



GPS 320



MAGELLAN

QUIT ENTER

NAV

GOTO

MARK

MENU



PWR



GPS 315/320 Receiver

Quadrifilar antenna

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

The **NAV** key accesses the navigation screens.

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

The **LIGHT** key turns the light on and off.

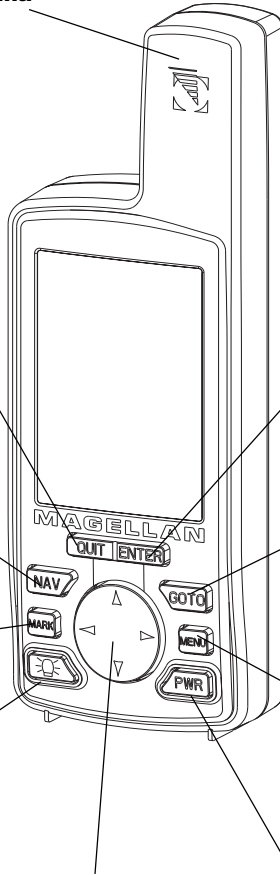
The **ARROWS** enter information and scroll through menus.

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

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

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

The **PWR** key turns the receiver on and off.

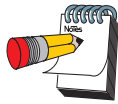


Using the Status Screen

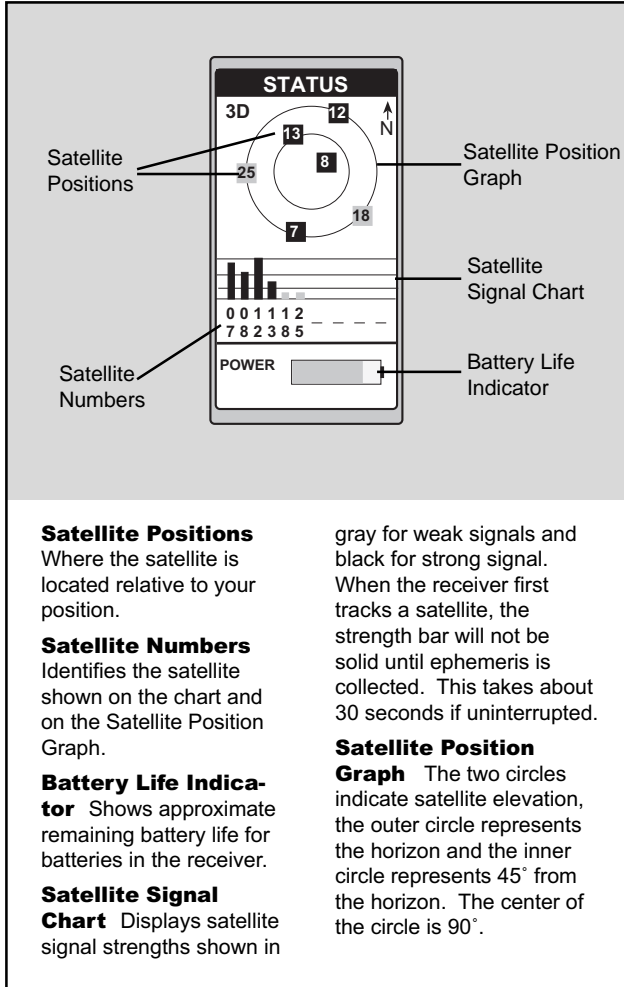
The *STATUS* screen gives you the general well-being of your receiver by showing you satellite status, signal strengths and battery life.



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

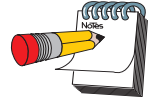


The Battery Life Indicator was designed to be used with AA alkaline batteries. With AA lithium batteries, you will have more battery life available than shown on the Battery Life Indicator.



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 diagram shows a rectangular screen titled "POSITION". The screen displays the following information:

- Position Coordinates:** 34°06.52N, 117°49.56W
- Elevation:** ELEV 900 FT
- Date:** 11:23:35 PM, 23JAN97
- Estimated Position Error:** EPE 112 FT
- Speed:** SPEED 5.38 K, TRIP 238.8 M
- Distance Traveled:** (indicated by the TRIP value)
- Course:** COURSE 150° M
- Compass:** A scale from 120 to 150 with an 'S' at the end. A triangle points to 150.
- Position Icon:** A small triangle on the compass scale.
- Second Coordinate System access:** A double-headed arrow at the bottom of the compass scale.

Position Icon Your current position on the compass.

Estimated Position Error May display the estimated position error value or "DGPS" if DGPS is being fed to receiver, or "Simulate" if simulate is on.

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

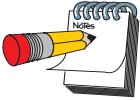
When you are stationary, the receiver begins the averaging mode. While averaging, the receiver continuously takes fixes to create an average. Once you begin moving, averaging stops automatically.

Viewing the Secondary Coordinate Screen

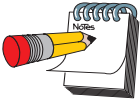
From the *POSITION* screen, use the left/right *ARROWS* to view the *Second Coordinate System* access screen.

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.

The diagram shows the NAV 1 screen with the following fields and labels:

- Destination Name:** TO: FISH
- Customizable Navigation Data:** DST 50.2ⁿ, SOG 8.2^K, XTE 3.80^m, VMG 7.2^K
- Destination Icon:** A small icon above the bearing.
- Compass:** A scale from 120 to 150 with 'S' for South. An arrow points to 150.
- Position Icon:** A small icon below the bearing.
- COG:** 150^o

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 ^o m
DST	50.2nm
SOG	8.2kT
COG	056 ^o m
VMG	7.2kT
CTS	028 ^o m
ETA	01:09P
ETE	02H24M
XTE	L.2nm
TRN	L26 ^o
ALT	83 ^F T
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.

From NAV 1 screen

MENU

Select CUSTOMIZE

ENTER

Choose field

ENTER

FIG. A

Select data type

ENTER

QUIT

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

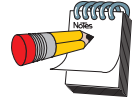
Using the Compass Screen

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

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 C



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.

From COMPASS screen

MENU **Select** **ENTER**
CUSTOMIZE

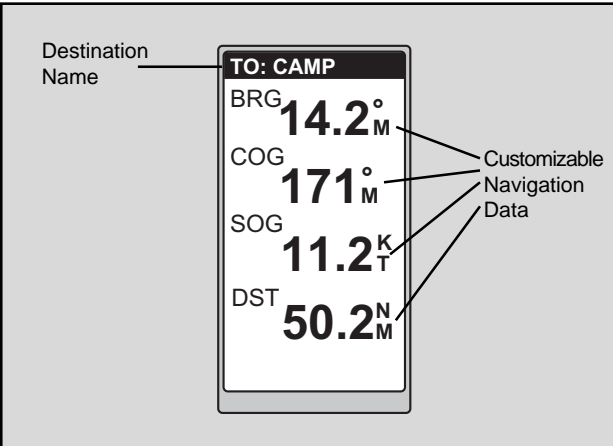
ENTER **FIG. B** **Change field** **ENTER** **QUIT**

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[°]M

COG 171[°]M

SOG 11.2^KT

DST 50.2^NM

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 [°] m
DST	50.2nm
SOG	8.2kT
COG	056 [°] m
VMG	7.2kT
CTS	028 [°] m
ETA	01:09P
ETE	02H24M
XTE	L.2nm
TRN	L26 [°]
ALT	83 ^F _T
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

MENU

Select CUSTOMIZE

ENTER

Choose field

ENTER

FIG. A

Change field

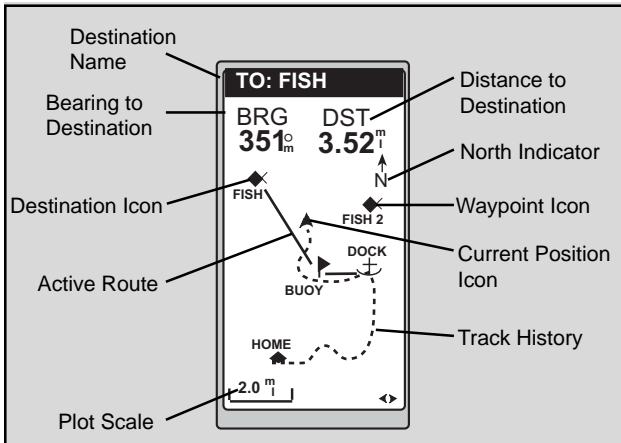
ENTER

QUIT

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.

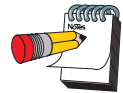


The diagram shows a simulated PLOT screen interface. At the top, it displays 'TO: FISH'. Below this, it shows 'BRG 351°m' and 'DST 3.52°m'. A North Indicator (N) is shown with an arrow pointing up. A Waypoint Icon (FISH) is marked with an 'X'. A Current Position Icon (FISH 2) is marked with a diamond. A Track History is shown as a dashed line connecting waypoints labeled HOME, BUOY, DOCK, and FISH. A solid line with an arrow indicates the Active Route from the current position towards FISH. A Plot Scale at the bottom left shows a distance of 2.0 miles with left and right arrows for adjustment.

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.

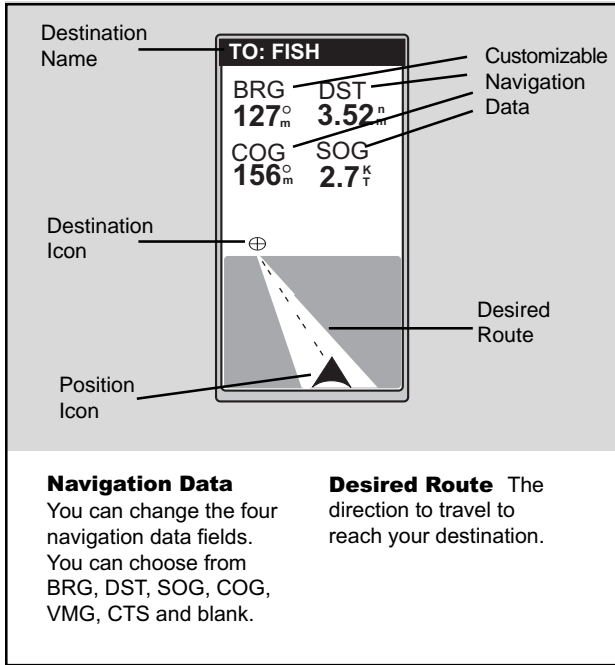
Track History
Automatically records where you have been.



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

Using the Road Screen

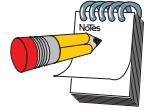
The *ROAD* screen displays four customizable navigation data fields, at the top of the screen, and shows your position on the desired route.



The diagram shows a screen with a top section for navigation data and a bottom section for a map. The top section is titled "TO: FISH" and contains four data fields: BRG (127°), DST (3.52ⁿ), COG (156°), and SOG (2.7^K). Lines connect these fields to the text "Customizable Navigation Data". The map section shows a "Position Icon" (a black triangle) and a "Desired Route" (a dashed line). A "Destination Icon" (a circle with a crosshair) is also shown. A yellow callout box on the right side of the diagram contains three horizontal lines.

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.

From ROAD screen **MENU** **Select** CUSTOMIZE **ENTER**

Choose field **ENTER** **FIG. B** **Choose field** **ENTER** **QUIT**

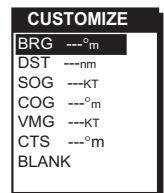


Figure B. You can choose from BRG, DST, SOG, COG, VMG, CTS and blank.

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 diagram shows a navigation screen with the following elements and labels:

- Destination Name:** TO: CAMP
- Navigation Data:** BRG 027°, COG 056°, SOG 14.2 kph
- Average Speed Icon:** A small icon above the SOG value.
- Instantaneous Speed:** The needle on the graphical speedometer.
- Graphical Speedometer:** A semi-circular gauge with markings at 0, 5, 10, 15, and 20.
- Odometer:** 0 0 5 4 2 5 nmi
- Trip Odometer:** 0 5 4 5 nmi

Below the screen diagram, there are two explanatory sections:

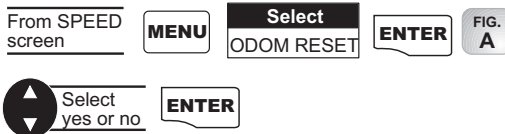
- Graphical Speedometer:** Scale can be increased or decreased by using the right/left arrows.
- Instantaneous Speed:** A graphical representation of speed over ground (SOG).

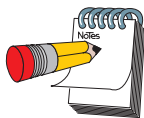


Figure A. Select "Yes" to reset the odometer.

Resetting the Odometer

You may want to reset the Odometer field to zero.





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
03:54:21^P_M

ETE
01:09:24

OF ARRIVAL
04:34:20^P_M

ELAPSED
02:24:56

Time

Estimated Time Enroute

Time of Arrival

Elapsed Time

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.



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



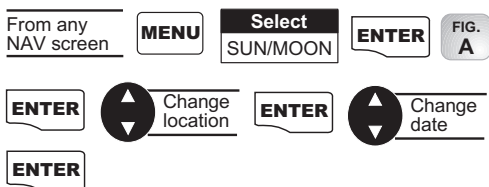
If UTM is chosen you will not be prompted to make the time change.

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

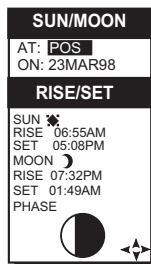
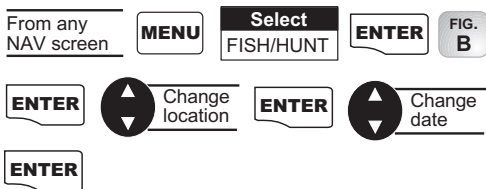


Figure A. You can change the location (AT) and/or the date (ON) for the calculation.

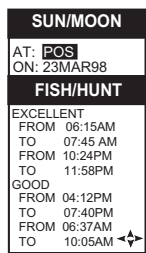


Figure B. You can change the location (AT) and/or the date (ON) for the calculation.

Selecting Arrival Alarm

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

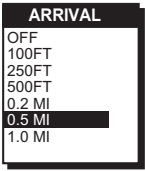


Figure A. You can choose from OFF, 100, 250, 500 feet, 0.2, 0.5 and 1.0 miles.



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.

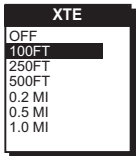
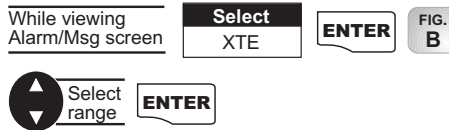



Figure B. You can choose from OFF, 100, 250, 500 feet, 0.2, 0.5 and 1.0 miles.



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

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):

Warm Approximately 15 seconds

Cold Approximately 1 minute

Update Rate 1 second continuous

Accuracy:

Position 49 feet (15 meters) RMS (with Selective Availability turned off)

Velocity 0.1 knot RMS steady state (with Selective Availability turned off)

Limits:



Speed 951 mph

Altitude 17,500 meters

Physical:

Size 6.2" x 2.0" x 1.3" [h] x [w] x [d]

15.75 cm x 5.08 cm x 3.30 cm

Weight 7 ounces (198.45 grams) with 2 AA batteries installed

Display 2.2" x 1.33" [h] x [w]

5.59 cm x 3.38 cm

high contrast LCD with EL backlit display

Housing Waterproof (Battery compartment is splashproof)

Temp. Range:

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

Storage -40°F to 167°F (-40°C to 75°C)

Power:

Source 2 AA alkaline or lithium batteries or 9-16 VDC with power cable

Battery Life Up to 15 hours