery compartment back into the SporTrak and tighten the retaining screw. Do not overtighten the retaining screw.



**How much time do I have to replace the batteries?** *Any waypoints or routes you have created are stored in permanent memory with the batteries removed. Present position and time data is not stored in permanent memory but will be held in memory for at least 12 hours without batteries installed.*



Always turn the SporTrak off before removing the batteries or turning off external power. Failure to do so can cause loss or corruption of data.

## Proper Handling - Signal Reception

**Clear View of the Sky.** Because the receiver attains information it needs from satellites orbiting the earth, the antenna needs to have a relatively unobstructed view of the sky. This allows the receiver to choose from all satellites currently available.



If the view of the sky is poor, (large cliffs or buildings, heavy foliage or other obstructions) the satellite signals can be blocked and the receiver may take longer to compute a position fix.



**Holding the Receiver.** The receiver is designed to fit comfortably in your hand. Hold the receiver in the palm of your hand with the antenna pointing towards the sky.

*You do not need to initialize your receiver each time you use it unless the memory has been cleared or if it has been transported more than 300 miles while turned off.*

## Power On



If after powering the receiver on, you do not press **ENTER** within 10 seconds, the receiver will shut off automatically.



## Initialize

### Initialize for First Time Use

The final step in setting up the SporTrak for the first time is to initialize the receiver . This will help your SporTrak begin computing your position in the fastest manner possible.

The reason for initialization is to speed up the process for computing the first position fix when the SporTrak has no last position computed in memory (i.e., when the SporTrak is brand new or memory has been cleared). This gives the SporTrak an approximate indication of where it is located so it can use its satellite almanac (stored in permanent memory) to estimate what satellites are overhead and which ones it should be looking for.

Follow these instructions to initialize the SporTrak.

### Select Language

The first time you use your SporTrak (or if memory has been completely erased) you will be asked to select the language that you want to use. Use the UP/DOWN arrows on the keypad to highlight the language you desire. With the language highlighted, press the  ENTER button. You can select English, French, German, Spanish, Italian, Portuguese, Finnish, Norwegian or Swedish.

You can change the language at any time by accessing the Languages option of the Setup Menu. (See *Changing Languages* in the Reference Section of the User Manual.)

## Key Layout Screen

A screen is displayed showing the icons and text name for each key. When the SporTrak prompts you to press a key, it displays the text equivalent for the key icon. This screen should help you understand which key the SporTrak is prompting you to press. When you are done viewing this screen, press  ENTER.

## Initialize Alert

A screen is displayed informing you that the SporTrak is not initialized. Press  ENTER to continue.

## Select Approximate Position

Use the Up/Down arrows on the keypad to highlight your general region.

Press  [ENTER].



Use the Up/Down arrows on the keypad to highlight your area.

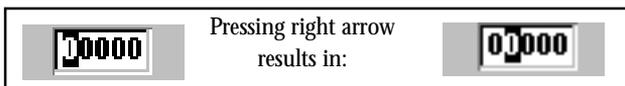
Press  [ENTER].



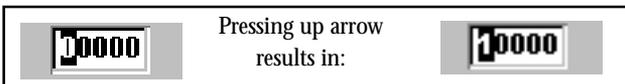
To use the arrow keys to edit a field, follow the simple diagram below.

### Editing

 moves the cursor block left or right.



 increments the value up or down.



You are prompted to enter the elevation of your present position. Use the arrow keys to enter the elevation, if you know it. If you don't know your elevation, press  **ENTER**.

The cursor appears in the time field, waiting for you to input your local time. Set your local time using the arrow keys. Be sure that you set the AM/PM indicator.

Note: After the SporTrak starts to pick up signals from any satellite, it will automatically update the time using the satellite's atomic clock.

After you have entered the correct time, press  **[ENTER]**.

Using the arrow keys, enter the present date.

Press  **[ENTER]**.

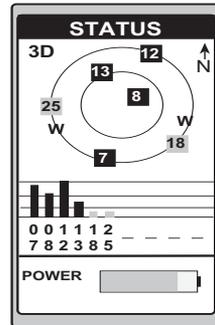
A screen will be displayed asking your primary use for your receiver, MARINE or LAND. The default is LAND. Use the arrow keys to select usage and press  **[ENTER]**.

The following chart shows the terminology that your receiver uses while in land or marine mode. **For purposes of this manual, it will be assumed that the receiver is in the marine mode.**

	Land	Marine
Speed	SPD	SOG
Bearing	BRG	BRG
Distance	DST	DST
Heading	HDG	COG
Velocity Made Good	VMG	VMG
Course To Steer	CTS	CTS
Estimated Time of Arrival	ETA	ETA
Time To Go	TTG	ETE
Cross Track Error	XTE	XTE
Recorded Position	Landmark	Waypoint
Units of Measure	MILES/MPH or KM/KPH	NM/KNOTS

You have completed the *Initialization*. The *STATUS* screen will appear on your receiver.

Note: The “3D” in the upper left corner is displayed when the receiver has begun computing your position. The “3D” symbol indicated that the receiver has acquired four or more satellites and can therefore compute elevation as well as your position. If “2D” is displayed, then the SporTrak is computing your position but not elevation. This could be either due to only three satellites have been acquired or you have set the elevation mode to 2D in the Setup Menu.



## Getting a Fixed Position

Now you should go outside in an area where you can get a clear view of the sky. The receiver will begin acquiring data from the satellites in view and will display the progress on the *STATUS* screen. Once the receiver has computed a fixed position, the *POSITION* screen will be displayed.

## Saving Your Waypoint

Once the receiver has computed your current position, you may save (MARK) this position as a waypoint. You can save up to 500 waypoints in your SporTrak and refer back to them at any time.

### Saving Your Position with a Receiver-Created Name

This is a fast way to save your position.



### Saving Your Position with a User-Created Name

This allows saving a position with a name that is more descriptive, such as "CAMP" or "HOME".



### Creating a GOTO

A GOTO is a route that guides you from your current position to any waypoint in the receiver's memory.





This completes the *Getting Started* section.  
The following *Basic Operation* section will familiarize you with the NAV screens and more detailed functions.

# Basic Operation

## Entering Information

Throughout this user manual there are some key presses that will be used often, so please keep them in mind while setting up and navigating. When entering data...

- Use the  for making selections and moving up or down.
- Use the  to move the cursor to the left or right and page through menus.
- Press  to return to the previous screen and to exit a screen or end a process.

## Navigation Screens

The nine NAV (Navigation) screens (*STATUS*, *POSITION*, *NAV 1*, *COMPASS*, *NAV 2*, *PLOT*, *ROAD*, *SPEED* and *TIME*) provide you with necessary information you will need to use the receiver as a navigational tool.

NAV screens can be viewed by pressing  from any screen. While viewing any NAV screen, you can use the  or  to step through the sequence of NAV screens.

All screens, except *STATUS* and *POSITION* screens, can be disabled by turning them off in the NAV SCREENS portion of SETUP.

## Using the Status Screen

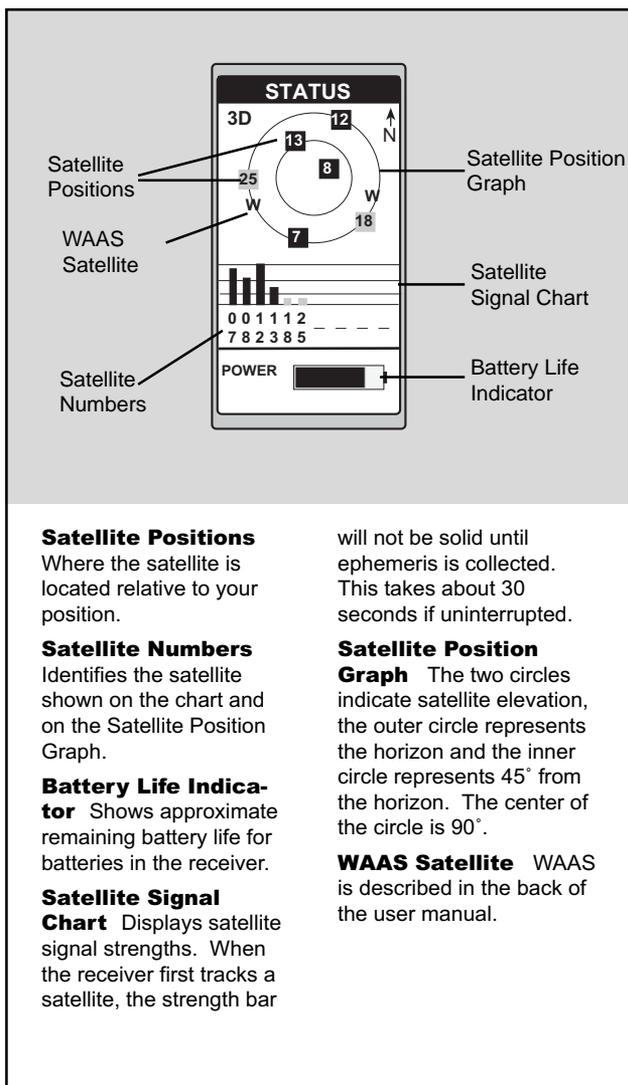
The *STATUS* screen gives you the general well-being of your receiver by showing you satellite status, signal strengths and battery life.



Once the receiver has computed a fixed position, the *STATUS* screen will be replaced by the *POSITION* screen.

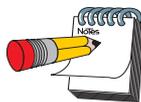


The Battery Life Indicator was designed to be used with AA alkaline batteries. With AA lithium batteries, you will have more battery life available than shown on the Battery Life Indicator.



## Using the Position Screen

The *POSITION* screen displays the coordinates of your last computed position and basic navigation data. You also have the option of viewing your position using another coordinate system.



The screenshot shows the following data on the POSITION screen:

- Position Coordinates:** 34° 06.52N, 117° 49.56W
- Elevation:** ELEV 900 FT
- Date:** 23JAN97
- Time:** 11:23:35 PM
- Estimated Position Error:** EPE 112 FT
- Speed:** SPEED 5.38 K<sub>T</sub>
- Distance Traveled:** TRIP 238.8 M
- Course:** COURSE 150° M
- Compass:** A scale from 120 to 150 with 'S' at the end and a position icon.
- Second Coordinate System access:** Indicated by a double-headed arrow at the bottom of the compass.

**Position Icon** Your current position on the compass.

**Estimated Position Error** May display the estimated position error value, WAAS (if WAAS corrections are being received), AVERAGING (if computing a position while not moving), "DGPS" (if DGPS is being fed to receiver), or "Simulate" (if in the simulate mode).

**Second Coordinate System Access** Displays your present position in a secondary coordinate system. Datums can be selected under SETUP.

When you are stationary, the receiver begins the averaging mode. While averaging, the receiver continuously takes fixes to create an average. Once you begin moving, averaging stops automatically.

## Viewing the Secondary Coordinate Screen

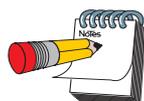
From the *POSITION* screen, use the left/right *ARROWS* to view the *Second Coordinate System* access screen.

## Using the NAV 1 Screen

The *NAV 1* screen displays your destination along with four customizable navigation data and a graphical compass.



Ideally, when you are navigating, the Position Icon and the Destination Icon should line up, one above the other.



When the bearing to your destination cannot be displayed within the compass, an arrow will be displayed to indicate the steering direction you should be traveling.

Destination Name: TO: FISH

Destination Icon: (Position Icon)

Compass: 120 150 S

Position Icon: (Arrow pointing to 150)

Customizable Navigation Data:

- DST 50.2<sup>n</sup><sub>m</sub>
- SOG 8.2<sup>K</sup><sub>T</sub>
- XTE 3.80<sup>n</sup><sub>m</sub>
- VMG 7.2<sup>K</sup><sub>T</sub>
- BRG 127<sup>o</sup><sub>m</sub>
- COG 150<sup>o</sup><sub>m</sub>

**Destination Icon** This icon represents where you want to go.

**Customizable Navigation Data** You can change the four navigational fields. You can choose from BRG, DST, SOG, COG, VMG, CTS, ETA, ETE, XTE, TRN, ALT, TME and blank.

CUSTOMIZE	
BRG	027 <sup>o</sup> <sub>m</sub>
DST	50.2 <sup>n</sup> <sub>m</sub>
SOG	8.2 <sup>K</sup> <sub>T</sub>
COG	056 <sup>o</sup> <sub>m</sub>
VMG	7.2 <sup>K</sup> <sub>T</sub>
CTS	028 <sup>o</sup> <sub>m</sub>
ETA	01:09P
ETE	02H24M
XTE	L.2 <sup>n</sup> <sub>m</sub>
TRN	L26 <sup>o</sup>
ALT	83 <sup>F</sup> <sub>T</sub>
TME	01:09P
BLANK	

## Customizing the NAV 1 Screen

The *NAV 1* screen can be changed to show the navigation data that you prefer to view.

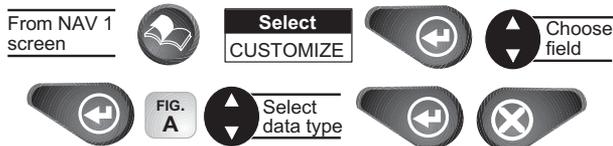


Figure A. Select the data field to appear on the NAV 1 screen.

## Using the Compass Screen

As well as displaying the customizable navigation data, the *COMPASS* screen provides a pointer compass to help you reach your destination.

Destination Name

TO: HOME

BRG 127<sup>m</sup> DST 3.52<sup>i</sup>

COG 156<sup>m</sup> SOG 2.7<sup>H</sup>

Sun Icon

Compass

Steering Indicator

Destination Icon

COG Indicator

Moon Icon

**Steering Indicator**  
Displays the bearing of the destination relative to the course over ground.

**Destination Icon**  
Shows the general direction you should be traveling.

**COG Indicator** Displays direction you are traveling. The COG indicator always points up and the compass rotates according to the COG.



When the COG Indicator and the Steering Indicator point in the same direction, you are on course.

The NorthFinder™ feature displays sun and moon icons, above the horizon, for you to determine the direction of north and your destination. Align the sun on the COMPASS screen with the sun in the sky. When aligned, the Steering Indicator will point you in the direction you should travel to reach your destination.

## Customizing the Compass Screen

The *COMPASS* screen can be changed to show the navigation data that you prefer to view.



CUSTOMIZE	
BRG	---°m
DST	---nm
SOG	---KT
COG	---°m
VMG	---KT
CTS	---°m
BLANK	

Figure B. Select the data field to appear on the COMPASS screen.

## Using the NAV 2 Screen

The *NAV 2* screen displays four customizable navigation data. The *NAV 2* screen is designed to help you see the screen when your receiver is mounted at a distance from you.

Destination Name

TO: CAMP

BRG 14.2°<sub>M</sub>

COG 171°<sub>M</sub>

SOG 11.2<sub>K</sub><sub>T</sub>

DST 50.2<sub>N</sub><sub>M</sub>

Customizable Navigation Data

**Customizable Navigation Data.** You can change the four navigational data fields. You can choose from BRG, DST, SOG, COG, VMG, CTS, ETA, ETE, XTE, TRN, ALT, TME and blank.

CUSTOMIZE	
BRG	027° <sub>m</sub>
DST	50.2 <sub>nm</sub>
SOG	8.2 <sub>KT</sub>
COG	056° <sub>m</sub>
VMG	7.2 <sub>KT</sub>
CTS	028° <sub>m</sub>
ETA	01:09P
ETE	02H24M
XTE	L.2 <sub>nm</sub>
TRN	L26°
ALT	83° <sub>T</sub>
TME	01:09P
BLANK	

## Customizing the NAV 2 Screen

The *NAV 2* screen can be changed to show the navigation data that you prefer to view.

From NAV 2 screen

Select CUSTOMIZE

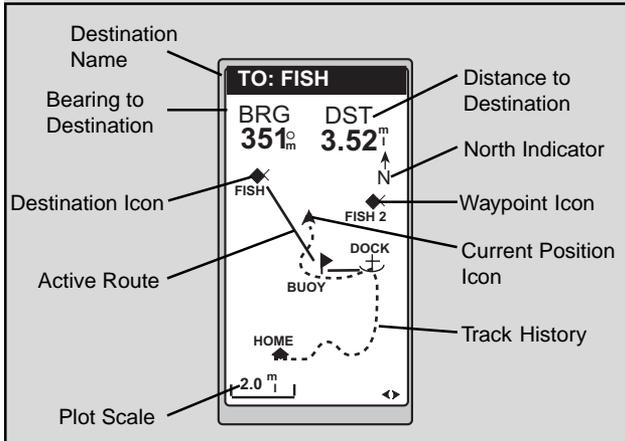
Choose field

FIG. A Change field

Figure A. Select the data field to appear on the NAV 2 screen.

## Using the Plot Screen

The *PLOT* screen is a mini map that shows where you have traveled and where you want to travel. You can view the active route, your current position and the other waypoints and destination in the *PLOT* screen.



The diagram shows a handheld device screen displaying a mini map. At the top, it says "TO: FISH". Below that, it shows "BRG 351<sup>m</sup>" and "DST 3.52<sup>m</sup>". A north indicator is shown with an "N" above an arrow. The map shows a current position icon (a diamond with a cross) and a track history (a dashed line) connecting waypoints labeled "HOME", "BUOY", "DOCK", "FISH 2", and "FISH". A solid line with an arrow indicates the active route from the current position to "FISH". A scale bar at the bottom left shows "2.0<sup>m</sup>" and navigation arrows.

**Active Route**  
Indicates the direction required to reach your destination.

**Plot Scale** Can be changed by using the left/right arrows. The scale ranges from .1 to 200 miles.

**Track History**  
Automatically records where you have been. The SporTrak can store up to 2000 track points.



PAN-N-SCAN, an additional feature, allows you to scroll through the *PLOT* screen enabling you to create waypoints and GOTOs.

## Selecting PAN-N-SCAN

By using PAN-N-SCAN, you can look ahead or review where you have traveled according to waypoints, routes and track history.



The ARROWS can be used to move the cursor. If the cursor is over the waypoint icon when **MENU** is pressed, the menu will be displayed with WPT INFO added. Moving the cursor over a waypoint brings up the name, bearing and distance. Pressing **MENU** and selecting WPT INFO displays full information.

In PAN-N-SCAN mode, you can zoom in by pressing the **ENTER** key. Once the lowest scale is reached (0.1 mile), pressing **ENTER** zooms out to the highest scale (200 miles).

## Setting Track History

Using **TRACK HISTORY** records where you have been by automatically storing locations, as “dropping bread crumbs” from your starting point as you travel. This is useful when you want to return to your starting point.



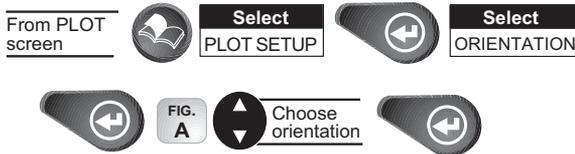
## Clearing Track History



## Setting Up the Plotter

This menu allows you to change the orientation, turn the plot rings on or off, set the course projection and set the plotter scale.

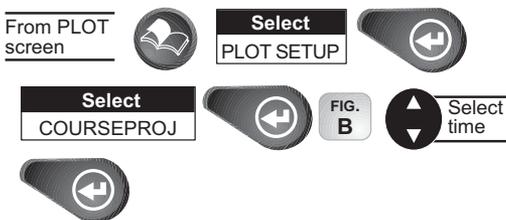
### Setting Plotter Orientation.



**Turning Plot Rings On or Off.** You may want to estimate the distance to a point on the plotter. To assist you, turn the PLOT RINGS option on. The distance between each plot ring is equal to the scale, therefore, at most you will see a portion of 2 rings at one time.



**Setting Up Course Projection.** You may want to know where you will be after a specified period of time based on your current speed and heading.



A solid black line will appear starting from your position to the projected position.



*Figure A.* You can choose from TRACK UP (direction you are moving at the top of the screen), COURSE UP (destination of the current leg at the top of the screen) and NORTH UP (north at the top of the screen).



*Figure B.* You can choose from OFF, 1, 2, 5 and 10 minutes.

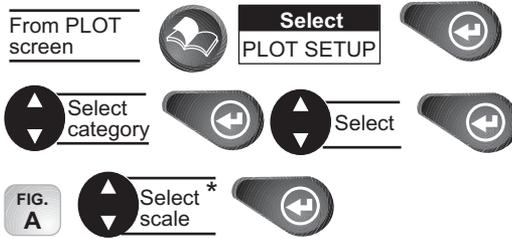
PLOT SCALES	
0.1	
0.2	
<b>0.3</b>	
0.5	
0.8	
1	
2	
3	
5	
8	
10	
20	
50	
100	
200	

Figure A. You may select the scale for the waypoint to appear on the plotter. The number you select is the maximum scale in which the icon will appear.



Depending on which has been selected previously, you may need to select SHOW DATA to bring the fields into view.

**Setting Up Plot Scales.** You can set up the maximum scales at which the waypoints appear on the plotter screen.



\* Selecting OFF will turn the scales off. If you select either ICONS ONLY or ICONS/NAMES, you will be prompted to change the plot scales for a waypoint.

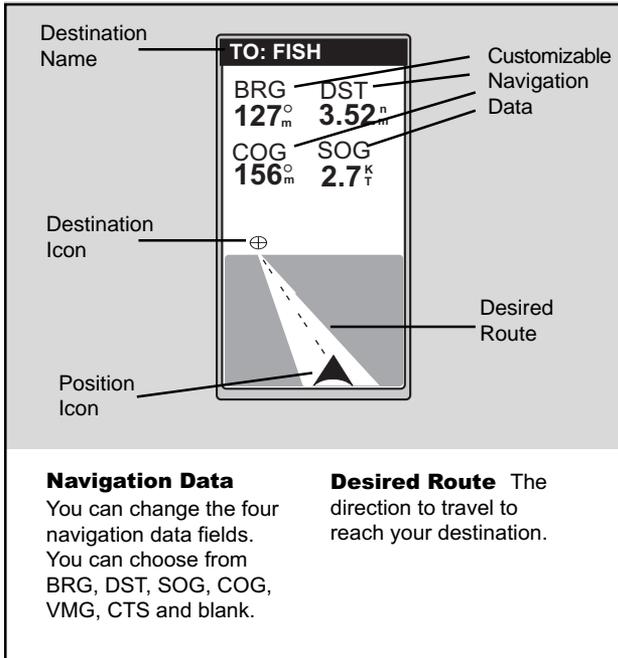
### Setting Hide Data/Show Data

You may want bearing and distance to be hidden. You can choose to either hide these navigation data fields or have the fields present. Under HIDE DATA/SHOW DATA, you can turn these fields on or off.



## Using the Road Screen

The *ROAD* screen displays four customizable navigation data fields, at the top of the screen, and shows your position on the desired route.

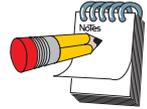


The diagram shows a screen with the following elements:

- Destination Name:** TO: FISH
- Customizable Navigation Data:**
  - BRG 127°<sub>m</sub>
  - DST 3.52<sup>n</sup><sub>m</sub>
  - COG 156°<sub>m</sub>
  - SOG 2.7<sup>K</sup><sub>T</sub>
- Destination Icon:** A circle with a crosshair.
- Position Icon:** A triangle representing the user's current position.
- Desired Route:** A dashed line on a map showing the path from the position icon to the destination icon.

**Navigation Data**  
You can change the four navigation data fields. You can choose from BRG, DST, SOG, COG, VMG, CTS and blank.

**Desired Route** The direction to travel to reach your destination.



When the destination icon is straight ahead, you are on course. If you are off course and the destination icon is off the screen, an arrow will appear to point you in the direction to get back on course.

## Customizing the Road Screen

The *ROAD* screen can be changed to show the navigation data that you prefer to view.



The diagram shows the following steps:

- From *ROAD* screen, press the **Select** button (book icon).
- Press the **CUSTOMIZE** button.
- Press the **Choose field** button (directional pad).
- Press the **Change field** button (directional pad).
- Press the **FIG. B** button.
- Press the **Change field** button (directional pad).
- Press the **Choose field** button (directional pad).
- Press the **Change field** button (directional pad).

CUSTOMIZE	
BRG	---°m
DST	---nm
SOG	---KT
COG	---°m
VMG	---KT
CTS	---°m
BLANK	

*Figure B.* You can choose from BRG, DST, SOG, COG, VMG, CTS and blank.

## Using the Speed Screen

While using the *SPEED* screen, you can view the graphical speedometer, odometer and trip odometer as well as the numerical bearing, course over ground and speed over ground.

The screenshot shows the following information and controls:

- Destination Name:** TO: CAMP
- Navigation Data:** BRG 027°, COG 056°, SOG 14.2 k
- Average Speed Icon:** A small circular icon representing average speed.
- Instantaneous Speed:** A needle on a speedometer scale.
- Graphical Speedometer:** A semi-circular scale with markings at 0, 5, 10, 15, and 20.
- Odometer:** A digital display showing 00542.5 miles.
- Trip Odometer:** A digital display showing 054.5 miles.

**Graphical Speedometer** Scale can be increased or decreased by using the right/left arrows.

**Instantaneous Speed** A graphical representation of speed over ground (SOG).

**WARNING**

RESET  
ODOMETER  
TO 000?  
**YES**  
NO

Figure A. Select “Yes” to reset the odometer.

## Resetting the Odometer

You may want to reset the Odometer field to zero.

From SPEED screen

Select

ODOM RESET

Select yes or no

FIG. A

## Resetting the Trip Odometer

You may want to reset the Trip field to zero.

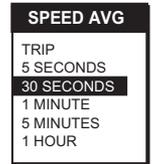


## Setting the Speed Average

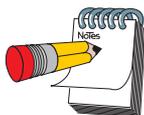
You may want to reset the Speed Average field in your receiver.



The default is 30 seconds.



*Figure B.* You can set the timing for Speed Averaging. You can choose from TRIP, 5, 30 seconds, 1, 5 minutes or 1 hour. TRIP option is for averaging speed over the entire trip.



The default for the *TIME* screen is off.

All data shown on the *TIME* screen applies to the route you are navigating in.

## Using the Time Screen

The *TIME* screen displays the current time, estimated time enroute, time of arrival, and elapsed time in regards to the route you are navigating in.

**Time** Can be customized to correct the current time and to select the time format.

**Estimated Time Enroute (ETE)**

**Time of Arrival (OF ARRIVAL)**

**Elapsed Time (ELAPSED)**

## Selecting Time Format

You may need to correct the current time or change the time format.

From *TIME* screen

**Select FORMAT**

**FIG. A** Select format

If LOCAL 24HR or LOCAL AM/PM

**Change fields**

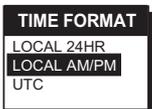


Figure A. You can choose from LOCAL 24HR, LOCAL AM/PM and UTC.

If UTM is chosen you will not be prompted to make the time change.

## Resetting Elapsed Time

You may want to reset the elapsed time to zero.

From TIME  
screen



Select  
RESET ELAP



You have completed the basic operation for your receiver. From the information provided, you can now navigate from place to place quickly and easily.

The following chapters provide you with additional information on using your receiver that build on what you have learned.

# Reference

The *Reference* section contains information that will help you navigate using your receiver. Now that you have read the *Basic Operation* section, you have reviewed the basic usage. The *Reference* section will cover waypoints, routes, and auxiliary functions.

The *Working with Waypoints* section tells you how to create, edit, delete, project and sort waypoints. These functions will guide you in the uses of waypoints. You can create your own waypoints (known as User waypoints) or use the waypoints already in the receiver's memory (Non-User waypoints). You can store up to 500 user positions which can be used to build routes for navigation.

The *Working with Routes* section tells you of the four different types of routes consisting of GOTO, BACK-TRACK, MOB and MULTI-LEG ROUTE. A route is a planned course of travel defined by a series of waypoints saved in the receiver's memory. The receiver holds 20 routes with 30 legs. The route function allows you to create, activate/deactivate, view/edit or delete any one of the 20 routes.

The *Auxiliary Function* section tells you how to select the Sun/Moon and Fish/Hunt options, contrast, simulate mode and the alarms and message functions. You can choose from the Anchor alarm, Arrival alarm, XTE alarm, Proximity alarm and GPS Fix alarm. These alarms can be reset to the alarm default settings or can be cleared of defaults.

Following, you will find the *Customizing* section. Customizing allows you to use the Setup menu to establish the options you would like to set in your receiver.

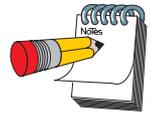
## Working with Waypoints

This section tells you how to edit, delete, project and sort waypoints. You can store up to 500 user positions which can be used to build routes for navigation.

Waypoints consist of two types, User and Non-User. The User types are made up of waypoints that you can save in the receiver's memory. You can edit and delete these waypoints, if you wish. The Non-User types display locations, their coordinates and a description. These are permanently stored in the receiver's memory and cannot be deleted unless written over by waypoints downloaded from the DataSend™ CD.

To help you understand the difference, the chart below shows the functions of the User and Non-User waypoints.

WPT Types	Available Functions
User	<ul style="list-style-type: none"><li>• Create</li><li>• Edit</li><li>• Delete</li><li>• Project</li><li>• Sort</li></ul>
Non-User	<ul style="list-style-type: none"><li>• Find</li><li>• Project</li><li>• Sort</li></ul>



You can store up to 10 Non-User waypoint categories.

As you are working with waypoints, you will notice that the cities (non-user waypoints) are divided into categories. This division is based on the population of the city using the following guidelines:

Major city	500,000+
Large city	100,000 – 500,000
Medium city	20,000 – 100,000
Small city *	Less than 20,000

\* available with DataSend CD.

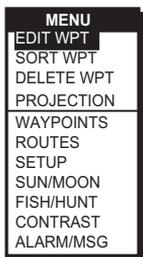


Figure A. This menu allows you to select the edit waypoint mode. Only User waypoints can be edited.

## Creating a User Waypoint

A waypoint is a recorded position that can be used in a route or a GOTO. You can save up to 500 user waypoints in your receiver. You can create a waypoint with a receiver-generated name (WPT001, WPT002, WPTxxx) by pressing:



To create a waypoint with a name of your choice or if you wish to change any data field while entering a waypoint, use the following:



## Editing a User Waypoint

### Editing a Selected Waypoint

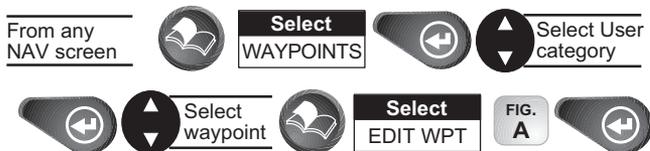


Figure B. You may change any of the data fields in this screen.

**Editing Waypoint Fields.** Follow the instructions on selecting a waypoint and use the following to edit the desired fields.



## Creating, Editing and Deleting a Message

**To create a message.** Follow the instructions on selecting a waypoint and use the following to create/edit/delete a waypoint.



**To delete a message.** Follow the instructions on selecting a waypoint.



**To save your edits.** Follow the instructions on selecting a waypoint.



## Deleting a User Waypoint

You may find that you have saved waypoints that you no longer use. If so, you can delete these unnecessary waypoints.



Once these waypoints are deleted, you cannot undo this process or retrieve these deleted waypoints.

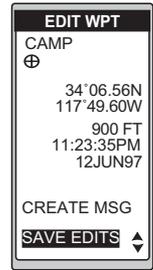
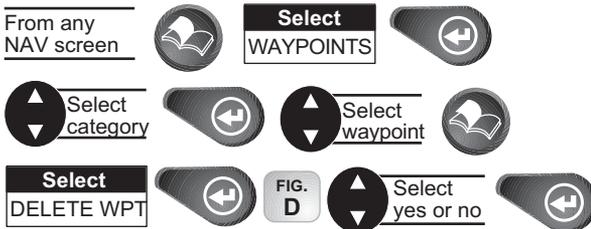


Figure C. Once you have made your changes, be sure to select SAVE EDITS.



Figure D. This screen prompts you to select YES or NO in deleting the waypoint named.

To find the waypoint use the **ARROWS** to change the letters. For example, to find Dodger Stadium, use the **ARROWS** to change the first letter to "D". Then use the **ARROWS** to find the second letter, "O". Continue until the name is found.



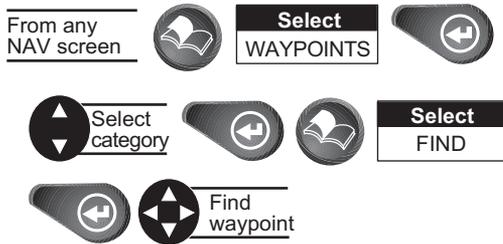
*Figure A.* You can choose from ALPHABETIC (shows all waypoints), NEAREST (shows closest 20 waypoints) and ICON/NAME (cannot sort Non-User waypoints).



In the G.C. (Great Circle) BRG/DST field, you can input the bearing and distance into the data fields in order to compute the projection. You can also input information into the coordinate fields.

## Finding a Non-User Waypoint

To simplify your search for a waypoint, you can find it using the smart scroll function.



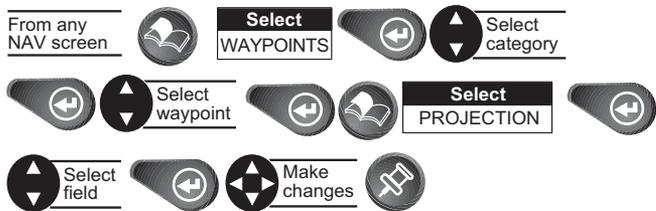
## Sorting a Waypoint

You may want to change how the waypoints are sorted.



## Projecting a Waypoint

This function allows you to create a waypoint at a certain distance and direction from an existing waypoint.



You can change any of the three sections in the *PROJECTION* screen. Once you have the necessary information in the data fields and the receiver has projected the position, you can save the position by pressing [MARK].

## DataSend™ CD (optional)

DataSend™ software contains a database of waypoints that can be sent to your receiver and are broken down into multiple categories. The software allows you to select a geographical area and enable waypoint categories for that location to be transferred into the receiver.

## Using DataSend™

After you have installed DataSend™ you are ready to view and send waypoints to the receiver. While running DataSend™ you will see a background map of the world that you can zoom in to see enabled waypoints.

If you want to send waypoints to your receiver, you must select the geographic area first, then from the waypoint list you can make your selection of waypoints to send. The software will compute the amount of memory required and whether your selection fits into your receiver. If it exceeds the available receiver memory, either the geographic area, list of waypoints selected, or both, can be decreased and the memory requirements recomputed. The list of waypoints selected in the specified geographic area can then be saved under a project name you enter.

You can then send the waypoints to the receiver which replace all waypoints in the receiver. The default waypoints that came with the receiver can be restored at any time.



Don't worry about losing the waypoints that came with the receiver, they are available on the CD for retransmission to the receiver.

## Working with Routes

### Creating/Clearing a GOTO

A GOTO is a route that guides you from your current position to any waypoint in the receiver's memory. As an example, you can save a waypoint at your home. No matter where you go, you will always be able to navigate back home by using GOTO.

#### To create a GOTO



**To clear a GOTO.** The CLEAR GOTO function allows you to delete an active GOTO route.



If there are no active GOTOs, the CLEAR GOTO will not be displayed in the MENU.

### Creating GOTO on the Plotter Screen

A GOTO route can be created by selecting a waypoint on the plotter screen. While on the plotter screen, follow this procedure to access PAN-N-SCAN and set a GOTO by:



When the crosshair is over the waypoint icon, the waypoint name is displayed at the top of the screen.



Figure A. Your menu may differ depending on the waypoints in memory.



By selecting the GOTO destination waypoint from the plotter screen, you can avoid selecting the wrong waypoint if its name is shared with another waypoint.

## Creating a Man Over Board (MOB) Route

Another type of route is a Man Over Board (MOB). The MOB route is useful when you want to instantly create and activate a route to the last computed position.



MOB waypoints will be created and titled MOB001, MOB002 and so on. If a MOB already exists, the receiver will give you the option of replacing the MOB.

**To clear a MOB.** The CLEAR MOB function allows you to delete an active MOB route.

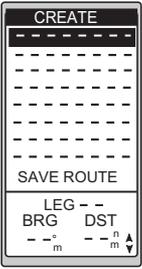


## Creating a Backtrack Route

Backtrack creates a route that starts from the last point recorded in track history using the “bread crumbs” saved, to the first point recorded for track history. By following this route, you “retrace your steps” back to the starting point.



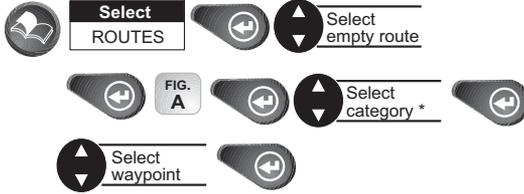
A route will be created and given a name in the format of BXXPxx. XX is the BACKTRACK number and xx is the waypoint number ranging from 01 to 31. For example, your first backtrack will read B01P01. The backtrack waypoints will be listed in the menu just as other waypoints.



**Figure A.** Highlight the first dotted line to place the first waypoint in the multi-leg route.

## Creating a Multi-Leg Route

You may want to create a route with your saved waypoints. For example, if you want to create a route from your home, to a campsite and then to a favorite fishing spot, you can create a route that would take you to each place.

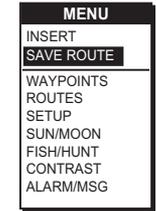
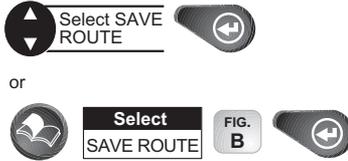


\* You can combine waypoints of different categories in the same route.

The receiver will display the selected waypoint in the starting location and will highlight the destination for leg 2.

Press  for your next selection. Continue this process until you have completed the route.

To end the creation process:

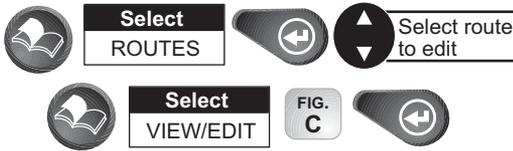


**Figure B.** Use this menu as an option for saving your route.

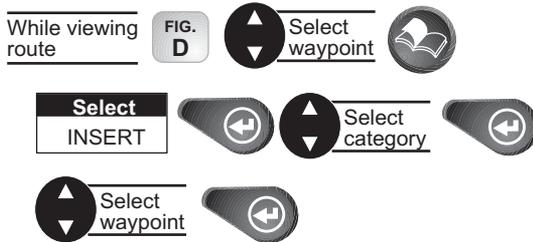


When selecting a navaid for a route, be sure you are selecting the correct one because there may be navaid's with the same names in different parts of the world.

## Viewing/Editing a Route



**Inserting a Leg.** With the route you have created, from your home to a campsite, you can insert a leg in the route. For example, on your way to the campsite, you find a stream that you want to stop at on your way back. You can add the waypoint for the stream to your route.



**Changing a Waypoint in a Route.** Using your home to campsite route, you want to go to the fishing spot on the way to the campsite and not stop at the stream. You can replace the stream waypoint with the fishing spot.

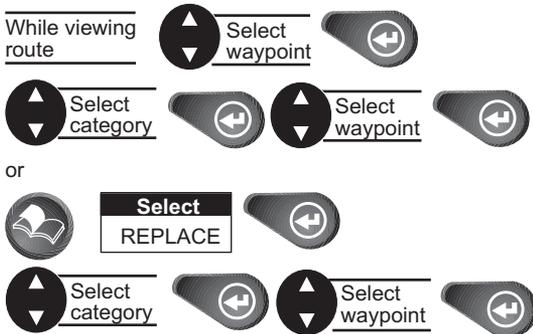


Figure C. To view or edit a route, highlight View/Edit.

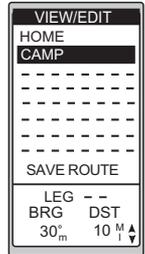


Figure D. You can add to an already existing route by highlighting the next available dotted line.

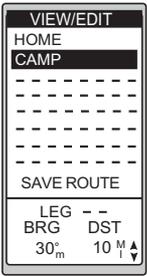
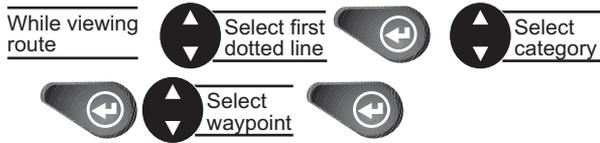
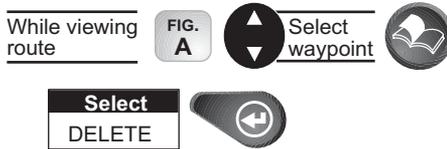


Figure A. Highlight the waypoint you want deleted.

**Adding a Waypoint at the End of a Route.** You may be navigating using the home to campsite route and find a great picnic spot. You would want to add this to the end of your route.



**Deleting a Waypoint in a Route.** On your next trip navigating from the home to campsite route, you find the campsite has closed. You may want to delete the campsite leg from your route.



**Saving a Route.** Once you have made changes to your route, you may want to save those changes.



**Activating/Deactivating a Route.** While navigating in your route from home to campsite, you may decide you want to activate (turn on) the home to campsite route and begin navigating.



Figure B. Use this menu as an option for saving the changes made to your route.

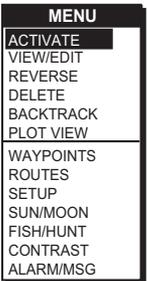
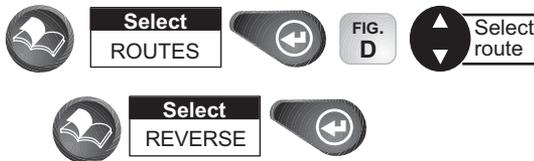


Figure C. The menu may read Deactivate, depending on which was chosen previously.

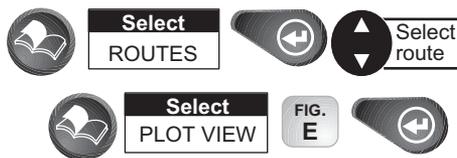
While navigating in your route from home to campsite, you may decide you want to deactivate (turn off) the route and return to it later.



**Reversing a Route.** Once you have reached the end of your route, you can reverse the route to return home. For example, Camp...Fish, goes from A to B to C to D, reversed would read from D to C to B to A and the title would read Fish...Camp.



**Using Plot View in a Route.** While navigating in your route, you can view the entire route in a small screen overview with the use of Plot View.



**Deleting a Route.** After your last trip using your home to campsite route, you decide you no longer want to visit those sites. You can delete the route from your receiver.

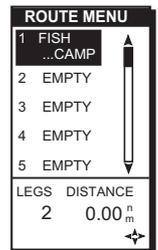
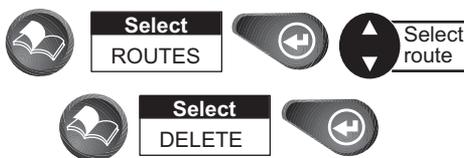


Figure D. The route title will change when you reverse a route.

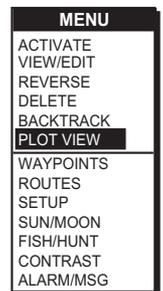


Figure E. Use this menu for accessing Plot View in a route.

## Working with TrackRoute

TrackRoute consists of track points collected by the Track History function. A track can be up to 2000 points in size.

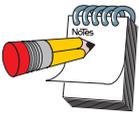
**Activating.** By activating the TrackRoute at the top of the ROUTE MENU, you can navigate from the first created track point to the last track point, making a reverse BACKTRACK. This turns the Track History logging off to keep from overwriting track points in memory. The top of the navigation screens will indicate TO: LEGXXXX where XXXX is between 0 to 2000. As you navigate with the receiver and pass individual track points, the legs will switch and countdown until you reach LEG 0 which is your final destination.

**Deactivate.** When TrackRoute is deactivated, Track History logging begins. The track points will be overwritten once the receiver records new position fixes.

**Reverse.** This reverses the TrackRoute or the track in Track History.

**Delete.** This erases the track points in Track History.

**Backtrack.** This activates BACKTRACK Route by saving the Track History as a 30 leg route and activating it.



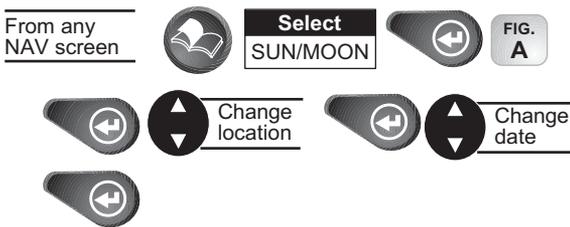
There may be some track points that are close to each other causing the receiver to skip 1 or more of these legs.

# Auxiliary Functions

## Working with Sun/Moon and Fish/Hunt

The Sun/Moon function displays solar and lunar calculations and the Fish/Hunt function displays times for excellent and good Fishing/Hunting. The default will be the current position unless the function is accessed from a waypoint menu or waypoint information screen.

### Sun/Moon



### Fish/Hunt

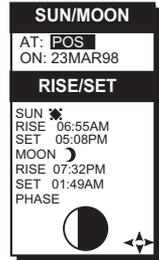
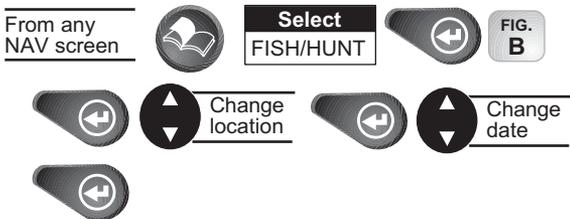


Figure A. You can change the location (AT) and/or the date (ON) for the calculation.



Figure B. You can change the location (AT) and/or the date (ON) for the calculation.

## Selecting the Simulate Mode

The Simulate mode will help you become familiar with your receiver and how it works by generating artificial position fixes. By utilizing Simulate, the receiver will create a route and will continue until you end it. In order to end and delete the created route, you can return to the window (where you initiated the mode) and select OFF or power the receiver off.

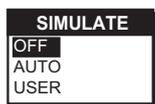


Figure A. If USER is selected, you will be asked to input SOG and COG.



Default setting: OFF

Both AUTO and USER modes generate a route and simulate navigation using that route. AUTO mode uses a speed of 25 mph and automatically generates a COG to follow the route. USER mode allows you to set the speed and COG to values you enter.

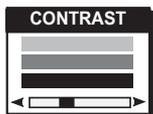
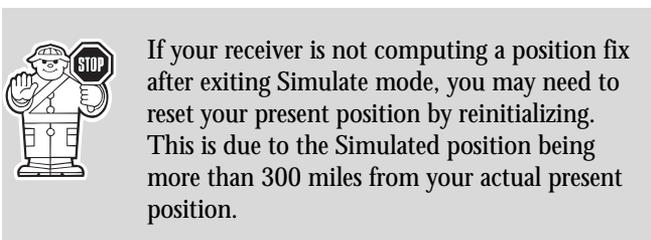


Figure B. Use the cursor to adjust the screen to your preference.



## Selecting Contrast

You may want to change the contrast of your receiver. You can adjust the brightness depending on your preference.



## Selecting Alarm/Message

### Accessing the Alarm/Message Menu

While navigating, you may decide to set an alarm. The receiver has five types of alarms: Anchor alarm, Arrival alarm, XTE alarm, Proximity alarm and GPS Fix alarm. To access the Alarm/MSG menu:



### Selecting Anchor Alarm

The Anchor alarm will notify that you have moved from the set position. For example, while boating, you can set your Anchor alarm. Once anchored, your boat begins to drift from the set position, a pop-up window will appear to notify that you are moving.

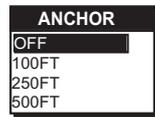


The alarm will sound when the GPS position is at a distance greater than the distance you have chosen. The alarm will sound until turned off or the condition is corrected.

Default setting: OFF



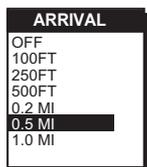
When the pop-up window for an alarm is displayed, the distance and a message, if there are any messages, will appear.



*Figure C.* You can choose from OFF, 100, 250 or 500 feet.

## Selecting Arrival Alarm

The Arrival alarm will notify you when you are within the arrival circle of the destination waypoint.



*Figure A.* You can choose from OFF, 100, 250, 500 feet, 0.2, 0.5 and 1.0 miles.

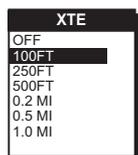


The alarm will sound and a pop-up window will appear when the GPS position is within the arrival circle you have chosen. The pop-up window will display the arrival circle distance as well as any message you have inputted for the waypoint. The alarm will sound until turned off.

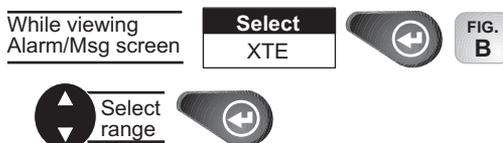
Default setting: OFF

## Selecting XTE Alarm

The XTE (Cross Track Error) alarm will notify you when you have gone off your set course.



*Figure B.* You can choose from OFF, 100, 250, 500 feet, 0.2, 0.5 and 1.0 miles.



The alarm will sound when the GPS position is off your set course by the distance you have chosen. The alarm will sound until turned off or the condition is corrected.

Default setting: OFF

## Selecting Proximity Alarm

The Proximity alarm will sound when you are within the proximity of any waypoints you have chosen that are not on the active route.

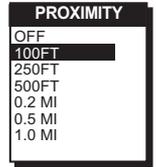
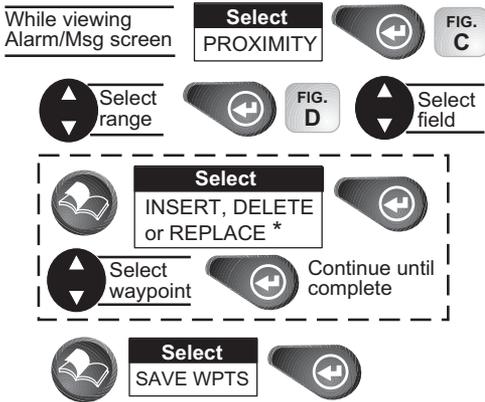


Figure C. You can choose OFF, 100, 250, 500 feet, 0.2, 0.5 and 1.0 miles.

\* DELETE and REPLACE will be displayed only if you select a used waypoint field.

The alarm will sound and a pop-up window will appear when the GPS position is within the proximity distance you have chosen. The pop-up window will display the proximity distance as well as any message you have inputted for the waypoint. The alarm will sound until turned off.

Default setting: OFF

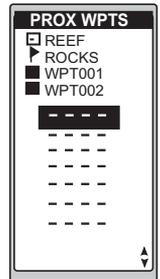


Figure D. You can select any saved waypoint to list on the Proximity waypoint screen.

### Selecting GPS Fix Alarm

The GPS Fix alarm allows the Poor GPS alarm to be turned off. Therefore, when the GPS reception is poor, you will not be notified.



Default setting: OFF



Figure E. You can choose from OFF or ON.

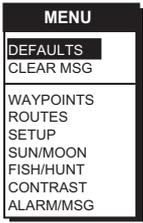


Figure A. You can restore the default settings or clear all messages.

## Viewing the Alarm/MSG Menu

While viewing  
Alarm/Msg screen



FIG.  
A

## Selecting Alarm Defaults

After a memory clear, you may want to restore the alarm default settings.

While viewing  
Alarm/msg screen



Select  
DEFAULTS



FIG.  
B



Select  
yes or no



Figure B. The screen verifies the selection you made.

## Clearing Alarm Defaults

The message buffer may become cluttered with information. You can use the CLEAR MSG to delete the messages.

While viewing  
Alarm/msg screen



Select  
CLEAR MSG



FIG.  
C



Select  
yes or no



Figure C. Once cleared you cannot retrieve this information.

## Selecting Language

Use the following steps to change the language (English, Spanish, German, Italian, Swedish, French, Norwegian, Finnish or Portuguese) of the Magellan SporTrak.

From any  
navigation screen



Select  
LANGUAGES



Select  
language



# Customizing

## Selecting Setup

Setup allows you to initialize the receiver and set system parameters to your preference.



## Selecting Initialize

By initializing your receiver, you establish the initial position for the receiver. This will enable the receiver to search the sky for available satellites. You will need to reinitialize if you have traveled more than 300 miles while the receiver is turned off. To initialize:



Follow the steps requested to initialize, as done when the receiver was initialized the first time (see *Getting Started*).

## Disabling NAV Screens

You may find that you do not use one, or more, of the nine NAV screens provided in the receiver. You have the option to disable NAV screens, except for the *STATUS* and *POSITION* screens.



Figure D. Refer to this screen anytime you want to access Setup.

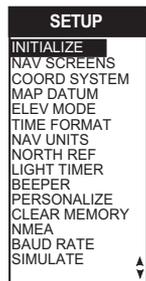


Figure E. If you need to initialize again, make this selection.



The default for the TIME screen is off.



Figure A. You can turn NAV screens on or off.



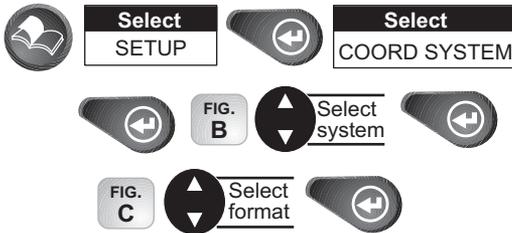
The COMPASS screen is displayed next with the same pop-up menu. You will continue to be prompted for the other NAV screens.

## Selecting a Coordinate System

A coordinate system is provided for you. This option allows you to select primary and secondary coordinates used for entering and viewing position information. The most common is LAT/LON.



Figure B. You can choose from LAT/LON, UTM, TD, OSGB, Irish, Swiss, Swedish, Finnish, German, French, MGRS and User Grid.



If a format is required for the coordinate system you have chosen, a pop-up menu will be displayed.

The default primary coordinate system will be Lat/Lon in Degrees/Minutes and the default secondary coordinate system will be UTM.



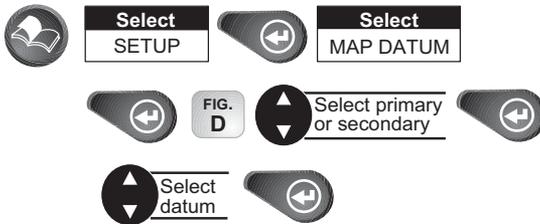
Figure C. You can choose from DEG/MIN.MM, DEG/MIN.MMM or DEG/MIN/SEC. The screen will be different for other coordinate systems.



You will want the receiver to use position coordinates in the same map datum that is used by your maps.

## Selecting Map Datum

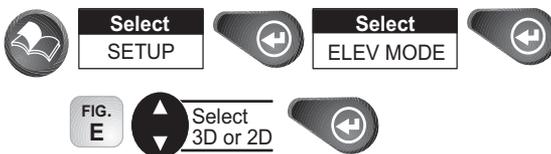
You can change the datum the receiver uses to compute position coordinates. You will want your receiver's datum to match the datum on the map or chart you are using. Use the map "legend" to determine the datum required for the map or chart. If you are not using a map or chart or are unsure which datum to use, select WGS84.



Default setting: WGS84

## Selecting Elevation Mode

You have the option of changing your elevation mode to 2D (2-Dimensional) or 3D (3-Dimensional). You may find 2D useful if you know the elevation of your position and the elevation will not change. Your receiver will compute elevation in 3D mode but will not in 2D mode.



If you select 3D, the receiver will return to SETUP. If 2D is selected, the receiver will ask for elevation.



Default setting: 3D



*Figure D.* Be sure the map datum matches the datum required for the maps or charts you are using.



*Figure E.* You can choose from 2D or 3D.



*Figure F.* If you are at sea level, you can use 2D because your elevation is zero.

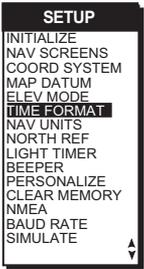


Figure A. You can access Time Format from this menu.

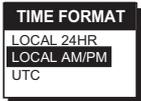


Figure B. You can choose from LOCAL 24HR, LOCAL AM/PM or UTC.

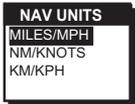


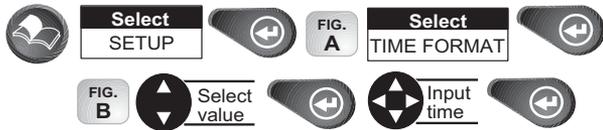
Figure C. You can choose from MILES/MPH, NM/KNOTS and KM/KPH.



Figure D. You can choose from TRUE, MAGNETIC, MILS TRUE or MILS MAG.

## Selecting Time Format

You have the option of changing the format for the time.

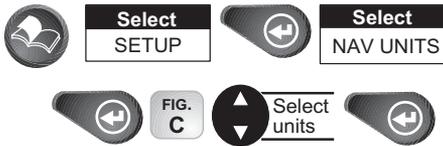


If UTC is selected, the receiver will return to SETUP. If LOCAL 24HR or LOCAL AM/PM are selected, a pop-up menu will be displayed prompting you to input the correct time.

Default: Local AM/PM

## Selecting NAV Units

You can choose the units of measure used by your receiver.

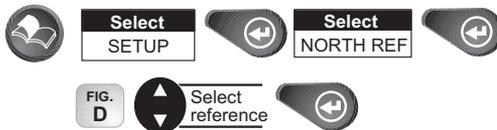


Default setting is MILES/MPH for land use in the United States and KM/KPH for land use outside the United States.

Default setting is NM/KNOTS for marine use.

## Selecting North Reference

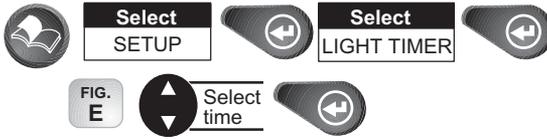
The receiver uses magnetic north as a default reference for all navigation computation. You can change this to true north (good, if you are using a map) or back to magnetic north (default, good to use if you are using a compass), or mils true or mils mag under SETUP.



Default setting: MAGNETIC

## Selecting Light Timer

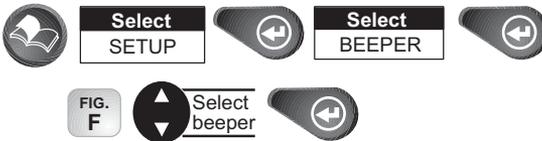
The light timer is a power saving function that automatically turns the light off.



Default setting: ALWAYS ON

## Selecting the Beeper

You can select the options for when the beeper will sound.



Default setting: KEYS/ALARM

## Selecting Personalize

With the personalize function, you have the option of inputting your name into the receiver.



If ON is selected:



LIGHT TIMER
ALWAYS ON
15 SECONDS
30 SECONDS
1 MINUTE
2 MINUTES
4 MINUTES

*Figure E.* Once the timer turns the light off, it can be turned on with the next key press. Suppose you select the timer setting for 30 seconds. Press the light key to turn the light on, it remains lit. With the next key press, the light turns on again for 30 seconds. This continues until you turn the light or the receiver off.

BEEPER
OFF
KEYS ONLY
ALARM ONLY
KEYS /ALARM

*Figure F.* You can choose from OFF, KEYS ONLY, ALARM ONLY and KEYS/ALARM.

## Selecting Clear Memory

The Clear Memory function allows you to delete track history, waypoints and routes as well as reset the settings to the factory defaults. There is also an option to delete everything in the receiver's memory. Use caution when accessing the Clear Memory function. **Once you have deleted, you cannot undo the process or retrieve this deleted data.**



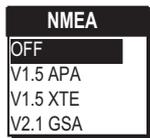
*Figure A.* You can choose from TRACK HIST, WPT/ROUTES, BACK WPTS, ROUTES, RESET DFALT and ALL.



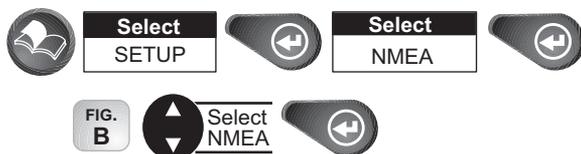
If you clear all memory, the receiver will clear everything and power itself off.

## Selecting NMEA

Your receiver can be set to output GPS data to interface with your personal computer.



*Figure B.* You can choose from OFF, V1.5 APA, V1.5 XTE and V2.1 GSA.



Default setting: OFF

## Selecting Baud Rate

Connection to external devices requires that the baud rate of the data being sent or received by the receiver be matched to the baud rate of the external device.



Default: 4800 baud

# Troubleshooting

## **Receiver will not turn on:**

1. Check to see if batteries are installed correctly.
2. Replace with two new AA alkaline or lithium batteries.

## **Takes more than 10 minutes to get a position fix:**

1. If there are any obstacles nearby or overhead, move to a new location.
2. Make sure that the antenna is pointing up, has a clear view of the sky and is a reasonable distance away from your body.
3. Check Satellite Status to see where the satellites are and if the receiver is acquiring data.
4. If the receiver still does not get a position fix within 10 minutes, you may wish to repeat the initialization procedure.

## **Battery life seems shorter than it should be:**

1. Make sure that you are using two AA alkaline or lithium batteries.
2. Shorter life span of the batteries can be due to excessive use of the backlight. **Turn the backlight off when not needed.**

## **Position coordinates on your receiver do not match the location on your map.**

1. Make sure that your receiver is set up to use the same datum as your map. The map datum is generally shown in the map legend. See *Map Datum* under *Reference* for instructions on selecting the map datum in your receiver.
2. Check your LAT/LON format. Make sure that the format selected in COORDINATE SYSTEM (DEG/MIN/SEC or DEG/MIN.MM) is in the same format as the map you are using.

## **Data was not saved or was corrupted.**

1. This can be caused because you removed the batteries or removed external power while the SporTrak was turned on

## **SporTrak turns off unexpectedly.**

1. This is commonly caused by excessive static electricity. Turn the receiver back on and it should operate normally. Move the SporTrak to a different location to avoid a similar occurrence.

## Frequently Asked Questions

### *General*

*What is the difference between degrees/minutes/seconds (DEG/MIN/SEC) and degrees/minutes/minutes (DEG/MIN/MMM or DEG/MIN/MM)?*

There are different ways in expressing the coordinates computed using Lat/Lon coordinate system. With DEG/MIN/SEC the final set of numbers (SEC) is expressed as 0-59 while DEG/MIN/MM expresses the same value as 0-99 and DEG/MIN/MMM is from 0-999. It would be the same as if you had one clock that expressed time as hour/minutes/seconds and another clock that expressed the same time as hours/minutes/decimals. The accuracy for any of the three is the same. Which you choose is dependent upon your preference or any chart you are using at the same time. (You should always make sure that your SporTrak is setup to be the same as any map or chart you may be using.)

*What is 2D vs. 3D?*

The difference is primarily how many satellites are used to compute the position fix and how elevation is computed. In 2D (two-dimensional) only three satellites are needed for a position fix and elevation is not computed. Any elevation displayed by the SporTrak during 2D operation is the elevation you entered. In 3D (three-dimensional), a minimum of four satellites are needed to compute the position and at the same time, elevation is computed by the SporTrak.

*How long can I expect my SporTrak to run on a fresh set of batteries?*

Under normal operating conditions you should get up to 15 hours of use while the display backlight is turned off. This duration will drop significantly if you use the display backlight.

### *How often do I need to initialize the SporTrak?*

Initializing the SporTrak decreases the time it takes to get a position fix during cold start. What is meant by a cold start is that the SporTrak has no reference to use as a guide to tell it what satellites should be overhead. Without a reference to start with, the SporTrak will have to “search the sky” trying to find any satellite that may be in “view.” This takes time and can increase the time it takes to get its first position fix. (Can take 10 minutes in severe conditions.)

So where does this reference come from? Under normal operating conditions, the last position fix computed before the SporTrak was turned off is stored into memory and will be used as the reference the next time the SporTrak is turned on. However, if you cleared the memory (see Clearing Memory - All in the Reference Chapter) this stored reference point is removed from memory and you probably will want to initialize the receiver again. Also, if you travel with your SporTrak for more than 500 miles with it turned off, it will still have the reference point but it may be too inaccurate to be useful and again, you may want to initialize the SporTrak.

## **Navigation Screens**

### *Why does my compass not point in the right direction?*

The SporTrak computes direction by comparing your present position to the last position taken, it requires that you be moving to compute your compass heading. Furthermore, to eliminate error, you must be moving at a minimum of 0.5 mph.

## **Routes**

### *What is a backtrack route?*

A backtrack route allows you to “retrace” your steps. As you are moving, the SporTrak automatically creates and stores hidden waypoints into memory. These waypoints are the ones that the SporTrak will use to retrace your steps. When you create a backtrack route, the SporTrak converts these hidden waypoints into User Waypoints.

*How do I know which route is active?*

Access the route menu by pressing the MENU button and select the option Routes. The route menu lists all of the routes in memory with the active route displayed in bold characters.

## **Alarms**

*Why does my SporTrak not make an audible beep when I have an alarm active?*

Check your setup settings for the Beeper. If the selection is Off or Keys Only, the beeper will not sound for alarms.

## **Output Data**

*What is NMEA?*

NMEA (National Marine Electronics Association) is the standard used for interfacing marine electronic devices. This standard has also been adapted for use in a variety of third-party mapping software programs.

*My GPS is not communicating with my computer. What can I do?*

Check your baud rate and check the baud rate that your software is using. If they don't match, change either the software's or the SporTrak's baud rate (*See Setup - Changing the Baud Rate.*)

*Can I interface my SporTrak with a Macintosh computer?*

Magellan does not supply cabling or software for the Macintosh line of computers. For information on a cable or software that may meet your requirements, visit GPSSy at [www.gps.com](http://www.gps.com) on the internet.

## Contacting Magellan

If after using the troubleshooting section, you are still unable to solve your operation problems, please call Magellan's Technical Service at (800) 707-9971.

Representatives are available Monday through Friday from 7 AM to 5 PM, PST. Faxes can be sent to Customer Service at (909) 394-7070.

If necessary, you can also return your receiver to Magellan for repair. Before returning the receiver you must get a Return Materials Authorization (RMA) from Magellan. To get an RMA, contact a Magellan Technical Service Representative at (800) 707-7845 or you can send an email explaining your reasons to [magellanrma@thalenavigation.com](mailto:magellanrma@thalenavigation.com). After receiving the RMA number, ship the receiver by Parcel Post or UPS. Include a description of the problem, your name, address, a copy of your sales receipt and print clearly on the outside of the package the RMA number assigned. If your return ship address is different, please indicate.

With all correspondence, please state the model of your receiver and if calling, please have your receiver with you.

Packages should be sent to:

Thales Navigation  
Magellan Products  
960 Overland Court  
San Dimas, CA 91773  
ATTN: <RMA Number>

Additional information regarding software updates to your SporTrak can be found in the Product Support section of the Magellan web site ([www.magellangps.com](http://www.magellangps.com)).

Customers outside of the United States should contact the Magellan distributor for your country. A detailed address of each distributor can be found at [www.magellangps.com/frames/frame\\_stores.htm](http://www.magellangps.com/frames/frame_stores.htm).

Magellan™ is a trademark of Thales Navigation.

# Connecting to the SporTrak

Available as accessories for your GPS receiver are the following cables: External Power Cable with Cigarette Lighter Adapter, Power/Data Cable, Data Cable and PC Cable with Cigarette Lighter Adapter. The instructions given below apply to all cables, unless otherwise stated.

## Connecting directly to the SporTrak.

Using the captive screw that is attached to the plug, tighten into the back of the receiver.

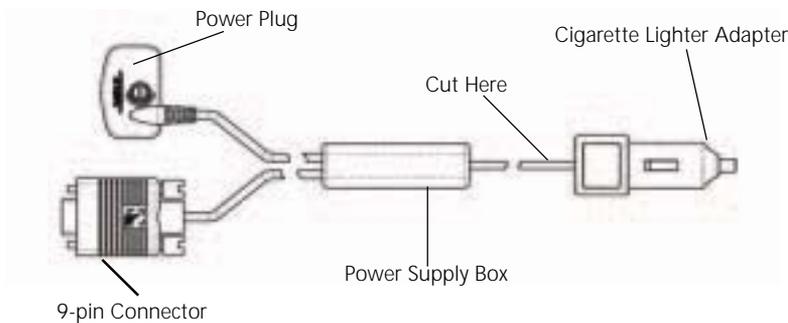
If you are connecting to the SporTrak while it is mounted in the Mounting Cradle, attach the cable through the back of the cradle. It is not necessary to tighten the captive screw to the SporTrak, although you may do so for added security.



## Connecting to an External Power Source

If using the cable that comes with the cigarette lighter adapter, simply connect it to the cigarette lighter outlet. If you wish to make a permanent mount to a power supply, cut the cable between the power supply box and the cigarette lighter adapter. Attach the red (+) and black (-) wires to your external power source. The input voltage range for external power is 9-18 VDC.

**Caution:** Do not bypass the power supply box or you will damage your unit and void the warranty.

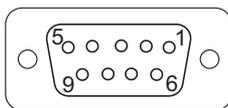


## Connecting to a Data Source

Data Connection Pinout (PC and Data cables only)

This is the pinout looking into the 9-pin female connector

Pin 2: Data Out  
Pin 3: Data In  
Pin 5: Ground



## Cable Wiring Color Code

Power  
Red: Power +  
Black: GND

Data (Power/Data, PC cable & Data cable only)  
Yellow: Data In  
Orange: Data Out  
Black: GND

# WAAS

Your Magellan GPS receiver has been upgraded to include the latest WAAS (Wide Area Augmentation System) technology. With WAAS your GPS receiver can compute position locations with an accuracy never before possible in a commercial receiver.

**What is WAAS?** WAAS is a means of improving the accuracy of GPS beyond the standard civilian signal. WAAS was developed by the FAA to provide the accuracy needed for aircraft to perform approaches for landings. WAAS improves the accuracy of GPS by calculating the errors in the GPS signal at several monitoring stations around the country and then transmitting the error corrections to special WAAS satellites. In turn, these satellites broadcast the error corrections to WAAS-capable GPS receivers around the world.

WAAS is a free service and, with the small exception of two additional satellites displayed on the Satellite Status screen, it will be transparent to you. There is nothing you need do, it's all ready to go.

**How accurate will my GPS receiver be with WAAS?** The FAA reports that expected accuracy can be improved to around 7 meters vertically and horizontally. Our own testing suggests that Magellan GPS receivers will typically experience accuracy improvements to around 3 meters. You can expect to see this level of accuracy for 95% of the time that you are receiving WAAS signals.

**What are some of the problems with WAAS?** The signal coverage with WAAS is not global like GPS satellites. In some locations, receiving WAAS signals can be difficult and intermittent. There are two satellites transmitting WAAS for corrections in the Americas and two more over Africa and India providing similar coverage for Europe. These satellites are geostationary, i.e., they stay in the same spot over the Earth equator. The two satellites for the Americas are over the Pacific and Atlantic Oceans. Chances are then, they will probably be near the horizon from where you are using your GPS receiver. This increases the chance that buildings, foliage, terrain and other obstacles could block the WAAS signal.

Also WAAS is a relatively new system and is still in its developmental stage. So on occasion you may experience service outages. Even during these outages, your GPS receiver will still be working, computing position fixes and helping you get to where you want to go using the GPS signals. The only difference is you will not be getting the precision that WAAS was providing. You can expect to see these outages diminish as the system matures and stabilizes.

For more information on WAAS, you can visit the FAA website's section on their WAAS system: <http://gps.faa.gov/programs/WAAS/waas.htm>

# Available Datums

<b>Datum</b>	<b>Full Name</b>	<b>Datum</b>	<b>Full Name</b>
WGS84	World Geodetic System	IRELA	Ireland 1965
NAD27	North America 1927	KAUAI	Kauai
NAD83	North American 1983	KERTA	Kertau 1948
ADIND	Adinda	KKJ	KKJ (Finland)
ALASK	Alaska	LIBER	Liberia 1964
ARC50	Arc 1950	LUZON	Luzon
ARC60	Arc 1960	MASSA	Massawa
ASTRO	Camp Area Astro	MAUI	Maui
AUS66	Australian Geodetic 1966	MERCH	Merchich
AUS84	Australian Geodetic 1984	MINNA	Minna
BOGOT	Bogota Observatory	MONTJ	
BUKIT	Bukit Rimpah	NAHRW	Nahrwan, Saudi Arabia
CAMPO	Campo Inchauspe	OAHU	Oahu
CANAD	Canada	OEGYP	Old Egypton
CAPE	Cape	OHAWA	Old Hawaiian
CARTH	Carthage	OMAN	Oman
CENAM	Central America	PITCA	Pitcairn Astro 1967
CHATH	Chatham 1971	QATAR	Qatar National
CHUAA	Chau Astro	QORNO	Qornoq
CORRE	Corrego Alegre	RT90	RT90 (Sweden)
CYPRU	Cyprus	SAM56	Provisional So. Am. 1956
DJAKA	Djakarta (Batavia)	SAM69	South American 1969
EGYPT	Egypt	SCHWA	Schwarzeck
EUROP	European 1950 (All of Europe)	SICIL	Sicily
EUR50	European 1950 (W. Europe)	SIERR	
EUR79	European 1979	SWISS	
GANDA	Gandajika Base	TANAN	Tananarive Observatory 1925
GEO49	Geodetic Datum 1949	THAI	Indian (Thailand, Vietnam)
GHANA		TIMBA	Timbalai
GRB36	Ordinance Survey of GB, 1936	TOKYO	Tokyo
GUAM	Guam	USER DEFINED	
GUNSG	G. Segara	VOIRO	
GUNSR		WGS72	World Geodetic System 1972
HAWAI	Hawaii	YACAR	Yacare
HERAT	Herat North	ZANDE	Zanderij
HJORS	Hjorsey 1955		
HUTZU	Hu-tzu-shan		
INDIA	Indian (India, Nepal)		
IRAN	Iran		

# Specifications

## CHARACTERISTICS

### Performance

Receiver 12 parallel-channel technology, tracks up to 12 satellites to compute and update information with quadrifilar antenna

Acquisition Times (under optimal conditions):

Hot approximately 15 seconds

Warm approximately 1 minute

Update Rate 1 second continuous

Accuracy

Position 7 meters, 95% 2D RMS  
w/WAAS <3 meters, 95% 2D RMS

Velocity 0.1 knot RMS steady state

Limits:

Speed 951 mph

Altitude 17,500 meters

### Physical:

Size 5.6" x 2.2" x 1.15" [h] x [w] x [d]  
14.2 cm x 5.6 cm x 2.9 cm

Weight 6 ounces (170 grams) with 2 AA batteries installed

Display 2.2" x 1.33" [h] x [w]  
5.59 cm x 3.88 cm  
high contrast LCD with EL backlit display

Housing Weatherproof construction, wraparound rubber armor

Temp. Range

Operating 14°F to 140°F to (-10°C to 60°C)

Storage -4°F to 158°F (-20°C to 70°C)

### Power:

Source 2 AA alkaline batteries or 9-18 VDC with power cable

Battery Life Up to 15 hours

# Accessories

Accessories for your receiver are available from your Magellan dealer or you can order directly from Magellan at (800) 669-4477 (press 3 to place an order).

**Swivel Mounting Bracket:** Mounts the receiver on a surface, allowing for hands-free operation.

**Vehicle Mounting Bracket:** Full swivel and tilt for easy viewing in any vehicle.

**Bike Mounting Bracket:** Mounts the receiver on the handlebars of a bicycle, motorcycle or off-road vehicle.

**Carrying Case:** The carrying case provides a way of carrying the SporTrak on your belt while at the same time protecting it from the elements.

**Power/Data Cable (Bare Wires):** Allows you to connect your receiver to external power and data.

**PC Interface Cable with Cigarette Lighter Adapter:** Connects your receiver to your PC for data transfer and to a cigarette lighter for external power.

**External Power Cable with Cigarette Lighter Adapter:** Allows you to connect the receiver to a cigarette lighter for external power.

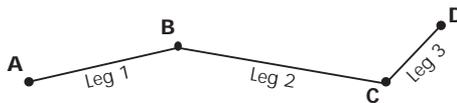
**PC Cable:** Allows you to connect the SporTrak to a PC.

**DataSend™ CD-ROM:** The software contains a database of points of interest that can be sent to your receiver. You can select from a number of geographical locations and download them into your receiver.

# Glossary

Active Leg	The segment of a route currently being traveled.
Altitude	The current elevation above sea level.
BRG	Bearing. The compass direction from your position to a destination, measured to the nearest degree.
Buoy	A navigation aid (usually found in marine charts) that is floating in water. The position can vary due to the magnitude and direction of the current.
COG	Course Over Ground. The direction the receiver is moving. COG can be reported in true or magnetic north values.
Coordinates	A unique numeric or alphanumeric description of the position.
CTS	Course to Steer. The direction you should be traveling in order to return to the course while proceeding towards the destination. It is a “compromise” course bearing that projects from your current position to a point on the courseline mid-way between a point perpendicular to your position and the current leg destination waypoint.
Datum	Refers to the theoretical mathematical model of the earth’s sea level surface. Map makers may use a different model to chart their maps, so position coordinates will differ from one datum to another. The datum for the map you are using can be found in the legend of the map. If you are unsure of which datum to use, use WGS84.
Default	The value or setting automatically chosen by the unit unless otherwise directed. Can be changed in Setup.
DST	Distance. Distance from position to destination.

Ephemeris	The position and velocity of the satellites in the sky. The receiver uses the ephemeris to calculate the precise distance from the GPS receiver to the satellite.
ETA	Estimated Time of Arrival. The estimated time of day the leg's destination waypoint will be reached.
ETE	Estimated Time Enroute. The estimated time remaining to reach the next waypoint in a route.
Fixed Navaid	A navigation aid (usually found in marine charts) that has a fixed position and can be found on land or water. An example is a T.V. tower on land or a Greenday mark in water.
HDG	Heading. The direction you are facing, defined as an angle from North.
Latitude	The angular distance north or south of the equator measured by lines encircling the earth parallel to the equator from 0° to 90°.
LAT/LON	Coordinate system using latitude and longitude coordinates to define a position on the earth.
Leg (Route)	A segment of a route that has a starting (FROM) waypoint and a destination (TO) waypoint. A route may consist of 1 or more legs. A route that is from waypoint A to waypoint B to waypoint C to waypoint D has three legs with the first being from waypoint A to waypoint B.



LMK	Landmark. A location saved in the unit's memory which is obtained by entering data, editing data, calculating data or saving a current position. Used to create routes. Same as a waypoint.
Longitude	The angular distance east or west of the prime meridian (Greenwich Meridian) as measured by lines perpendicular to the parallels and converging at the poles from 0° to 180°.
Magnetic North	The direction relative to a magnetic compass
NMEA	National Marine Electronics Association. A professional organization that defines and maintains the standard serial format used by marine electronic navigation equipment and computer interfaces.
OSGB	A coordinate system describing only Great Britain, similar to UTM's. Used with GRB36 datum.
Position fix	Position coordinates as computed by the GPS receiver.
SOG	Speed Over Ground. The speed at which the receiver is moving.
TRN	Turn. Degrees or direction to turn.
True North	The direction to North Pole from an observer's position. The north direction on any geographical meridian.
TTG	Time To Go. The measurement of how long it will take you to arrive at your destination. TTG is based on how fast you are moving towards the destination and the distance remaining.

UTC	Universal Time Coordinated. Formerly referred to as Greenwich Mean Time (GMT).
UTM	Universal Transverse Mercator metric grid system used on most large and intermediate scale land topographic charts and maps.
VMG	Velocity Made Good. The component of the velocity that is in the direction of the destination.
Waypoint	WPT. A location saved in the receiver's memory which is obtained by entering data, editing data, calculating data or saving a current position. Used to create routes.
XTE	Cross Track Error. The distance, left or right, of the desired courseline. The courseline is a straight line from your present position to your destination.