



**CAPN 8.3
User Manual**

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GETTING STARTED	6
What's New in 8.0.....	6
Installing the CAPN.....	6
Technical Support.....	6
Important Note regarding CAPN Classic.....	6
SECTION 1: THE BASICS	7
1.1 Opening Charts.....	7
1.2 Moving Around the Charts.....	7
1.3 The Information Bar	7
1.4 The Navigation Information Console.....	8
1.5 Viewing Area Display Options.....	9
1.6 Charting Preferences.....	9
1.7 Screen Display Options	12
SECTION 2: CHARTS	14
2.1 Working With Mosaic Charts	14
2.2 Loading New Charts.....	14
2.3 The Chart List.....	16
2.4 Chart Modes.....	17
2.5 Chart Types.....	17
2.6 Printing Charts	18
2.7 General Chart Options.....	19
2.8 Raster Chart Options	20
2.9 Vector Chart Options.....	20
2.10 Go To	23

SECTION 3: NAVIGATION.....	25
3.1 GPS Setup.....	25
3.2 Dead Reckoning (DR).....	26
3.3 Plan/Nav Mode.....	26
3.4 Ship Settings.....	26
3.5 My Nav Console	27
3.6 “Steer To” Function	28
3.7 Trip Log.....	29
3.8 Autopilot Setup	29
3.9 Navigation Viewing Tools	30
SECTION 4: ROUTES	32
4.1 Creating a Route.....	32
4.2 Removing a Route from Display (Stowing)	32
4.3 Deleting a Route.....	32
4.4 Reversing a Route.....	33
4.5 Copy a Route.....	33
4.6 Hide Route Labels	33
4.7 Waypoints.....	33
4.8 Using Turn Points Instead of Waypoints.....	35
4.9 Following A Route	35
SECTION 5: TRACKS	37
5.1 Recording a Track.....	37
5.2 List of Prior Tracks	37
5.3 Track Options	38
5.4 Ship Track settings	38
SECTION 6: MARKS	40

6.1 Creating a Mark	40
6.2 Customizing Your Marks.....	40
6.3 Editing a Mark: The Mark & Waypoint List	41
6.4 Moving a Mark	43
6.5 Attaching a Photo to a Mark	43
6.6 Deleting Marks.....	44
SECTION 7: ALARM ZONES	45
7.1 Circular Alarm Zone.....	45
7.2 Custom Alarm Zone	45
7.3 Alarm Zone Settings	45
7.4 Making Adjustments to the Alarm Zone	46
SECTION 8: EXPORTING AND IMPORTING DATA	47
8.1 Why Export and Import?	47
8.2 Exporting Data From the CAPN.....	47
8.3 Importing Data To the CAPN.....	47
8.4 Exporting Routes in GPX Format.....	47
8.5 Importing Marks from a Text File.....	47
8.6 Importing Old CAPN Data	48
SECTION 9: INFORMATION TO AID NAVIGATION	49
9.1 Tides.....	49
9.2 Tidal Currents.....	53
9.3 Nautical Almanac	55
9.4 Compass Deviation Card	56
9.5 Compass Rose	56
9.6 Distance Scale.....	56
9.7 Measure Tool.....	56
9.8 Man Overboard	57

9.9 Using Maptech’s Coast Pilot.....	57
SECTION 10: AUTOMATIC IDENTIFICATION SYSTEM (AIS)	58
10.1 What is AIS?	58
10.2 Connecting and Configuring Your AIS Transponder	58
10.3 AIS Target Display	58
10.4 AIS Target List	59
10.5 Managing Targets.....	59
SECTION 11: VIDEO OPTION	62
KEYBOARD SHORTCUTS	63
GPS TROUBLESHOOTING	64
Check the GPS Cable	64
GPS Software Drivers	64
Check for Port Conflicts	64
Check for Software Conflicts.....	64
Use MTTY to Check your Port and Cable	64
Try Getting a Satellite Fix.....	65
Try Other GPS Software.....	65
Contact Maptech.....	65

Getting Started

Welcome, and thank you for using the CAPN!

This document is a condensed version of the CAPN electronic Help system, formatted for efficient printing and designed to serve as a reference for using the CAPN.

What's New in 8.0

- **Support for Vector Charts.** The CAPN now supports vector charts in S-57 and DNC format.
- **Support for Maptech Version 5 charts.** The CAPN is now compatible with Maptech's new Version 5 Charts.
- **AIS Support.** Exchange data with other vessels using your AIS transponder.
- **Transparency feature for all windows.** Keep the chart display area clear by using transparent windows.
- **Export routes into GPX format.** The CAPN can now export routes into the popular GPX format for use with most GPS units.
- **Export tracks into one file.** Combine all displayed tracks into a single track file.
- **High visibility colors for all raster charts.** Choose to view raster charts in high visibility colors, making them easier to see in certain lighting conditions.

Installing the CAPN

Normally, the CAPN Setup program runs automatically when the THE CAPN SOFTWARE/US DVD INSTALLER is inserted in the drive. If it doesn't, follow these instructions:

1. Double click **My Computer**.
2. Double click your CD/DVD drive.
3. Double click **Setup.exe** Follow the on-screen instructions. (See page 14, **Loading CAPN US DVD Data to Your Hard Drive** for details.)

The installer program will create shortcuts for the CAPN on your desktop.

Technical Support

If you have any questions and you haven't found the answer here, Maptech's technical support staff is happy to assist you. Support is available from 9 AM to 5 PM Eastern Time, Monday through Friday.

Telephone: (978) 792-1197

E-mail: support@maptech.com

Fax: (978) 792-1095

Internet: <http://www.maptech.com/support>

Maptech's support site includes downloads and an online technical support discussion forum, where Maptech software users and technical support staff can share information, suggestions and comments.

Important Note regarding CAPN Classic

CAPN Classic is a much older edition of the CAPN that provides the ability to plot directly on a plotting sheet. CAPN Classic is no longer updated or supported by Maptech. Maptech reserves the right to discontinue CAPN Classic at any time.

CAPN Classic can be found in the CAPN program group on the Start menu.

Section 1: The Basics

1.1 Opening Charts

The Chart List

To view a list of available charts, click **Charts, Get a Chart** to open the chart list. To open a chart, double click its title or highlight the title in the list and click **Move to Center of...[Chart Number]** at the bottom of the window.

For more information on how to load charts into the chart list, see page 14

1.2 Moving Around the Charts

Panning and Centering

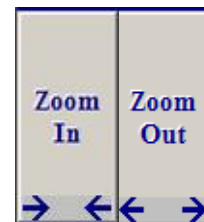


The pan/center cursor is used to reposition and scroll the chart. Click the chart and it will center itself on the screen at the location you clicked.

Zooming In and Out

There are several ways to zoom in and out:

- **Use the Zoom buttons along the right side of the screen.** Each time you click, the chart is zoomed in or out by a factor of two. You can view charts at up to seven different zoom levels.
- **Right click the point you want to zoom and choose Zoom Chart Here.** To zoom to the original scale of the chart, choose **Normal**. Or, zoom the chart by a factor of two (2x), four (4x) and so on.
- **Use your keyboard.** Press **F2** or the + (plus) key to zoom in. Press **F3** or the - (minus) key to zoom out.



- **Click and drag zooming.** Click and drag the area of the chart you would like to zoom. A blue box will outline the area to be zoomed. When you release the mouse, the outlined area will fill the chart display area.

Next Chart Up/Next Chart Down (Scaling)

Depending on what charts are loaded, some areas may be covered by several charts at different scales. You can easily switch to a different scale chart for the area you are viewing. This is called *scaling*. Right click the area and choose **Next Chart Up** or **Down**. **Next Chart Up** will scale *out* to a smaller scale chart (to show a wider area). **Next Chart Down** will scale *in* to a larger scale chart (to show more detail).

To view a list of all chart coverage for an area, right click the chart and choose **Switch to Chart**. The chart you are viewing will be listed at the top. All charts that share the same latitude and longitude as the point you clicked are listed below, along with the complete path, number, scale and type.

1.3 The Information Bar

The information bar is located at the top of the screen, just below the menu bar and above the chart display area.

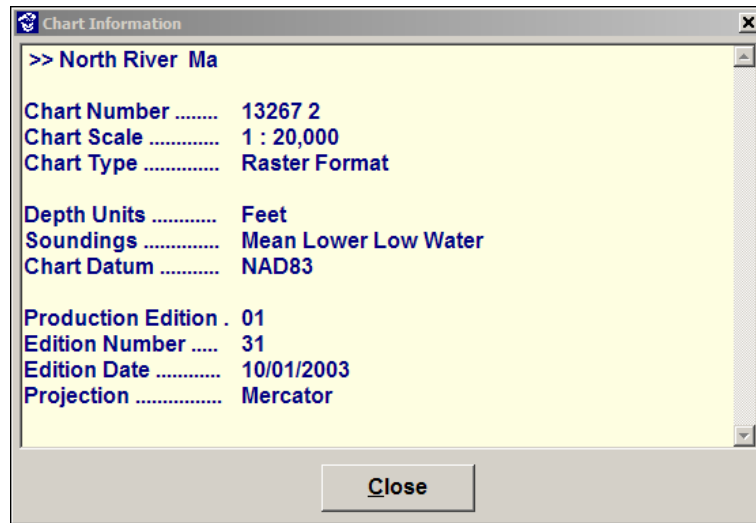
Chart 13267 2 Scale = 1 : 20,000 Depth in Feet North River Ma

The information bar gives details on the chart you are viewing (the *active* chart). The chart's number, scale, sounding units and name are displayed.

To change the text and background colors, right click the Information Bar and choose **Info Bar Text Color** or **Background Color**.

Full Chart Info

To view more detailed information about the active chart, such as Chart Type, Chart Datum and Edition Number and Date, right click the information bar and choose **Full Chart Info**.



1.4 The Navigation Information Console

The navigation information console, located on the left side of the screen, displays useful information while navigating:

Cursor Info

The Cursor Info box shows the latitude and longitude of the cursor on the chart. It also shows the range and bearing from the ship icon to the cursor when you are in Dead Reckoning Mode or have a GPS fix.

GPS Status

GPS Status tells you if the CAPN is receiving valid data from a GPS, DGPS, or Loran. If you are receiving a DGPS, the GPS Status box will have a green background. See page 25 for information on configuring your GPS.

Ship Info

The Ship Info box shows the position of your ship, plus the course over ground (COG) and speed over ground (SOG). The Ship Info box shows only when the CAPN is in Dead Reckoning mode or has a valid GPS fix.

Steering Info

The Steering Info box shows information about the route you are navigating. It displays the length of the current leg (leg), distance to next waypoint (dist), bearing to next waypoint (brg), cross track error (xte), time to destination (ttg), distance to destination (dtg), and velocity made good (vmg).

1.5 Viewing Area Display Options

The buttons located along the top of the viewing area (just below the menu bar) are for changing your viewing area display options.

Help



Click the **Help** button to access the CAPN's online Help system and other important information.

Hide Info



Click **Hide Info** to hide the navigation information console, located along the left side of the screen. This increases the visible chart area. Click this button again to bring the navigation information console back into view.

Hide Menu



Click **Hide Menu** to hide the menu bar at the top of the screen. Click this button again to bring the menu bar back into view.

Split View



Click **Split View** to enable the CAPN to display two charts on the screen at once. Click this button again to go back to single chart view. For more on the Split View feature, see page 17.

Hide Buttons



Click **Hide Buttons** to hide the button bar along the right side of the screen and increase the visible chart area. The buttons will become transparent so they are still accessible. Click this button again to bring the button bar back into full view.

Full Screen View

To hide all the buttons, the menu bar and the information bar, right click the chart and choose **Options, Full Screen View**. This will maximize the amount of chart viewing space on the screen. To bring the buttons, menus and the information bar back to view, right click the chart and choose **Options, Full Screen View**.

1.6 Charting Preferences

Click **Options, Capn Preferences** to change the settings of your charts, routes, marks and ship.

Charts

Click the **Charts** tab to set preferences for viewing your charts.

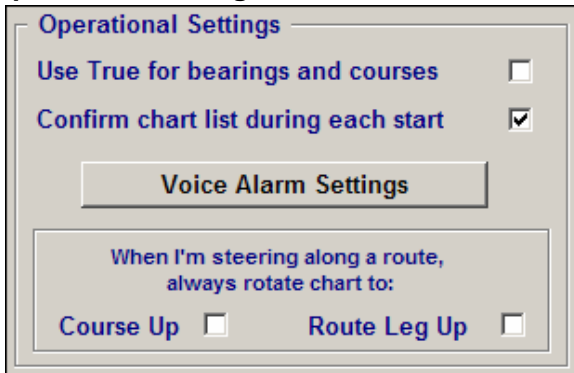
Distance and Speed Settings

Choose your **Distance Units** (Nautical Mile, Statue Mile or Kilometer). If a distance is defined as "close", the CAPN will measure it in **Close Distance Units** (Feet, Yards, Meters, or a fraction of your Distance Units).

Distance & Speed Settings	
Distance Units	SM
Close Distance Units	Feet
Close Distance is ...	0.5

Choose what distance to define as “close” by entering a decimal fraction of your Distance Units.

Operational Settings



The CAPN normally uses Magnetic for bearings and compass courses. Check the box to **Use True for bearings and courses**.

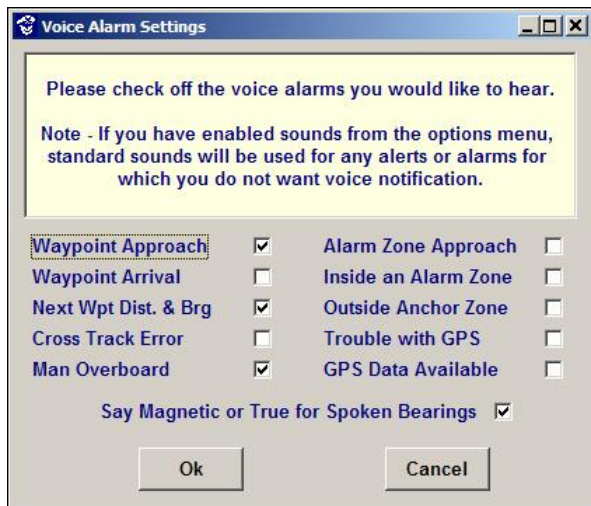
Check **Confirm chart list during each start** to tell the CAPN to scan all known chart directories each time you start. (See page 15 for instructions on setting up directories.)

By default, the CAPN shows charts in a north up rotation. When following a route, you may want to orient the chart differently:

Course Up: Rotates the chart so the COG (Course Over Ground) arrow is always pointing to the top of the screen.

Route Leg Up: Rotates the chart so the active leg on the route is pointing to the top of the screen. When you arrive at a waypoint, the chart will rotate so the next leg is oriented towards the top of the screen. You must be using the Steer To function (page 28) to use **Route Leg Up** orientation.

Voice Alarm Settings



Click the **Voice Alarm Settings** button to choose when you would like to hear a voice alarm.

When using voice alarms, make sure the volume of your computer is set high enough so you can hear it.

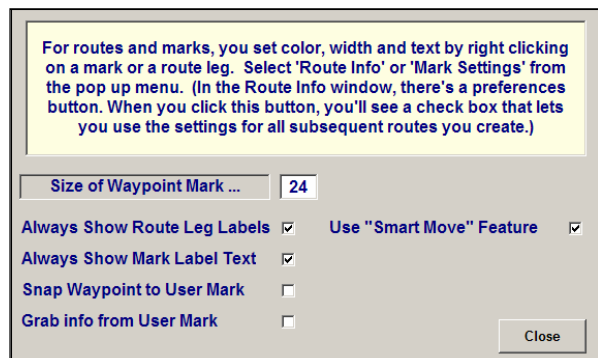
Position Display

Choose the Lat/Lon format for your position: Decimal minutes, degrees minutes and seconds, or Loran TDs.

Routes and Marks

Click the **Routes and Marks** tab to change the characteristics of your routes.

Choose a size for your waypoints icons (in pixels) and specify whether or not to show route and mark labels. To place a waypoint on top of a mark without deleting or altering the mark, check **Snap Waypoint to User Mark**. If you



place a waypoint within 10 pixels of a mark and you want their information to be identical, check **Grab info from User Mark**.

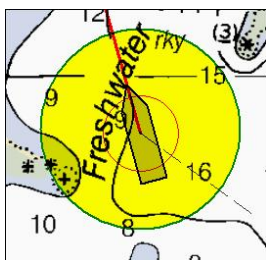
Check **Use “Smart Move” Feature** to move marks and waypoints while the cursor is in the standard “Center and Pan” mode. When Smart Move is enabled, hold the cursor over the object and the Move cursor will appear. Click and drag the object to the new location. For more on moving marks see page 43.

Ship Settings

Click the **Ship Settings** tab to change your ship icon’s appearance on the chart.

GPS Antenna Position

If you specify where your GPS antenna is positioned on your ship, you can change the appearance of your ship’s icon on the chart to better represent its actual size. This is handy especially if you are operating a large commercial vessel.



For example, on a tanker the GPS antenna may be 800 feet aft of the bow and 200 feet forward of the stern. The antenna may be offset to the port side of the ship by 75 feet. When you enter these measurements, the CAPN will calculate the size of your ship and adjust the size of the ship’s icon on the chart. This will make position, alarm and distance data more accurate. The GPS antenna will be marked on the icon by a small black dot with a red circle around it.

GPS Antenna Position in Feet From	
Bow	800
Stern	200
Port	75
Starboard	100

Course Over Ground Predictor Arrow

Course Over Ground readings can become erratic at slow speeds. For this reason, you can set the predictor arrow to shut off below a specified speed.

The predictor arrow is normally based on a fixed distance. To base the arrow on time, check **Use Speed and Time to Scale the Predictor Arrow**. Specify the time in the space below the check box.

Settings for Course Over Ground Predictor Arrow	
Do NOT show predictor arrow below this speed:	0.0
Use Speed and Time to Scale the Predictor Arrow	<input type="checkbox"/>
Amount of Time (in Minutes) for Predictor Arrow	006

Advanced Settings

Click the Advanced Settings tab for the following options:

Mark Button is for events at ship

The Drop Marks button lets you place marks by clicking with your mouse. Check this box if you want the Drop Marks button to drop a mark at your ship’s position when clicked.

Always Plot Ship’s Track

Check here for the CAPN to automatically plot your ship’s track every time you are under way.

Disable Ship Bearing Menus

Check here to temporarily hide the bearings options on the right click menu.

Keep Measure Lines Visible

Range and bearing lines normally disappear when you stop measuring. Click here to keep them on the chart until you right click and choose **Delete**.

Multi-Monitor Mode for Win 98

Check here if you are using dual monitors and want to run the CAPN on the secondary monitor. Restart the CAPN for the change to take effect.

Show Right Click Mode Button

If you are using a touch screen or have only one button on your mouse, click here to add a **Right Click Mode** button to the button bar. Touch or click the button twice to bring up the right click menu.

Disable Transparent Windows

All information windows in the CAPN are transparent by default. Click here to disable this feature and make all windows opaque.

Change Place Marks button to Suspend & Resume Depth Alarms

Check here to toggle the **Place Marks** button with an on/off button for vector chart depth alarms.

GPS Limits for Uploading Routes

You can limit the number of Routes, the number of waypoint per route and the total number of waypoints the CAPN will download from your GPS; specify their numbers the spaces provided.

Use Heading for Course Up Mode

Use compass heading (if available) instead of Course Over Ground to rotate the chart when in Course Up Mode.

Display “Turn On/Off Track” Button

Check this box to add a button to the button bar that allows you to turn the tracking feature on and off while under way. **Note:** Each time a track is stopped and restarted, a new track is created.

Do not Scale Tide/Current Labels

Click here if you do not want to scale tide and current station marks as you zoom or scale the chart. This makes it easier to read the icon data no matter what scale chart you are viewing.

Do not use See Through Buttons

The CAPN shows transparent buttons on top of the chart when **Hide Buttons** is clicked. Check this box to disable this feature and for the CAPN to completely hide the buttons when **Hide Buttons** is clicked. Choose the font, background and foreground colors for the transparent buttons when they are enabled.

Enable Chart Panning

Check here to enable chart panning. Use the slider to adjust panning speed.

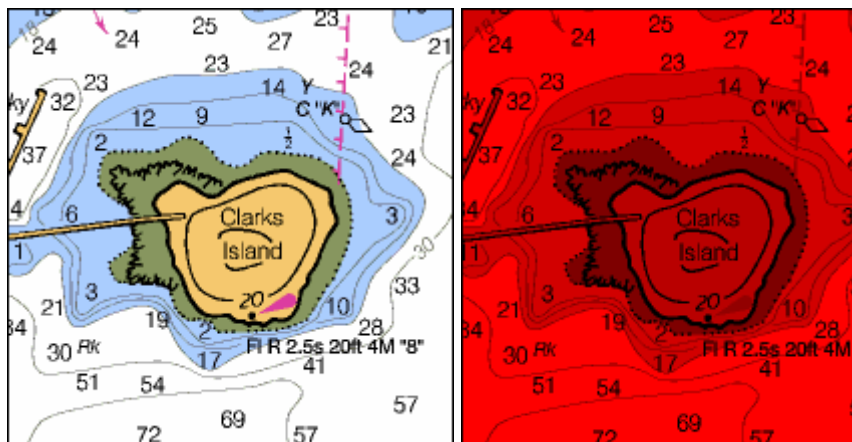
1.7 Screen Display Options

High Resolution

The CAPN can display charts in high resolution, which improves the readability of the chart at a higher zoom level. Click **Options, High Resolution** to enable this feature. Keep in mind that scrolling and chart redraw speed will be decreased when viewing charts in High Resolution mode. Click **Options, High Resolution** again to disable.

Day/Night Visibility

Change your computer's display colors to a red shade to preserve your vision at night. To toggle between night and day color palettes, click **Options, Day and Night Visibility, Night Colors**.



Adjust the color of the display by clicking **Options, Day and Night Visibility, Adjust Night Colors.**
Adjust the intensity or brightness by clicking **Set Intensity.**

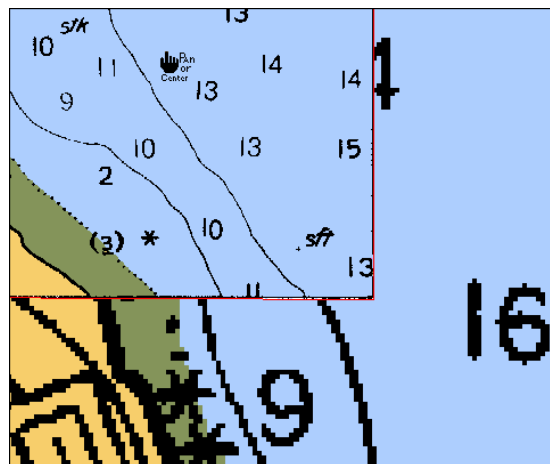
Hi Bright Daytime Controls will change the color palette of the buttons and navigation panel so they are easier to see in bright sunlight.

Section 2: Charts

2.1 Working With Mosaic Charts

The CAPN has the ability to stitch together digital versions of paper charts. Many people find such an electronic display more convenient to use. However, there are some things you should know about mosaic charts before using them for navigation.

Paper charts were never designed to be stitched together. In the example here, a 1:40,000 coastal chart is stitched together with a 1:10,000 harbor chart. As you can see, the density of the information is not uniform across the entire display. Be aware of this when using the CAPN for navigation.



When the mosaic feature is enabled, the CAPN will search your inventory of charts to display the best chart for the area you are viewing.

2.2 Loading New Charts

Loading charts to your hard drive provides a faster display. If there are charts you plan to use frequently, consider copying them to your hard drive.

The CAPN recognizes CAPN US DVDs, Maptech ChartPack DVDs, Maptech/BSB chart CDs (see note), SoftChart CDs and CHS Chart CDs.

Note: The CAPN does not recognize some data on Maptech/BSB Chart CDs and DVDs, including NavPhotos, Topographic Maps, Contour Charts and Oblique Photos.

Loading CAPN US DVD Data to Your Hard Drive

Before loading data from your CAPN US DVDs, you must first install the latest version of The CAPN. Make sure to close all other applications before beginning the installation. Insert the CAPN SOFTWARE/US DVD INSTALLER into your drive, title side up. Installation will begin automatically. If you have already installed the latest version of the software, skip to step 4.

1. Click **Install the most up-to-date Capn Program.**
2. Read the License Agreement, select **I Agree** and click **Continue with Installation.**
3. Follow the on-screen instructions.

Note: If installing the CAPN for the first time, the software needs to be registered. Double-click the Capn Version 8 icon on your desktop to find the software's ID number. Call 1-800-760-4412 to receive a Registration Key. You have 30 days to register the software.

4. Click **Install Raster and Vector Charts, Plus Photo Images.**
5. Select the DVD(s) to be installed and click **Copy Selected DVDs to your Computer.** The title of the first DVD will display in the title window; insert this DVD into the drive.
6. Under "Copy Options", select data types. (See page 16 for a description of each data type.) If applicable, select the overview regions. Click **Install this DVD.**
7. Repeat step 6 for each DVD title you selected. Click **Close** to exit.
8. Click **Close** to exit the installer.

Loading All Other Charts to your Hard Drive

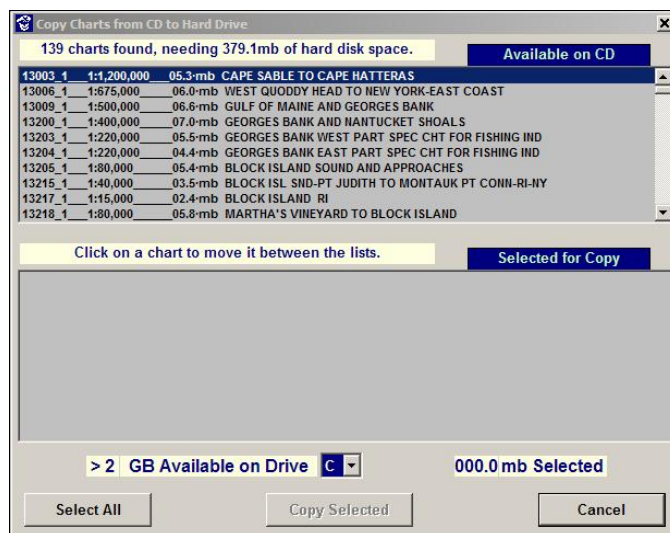
Follow these steps to copy charts from Maptech ChartPack DVDs, Maptech/BSB chart CDs, SoftChart CDs and CHS Chart CDs to your hard drive:

1. Start the CAPN.
2. Insert a chart CD or DVD into your drive.
3. From the **Charts** menu, select **Copy Charts from CD...**

The CAPN will scan your drive for all compatible chart data available on the CD/DVD. Click the titles in the top pane to select charts to copy to the hard drive. If you click on a chart and decide you don't need it, click on the title again in the bottom pane. Click **Copy Selected** when finished making selections.

GB Available on Drive shows how much space you have on your computer to copy charts. As you select charts to copy, the **mb Selected** figure will keep track how much disk space you will need for the selected charts.

Click **Select All** to copy ALL charts on the disc to your hard drive.



Reading Charts from a CD or DVD

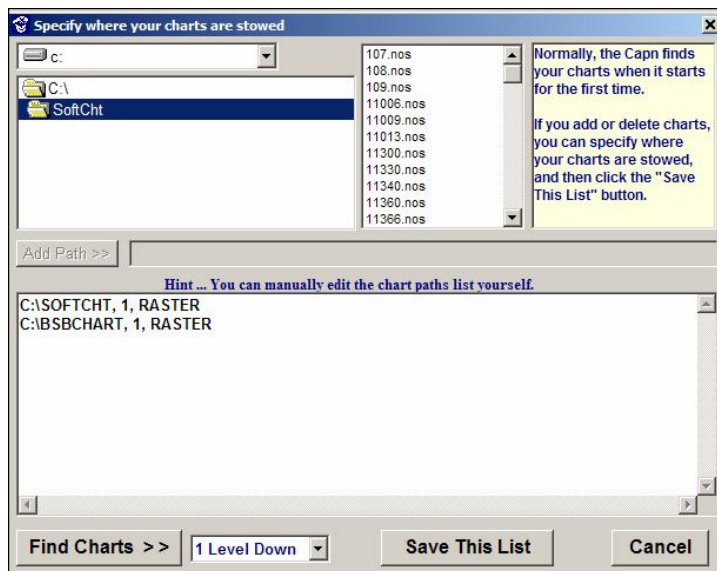
If hard drive space is limited, you may choose to read charts from the CD/DVD rather than copying them to your hard drive. To do this, you must tell the CAPN where the charts are located. See the section **Setting Paths** below for instructions on how to do this.

Setting Paths

The Set or Refresh Chart Paths feature lets you manage your own chart storage.

The directories shown in the bottom pane of the window are scanned by the CAPN whenever the chart list is refreshed. All charts included in these directories will then be added to the chart list. This window allows you to create new directories, remove directories or specify how many levels down in a directory you would like the CAPN to search for charts.

Add a Directory: Select a drive using the drop-down menu in the top left corner of the window. A list of the directories on the selected drive will appear in the window below. Highlight the directory where the charts are located and click the **Add Path>>** button. This path will be added to the list of directories the



Charts

CAPN will scan each time the chart list is refreshed.

Remove a Directory: To remove a directory, manually delete the path from the bottom pane of the window.

Chart Levels: Use the drop down menu to choose how many levels down you would like the CAPN to search for charts. In the example above, the CAPN will search only the specified directories for charts (C:\SOFCHT and C:\BSBCHART) because it is searching only 1 Level Down. If you select 2 Levels Down, the CAPN will search the listed directories, plus any directories *within* those directories.

Click the **Find Charts >>** button to refresh the chart list.

Note: Make sure to click the **Save This List** button to save any changes you have made before you close this window.

2.3 The Chart List

The Chart List shows the titles of all charts available for viewing. Click **Charts, Get a Chart** to open the CAPN's chart list.

The screenshot shows a dialog box titled "Select a Chart" with a subtitle "(Click on column caption to sort. Type number to 'jump' to chart.)". The dialog contains a table with the following columns: Number, Scale, Edition, and Chart Type and Name, plus Path. The table lists various charts, with the entry for chart number 13228_1 highlighted in blue. To the right of the table is a small map preview showing a coastal area. At the bottom of the dialog, there is a text field containing the path "Stored in Folder ... c:\bsbchart\13228_1.kap" and a button labeled "Move to Center of ... 13228_1". There are also checkboxes for "Don't Show Preview" and a "Cancel" button.

Number	Scale	Edition	Chart Type and Name, plus Path
13003_1	1,200,000	10/01/2004	(R) Cape Sable to Cape Hatteras
13006_1	675,000	02/01/2005	(R) West Quoddy Head to New York - East Coast
13009_1	500,000	10/01/2004	(R) Gulf of Maine and Georges Bank
13200_1	400,000	12/01/2005	(R) Georges Bank and Nantucket Shoals
13203_1	220,000	08/14/1999	(R) Georges Bank West Part Spec Cht For Fishing Ind
13204_1	220,000	08/14/1999	(R) Georges Bank East Part Spec Cht For Fishing Ind
13205_1	80,000	09/01/2004	(R) Block Island Sound and Approaches
13215_1	40,000	08/01/2004	(R) Block Isl Snd - Pt Judith to Montauk Pt Conn - Ri - Ny
13217_1	15,000	03/23/1996	(R) Block Island Ri
13218_1	80,000	06/01/2004	(R) Martha's Vineyard to Block Island
13219_1	15,000	10/06/2001	(R) Pt Judith Harbor Ri
13221_1	40,000	12/01/2004	(R) Narragansett Bay Ri - Ma
13223_1	20,000	04/01/2005	(R) Narragansett Bay Incl Newport Harbor Ri
13224_1	20,000	03/01/2004	(R) Providence R and Head of Narragansett Bay Ri
13224_2	20,000	03/01/2004	(R) Seekonk R Cold Spring Pt to Pawtucket Ri Extension
13225_1	10,000	12/09/2000	(R) Providence Harbor
13226_1	20,000	01/01/2004	(R) Mt Hope Bay Ri - Ma
13226_2	20,000	01/01/2004	(R) Extension to Taunton Ma
13227_1	10,000	08/26/2000	(R) Fall River Harbor Ma
13227_2	2,500	08/26/2000	(R) State Pier Ma Inset
13228_1	20,000	05/17/1997	(R) Westport River and Approaches
13229_1	40,000	12/01/2004	(R) South Coast of Cape Cod to Buzzards Bay Ma
13229_10	40,000	12/01/2004	(R) South Coast Cape Cod - Buzzards Bay Ma
13229_11	40,000	12/01/2004	(R) Buzzards Bay Ma
13229_12	20,000	12/01/2004	(R) Acushnet River Ma Inset 6
13229_13	40,000	12/01/2004	(R) Cape Cod Canal Ma
13229_14	40,000	12/01/2004	(R) North Bay Extension Ma
13229_2	20,000	12/01/2004	(R) Stage Harbor Ma Inset 1
13229_3	20,000	12/01/2004	(R) Lewis Bay - Hyannis Harbor Ma Inset 2
13229_4	40,000	12/01/2004	(R) South Coast of Cape Cod and Buzzards Bay Massachusetts
13229_6	5,000	12/01/2004	(R) Great Harbor Ma Inset 3
13229_7	12,000	12/01/2004	(R) Robinsons Hole Ma Inset 4
13229_8	12,000	12/01/2004	(R) Cuttyhunk Harbor Ma Inset 5
13229_9	40,000	12/01/2004	(R) South Coast of Cape Cod & Buzzards Bay Mass.
13230_1	40,000	10/01/2005	(R) Buzzards Bay
13230_2	20,000	10/01/2005	(R) Quicks Hole
13232_1	20,000	06/30/2001	(R) New Bedford Harbor and Approaches
13232_2	20,000	06/30/2001	(R) Continuation of Apponagansett Bay
13232_3	40,000	04/01/2005	(R) Martha's Vineyard Ma

To open a chart, highlight the title in the list and click **Move to center of [chart number]**, or double click on the title in the list. The CAPN will open the selected chart and center it on the screen.

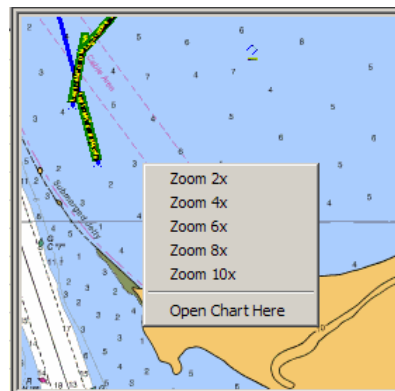
Order of Chart List

Arrange the charts in the Chart List by **ID** (the number given to the chart by the agency that created it), **Scale**, **Edition date**, or **Type** (R=Raster, V=Vector). Click the heading at the top of the column and the chart list will.

Preview Window

A preview of the selected chart displays in the top right corner of the chart list. Click it to pan the chart in the window. To zoom the image in the preview window, right click and choose a zoom level. Open the chart centered on the point you right clicked by choosing **Open Chart Here**.

Click **Don't Show Preview** to toggle the preview on and off.



2.4 Chart Modes

Standard View

The CAPN's standard view mode is the mosaic mode, described on the page 14. This view shows several charts at a time, stitched together in a quilt-like fashion.

Split View



The chart view can be split between two different charts. This is helpful if you would like to see a close up of where your ship is as well as an overview of your position. To split the display area between two charts, click the **Split View button** at the top of the screen or right click the chart and choose **Split View, Vertical** (for a side by side split) or **Horizontal** (for a top and bottom split). The CAPN will split the view between the chart that is open and a chart at a smaller scale of the same area (for a wider view).

Return to standard view by clicking the **Un Split** button at the top of the screen. Or, right click the chart you want to close and choose **Close This Chart View**.

Single Chart Mode

To turn the mosaic feature off and view just one chart, right click the chart view and choose **Options, Single Chart Mode**. The CAPN will display the entire navigable area of the selected chart. To turn the mosaic feature back on, right click and choose **Options, Single Chart Mode** again.

Synchronized Chart Views

If you want to view two different chart views at the same time and center them on the same point, you can synchronize the two views.

In Split View Mode, right click the point on either of the chart views to center on. Choose **Synch other View**. Both chart views will center on the same point. This works with any two chart types

2.5 Chart Types

Raster Charts

A raster chart is a digital replica or scan of a paper nautical chart. Raster charts have the advantage of looking exactly like the corresponding official paper chart. They include latitude and longitude as well as information such as depth units and date of last update.

Vector Charts

Vector charts are not digital images. They are drawn from a database of many objects such as obstructions, harbors, islands and soundings. They do not resemble the corresponding raster chart or paper chart, and do not give as much detail. However, measurements and display options can all be controlled. There are two types of vector charts.

ENC

An ENC (Electronic Navigation Chart) is a vector-based digital database produced by NOAA that contains marine features suitable for marine navigation. It is based on the International Hydrographic Organization (IHO) S-57 standard. S-57 is the worldwide standard format for vector chart databases.

DNC

A **DNC** (Digital Nautical Chart) is a vector-based digital database containing significant marine features essential for safe navigation. The database is produced by the National Geospatial-Intelligence Agency (NGA).

Photo Images

Photo images are aerial photographs of coastal areas, georeferenced so that overlays—vessel icon, routes, etc—are properly positioned. Photo Images help you discern depth changes and other details close to shore.

Note: Photo Images are designed to serve as aids to navigation, and as accompaniments to nautical chart coverage. They should never be relied upon for navigation.

3D Data

The CAPN's 3D Data provides a 3D view of underwater topography. If you have installed 3D data on your computer, you can view underwater coverage alongside a nautical chart or Photo Image. Click **Charts, Open Capn 3D View** to display 3D coverage for the chart you are viewing.

2.6 Printing Charts

To print a portion of a chart, center the area of the chart you want to print on the screen and click **Charts, Print Chart View** for printing options.



Use Lat/Lon Graticules: Check this box to include coordinate rulers along the borders of the printout. The rulers will also be joined by gridlines across the image.

Lat/Lon Text: Choose the font size of the Lat/Lon readings along the border of the printout.

Graticule Width/Color: Choose a width to adjust the thickness of the graticule lines. Click the colored bar to choose a color for the graticule lines.

Header/Footer: Type a note to appear at the top of the printout (**Header**) or at the bottom (**Footer**).

Justification/Font: Choose **Left**, **Right** or **Center** for placement of the Header and/or Footer. Click **Font** to choose a different font.

Include Chart Information in Header and Footer: Check this box to print the chart number in the header and the edition date of the chart in the footer.

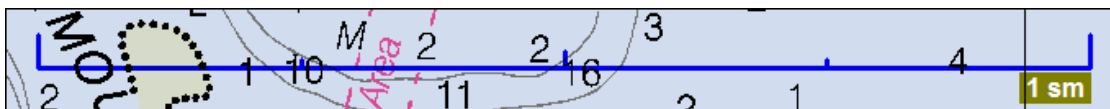
Click **OK** to print. This will print only the portion of the chart visible on the screen.

2.7 General Chart Options

Click **Charts, General Chart Options** to set preferences for how charts are displayed.

Show Distance Scale

If you want a distance scale displayed on the chart, click **Show Distance Scale** (or click **Options, Show Distance Scale**). The scale bar will appear along the bottom edge if the display is wider than it is high. If the chart display is higher than it is wide (such as during Split Chart Mode), it will appear along the left side of the display.



To change the units of measurement used on the distance scale, click **Options, Capn Charting Preferences** and choose **Nautical Miles**, **Statute Miles**, or **Kilometers**.

Select Types of Charts to Display

Click **Chart Types to Display** to choose which types of chart data to view. Even if a certain type of chart data is turned off, the charts of that type will still appear in the chart list. Use caution when choosing types of charts to display when navigating; some areas may have incomplete coverage.

Adjust Min-Max Display Rules

Maximum Under Zoom Allowed ... (Zoom Out)	<input type="text" value="6"/>
Maximum Over Zoom Allowed (Zoom In)	<input type="text" value="8"/>
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>	

Click **Adjust Min-Max Display Rules** to limit how far out or how far in the CAPN can zoom.

The higher the value for **Maximum Under Zoom Allowed**, the more large scale charts will be displayed. Too large

a value will result in the screen being cluttered with tiny charts that will be difficult to read. Reasonable values for this field range from 4 to 10.

Too large a value for **Maximum Over Zoom Allowed** will result in offshore charts zoomed in out of proportion to the distance being viewed on the screen. Reasonable over zoom values range from 4 to 8.

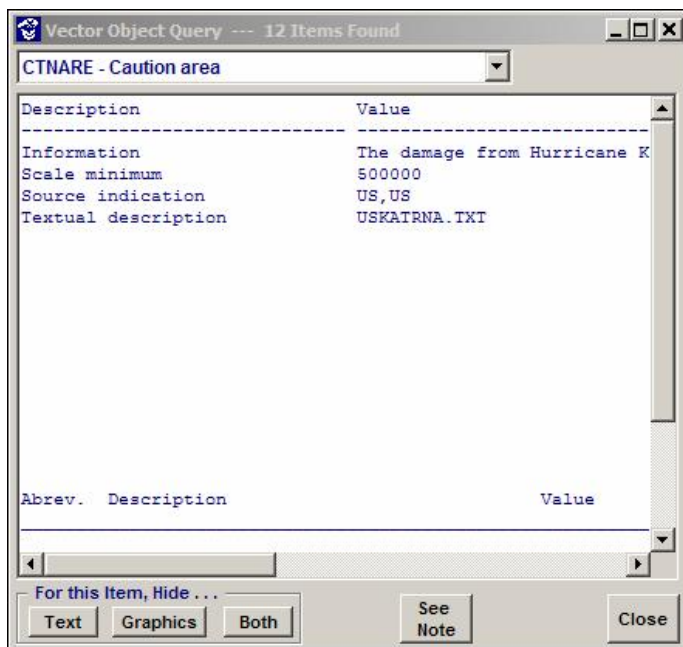
Text: Hides just the text information about the selected object category.

Graphics: Hides just the graphics for the selected object category.

Both: Hides both the text and graphic information for an object category.

Once you click one of the three options, the **Show Item** button will appear at the bottom of the window. To show the object that you hid, click **Show Item**.

Some vector objects, such as caution areas, have notes attached to them. If you query a vector object with a note, a button labeled **See Note** will appear at the bottom of the window. Click **See Note** to read all information about that object.



Hide/Show Feature List

The Hide/Show Feature List provides an easy way for expert mariners to choose what to hide and show on their vector charts. This feature allows a mariner who travels the same route over and over to toggle different categories of objects on and off.

NOTE: It is recommended that you only hide important features, such as buoys or lights, if your knowledge of the area you are navigating is very good. For safety reasons, always check this list before navigating with your vector charts.

There are two separate Hide/Show Feature Lists: one for DNC charts and one for ENC (S-57) charts

To use the Hide/Show Feature List:

1. Right click a vector object and choose **Vector Object Query**.
2. Choose to hide the text, graphics or both for the selected vector object category. When you do this, it will add that object's category to the Hide/Show Feature List.
3. With the Vector Object Query window open, click **Vector Charts, Hide/Show Feature Lists, DNC Vector Charts** or **S-57 Vector Charts** (depending on what type of vector chart you are working with) to open the Hide/Show Feature List:



4. Repeat steps 1 and 2 with as many features as you wish to add them to the list.
5. When you are finished adding features to the list, you can then customize what is shown and hidden on the charts. Check the **Text** and **Graphic** boxes to hide categories of objects from the charts. Click **Update Display** to update the changes on the charts. It is best to keep this window open on the screen while you are navigating to hide and show different features at different times.

For safety reasons, this list will display every time you start the CAPN. Make sure to review this list before you get under way to make sure it is customized to your needs. This is especially important if you are navigating through an area you are not familiar with or if you are not the only mariner operating the ship.

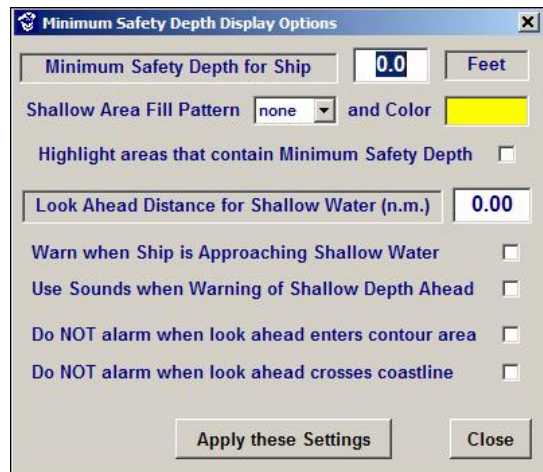
Depth

To change the sounding units, click **Depth in** and choose **Meters, Feet** or **Fathoms**.

Minimum Safety Depth

Vector Charts can show colored and shaded areas that warn you when you are approaching an unsafe depth for your ship. Click **Minimum Safety Depth** to enable this function and customize it to your ship's specifications. Note that The CAPN must be set to prefer Vector over Raster charts (see below), otherwise you may not get the expected results.

Enter a minimum safety depth for your ship. Choose a color and fill pattern for the display of shallow areas if you wish. (Please note that color fills are only available on DNC vector charts and not available on S-57/ENC charts – see "Preferred Vector Charts", below.)



Click **Apply these Settings** for your preferences to take effect.

Maximum Spot Soundings

Choose the maximum depth of soundings to display on vector charts by clicking **Max. Spot Sounding**. Click **Choose All** to display all soundings.

Favor Vector Over Raster

Give preference to vector charts over raster charts by checking **Favor Vector Over Raster**. If both are available, the CAPN will display the vector chart. When this option is unchecked, raster charts will be favored over vector charts.

Preferred Vector Charts

Choose which type of vector chart is preferred: **DNC** or **S-57** (ENC). Please note that the Minimum Safety Depth color, described above, only applies to DNC charts.

Allow Transparent Raster

The CAPN can show a transparent raster chart over the top of a vector chart. Check **Allow transparent raster** to use this feature. You will have the benefits of both chart types at once.

After enabling the transparent raster feature, you can adjust the level of transparency. Right click the chart display and choose **Options, This View-Raster See-Thru Level**. Use the slider to make the raster chart more or less transparent.

Show Feature Hot Spots

To place a red dot on each vector data feature, check **Show Feature Hot Spots**.

Modify Object Sizes

Change the size of vector objects (in points) by clicking **Modify Object Sizes**. Change the size of **Lines, Points, and Text**.

2.10 Go To

The Go To feature is used to view a specific position on a chart. Right click the chart and choose **Go To**. Choose one of the following options:

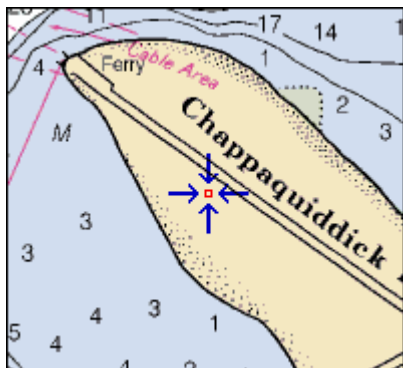
User Mark

Choose **User Mark** to open the Mark and Waypoint list. To view one of the marks or waypoints you have created, highlight its name in the list and click **Center On Mark**. For a complete description of all features in this window, refer to page 41.

Ship's Position

Choose **Ship's Position** to center the chart display on your ship's location.

General Location



Entered Position

The CAPN provides an extensive database of place names and their positions. This can be helpful when searching for a particular feature on a chart. Choose **General Location** to browse through a list of locations covering all US waters plus the Bahamas. Select your general area from the drop down menu in the bottom left corner of the window. The list can be sorted by Location Name, Type of location, State, County, Latitude or Longitude. Once you have found the location you are looking for, highlight it in the list and click **Center on Location**. The General Location window will close and the chart display will center on that location. It will be marked with the symbol shown in this example.

If you know the latitude and longitude of the place you would like to display, choose **Entered Position**. Enter the latitude and longitude and click **OK**. The window will close and the chart display will center on that location. It will be marked by the symbol shown above.

Coast Pilot Page

Maptech ChartPack CDs (edition 3.0 and higher) contain the Coast Pilot for that region. This includes information not found on the charts, such as bridge clearances, ice conditions, traffic separating schemes, etc. Choose **Coast Pilot Page** and highlight the page to read. Click **Display** to close the index and open the selected page.

Current Station

If there is a specific Current Station you would like to view, choose **Current Station**. A list of all current stations within 30 nautical miles of your position will appear. Highlight a current station in the list and click **Center on Selected Station** to close the window and display the current station on a chart. Click **Prediction** to view the station's Current table. For more information on current tables, see page 54.

Note: To view the current station's icon on a chart, make sure your tides and currents icons are not hidden from view. From the **Options** menu, select **Tides and Currents, Show Tide and Current Icons** to show them on the chart display.

Tide Station

If there is a specific Tide Station you would like to view, choose **Tide Station**. A list of all tide stations within 30 nautical miles of your position will appear. Highlight a tide station in the list and click **Center on Selected Station** to close the window and display the tide station on a chart. Click **Prediction** to view the station's Tide Table. For more information on tide tables, see page 52.

Note: To view the Tide Station on a chart, make sure your tide and current icons are not hidden from view. From the **Options** menu, select **Tides and Currents, Show Tide and Current Icons** to show them on the chart display.

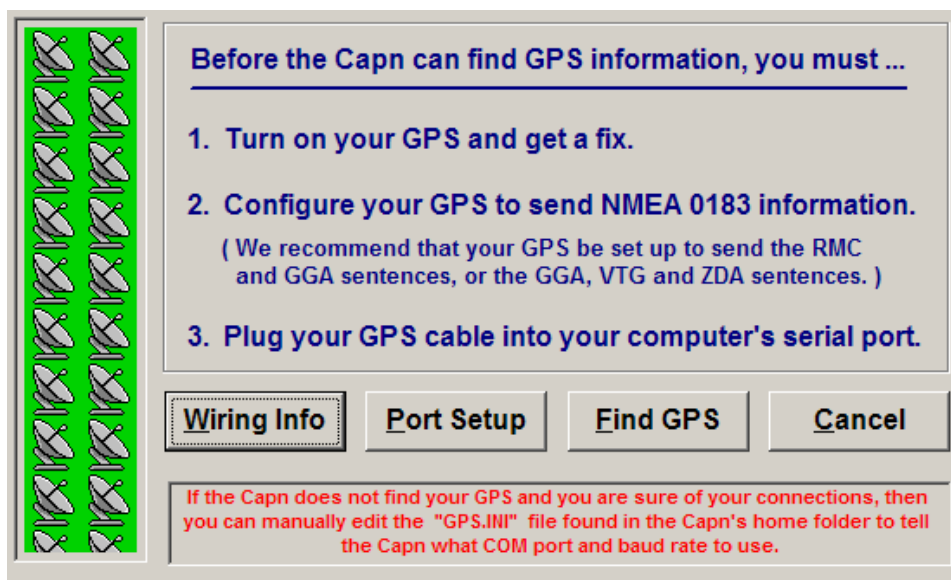
Section 3: Navigation

3.1 GPS Setup

Automatic

Before the CAPN can establish communication with your GPS it needs to be properly configured.

Click the **Click Here To Find GPS** button on the Nav Console or click **Options, Find GPS Data**. The GPS check list will appear:



Follow the instructions on the checklist. Once the GPS is connected to your computer, click **Find GPS**. If you need further instruction on how to configure your GPS to communicate with the CAPN, click **Wiring Info**. This page gives wiring information for various GPS brands.

Note: The CAPN will only recognize a GPS if it uses a serial connection. If your computer does not have a serial port, you must connect the GPS via a serial to USB adapter.

Once you configure your GPS, the CAPN will tell you if it is connected and properly configured. If it is, the GPS status will display on the Nav Console. It will also display your ship's COG, SOG and position.

If no GPS is found, try configuring your GPS manually, or see page 64 for some troubleshooting hints and tips.

Manual

If you know what port your GPS is connected to and you would like to configure it manually, click **Port Setup**.

1. Select the port and the baud rate.
2. Choose a handshaking option.
3. Click Save COM Port Settings to close the window. Click Find GPS.

Note on Handshaking

Handshaking is the process by which communication is established between your computer and your GPS. After a handshake takes place, normal data transfer begins. If you do not know the correct handshake protocol, select **None**.

The CAPN may not find your GPS even if your connections are good. If this is the case, you need to configure your GPS manually:

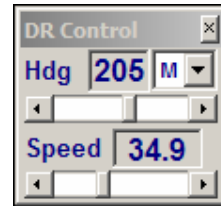
1. In the Capn Voyager folder, open the GPS.ini file.
2. Enter the baud rate and the port number the GPS is connected to.
3. Save this information and close the file. In the CAPN, click **Find GPS** again. The CAPN should now receive information from your GPS.

3.2 Dead Reckoning (DR)

A dead reckoning position is one based solely on speed, course and time. It is not created by any positioning data input such as GPS, DGPS or Loran

To navigate in DR mode:

1. Click **Navigation, Plot Ship in DR Mode**. A check will appear next the item in the menu.
2. Click the chart where you would like to place your vessel.
3. Adjust the course and speed in the DR Control window.
Hdg (Heading): Your ship's direction.
Speed: Your ship's speed.



If you lose your GPS signal while underway, it is important to remember to switch to DR mode. An accurate DR plot is far better than no plot at all.

3.3 Plan/Nav Mode



The **Plan/Nav Mode** button will appear on the right side of the screen when navigating in DR mode or when there is a feed from a GPS.

When Nav Mode is active, the CAPN keeps the ship on the screen. This is especially useful when following a route. If you pan the chart so that the ship is no longer in view, the CAPN will automatically bring your ship's location back into

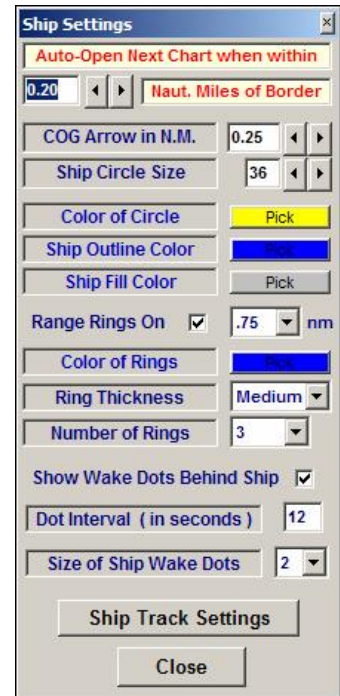
view after a few seconds.

When plan mode is active, you can pan the chart as much as you want, or open charts that don't cover your ship's location. It is best to plot routes and mark locations while in Plan Mode.

3.4 Ship Settings

You can modify your ships settings while in DR mode or when receiving a valid GPS signal. Right click the ship icon and choose **Ship Settings**.

Auto-Open: Set the CAPN to automatically open the adjacent chart within a specified distance of the current chart's border. The distance you set will depend on the area you are navigating. If you are navigating on a river, auto-open should be set at a small distance to avoid charts opening too soon. Charts for the open sea tend to have more overlap, so the distance should be increased. Use the left and right arrows to adjust the distance.



COG (Course Over Ground) Arrow: The Course Over Ground Arrow extends from the front of the ship icon to a distance or time interval that you determine. Use the arrows to adjust the interval. To change the units of measurement, click **Options, Capn Preferences, Charts**.

Ship Circle Size: Adjusts the size of the ring around the ship icon.

Color of Circle: Choose a color for the ring and the fill around the ship icon.

Ship Fill Color: Choose a color for the ship icon.

Range Rings On: Check here to show range rings around the ship icon. Specify the interval of the range rings.

Color Rings: Specify a color for the range rings.

Show Wake Dots Behind Ship: Check this box for the CAPN to place dots on the chart in the wake of the ship icon as it moves.

Dot Interval (in seconds): Choose how often the CAPN should place a wake dot on the chart.

Size of Ship Wake Dots: Adjust the size of the wake dots (in pixels).

3.5 My Nav Console

My Nav Console contains additional information that is helpful while underway. It can be customized to display the data that you want. Click **Navigation, My Nav Console** to show the Nav Console.

My Nav Console		
Speed Over Ground	SOG 3.1 kn	COG 088.0° M
Time To Go to Next Wpt	ttg 10m 28s	dtg .54 nm
Bearing to Next Wpt	Brg 091° M	XTE 0 yds L
Velocity Made Good	VMG - 3.1 kn	Not Listening
Latitude	38° 57.456' N	076° 27.430' W
Time to Go-End of Route	R ttg 10m 28s	R dtg .54 nm
Date	Date - n/a	Time - n/a
Speed Through Water	Speed - n/a	Hdg - n/a
Depth	Depth - n/a	w tmp - n/a
True Wind Direction	TW - n/a	TW Spd - n/a
Relative Wind Direction	RW - n/a	RW Spd - n/a
		Course Over Ground
		Dist. to Go to Next Wpt.
		Cross Track Error
		GPS Status
		Longitude
		Dist. To Go End of Rte.
		Time
		Compass Heading
		Water Temperature
		True Wind Speed
		Relative Wind Speed

Customizing My Nav Console

All changes made to My Nav Console are saved automatically.

Appearance

There are several options for customizing the window's appearance. Right click the Console window and choose **Font**. Select a font size from the list. You can also select a font color and a background color.

Expand Work Area

Expand the work space of My Nav Console by placing the cursor in the lower right corner of window until an arrow appears. Click and drag to enlarge the window. Any data box in the Console can be clicked and dragged into the expanded space.

Customize Information

Right click the console window and choose **What To Show**. Check the boxes to display the information.

3.6 "Steer To" Function

To follow a direct route to a single destination, use the Steer To function. The route always starts at the ship and contains only one waypoint. **The Steer To function will only work while you are navigating with a GPS or are in DR mode.**

To Steer To a mark: Make sure your GPS is configured correctly. If you are not using a GPS, make sure you are operating in DR mode. Right click the mark and choose **Steer To Mark**.

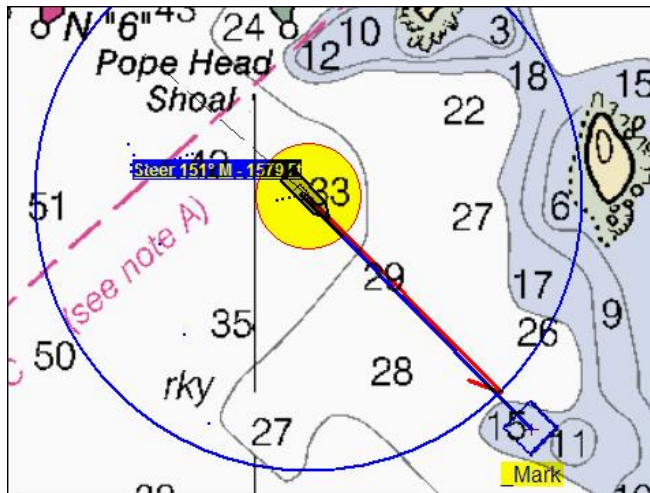
To Steer to a waypoint in a route: Make sure your GPS is configured correctly. If you are not using a GPS, make sure you are operating in DR mode. Right click the waypoint and choose **Steer to Waypoint**.

You can also steer to any location on a chart while you are in navigation mode. Right click the location and choose **Steer Here (Temp Rte)**. The CAPN will automatically draw a route line from the ship to the destination you have chosen.

When using the Steer To function, the blue box next to the ship icon displays the bearing and the distance to your destination. If operating in DR mode, manually enter the bearing shown in the blue box into the DR Control window. If navigating with a GPS, your ship will automatically adjust to the bearing.

The Ship Info Box (located on the left side of the screen) displays your COG (course over ground) and SOG (speed over ground) as well as the ship's latitude and longitude.

Information on your progress (distance, bearing, cross track error, etc) is displayed in the Steering Info box on the left side of the screen, just below the Ship Info box.



Notices and Warnings

Notices and warnings are displayed in the information bar located just below the menu bar. The information displayed will vary depending on whether you are steering to a mark or a waypoint in a route.

Under Two Minutes to .. Steer To Point - Final Waypoint

The CAPN can also give notices and warnings by voice (see page 9).

Note: If at any time you lose your GPS signal, the CAPN will drop a mark on the chart to show the location of your last good fix.

3.7 Trip Log

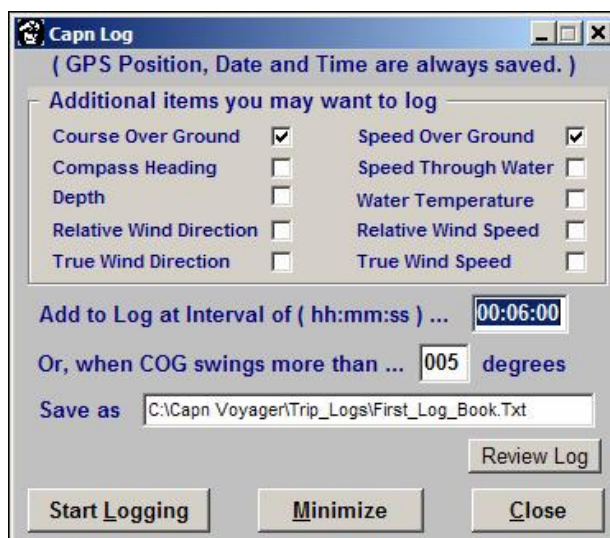
Collect and store data for all your trips in the trip log. To access the trip log, click **Navigation, Open Trip Log**, or right click the ship icon and select **Open Trip Log**.

The top part of the window lists all the information you can store in your trip log. Check the boxes of the information to include.

Adjust how often the data is collected by setting a new log interval. Or, adjust the interval according to how your COG changes.

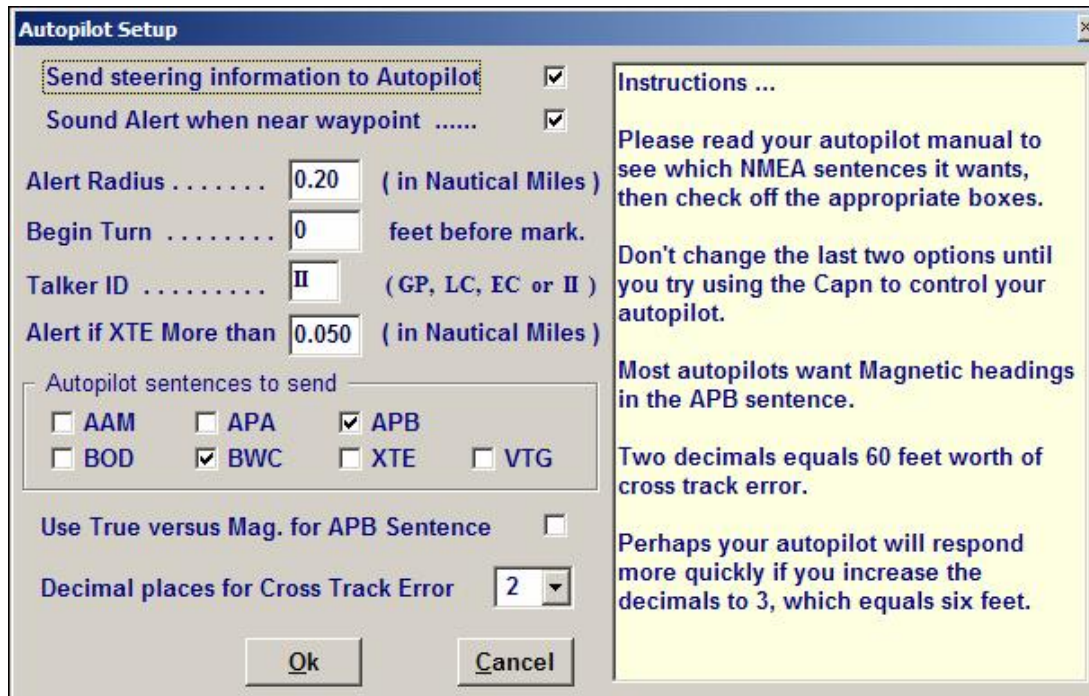
The **Save As** box shows where your Trip Log will be saved. The default location is the Trip_Logs folder. The log is always saved as a .txt file. Click **Start Logging** to activate the logging function.

After logging has begun, click **Add Note** to type a short note, or click **Review Log** to view the log file. Read all trip logs at any time by clicking **Navigation, Open Trip Log, Review Log**.



3.8 Autopilot Setup

The CAPN can control your autopilot when steering to a mark or waypoint or following a route. Once the autopilot is connected to the CAPN, it will need to be configured. Click **Navigation, Autopilot and Route Alert Setup** to access the Autopilot Setup window.



The right side of the window lists some important instructions about how to set up your autopilot to work with the CAPN.

Send steering information to Autopilot: Check here for the CAPN to send this information to your Autopilot.

Sound Alert when near waypoint: Check here for the CAPN to sound an alarm when approaching a waypoint. Enter an **Alarm Radius** to tell the CAPN the distance from the waypoint the alarm will sound.

Begin Turn: Tells your autopilot to begin turning a specified number of feet before the waypoint or mark. This allows you to customize the performance of your autopilot based on the handling.

Talker ID: Tells the CAPN to identify itself to your autopilot as a GPS (GP), Loran (LC), or an Integrated Instrument (II).

Autopilot sentences to send: Select which NMEA sentences you want the CAPN to send to your autopilot. Check the autopilot's manual to see what NMEA sentence is required.

Use True versus Mag for APB Sentence: Most autopilots need Magnetic headings in the APB sentence; check your autopilot's manual.

Decimal places for Cross Track Error: Two decimal places equal 60 feet worth of cross-track error. Your autopilot may respond more quickly if you increase the decimal places to three.

3.9 Navigation Viewing Tools

Choose how the chart appears and moves during navigation in relation to the vessel icon. There are four different navigation viewing tools; all of them are listed in the Navigation Menu:

Keep Ship in View

Choose this option to keep the ship in view at all times. The chart will only scroll when the ship icon nears the edge of the screen.

Max. Chart Ahead

Max. Chart Ahead keeps the ship icon at the screen's far edge, maximizing the view of the chart area ahead of the ship. The chart scrolls while the ship stays in the same place on the screen.

Moving Map Display

The moving map display option keeps the ship icon in the center of the screen. As the ship moves, the chart scrolls beneath it.

Find Best Chart for Ship

Check this option to make sure the CAPN chooses the best chart for navigation. This is usually the largest-scale chart with the greatest detail.

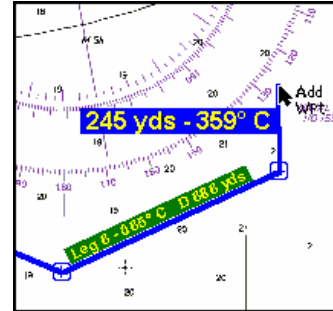
Section 4: Routes

A route is a series of waypoints, connected in sequence along a path of travel. Waypoints are individual latitude and longitude locations.

In the CAPN, routes are displayed as symbols and lines on the charts. There are several options for adjusting the characteristics of a route.

4.1 Creating a Route

1. Right click the chart and choose **Routes, Create a Route** or select **Create a Route** from the **Routes/Marks** menu.
2. The cursor will change to the Add Waypoint tool. Click the chart where you want to create a *waypoint*. Each time you click the mouse, the CAPN will place a waypoint at that location. A *route line* will appear between consecutive waypoints. Each line segment is called a *leg*. The labels show the distance and bearing of each leg.
3. When finished adding waypoints to the route, right click and select **Route Done**.



The Route Information window will appear on the screen. Enter a name for the route or use the default name (the time and date the route was created). You can also add a note and fill in the destination and the start point. Click **Text and Line Styles for this Route** to change the appearance of the route:

Route Line Color/Width: Choose a color and a line width for all legs of the route.

Text Background/Foreground: Choose a color for the route leg labels and the text.

Text Font: Choose a font for the leg label text.

Scaled Text: Check this box to scale of the route leg labels as you zoom in and out.

Check **Use these values for all new routes** for the changes to apply to all routes created. Clear the box to apply these attributes to this route only.

View the route information window for a route or change its appearance at any time by right clicking the route and choosing **Route Information**.

4.2 Removing a Route from Display (Stowing)

Stowing a route temporarily removes it from the chart display. To stow a route, right click it and choose **Stow this Route**. Choose **Stow All Routes** to remove all routes temporarily from display.

To bring a stowed route back into view:

1. Right click the chart and choose **Routes, Display a Route**, or select **Display a Route** from the **Routes/Marks** menu.
2. Highlight the route on the list.
3. Click **Display Highlighted Route**. The message "Highlighted route displayed" will appear.

4.3 Deleting a Route

To *permanently* delete a route:

1. Right click the chart and choose **Routes, Delete Route**, or select **Delete Route(s)** from the **Routes/Waypoints** menu.
2. Highlight the route(s) you wish to delete on the list. To select multiple routes, hold the Ctrl key down as you click.
3. Click **Delete Highlighted Route(s)**.

4.4 Reversing a Route

Reversing a route means changing the end waypoint to the beginning. Right click the route and choose **Reverse the Route**. All of the waypoints in the route will be renumbered in reverse order. This is useful when you want to take the same route for a return trip.

4.5 Copy a Route

If you have a route you would like to make a few changes to, but you also want to keep a copy of the original route, right click the route and choose **Copy this Route**. The Route Information window will appear; the name of the new route will be the same as the name of the original route, with (COPY) at the end. You can rename the new route or keep the default name. When you are done filling in information about the new route, click **Close**.

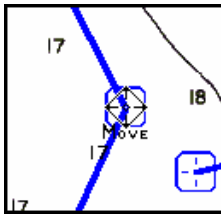
The route displayed on the chart is the COPY of the original route. The original route is stored in memory and can be accessed by clicking **Routes/Marks, Display or Export Routes**.

4.6 Hide Route Labels

To temporarily hide route labels, click **Routes/Marks, Hide Route Labels**. Click **Hide Route Labels** again to make the labels visible. You can also hide or show route labels by right clicking the route and choosing **Hide Route Labels**.

4.7 Waypoints

Moving Waypoints



Hold the cursor over the waypoint until the cursor changes to the Move tool. Click and drag the waypoint to the desired location. The route legs will expand and contract to adjust to the new placement, and the cursor will return to the Pan/Centering tool.

To move several waypoints, use continuous move mode. Press **Alt+M** on the keyboard to change the cursor to the move cursor. Move the waypoints and when finished, press the **M** key to turn continuous move mode off.

Inserting a Waypoint

Insert a waypoint at any point in the route line by right clicking the line and choosing **Insert waypoint**. A new waypoint will be placed at the location you clicked and the cursor will change to the Move tool. Move the waypoint if desired, or click anywhere on the chart to return to the Pan/centering cursor.

Deleting a Waypoint

Delete any waypoint by right clicking it and choosing **Delete Waypoint**.

Waypoint Info

Each waypoint in a route has its own data, such as its distance and bearing to the waypoints before and after it in the route. Right click a waypoint and choose **Waypoint Info** to view this data.



The date and time the waypoint was created appears in the title bar of the window. The **In->** box indicates the bearing and distance to the *previous* waypoint; the **Out->** box indicates the bearing and

Routes

distance to the *next* waypoint. In the example above the **Out->** box says **Destination** since Waypoint 3 is the last waypoint in the route.

The **1st** and **last** arrows let you scroll through the information for all waypoints in this route.

For more information on the selected waypoint, click the **More Info** button. This will display what chart on which the route was created, the latitude and longitude of the waypoint, and any notes you have made about the waypoint. Click **Less Info** to close the bottom part of the window.

To close the waypoint info window and center the chart view on the selected waypoint, click **Center on Wpt.**

The Waypoint List

The Waypoint List is a good tool for planning a trip. Once you have plotted a route, the CAPN can calculate waypoint arrival times at different speeds.

Right click a route or waypoint and choose **Waypoint List**.

Route - Created 25 May 2006 @ 09:31:53

Click on Date of First Waypoint to Begin Calculations

Leg	Begins at Waypoint	Leg (C°)	Leg Dist.	Dist To Go	Speed	Date	Time	Latitude	Longitude
001	Wpt 1	222° C	85 yds	583 yds	0.00			42° 34.346' N	070° 46.325' W
002	Wpt 2	206° C	256 yds	498 yds	0.00			42° 34.308' N	070° 46.351' W
003	Wpt 3	240° C	243 yds	243 yds	0.00			42° 34.184' N	070° 46.381' W
004	Wpt 4	End	n/a	None	0.00			42° 34.099' N	070° 46.495' W

Cumulative distance travelled ... 0 yds Estimated Time Enroute

Total distance covered by route ... 583 yds Total Time .. N/A

Print List **Save Changes and Close** Cancel

All information is organized into labeled columns:

Leg: Each leg of the route is labeled by default 001, 002, etc.

Begins at Waypoint: The first waypoint of the leg.

Leg (C°): The bearing of the route leg to the next waypoint.

Leg Dist: Length of the leg.

Dist To Go: Distance from the selected waypoint to the last waypoint in the route.

Speed: Your speed along the route leg.

Date/Time: Departure date and time from the waypoint.

Latitude/Longitude: The location of the waypoint.

TZ (Time Zone): The number of the time zone east or GMT. (Use the scroll bar to find the TZ field.)

Planning your Trip Using the Waypoint List

It is easy to plan a trip ahead of time using the Waypoint list. From the dates, times and speeds you enter, the CAPN can calculate arrival times at waypoints and the total time of the trip

1. Click the box in the date column of the first waypoint. The CAPN displays a calendar to help you select the trip's starting date. Select the date and click **OK**. Next, enter the time of departure.
2. Enter the predicted speed for that leg of the route. When you click **OK**, you can set this speed for each leg of the route by choosing **Make All Speeds = [speed]**. Set this speed for just this leg and edit the others separately by choosing **Leave Other Speeds Alone**. If you are editing a speed in the middle of the list, you can set this speed for this leg and all the legs *after* it by choosing **Make remaining = [speed]**. Fill in the speeds for all legs of the route accordingly.
3. After setting your speeds, the CAPN will predict all times for each leg and the total time of the trip. Make sure to click **Save Changes** to save all data you have entered in the Waypoint List.

Once the Waypoint list is saved, experiment with different departure times and speeds; change the time or speed for any waypoint and the CAPN will recalculate the arrival times. Do this as many times as you wish; the CAPN will not save any changes until you click the **Save Changes** button.

4.8 Using Turn Points Instead of Waypoints

There may be times when you want your route to turn a tight corner or have several tight corners in close succession. Use a **Turn Point** to navigate these sharp turns.

To place a turn point while creating a route:

1. Create the route as usual. When you reach the location on the chart where you want to use a turn point, right click and select **Lay Down Turn Points**.
2. Click the chart. Each point you add to the route will be a turn point rather than a waypoint. Turn points are shown on the chart as small circles. To place waypoints again, right click and choose **Lay Down Turn Points**.

To convert a waypoint to a turn point, right click the waypoint and choose **Convert to Turn Point**. To convert a turn point to a waypoint, right click the turn point and choose **Convert to Waypoint**.

4.9 Following A Route

Following a Route Using a GPS

Make sure you have a valid GPS fix or you are navigating in DR mode. For instructions on how to configure your GPS for use with the CAPN, see page 25.

1. Create a route (see page 32) or select a route you have already created: Click **Routes/Marks, Display or Export Routes**. Select the route from the list and click **Display Highlighted Route(s)**. The Route List window will close and the route will be centered on the display.
2. Right click the first waypoint in the route and choose **Steer to waypoint**.
3. A blue box will appear, displaying the bearing from your position to that waypoint. Enter the bearing into your GPS. You can also find the bearing of the waypoint by placing your cursor over it. The bearing will display in the Cursor Info window.
4. Repeat steps 3 and 4 for each waypoint in the route.

As you near each waypoint, the CAPN will show your progress in the Information bar, above the chart display.

Approaching ... Wpt 1 - Bearing 006° M - Distance 135 yds

Routes

The CAPN can also tell you when you are nearing a waypoint with a voice alert. To enable voice alerts, click **Options, Enable sounds**. Make sure the volume set to level that you can hear.

Right click the waypoint to find out your ETA (estimated time of arrival) at the waypoint and the end of the route.

Note: If at any time you lose your GPS signal, the CAPN will drop a mark on the chart to show the location of your last good fix.

Following a Route in Dead Reckoning (DR) Mode

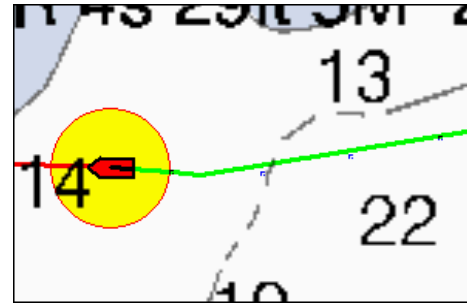
1. Create a route (see page 32) or select a route you have already created. Click **Routes/Marks, Display or Export Routes**. Select the route from the list and click **Display Highlighted Route(s)**. The Route List window will close and the route will be centered on the display.
2. Click **Navigation, Plot Ship in DR Mode** and click the chart where you want to place your ship icon.
3. Right click the first waypoint in the route and choose **Steer to waypoint**. This will draw a line from your ship's icon to the waypoint.
4. A blue box will appear, displaying the bearing to that waypoint. Enter the bearing and your speed into the DR Control window.
5. Repeat steps 3 and 4 for each waypoint in the route.

Section 5: Tracks

5.1 Recording a Track

The CAPN's tracking feature lets you record your ship's course. You must be in Dead Reckoning Mode or using a GPS to plot a track.

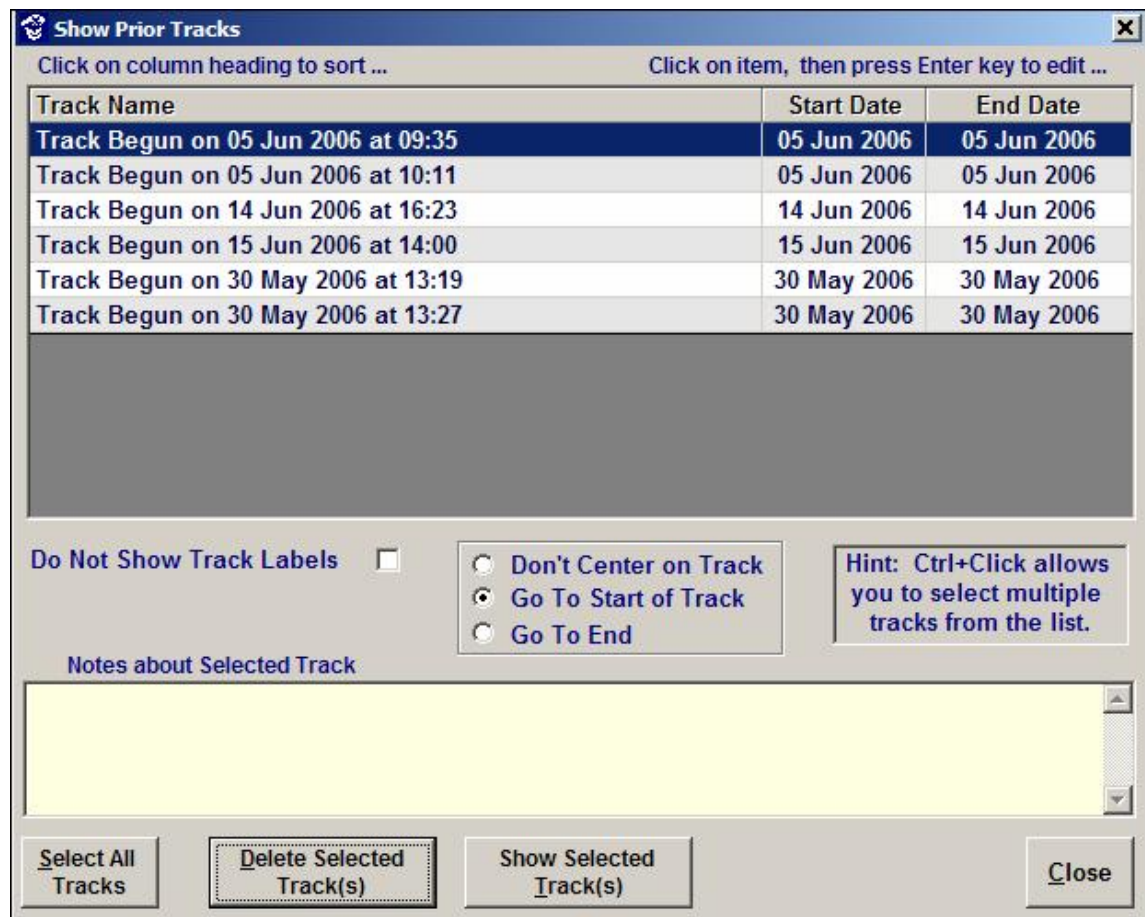
To record a track, click **Navigation, Plot Track**, or right click the ship icon and choose **Plot Track**. The track will appear as a line behind the ship icon as you move. The track will automatically save in the list of prior tracks.



To tell the CAPN to record your ship's track every time you are under way, click **Options, Capn Preferences**, click on the **Advanced Settings** tab and check **Always Plot Ship's Track**.

5.2 List of Prior Tracks

To see a list of all recorded tracks, click **Navigation, List of Prior Tracks**.



All tracks are listed under **Track Name** in the order they were recorded; the latest track appears at the bottom of the list. The next two columns list the date the track was started and the date it was completed. Click on any column heading to sort the list by that heading.

Show a Track

To make a track or tracks visible on a chart, highlight the track(s) and click **Show Selected Track(s)**. Hold the Ctrl key down on the keyboard to select multiple tracks, or click **Select All Tracks** to highlight all tracks on the list.

Track Labels

Track labels appear at the beginning and end of a track on the chart. The label includes the name and the start or end time. To hide the track labels, check **Do Not Show Track Labels**

Editing a Track

To change the name, start date or end date of a track, click on the information you would like to edit and press **Enter** on your keyboard.

Go To Track

There are two options to show a track on the chart display. Choose **Go to Start of Track** to center the chart display on the starting point of the selected track. Choose **Go to End** to center the chart display on the end of the selected track. Highlight a track in the list and click **Show Selected Track(s)**. The chart display will center on either the start or the end of the highlighted track, depending on which option you chose.

To make the selected track visible on the chart but you do not want it centered on the chart display, choose **Don't Center on Track**.

5.3 Track Options

Track Info

To access the track info window, right click any track on the chart display and choose **Chart Info**. From here, you can edit the name of the track and write a short note about it.

Stow a Track

To hide a track from view, right click the track and choose **Stow This Track**. To hide all tracks from view, right click a track and choose **Stow All Tracks**. Stowed tracks will still appear in the list of prior tracks but will not appear on the charts.

To show a stowed track, click **Navigation, List of Prior Tracks**. Highlight the track(s) you would like to show, choose **Don't Center on Track**, and click **Show Selected Track(s)**.

5.4 Ship Track settings

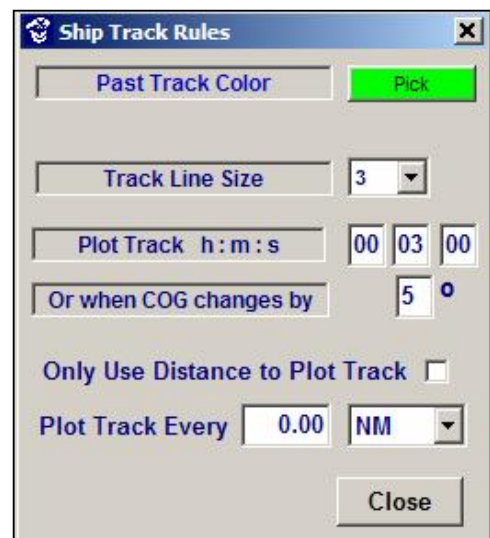
Click **Ship Track Settings** to adjust your track preferences.

Past Track Color: Click pick to choose a color for your track line.

Track Line Size: Adjust the thickness of the track line.

Plot Track h:m:s: Tell the CAPN to drop a track point at a chosen time interval. In this example, a track point will be dropped every 3 minutes.

Or when COG changes by: Tells the CAPN to drop a track point when your course changes by a specified amount.



Only Use Distance to Plot Track: Check here to tell the CAPN to only use distance (and not time) to drop track points. Uncheck the box if you wish to drop track points using time.

Plot Track Every: Tells the CAPN to drop a track point at a specific distance interval.

Section 6: Marks

The CAPN can mark points of interest on charts. Place a mark at a good fishing spot or mark a wreck that might not be noted on the chart.

6.1 Creating a Mark



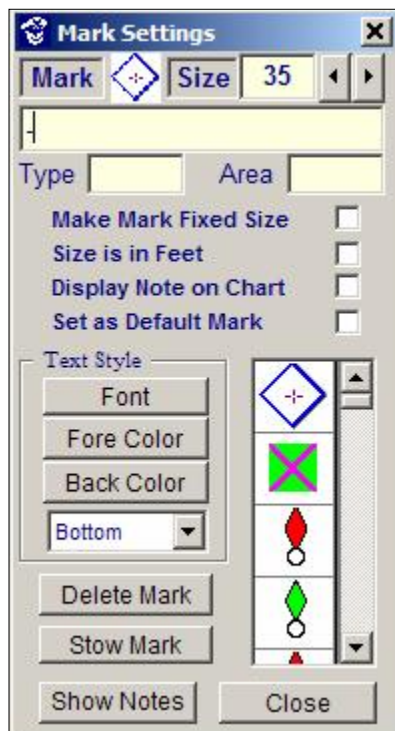
Click the **Place Marks** button on the right side of the screen, or click **Draw & Mark, Place Marks**. Click the location(s) to place a mark. When you are finished, click the **Stop Making Marks** button.

You can also place a mark by right clicking the chart and choosing **Drop Mark Here**.

To place a mark at your ship's location, click **Draw & Mark, Drop Mark at Ship**.

6.2 Customizing Your Marks

You can customize a mark's appearance in the Mark Settings window. Right click the mark and choose **Mark Settings**.



Mark, Size: Shows the mark icon that will be displayed on the chart and its size (in pixels). Change the mark's symbol by selecting a symbol from the list in the bottom half of the window. Adjust the size using the right and left arrow buttons. In the blank space below, type a caption for the mark. This will be displayed with the mark on the chart.

Type, Area: Note what type of mark it is (fishing spot, wreck, etc) and what area it is in (for example, LCB for Lower Chesapeake Bay). These labels are helpful later when you want to sort your marks according to their type and location.

Make Mark Fixed Scale: Check here to keep the size of the mark's icon consistent regardless of the chart's scale.

Size is in Feet: Scales the size of the mark to actual dimensions on the chart.

Display Note on Chart: Check here to display notes about this mark on the chart.

Set as Default Mark: Check here to make the selected icon the default icon. Clear this box to apply this style to this mark only.

Text Style: Choose **Font**, **Fore Color**, **Back Color** and **text location** to customize the mark's caption.

Delete Mark: Permanently deletes the selected mark.

Stow Mark: Hides the mark from display on the chart.

Show Notes: Click here to type a few short notes about the selected mark.

If the mark is not visible on the screen, there are several ways to edit it by accessing the Mark & Wpt List:

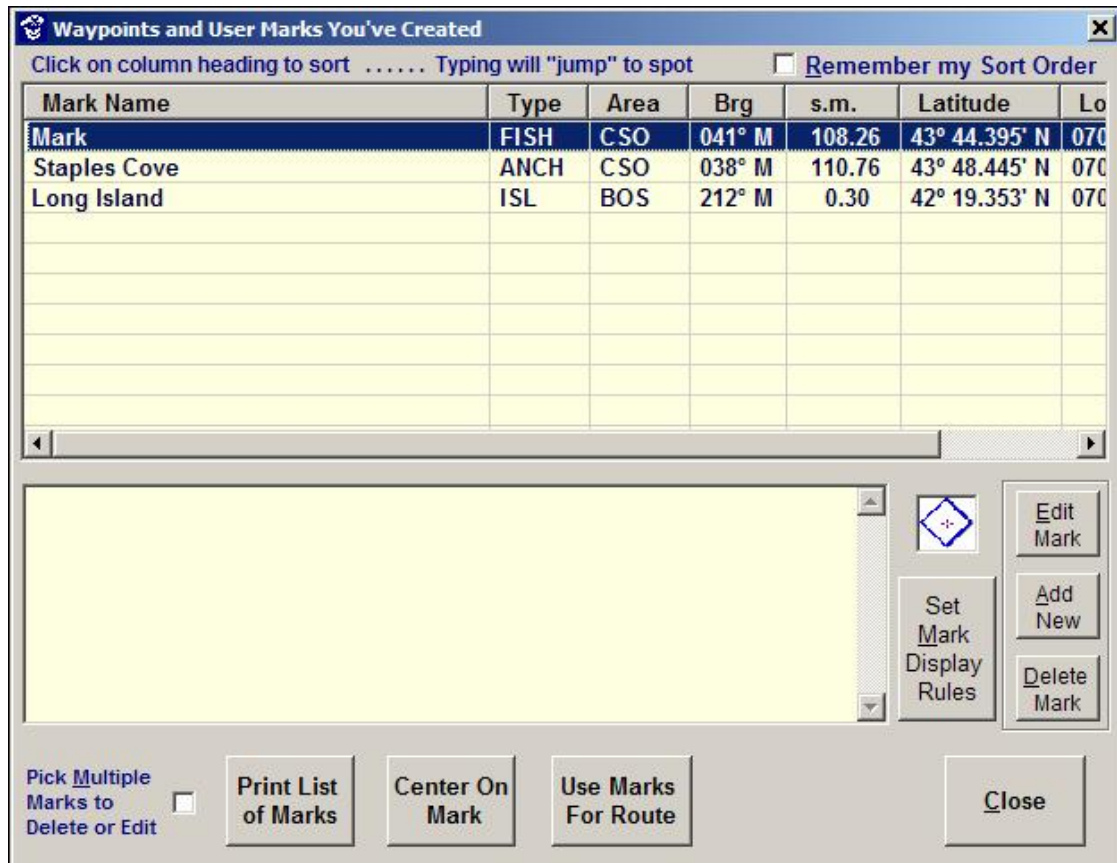
- Click Routes/Marks, Mark & Wpt. List, highlight the mark and click Edit Mark.

- Click **Draw & Mark, Mark & Wpt. List**, highlight the mark and click **Edit Mark**.
- Right click the chart; select **Go To, User Mark**. Highlight the mark and click **Edit Mark**.
- Click the **Go To** button on the button bar, highlight mark and click **Edit Mark**.

You can edit multiple marks at a time by checking the box next to **Pick Multiple Marks to Delete or Edit**.

6.3 Editing a Mark: The Mark & Waypoint List

Access the Mark & Waypoint list by using any of the methods described above.



The Mark and Waypoint list shows all the marks you have created. Click any column heading to arrange the marks in order by **Name, Type, Area, Bearing, S.M., Latitude** or **Longitude**. Click the **Remember my Sort Order** box for the CAPN to keep the marks in the order that you specified.

There are several mark management options here in the Mark & Waypoint List:

Print List of Marks: Print a list of your marks.

Center on Mark: Closes the Mark and Waypoint List and centers the chart on the highlighted mark.

Edit Mark: Customize the settings of the highlighted mark.

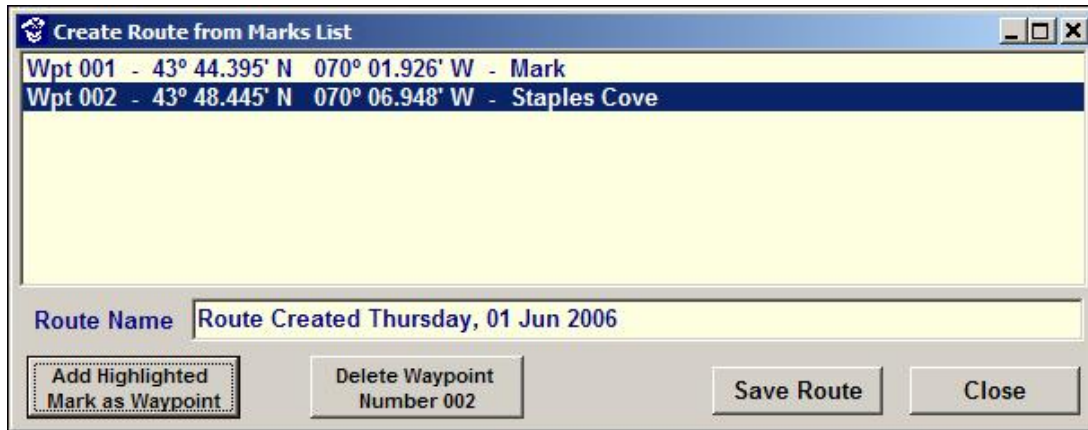
Add New: Adds a new mark on top of the one that is highlighted on the list.

Delete Mark: Deletes the highlighted mark.

Check **Pick Multiple Marks to Delete or Edit** to highlight multiple marks on the list.

Use Marks for Route

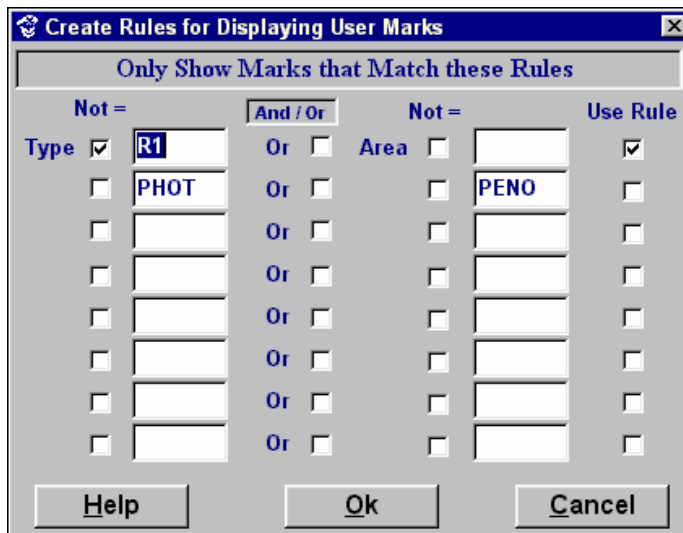
Click the **Use Marks for Route** button to change marks to waypoints and connect them in sequence to form a route.



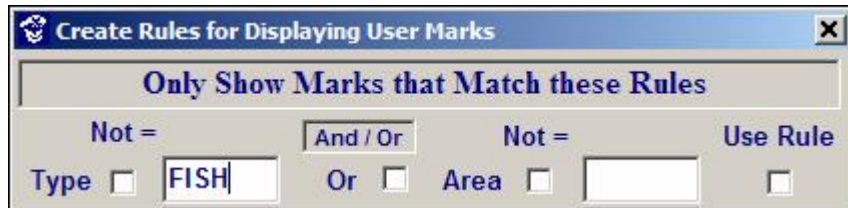
In the Mark & Waypoint list, highlight the mark you want as the starting waypoint. Click the **Use Marks for Route** button. Click the **Add Highlighted Mark as Waypoint** button. The mark will move from the Mark and Waypoint list to the **Create Route from Marks** window and will be labeled “Wpt 001”. Highlight as many marks as you want in the sequence you would like them in the route. Click **Save Route** when you finished.

Set Mark Display Rules

Click the **Set Mark Display Rules** button to show only a specific subset of the marks you have made on the chart. For example, you may want to show only those that mark fishing spots, or only those in a certain area.



In this example, suppose you want to display only the marks labeled “FISH” in the **Type** column of your Marks & Waypoints list. The rule you would make in the Rule window would look like this:



If you wanted to show the marks labeled “FISH” but not the ones in the Casco Bay area (CSO), your rule would look like this:



You can make up to eight rules that tell the CAPN which marks to display. Check the **Use Rule** boxes to enable or disable the rule.

6.4 Moving a Mark

To move an individual mark, place the cursor over the mark. Right click and choose **Move Mark**. Click and drag the mark to the new location

To move multiple marks, press **Alt+M** on your keyboard to place the CAPN into Continuous Move Mode. Move all the marks you wish. You can still pan the chart while Continuous Move Mode is enabled; press **M** on the keyboard to use the Pan cursor. Press **Alt+M** again to turn continuous move mode off.

You can also use the “Smart Move” Feature to move marks; see page 10 for more information.

6.5 Attaching a Photo to a Mark

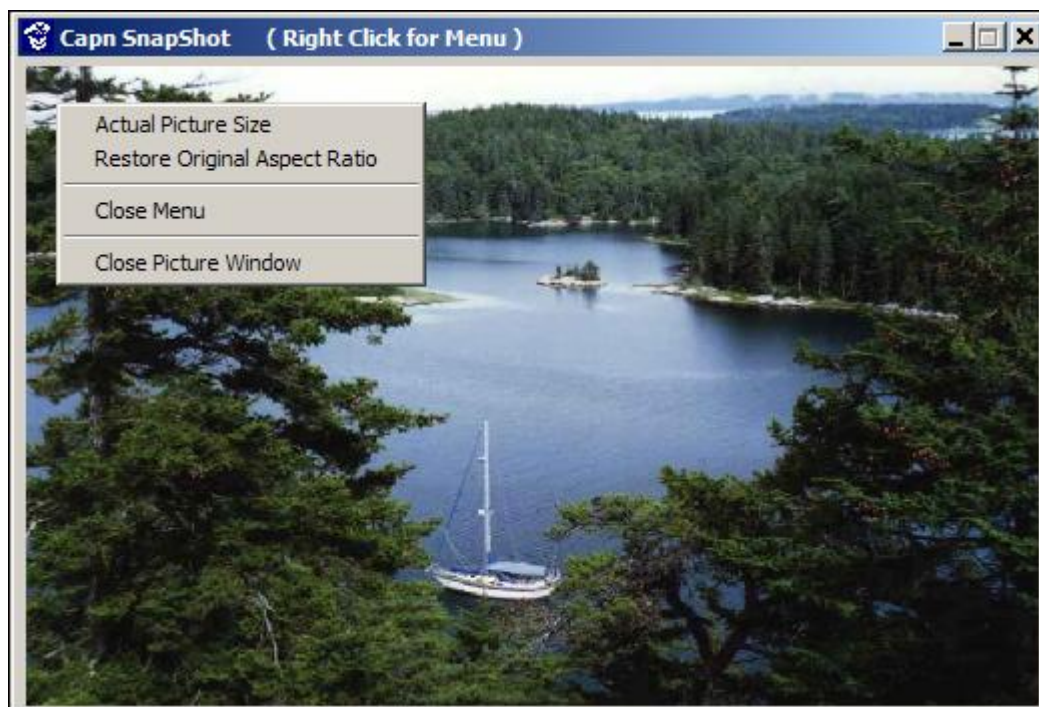
The CAPN lets you attach photos to your marks. This makes it possible to take a photo of a harbor, landmark, or anchorage and link it to a mark that represents its location on the chart. Photos must be in .bmp or .jpg format.

Right click the mark you would like to attach a photo to and choose **Attach Photo to Mark**. Browse to the location of the photo on your computer. Click the name of the photo in the bottom pane of the window. The picture will display in the preview window. To attach the photo to the selected mark, click **Use Photo**.



After the photo is attached, the mark icon will appear on the chart with an arrow. This arrow is meant to indicate the point of view from which the picture was taken. To change the arrow to a different position, right click the mark and choose **Adjust Photo Arrow**. A window will pop up; adjust the angle of the arrow and click **OK**.

To view the photo, right click the mark and choose **View Photo**.



Right click anywhere on the photo for the following options:

Actual Picture Size: Lets you view the photo at its actual size.

Restore Original Aspect Ratio: Restores the picture to its original size.

Close Menu: Closes the right click menu.

Close Picture Window: Close the menu and the picture window.

To remove an attached photo from a mark, right click the mark and choose **Delete Photo**.

6.6 Deleting Marks

Single Mark

There are several ways to delete a single mark:

- Right click the mark on the chart and choose **Delete Mark**.
- Click **Draw & Mark, Mark & Waypoint List**, highlight the mark in the list and click **Delete Mark**.
- Right click any point on the chart and choose **Go To, User Mark**, highlight the mark from the list and choose **Delete Mark**.
- Click the **Go To** button on the button bar, highlight the mark on the list and choose **Delete Mark**.

Multiple Marks

In the Mark & Waypoint list, check the box that says **Pick Multiple Marks to Delete**. Press and hold the shift key while you click on the marks to delete. Release the shift key and click **Delete Mark**.

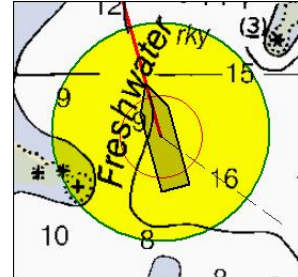
Section 7: Alarm Zones

An alarm zone is an area defined on a chart so that the CAPN can warn you when your vessel enters or leaves that area. For example, you might set a custom alarm zone around an area of shallow rocks. Or, draw a circular alarm zone around your anchorage to warn you when your anchor is dragging.

7.1 Circular Alarm Zone

To draw a circular alarm zone:

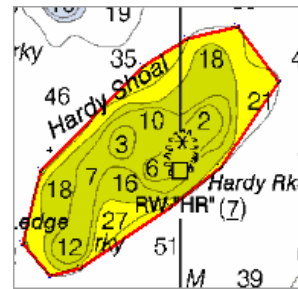
1. Click **Draw & Mark, Add Circular Alarm**.
2. Click the chart at the location you would like the center of the alarm zone to be placed. A shaded alarm zone circle will be placed on the chart and the Alarm Zone Settings window will appear.



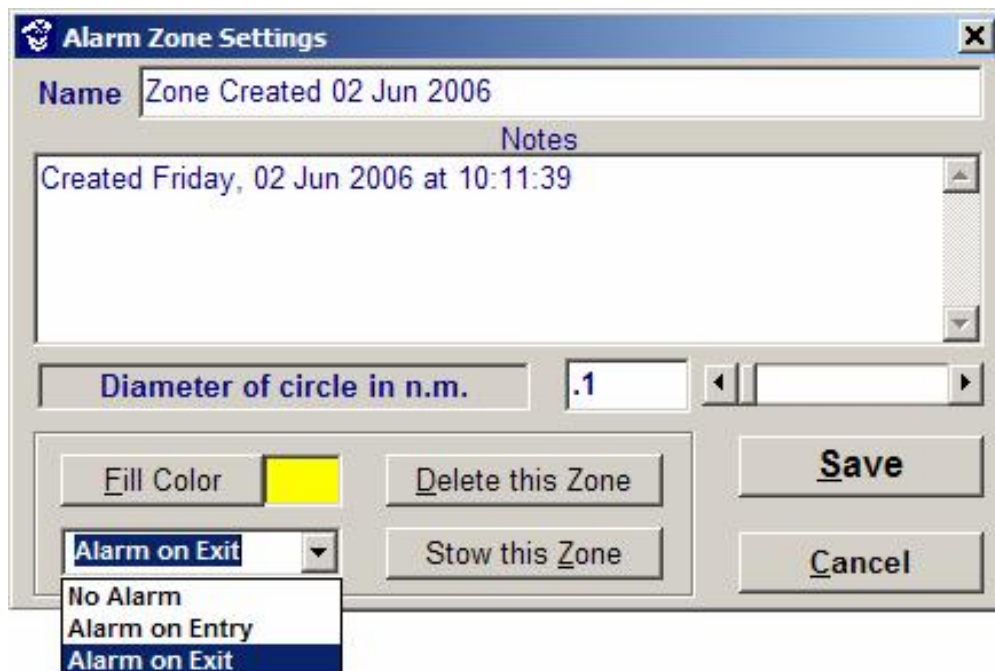
7.2 Custom Alarm Zone

To draw a custom alarm zone:

1. Click **Draw & Mark, Draw Alarm Zone**.
2. Click the chart where you would like one corner of your alarm zone to be placed. Continue placing points on the chart to form a polygon that outlines the entire alarm zone.
3. When you are finished drawing the alarm zone, right click and select **Alarm Zone done**. The Alarm Zone Settings window will appear.



7.3 Alarm Zone Settings



Name: The default name for an alarm zone is the date it was created. You can keep this name or change it.

Notes: This space can be used for a short description of the alarm zone.

Diameter of circle in n.m.: Adjust the size of a circular alarm zone.

Fill Color: Choose a color for the alarm zone.

Delete/Stow this Zone: Click here to delete or hide the alarm zone. You can also delete an alarm zone by right clicking it and choosing **Delete Alarm Zone**.

Use the drop-down menu to choose when you want the CAPN to sound the alarm. Choose **Alarm on Entry, Alarm on Exit, or No Alarm**.

Click **Save** when you have adjusted your alarm zone settings. You can access the Alarm Zone Settings window at any time by right clicking an alarm zone and choosing **Zone Settings**.

7.4 Making Adjustments to the Alarm Zone

Moving a Circular Alarm Zone

Right click the alarm zone and choose **Move Circle**. The cursor will change to the move cursor. Click and drag the alarm zone to a new location.

Moving an Alarm Zone Point

Place the cursor over the point and click and drag it to a new location. The alarm zone will stretch to cover the new area.

Adding an Alarm Zone Point

Right click just inside the alarm zone outline. Choose **Insert Zone Point**. The new point will be placed where you clicked.

Section 8: Exporting and Importing Data

8.1 Why Export and Import?

After creating routes, marks, tracks and alarm zones at home, you might want to save and transfer them to the computer on your boat. You can *export* the data from the CAPN and save it on a disc, then *import* it into the CAPN on your boat. You can also share this data with other mariners who use the CAPN. Exporting data is also a good way to back up important routes, marks, tracks and alarm zones.

8.2 Exporting Data From the CAPN

When exporting it is saved in text file format. Since the process to export all data types is the same, the steps outlined below should be followed to export routes, marks, tracks and alarm zones.

To export all data from the CAPN:

1. Click **Routes/Marks, Export, Routes** (or **Marks & Waypoints, Tracks, or Alarms**, depending on which type of data you are exporting).
2. The export window will appear. All data for the selected category is listed here. Highlight the data to export and click **Next>>**. For instructions on how to export multiple items, click **How to pick multiple items**.
3. Select a location where you want your data to be saved. Choose the default folder, browse to a different folder or create a new folder. Click **OK**.
4. Once the data is exported, the CAPN will ask you if you would like to delete the exported data from the CAPN. Click **Yes** or **No**.

8.3 Importing Data To the CAPN

To import all data back to the CAPN:

1. Click **Routes/Marks, Import, Routes** (or **Marks & Waypoints, Tracks, or Alarms**, depending on which type of data you are importing).
2. The import window will appear. Browse to the folder where the data is stored. Click **Import Selected [Type of Data]**. A window will appear when the data has been imported.

8.4 Exporting Routes in GPX Format

GPX, or GPS Exchange Format is an XML data format for the interchange of GPS data. GPX format is used to standardize data, so that it can be used in many different applications. The CAPN is able to export routes in the GPX file format for use in many applications, including EasyGPS and Garmin's MapSource.

1. Click **Routes/Marks, Display or Export Routes**.
2. Select the routes from the list you would like to export in GPX format.
3. Click **Export all routes as GPX files**.
4. A message will appear when your routes have been exported.

8.5 Importing Marks from a Text File

The CAPN can import marks from a text file. This way, you can share data with other CAPN users, or create text files for storing data outside the CAPN.

In the text file, each mark is described on a separate line. Each item contains five fields of information about that mark. The fields are separated by commas and presented in the following order:

"Mark Name, 30.12345, -80.12345, My Fishing Spot, Wreck at 75 Feet"

The first field is the mark's name, followed by its latitude, longitude, caption, and note. The latitude and longitude must be in decimal degrees; east and north are positive, west and south are negative.

Marks

Once all the data for your marks is entered into a text file, you can import the marks into the CAPN:

1. Click **Draw & Mark, Import, Marks from Text File**.
2. Click **Locate Your Text File** to browse to the file's location.
3. Enter a **Type Identifier** for your marks. For example, if all the marks represent fishing spots, the Type could be "FISH".
4. Enter an **Area Code**. For example, all of your marks are in the Lower Chesapeake Bay area, the Area Code could be "LCB".
5. Select a symbol from the list and a size (in pixels).
6. Click **Import Selected Text File**.

8.6 Importing Old CAPN Data

This version of the CAPN can use coordinate data from versions of the CAPN 5.0 and earlier. Click **Draw & Mark, Import, Pre-Capn Version 5.0** and select the type of data you wish to import. Follow the instructions on the screen to find and import the data.

Section 9: Information to Aid Navigation

9.1 Tides

The CAPN includes tide and current graphs for several tide stations within each chart region. To show the tide and current stations on the charts, click **Options, Tides and Currents, Show Tide and Current Icons**.

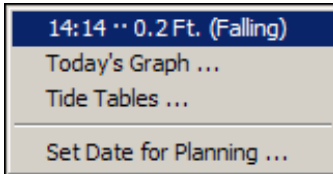
Predictions are updated every six minutes. When in Dead Reckoning Mode or navigating with a GPS, stations within 30 nautical miles of the current position are shown.

Tide Station Icons



Green icons marked with a **T** are tide icons. The icons indicating a tide station also show the height of the tide. The height of the tide will change to reflect present conditions.

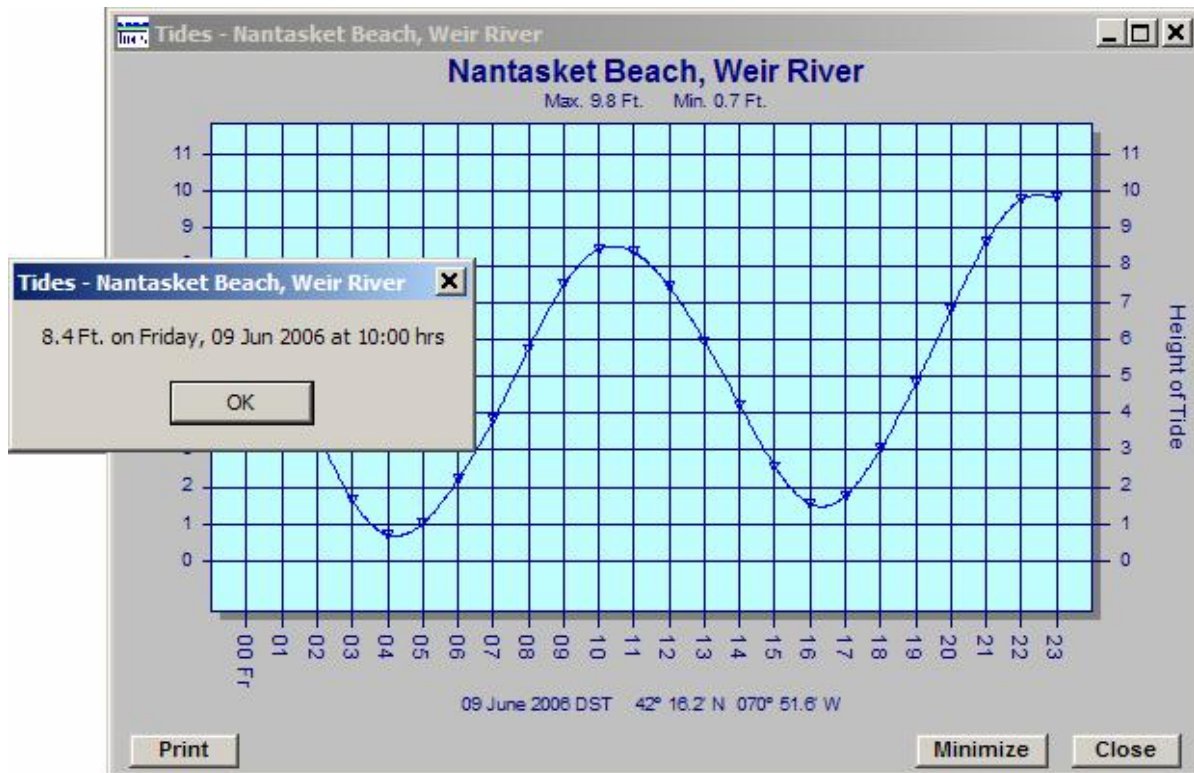
Right click a tide icon to view more information about the tide station.



The top line indicates the time, the tide height and the status (rising or falling). Choose **Today's Graph** to view the day's expected tide pattern. Choose **Tide Tables** to display a text version of the tide data for this station. **Set Date for Planning** lets you view predictions for future tides.

Tide Graphs

Right click a tide icon and choose **Today's Graph** to view the day's expected tide pattern. The time appears along the bottom of the graph and the height is along the sides:



Click any point on the graph and view the tide information for that hour.
Right click anywhere on the graph for the following options:

Viewing Style: Graphs can be viewed in 3 styles: **Color**, **Monochrome** or **Monochrome with Symbols**. This allows you to adjust the image for printing on a monochrome printer.

Font Size: Choose **Large**, **Medium**, or **Small**.

Numeric Precision: Choose the number of decimal places for information placed into a table, or exported data. The default value is 2.

Plotting Method: There are five plotting methods available:

- **Bar:** Bar graph.
- **Area:** Curved, shaded line.
- **Points+Line:** Points for every hourly reading connected with straight lines.
- **Points+Spline:** Points for every hourly reading connected with a curved line.
- **Spline:** Curved line without points.

Data Shadows: Displays a black shadow behind the bars, lines and points on the graph.

Grid Lines: Show the **X and Y Axis**, the **Y Axis** only or the **X Axis** only.

Grid In Front: Show the grid in front of the plotted line or behind it.

Graph or Table: Show a **Graph**, **Table** or **Graph With Table**.

Maximize: Enlarge the graph to fill the screen.

Color Dialog: Opens the Color Selection window. Choose colors for:

- **Desk Foreground:** The color used when placing text on the Desk Background. Includes the main title, subtitle, subset/point labels, grid numbers, and axis labels.
- **Desk Background:** The color surrounding the bounding rectangle of the graph's grid.
- **Shadow Color:** The color for the shadow along the bottom and the right side of the graph. To remove the shadows, choose the same color as the Desk Background.
- **Graph Background:** The color used for the background of the graph's grid.
- **Graph Foreground:** The color used for gridlines of the graph.
- **Table Foreground:** The color used around the perimeter of the table and for the text inside the table.
- **Table Background.** The color used for filling the background of the table.

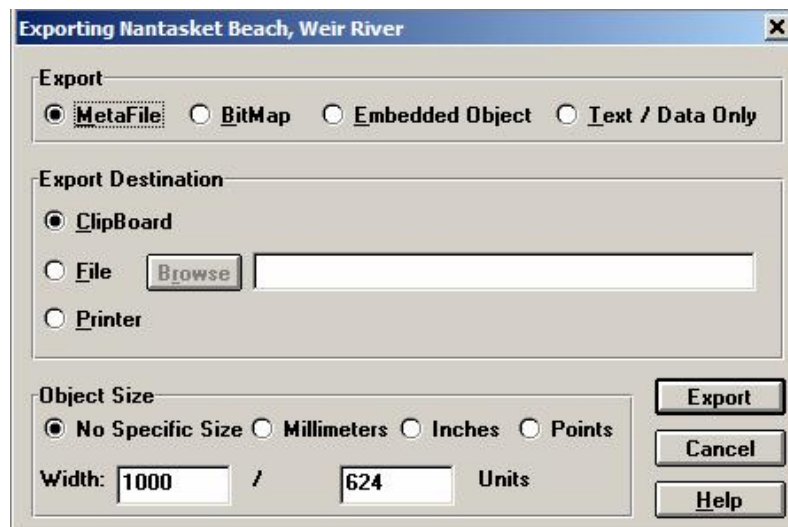
Preview each change in the preview window. Click **Ok** to save the changes.

Font Dialog: Choose your own fonts for the Main Title, the Subtitle, the Subset/Point/Axis and the Table Data. Choose the style for the text: **bold**, **italic** and/or **underline**.

Export Dialog: Displays options for exporting a graph (see below).

Exporting and Printing a Tidal Graph

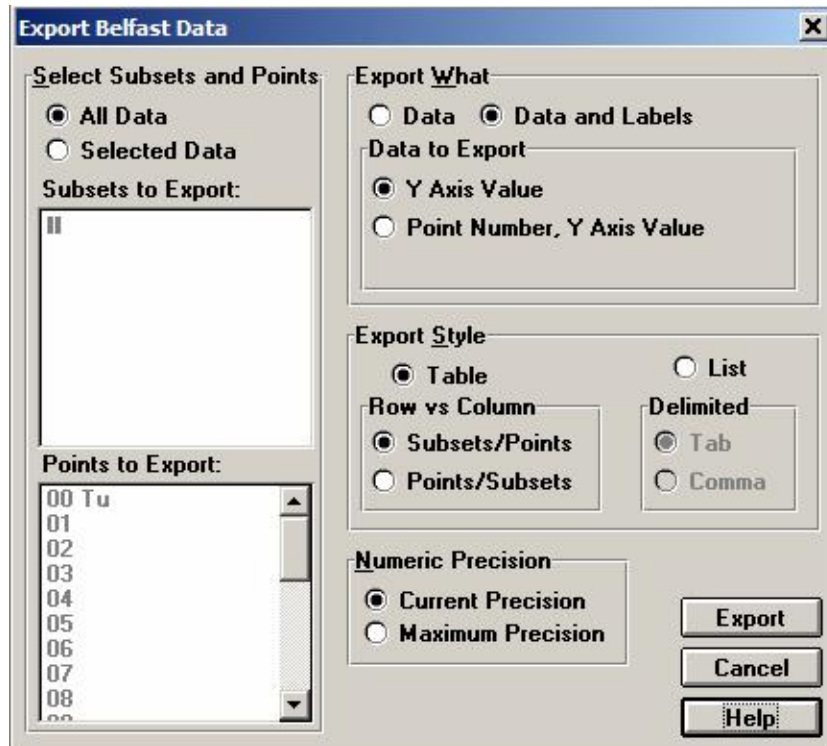
To export a graph, right click the graph and choose **Export Dialog**.



1. Choose the format for the exported graph: **MetaFile**, **BitMap**, **Embedded Object** or **Text/Data Only** (see below).
2. Specify a destination for your file; you can place it on the **Clipboard**, browse to a **File** on your computer, or send it to the **Printer**.
3. Choose a size for the exported graph. If you would like the graph saved in its original size, choose **No Specific Size**.
4. **Click Export.**

Exporting as Text Data

If you choose to export a graph as a text/data (TXT or DAT) file, select from the following options.



Select Subsets and Points

Choose to export **All Data** or **Selected Data**; if you choose **Selected Data**, click the individual points you would like to export in the bottom pane. Hold down the Ctrl key to select multiple points. Each point corresponds to a particular hour's reading for the selected day.

Export What

Choose to export just the **Data**, or **Data and Labels**. Export **Y Axis Value** or **Point Number, Y Axis Value**.

Export Style

Select **Table** to export the data in table format. Choose whether you would like the Subsets in rows with Points in Columns, or vice versa.

Select **List** to export the data in list format. Delimit each field of data with a **Tab** or **Comma**.

Numeric Precision

Select **Current Precision** or **Maximum Precision**.

Tide Tables

Right click a tide station icon and choose **Tide Tables** to display a text version of the tide data for this station. (You can also access tide tables at any time by clicking **Options, Tides and Currents, Tide Predictions**). Tide information is divided into two regions: West Coast and East Coast. These two regions are further divided into sub-regions. To view tide information for your general area, select a region and sub-region from these menus. The top pane displays a list of tide stations in the area you selected. The tide station you are currently looking at is highlighted in the list. Click on any tide station in the list to highlight it and view its information in the bottom pane. The table on the right shows the height of tide for that station over the next 24 hours:

The screenshot shows the 'Capn Tides' application window. At the top, there are dropdown menus for 'Regions' (set to 'East Coast of the Americas') and 'Sub-Regions' (set to 'MASSACHUSETTS, outer coast'). There are checkboxes for 'D.S.T.' and 'Metric'. A list of tide stations is shown, with '8444601 - Nantasket Beach, Weir River' selected. To the right is a table of tide heights over 24 hours. Below the list is a text box showing the date and time, station name, coordinates, and low/high tide times. At the bottom are buttons for 'Nearby Stations', 'Print Text', 'Graphic Display', 'Calendar', and 'Close'.

Hr	Height
00	03.5 feet
01	01.1 feet
02	-00.2 feet
03	00.0 feet
04	01.4 feet
05	03.5 feet
06	06.0 feet
07	08.3 feet
08	09.6 feet
09	09.7 feet
10	08.7 feet
11	06.8 feet
12	04.5 feet
13	02.1 feet
14	00.4 feet
15	00.1 feet
16	01.3 feet
17	03.4 feet
18	06.0 feet
19	08.6 feet
20	10.4 feet
21	10.9 feet
22	10.2 feet
23	08.4 feet

24 May 2006 @ 14:32 Standard Time
 Station = Nantasket Beach, Weir River
 42° 16.2' N 070° 51.6' W

Low at 02:18 = -00.3 High at 08:36 = 09.8
 Low at 14:36 = 00.0 High at 20:54 = 10.9

Date: Wednesday, 24 May 2006

Nearby Stations: Click **Nearby Stations** to view a list of all tide stations within 60 nautical miles of the one you are viewing. Stations appear in order of increasing distance.

Print Text: Click here to print a textual tide report on the station that is highlighted in the top pane.

Graphic Display: Click **Graphic Display** to see the graph for the highlighted tide station.

Calendar: Click the **Calendar** button to view the tide information for any day you wish.

Metric: Check this box to view heights in meters.

D.S.T: Check this box to adjust the **Hr** (hour) reading to reflect Daylight Savings Time.

Set Date for Planning



Right click a tide station on a chart and choose **Set Date for Planning** to view predictions for future tides.

Click **Calendar** to choose a date. Use the arrows to choose a time. Click **Update**

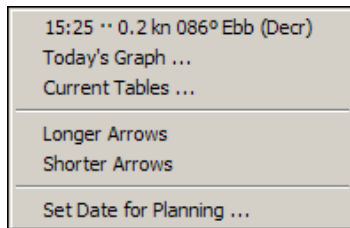
Display to update all predictions for all tide stations displayed on the charts. If you right click on any tide station, it will display the information for the date and time you chose. When you close this window, the time and date will revert back to the present.

9.2 Tidal Currents

Tidal Current Station Icons



Yellow icons Labeled **C** are current icons. The speed of the current is shown in the red box; the direction is shown by a blue arrow.



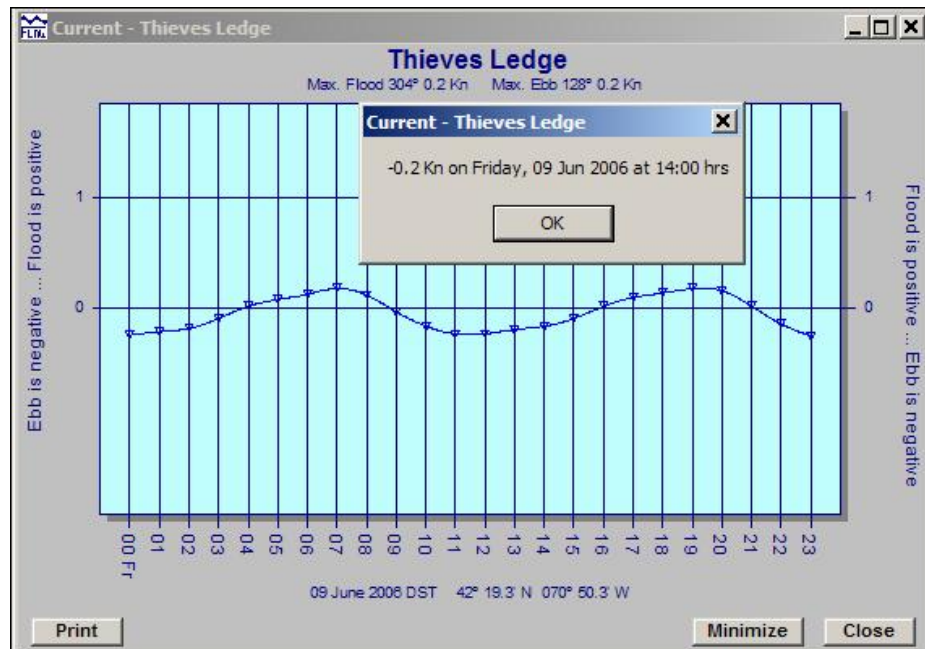
Right click a tidal current icon to view more information about the tidal current station.

The Time, current speed and status of the current appear in the first line of the menu. Choose **Today's Graph** to view the day's expected tidal current pattern. Choose **Current Tables** to display a text version of the current data for this station. **Set Date for Planning** lets you view predictions for future currents.

Adjust the length of the directional arrow by choosing **Longer Arrows** or **Shorter Arrows**.

Tidal Current Graphs

Click **Today's Graph** to view the day's expected current pattern. The time appears along the bottom of the graph and the ebb and flood are along the sides:



Click any point on the graph and view the current information for that hour.

Right click anywhere on the graph to change the viewing preferences for the graph. These are the same options for Tide Graphs; see page 49 for information on each option.

Exporting and Printing a Tidal Current Graph

To export a graph, right click the graph and choose **Export Dialog**.

1. Choose a format for the exported graph: **MetaFile, BitMap, Embedded Object** or **Text/Data Only** (see page 51).
2. Specify a destination for the file; place it on the **Clipboard**, browse to a **File** on your computer, or send it to the **Printer**.
3. Choose a size for the exported graph. If you would like the graph saved in its original size, choose **No Specific Size**.
4. **Click Export**.

Tidal Current Tables

Right click a tidal current icon and choose **Current Tables** to display a text version of the tidal current data for this station. (You can also access tidal current tables at any time by clicking **Options, Tides and Currents, Tidal Current Predictions**). Tidal current information is divided into two regions: West Coast and East Coast. These two regions are further divided into sub-regions. To view tidal current information for your general area, select a region and sub-region from these menus. The top pane displays a list of tidal current stations in the area you selected. The station you are currently looking at is highlighted in the list. Click on any station in the list to highlight it and view its information in the bottom pane. The window on the right shows the speed and direction for that station over the next 24 hours:

The screenshot shows the 'Capn Tidal Currents' window. The 'Regions' dropdown is set to 'East Coast of the Americas' and 'Sub-Regions' is 'BOSTON HARBOR APPROACHES'. A list of stations is shown, with '0001126 - Boston Light, 0.2 n.mi. south of (d.o. 10 ft.)' selected. Below the list, the date is '24 May 2006 @ 15:35 D.S.T.' and the station coordinates are '42° 19.5' N 070° 53.4' W'. A table of tidal current predictions is displayed on the right, showing speed and direction for each hour of the day.

Hr	Speed	Dir.
00	01.3 kn	@ 100 E
01	01.5 kn	@ 100 E
02	01.4 kn	@ 100 E
03	00.8 kn	@ 100 E
04	00.2 kn	@ 267 F
05	00.8 kn	@ 267 F
06	01.0 kn	@ 267 F
07	01.0 kn	@ 267 F
08	00.7 kn	@ 267 F
09	00.1 kn	@ 267 F
10	00.4 kn	@ 100 E
11	00.8 kn	@ 100 E
12	01.2 kn	@ 100 E
13	01.4 kn	@ 100 E
14	01.5 kn	@ 100 E
15	01.1 kn	@ 100 E
16	00.1 kn	@ 100 E
17	00.7 kn	@ 267 F
18	01.1 kn	@ 267 F
19	01.2 kn	@ 267 F
20	01.0 kn	@ 267 F
21	00.5 kn	@ 267 F
22	00.2 kn	@ 100 E
23	00.7 kn	@ 100 E

Additional information from the screenshot:

- Date:** Wednesday, 24 May 2006
- Station:** Boston Light, 0.2 n.mi. south of
- Coordinates:** 42° 19.5' N 070° 53.4' W
- Tidal Currents:**
 - Ebb @ 01:24 = 01.5 Kn
 - Flood @ 06:39 = 01.0 Kn
 - Ebb @ 14:00 = 01.5 Kn
 - Flood @ 18:57 = 01.2 Kn
 - Slack @ 03:48
 - Slack @ 09:15
 - Slack @ 16:06
 - Slack @ 21:45

Nearby Stations: Click **Nearby Stations** to view a list of all tidal current stations within 60 nautical miles of the one you are viewing. Stations appear in order of increasing distance.

Print Text: Click here to print a textual current report on the station that is highlighted in the top pane.

Graphic Display: Click **Graphic Display** to see the graph for the highlighted station.

Calendar: Click the **Calendar** button to view the current information for any day you wish.

D.S.T: Check this box to adjust the **Hr** (hour) reading to reflect Daylight Savings Time.

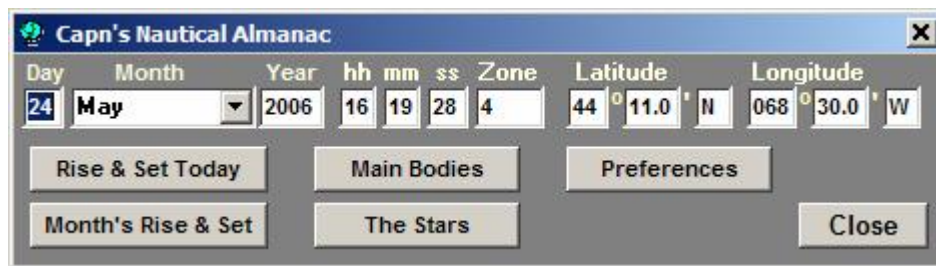
Set Date for Planning

Right click a tidal current station icon on a chart and choose **Set Date for Planning** to view predictions for future currents.

Click **Calendar** to choose a date. Use the arrows to choose a time. Click **Update Display** to update all of the tidal current stations displayed on your charts. If you right click on any tidal current station, it will display the information for the date and time you chose. When you close this window, the time and date will revert back to the present.

9.3 Nautical Almanac

Click **Navigation, Rise and Set times** to access CAPN's Nautical Almanac.



Enter a day and time and the CAPN can predict different information based on your location:

Rise and Set Today: Displays the rise and set of the sun and the moon on the day you selected as well as the meridian passage of selected planets.

Main Bodies: Displays the positions of the planets and major bodies at the specified time and date.

Preferences: Set preferences for Time, Almanac, and Sextant.

Month's Rise and Set: Displays a list of the sun and moon rise and set times for the next month.

The Stars: Displays a list of the positions of stars at the specified time and date.

9.4 Compass Deviation Card

Even though most compasses are very accurate, there is still a need to take into account physical influence on your boat. The Compass Deviation Card allows you to fill in the deviation correction that will allow the CAPN to display an accurate compass course for routes.

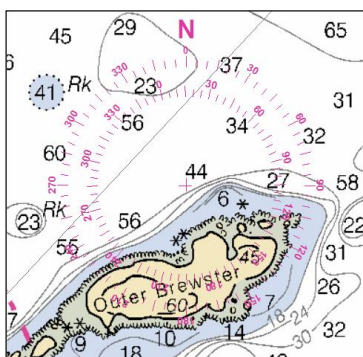
The Compass Deviation card also gives you the option of filling in just the cardinal points, allowing the CAPN to automatically calculate the intermediate points.

Compass	Deviation		Compass	Deviation	
N 000	0.0	W	S 180	0.0	W
015	0.0	W	195	0.0	W
030	0.0	W	210	0.0	W
NE 045	0.0	W	SW 225	0.0	W
060	0.0	W	240	0.0	W
075	0.0	W	255	0.0	W
E 090	0.0	W	W 270	0.0	W
105	0.0	W	285	0.0	W
120	0.0	W	300	0.0	W
SE 135	0.0	W	NW 315	0.0	W
150	0.0	W	330	0.0	W
165	0.0	W	345	0.0	W

If you have filled in the Cardinal Points (N, NE, E, SE, etc.) and you want the Capn to fill in the intermediate points. Click Here

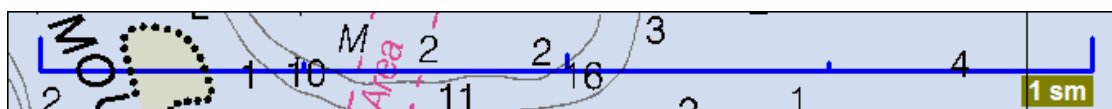
Ok Cancel

9.5 Compass Rose



Click **Options, Compass Rose** to place a compass rose in the center of the screen. As you pan the chart, the compass will stay in the center of the display and the chart will move under it.

9.6 Distance Scale



To display a distance scale displayed on the chart, click **Options, Show Distance Scale**. The scale bar will appear along the bottom of the screen if the display is wider than it is high. If the chart display is higher than it is wide (such as during Split Chart Mode), it will appear along the left side of the display.

To change the units of measurement, click **Options, Capn Charting Preferences** and choose **Nautical Miles, Statute Miles, or Kilometers**.

9.7 Measure Tool

Use the Measure Tool to measure the distance and bearing between any points on the chart.

1. Right click the chart and choose **Measure**. The cursor will change to the Set Point cursor.
2. Click the point on the chart you want to measure from.



3. Move to the next point and click again. The label that appears will show the range and bearing from the first location to the second. Continue adding more points if you wish.



When you are finished using the Measure Tool, right click and choose **Measure** to disable the measure tool.

9.8 Man Overboard



In the event of a man overboard (MOB) start the CAPN's Man Overboard tracking feature by clicking the red button in the top right corner of the screen. The Man Overboard window will appear and a voice alarm will sound. The window will display important information such as the time, date and location the person went overboard. The CAPN will keep track of the bearing to the person and the time the person has been in the water. Turn off the voice alarm by clicking the large red **Click Here to Silence the MOB Alarm Sound** button. Click **Cancel MOB** to turn off the Man Overboard tracking feature.

(Please note that the Man Overboard feature requires an active GPS position.)

9.9 Using Maptech's Coast Pilot

Most Maptech ChartKit CD and ChartPack DVDs come with a Coast Pilot help file for that region. There are two ways to install your Coast Pilot for use in the CAPN:

1. Insert the Maptech disc into your drive and open the CAPN. Click **Charts, Copy Charts from CD**. The Coast Pilot file will automatically be copied to your computer.
2. Using Windows Explorer, browse to the Cpilot folder on your Maptech CD/DVD. Copy the .hlp file. Place the .hlp file in c:/capn voyager/cpilot.

To access the Coast Pilot, right click a chart and choose **Go To, Coast Pilot Page**.

Section 10: Automatic Identification System (AIS)

10.1 What is AIS?

Automatic Identification System (AIS) is an onboard broadcast system with overlaid electronic chart data that gives continuously updated information operating in the VHF maritime band. It allows ships to easily track, identify and exchange navigation information with one another or from ashore.

AIS technology uses global navigation systems, navigation sensors and transponders operating according to a standardized communication protocol. AIS transponders on vessels can broadcast information about the vessel, such as name or call sign, size, type, position, course, speed, heading and navigation status.

10.2 Connecting and Configuring Your AIS Transponder

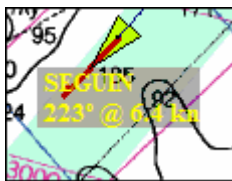
Refer to your AIS Transponder's Installation guide for information on how to correctly connect it to your computer. Once this is done, the CAPN must detect it.

Click **AIS, AIS Settings** to configure your AIS transponder.

Most AIS Transponders will connect to your computer via a serial port; choose **Serial port** as the source for the AIS data stream. Indicate which serial port the transponder is connected to and its baud rate. Click **Let the Capn find your AIS Serial Port** once this is done.

You can also access an AIS data stream via an internet connection without a transponder. Choose **Internet** as the source for your AIS data stream, indicate the Internet IP Address (the default is filled in already) and the Internet IP Port.

10.3 AIS Target Display



To show all AIS targets on your charts, click **AIS, Show AIS Targets**.

It usually takes several minutes for the system to gather full information on all of the AIS equipped vessels in the area.

A typical AIS target shows a triangular ship icon with a label. The icon shows the general size of the ship. The label under the icon displays the name of the ship, its bearing in degrees and its speed.

The red arrow at the front of the target is its course over ground (COG) or the direction the ship is actually traveling. The green arrow shows its heading, or the direction in which the bow of the boat is pointing. Not all targets show a green arrow because not all ships send heading data.

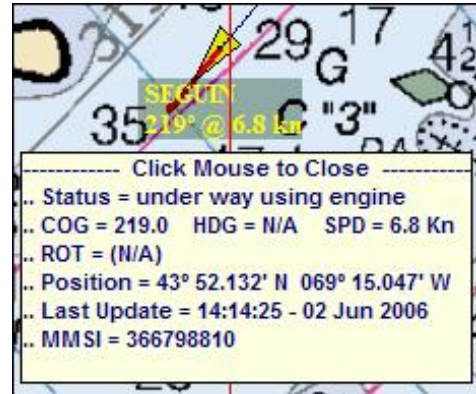
The ship's track (path of travel) appears as a dashed line behind the ship icon.

Position Report

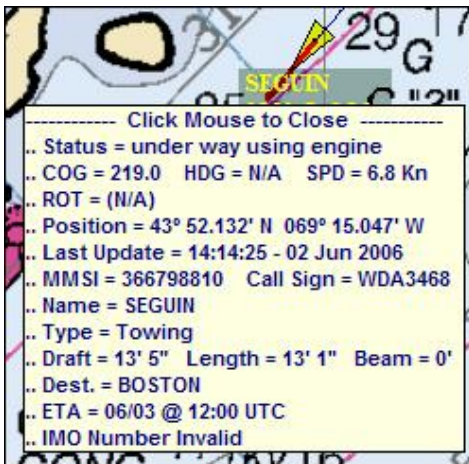
To see information on the position of a selected target, right click its icon and choose **Position Report**.

The popup window shows the ship's status, Course Over Ground (COG), Heading (HDG), Speed (SPD), Rate of Turn (ROT), position, when the information was last updated and the ship's unique MMSI number.

Click anywhere in the window to close. The window automatically closes after several seconds.



Full Ship Info



To see a full report on a target, right click it and choose **Full Ship Info**.

In addition to the information shown in the Position Info window, the Full Ship Info window shows the ship's call sign, name type, draft, length, beam, destination, Estimated Time of Arrival (ETA), and IMO number.

Click anywhere in the window to close. The window automatically closes after several seconds.

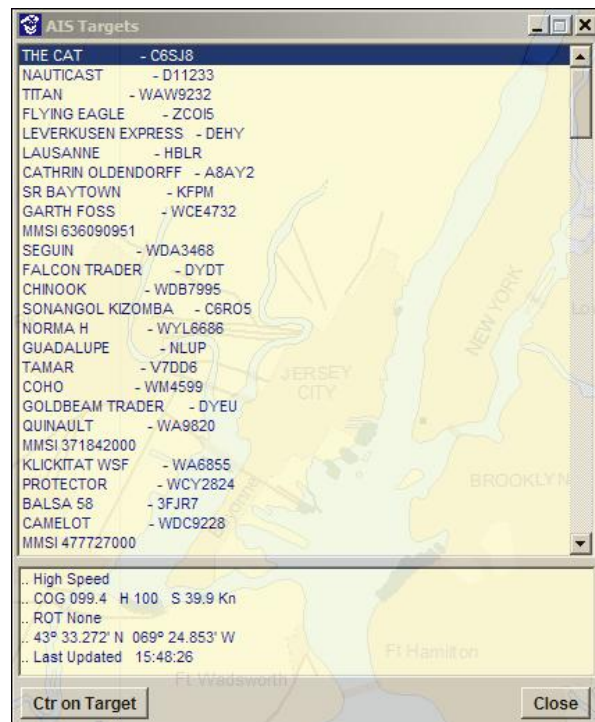
10.4 AIS Target List

Click **AIS, AIS Target List** to display a list of all AIS targets your ship is detecting.

The top pane lists each ship's name followed by its call number. Highlight any target on the list, and the bottom pane will display its position info. To show the selected target on a chart, click the **Ctrl on Target** button.

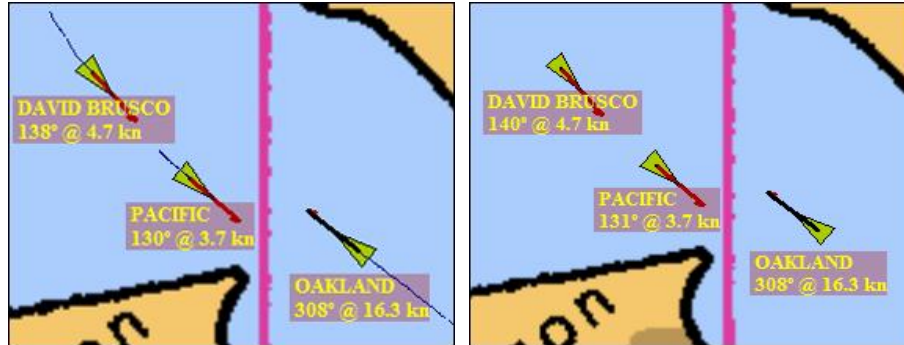
10.5 Managing Targets

There are several ways to manage the appearance of the AIS targets on your screen.



Unclutter Track and CPA Lines

When navigating a busy harbor with several other ships, the track and CPA lines of the targets can overlap and clutter the chart. To unclutter the chart, click **AIS, Unclutter Track and CPA lines**. This will temporarily remove those lines from the screen.

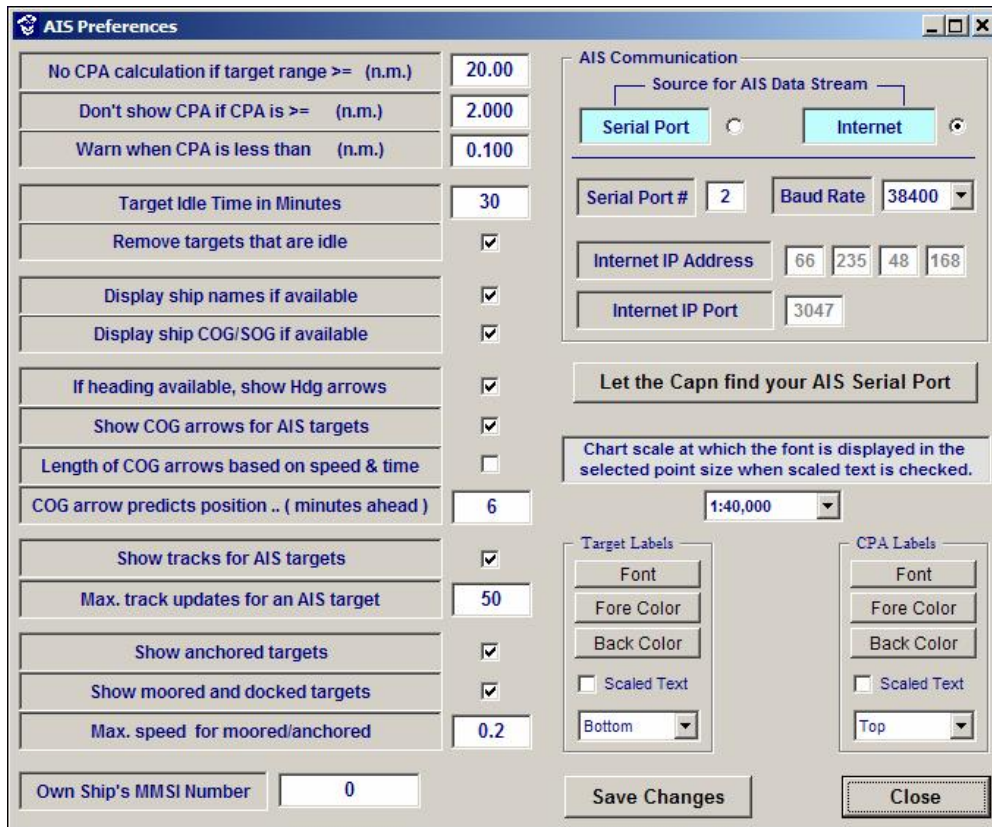


Removing a Target

Remove a target from view by right clicking it and choosing **Remove Target**. This can be handy when two icons are close together on the chart, making it difficult to read a ship's position. For safety reasons, the target will reappear after a few seconds.

Target Settings

Click **AIS, AIS Settings** to change the settings of your AIS targets.



CPA (Closest Point of Approach)

The CAPN can calculate the CPA (Closest Point of Approach) of AIS targets in your vicinity. There are three options for controlling how and when the CPA is calculated:

- Determine a distance at which you would like the CAPN to begin calculating a ship's CPA. (In the example above, this distance is set at 20 nautical miles.) If a ship is outside of this range, the CAPN will not calculate the CPA for that ship.
- When a ship comes within a closer proximity (here, 2 nautical miles) the CAPN will place a CPA line on the chart showing where the CPA is.
- When a ship's course comes within a dangerously close proximity to your ship's course, (here, 0.1 nautical miles) CAPN will warn you with an alarm.

Idle Targets

Control how idle targets are handled. Specify how many minutes a target must remain stationary in order to be considered 'idle', and choose whether or not to remove these targets from view.

Label Display

Choose to display a ship's name and its COG/SOG below the target if it is available.

Arrow Display

Choose which arrows you would like targets to display if they are available: Heading (green) and COG (red). Choose to base the length of COG arrows on speed and time. Specify a number of minutes ahead of your current position you would like the COG arrow to predict.

Tracks

Choose whether or not you would like to display tracks for AIS targets and specify a maximum amount of updates for tracks. Less updates to the track will mean a shorter track and less clutter on the display

Moored Targets

Show anchored, moored and docked targets. Specify a maximum speed at which a target will be considered "moored".

Target/CPA Labels

Change the appearance of the font, fore and back colors used on the Target and CPA labels displayed on the chart. To scale the labels as the chart scale changes, check the Scaled Text box. To change the location of the labels in relation to the target and the CPA, choose **Bottom, Left, Top, Right** or **Center**.

Remember to click **Save Changes** before you close the AIS Preferences window.

Section 11: Video Option

CAPN has the ability to display a video camera's feed right on top of the chart you are viewing. This can be handy for making backing into a slip easier, or for taking snapshots of a harbor entrance for use at night.

Most video CAMs connected to your computer will work with the CAPN. Refer to your camera's installation guide on how to connect it to your computer. When the CAPN is started, it will automatically detect the camera.

Click **Options, Capn Video Cam** to view the video feed. A small window will open over the display:



Format: Lets you change the size of the raw video feed.

Display: Lets you adjust things such as color matching, brightness and contrast.

Drop Snapshot at Chart Center: Takes a still shot of the video feed and attaches the picture to a mark placed at the center of the chart display.

If the Capn Video Display Window is blank, there is a good chance that the camera is not hooked up correctly. Refer to your camera's installation guide for troubleshooting tips.

Keyboard Shortcuts

Key	Function
F1	The CAPN Help
F2 and +	Zoom in
F3 and -	Zoom out
F4	Next Chart down
F5	Next Chart up
F7	Full Screen
F8	Toggle Plan/Nav Mode
F9	Charting Preferences
F12	Drop Mark at Ship
M	Change cursor to Move cursor
Alt+M	Continuous Move Mode on or off
H	Hide Route Labels
Ctrl+←	Pans chart to the left
Ctrl+→	Pans chart to the right

GPS Troubleshooting

If you still have difficulty establishing GPS communication, here are a few things to try:

Check the GPS Cable

Make sure the GPS cable is tightly connected at both ends, and it is not bent or twisted. This can cause wires to break inside the cable.

GPS Software Drivers

Visit your GPS manufacturer's website for updated drivers for your particular GPS unit. Manufacturers maintain and update software drivers for use with various GPS units, and these drivers are available for download via the internet. It is a good idea to keep current with the latest software drivers.

Check for Port Conflicts

Sometimes, a computer system may "reserve" a particular COM port for use with another device (like a handheld computer). This means that even when that device is not connected, the port may still be blocking access to other devices. Use your Windows Control Panel to verify the port's status, or try using a different port, if possible.

Check for Software Conflicts

Certain software programs may interfere with COM port operation (for example, programs designed for communicating with a handheld computer). If you use Microsoft® ActiveSync® for communicating with a PocketPC handheld device, or HotSync® for connecting to a Palm Powered device, make sure these programs are turned off when you connect your GPS to your computer.

Use MTTTY to Check your Port and Cable

MTTTY, a Windows accessory available on The CAPN Instructions and Documentation CD (and available for download at <http://www.maptech.com/support/emailed.doc.cfm?docat=586.77>, may be used to monitor the flow of data at your COM port. To use MTTTY to determine whether your problem is equipment-related:

1. Close the CAPN
2. Set your GPS unit to NMEA output. (Garmin users: choose NMEA/NMEA from the GPS's Setup Menu. Magellan users: choose NMEA 0183 2.0 from the NMEA menu. Refer to your GPS unit's manual for instructions if necessary.)
3. Start MTTTY: Insert The CAPN Instructions and Documentation CD and press "Test COM Ports" or download the application from the above link.
4. In the upper right hand corner, the **Port** drop down list contains a list of the COM Ports (real or virtual) found on your PC. Select the Port that the GPS is connected to. (If you're not sure, pick the first port listed, then repeat the test until the GPS is found.)
5. Next to Port, **Baud** is listed. Most GPS units transmit at 4800 Baud. Thus, select **4800** from the Baud list, unless you are using a different Baud rate on your GPS.
6. Leave all other settings at their default and choose Connect from the File menu.

At this point, one of three things can happen:

You get an error message.

This means that the COM port you have selected is unavailable or is not functioning properly. You may have inadvertently specified the wrong COM port name. Close MTTTY and repeat the procedure, trying a different COM port. If you are sure you are selecting the proper COM port it may be defective. Contact your computer manufacturer for further troubleshooting tips.

You get a blank screen with a flashing cursor.

This means that the COM port you have chosen is not receiving NMEA data. Close MTTTY and repeat the process, trying a different COM port. If you are certain that you are selecting the proper COM port, contact the manufacturer of your computer or GPS unit for further troubleshooting tips.

You get a screen with text scrolling upward.

You are successfully connected to your GPS unit. The data scrolling by are the NMEA sentences from your GPS. Note the COM port that you used for this successful test, and exit HyperTerminal. When asked if you want to disconnect now, click **Yes**.

Try Getting a Satellite Fix

Sometimes a GPS unit will not respond properly until it establishes its geographic location. Place your GPS unit near a window in order to establish satellite communication and try connecting again.

Try Other GPS Software

Try connecting your GPS to your computer using the software interface provided by the GPS manufacturer and packaged with the data cable. Until the unit is able to transfer data via the manufacturer's software, it will not work with the CAPN. If the unit will not function with the manufacturer's software or if you do not have the software, contact your GPS manufacturer for technical advice on connecting your GPS unit to your computer.

Contact Maptech

If you have tried these suggestions and still have trouble establishing or maintaining a GPS connection, Maptech's technical support staff will be happy to assist you. Support is available from 9:00 AM to 5:00 PM Eastern, Monday through Friday:

Telephone: (978) 792-1197

E-mail: support@maptech.com

Fax: (978) 792-1095

Internet: <http://www.maptech.com/support>

Maptech's support site includes a Downloads section with software updates, plug-in utilities, and Technical Documents. In addition, you will find an online technical support discussion forum, where Maptech software users and technical support staff can share information, suggestions and comments.