

Rose Point Navigation Systems  
COASTAL EXPLORER

# Reference

For version 2.0

DRAFT



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#### **WARNINGS**

Use Coastal Explorer at your own risk. Be sure to carefully read and understand the user's manual and practice operation prior to actual use.

Coastal Explorer depends on information from the Global Position System (GPS) and digital charts, both of which may contain errors. Navigators should be aware that GPS-derived positions are often of higher accuracy than the positions of charted data. Rose Point Navigation Systems, LLC does not warrant the accuracy of any information presented by Coastal Explorer.

Coastal Explorer is intended to be used as a supplementary aid to navigation and must not be considered a replacement for official government charts, notices to mariners, tide and current tables, and/or other reference materials. The captain of a vessel is ultimately responsible for its safe navigation and the prudent mariner does not rely on any single source of information.

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# Getting Started

# Welcome to Coastal Explorer

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Thank you for choosing Coastal Explorer!

If you are new to navigation software, but use a computer for anything else, you will find that Coastal Explorer works just like many other Windows applications: you create documents, edit them, save them, print them, etc. The big difference is that Coastal Explorer's documents contain navigation objects such as routes and waypoints rather than paragraphs or spread-sheet cells.

If you already use another navigation program this might seem strange at first as most other systems keep all of your navigation objects in a single database rather than in document files. We expect that you will quickly come to appreciate the benefits of using documents as you can more easily organize, backup, and even e-mail your routes and other objects using familiar Windows commands.

Coastal Explorer includes many other features that make it seem more like other Windows applications than most navigation systems do. These features include the familiar clipboard operations Cut, Copy, and Paste, multi-level Undo and Redo commands, and a Find command.

While we have tried to make Coastal Explorer as easy to use as possible, we have not skimped on the features! Coastal Explorer is a very powerful planning and navigation tool. Here are just some of the powerful features you will soon be using:

- Quilted vector and raster charts, photo charts, and topographic maps
- Fast and easy panning and zooming
- Split-screen chart viewing
- Instant access to the information contained in your charts and guide books
- Unlimited routes and waypoints
- Route checking and obstacle alerts
- Virtual Instrument displays
- Autopilot control
- Full-screen customizable Cruising Mode
- Chart Portfolio Management
- Tide and current predictions
- Optional Radar display and chart overlay

# How to Use This Book

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Here are some terms and conventions we used in making this book.

**Hover** means to point at something with the mouse and then stop moving the mouse for a few seconds.

**Click** means to point at something with the mouse then press and release a mouse button. If we don't say otherwise, then we mean the left-most button.

**Right-Click** means to press and release the right-most mouse button. This is a common operation to access popup menus.

**Drag** means to press and hold the mouse button while moving the mouse and releasing the button when you are done. Dragging is usually done with the left-most button.

**Press and Hold** means to press and hold the mouse button for a few seconds without moving the mouse. This is usually done with the left-most button.

We use a shortcut convention to point out where you can find commands. Rather than saying "Click on the Tools menu, then the Options command, then the Instruments tab, and then the Troubleshooter button," we will say "Select the **Tools > Options > Instruments > Troubleshooter** command."

## Using Coastal Explorer's Help System

Most of the contents of this book, plus any updated material that might become available, is included in Coastal Explorer's online help system. You can access help by using the **Help > Contents and Index** option in Coastal Explorer. The **F1** key will also open the help window, and usually select the topic most relevant to what you are doing.

# Installing Coastal Explorer

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## System Requirements

The minimum system requirements to use Coastal Explorer are:

- PC running Microsoft Windows 2000, Microsoft Windows XP, Microsoft Windows Vista, or a newer compatible operating system.
- 128MB of Memory; 512MB or more is recommended.
- 50MB Available Hard Drive Space; 500MB for a Full Installation and more for charts.
- Video display with at least 800x600 pixel resolution and 16-bit color (Thousands of Colors); 1024x768 or higher with 24-bit color (Millions of Colors) is recommended.
- Mouse or other pointing device; a scroll-wheel is recommended.

Some features require:

- NMEA 0183 compatible GPS with suitable PC interface
- NMEA 0183 compatible autopilot with suitable PC interface
- Other NMEA 0183 compatible equipment
- NMEA 2000 compatible equipment and a suitable PC interface.
- Rose Point Radar Sensor

## Installing the Software

When you insert the Coastal Explorer program CD into your disc drive the setup program should run automatically. If the AutoRun feature is disabled on your CD-ROM drive you will need to open the disc and run the **Setup** program found there.

The setup program will guide you through the installation process. Several features are optional and the setup program will allow you to choose which ones you want to install. The optional features include:

**High-Resolution World Base Map** – Coastal Explorer includes a “background” map of the world’s coastlines that helps you keep your bearings when viewing an area where you do not have chart coverage. The world map is always available, but this option will make it appear less “chunky” when viewed at larger scales. Turn this option off if you need the disc space (it uses about 100MB).

**Gazetteer** – The gazetteer lists millions of places in the United States, Canada, and Mexico. You can quickly and easily search for any of these places if you install the appropriate lists. During setup, you can decide whether or not to include each US state, Canada, and Mexico. The size of each list is shown in the setup program.

**Guide Books** – The Coast Pilot and Sailing Directions information is stored in several separate “books” organized by area. You can install all of the books or just the ones with the information you might use. Each book needs 1-2MB.

## Installing or Removing Optional Features

If you decline to install some options at setup time, but decide later that you’d like to have them, simply run the setup program again. You can also remove options that have been installed but are no longer needed.

## Removing Coastal Explorer from Your Computer

Use the Add/Remove Programs option in the Windows Control Panel to uninstall Coastal Explorer. Uninstalling Coastal Explorer will remove the software, world base map, gazetteer, guide books, weather files, and other files

that can be restored by running setup again. Your charts and navigation object documents are not removed by the uninstall program.

### Getting Program Updates

Coastal Explorer has a built-in, semi-automatic update mechanism to help ensure you are always using the latest and greatest version.

When you use Coastal Explorer on a computer that is connected to the Internet, it will automatically try to download the latest update. The next time you start Coastal Explorer after an automatic download you will be asked if you want to install the update.

You can also get Coastal Explorer to start your dial-up Internet connection, or just force a check and update at any time by using the **Help > Check for Updates** command.

If you need to update a computer that does not have access to the Internet, you can download an update file onto a floppy disk, flash memory key, or other portable storage device from our website at <http://updates.coastalexplorer.net/>.

# Using Coastal Explorer

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## Starting Coastal Explorer



Once you've installed Coastal Explorer, you can find it on the **Windows Start** menu in the **All Programs** list. The setup program will also offer to create an icon on your desktop for you.

You can also start Coastal Explorer by opening a navigation object document such as one in your **My Documents** folder or one sent to you as an e-mail attachment. Just double-click on the document's icon and Coastal Explorer will start up and load that document.

When Coastal Explorer starts up, it will offer to install any updates that were downloaded during a previous session. If anything in your chart folders has changed, the chart portfolio will be updated next. After that the last navigation object document that you were using is opened (unless you started Coastal Explorer by opening a different document).

## Operating Modes

**Coastal Explorer** was primarily designed to help you do two things: plan a voyage and navigate that plan. These two activities can require different tools, so Coastal Explorer has two modes: **Planning Mode** and **Cruising Mode**.

In **Planning Mode**, Coastal Explorer looks and works much like any other Windows application. It provides tools for creating Routes and other Navigation Objects, getting information from Charts and Guide Books, and finding places in the Gazetteer.

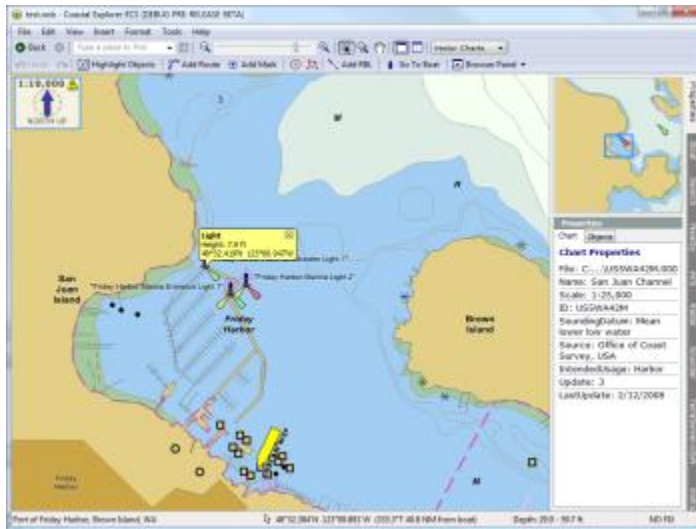
In **Cruising Mode**, Coastal Explorer takes over most of the screen and hides the title bar, menu bar, and standard toolbars in order to give you more chart area on the screen. Commands are made available via larger toolbars that are easier to use while underway and provide quick access to the functions you need most.

You can switch between **Planning Mode** and **Cruising Mode** at any time by pressing the **F12** key. While in **Planning Mode**, you can switch to **Cruise Mode** by using the **Cruise Mode** command on the **Tools** menu. **Cruise Mode** will be automatically activated if your boat starts moving faster than 1 knot according to a GPS or other instrument connected to your computer. Once in **Cruise Mode** you can switch back to **Planning Mode** by clicking on the Coastal Explorer logo in the top-left corner of the screen, and selecting **Planning Mode** from the menu that appears.

# Introduction to Planning Mode

**Planning Mode** is the initial mode of operation for Coastal Explorer. This is where you can easily create, open, and save documents, create routes, marks, boundaries, and other navigation objects, find places by name, and access all of the other planning features of Coastal Explorer.

Here is a snapshot of a typical Coastal Explorer screen while in Planning Mode:



**REVIEW:** This picture needs captions and arrows pointing at the various parts!

In the rest of this manual, we will refer to several parts of the window which we will name here.

Like most applications, Coastal Explorer has a title bar at the top of its window that indicates the name of the program and the name of the current chart window. Below that is the menu bar which provides easy access to many of the program's functions. Then there are two toolbars; the main toolbar on top, and the Navigation Object toolbar below that.

The bulk of the screen is taken up by the Chart Viewing Area. Inside the Chart Viewing Area is a yellow Chart Tip and below it is the Browser. To the right of the Chart Viewing Area is the Chart Overview and the Task Pane area which is showing the Properties Task Pane. Finally, at the bottom of the window is a status bar.

All of the work you do in Planning Mode is saved in documents called **Navigation Object Files**. Like any Word Processor or Spreadsheet program, you can have as many different documents as you like, and you would typically save them in your **My Documents** folder. When you start Coastal Explorer it will automatically open the last document you were using.

# Menu Commands

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The menubar normally appears near the top of the Coastal Explorer window just like in any other Windows program. However, in Cruise Mode and Full Screen Mode, the menubar and standard toolbars are not displayed. When using these modes, you can make the menubar appear temporarily by moving your mouse cursor to the top of the screen.

## The File Menu

<b>New</b>	Creates a new Navigation Object File
<b>Open...</b>	Opens an existing Navigation Object File
<b>Save</b>	Saves the currently open Navigation Object File
<b>Save As...</b>	Saves the currently open Navigation Object File as a new file
<b>Page Setup...</b>	Set print options such as page orientation and margins
<b>Print Preview</b>	Previews a print operation on the screen
<b>Print...</b>	Prints the current chart view
<b>Send To</b>	Sends a copy of the current Navigation Object File as e-mail or to portable storage
<b>Import...</b>	Import Navigation Objects from a file or your GPS/Chartplotter
<b>Export...</b>	Export Navigation Objects to a separate file
<b>Recent File List</b>	Quickly open one of the last few Navigation Objects files that were used.
<b>Exit</b>	Exits Coastal Explorer

## The Edit Menu

<b>Undo</b>	Undoes the last editing operation
<b>Redo</b>	Redoes the last editing operation that was undone
<b>Cut</b>	Cuts the selected objects to the clipboard
<b>Copy</b>	Copies the selected objects to the clipboard



**Paste** Pastes objects from the clipboard into the current Navigation Object File

**Delete** Deletes the selected objects

**Select All** Selects all of your navigation objects

**Find...** Find a place by name or latitude/longitude

## The View Menu

**Quilting** Enables or disables chart quilting.

**Scale** Displays a sub-menu with several common chart scales to select from.

**Orientation** Select the chart's orientation.

**Task Pane** Turns the Task Pane on or off.

**Status Bar** Turns the Status Bar on or off.

**Chart Outlines** Turns the display of chart outlines on or off.

**Distance Scale** Turns the display of the distance scale on or off.

**Browser Panel** Displays a sub-menu with different Browser Panel types to select from.

**Full Screen** Turns full-screen mode on or off.

**Properties** Shows the properties of the selection in the Task Pane.

## The Insert Menu

**Route** Starts adding a new route.

**Mark** Creates a mark at the next place you click on the chart.

**Annotation** Creates an annotation at the next place you click on the chart.

**Event** Creates an event mark at the current boat location.

**Boundary Circle** Creates a boundary circle mark at the next place you click on the chart.

<b>Boundary Area</b>	Starts adding a new boundary area.
<b>Range/Bearing Line</b>	Starts adding a new Range/Bearing line.
<b>Range/Bearing Line From Boat</b>	Adds a new Range/Bearing line from the boat to the next place you click on the chart.
<b>Instant Route</b>	Adds and activates a new route from the current boat position to the next place you click on the chart.
<b>Navigation Object File...</b>	Imports navigation objects from a file into the current document.

## The Format Menu

<b>Base Object Display</b>	Selects a minimum amount of vector chart detail.
<b>Standard Object Display</b>	Selects a normal amount of vector chart detail.
<b>Full Object Display</b>	Selects a high amount of vector chart detail.
<b>Vector Charts...</b>	Adjusts vector chart formatting options.
<b>Text Size</b>	Selects the size of text shown on the chart.
<b>Chart Types</b>	Controls which types of charts are shown.
<b>Chart Colors</b>	Select the colors to use for drawing charts.
<b>Tide Levels</b>	Controls the display of tide level predictions on the chart.
<b>Tidal Currents</b>	Controls the display of tidal current predictions on the chart.
<b>Raster Chart Note Links</b>	Controls whether raster chart note icons appear on the chart (when available).
<b>Maptech Marine Facilities</b>	Controls whether Maptech Marine Facilities icons appear on the chart (when available).
<b>Maptech Aerial Pictures</b>	Controls whether Maptech Aerial Picture arrows appear on the chart (when available).
<b>Maptech Special Marks</b>	Controls whether Maptech Special Marks appear on the chart (when available).

## The Tools Menu

<b>Chart Portfolio</b>	Hides or shows the Chart Portfolio.
<b>Navigation Object Browser</b>	Hides or shows the Navigation Object Browser.
<b>Weather</b>	Hides or shows the Weather Browser and chart layer.
<b>Activate Route...</b>	Select a route to activate.
<b>Deactivate Route</b>	Deactivates the active route.
<b>Enable Tracking</b>	Turns tracking on or off.
<b>Start New Track</b>	Starts recording another track.
<b>Cruise Mode</b>	Starts Cruise Mode.
<b>Download Charts...</b>	Download charts from the Internet (requires an Internet connection).
<b>Customize</b>	Customize the Coastal Explorer screen layout, instrument panels, and modes.
<b>Options...</b>	Provides access to program options.

## The Help Menu

<b>Contents and Index</b>	Displays Help
<b>Keyboard Shortcuts</b>	Displays all of the keyboard shortcuts
<b>Coastal Explorer Network</b>	Displays the Coastal Explorer Network web site
<b>Check for Updates...</b>	Checks the coastalexplorer.net website for Coastal Explorer updates
<b>Send Feedback...</b>	Sends e-mail to Rose Point Navigation Systems
<b>About Coastal Explorer</b>	Displays Coastal Explorer version information.

# The Main Toolbar

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The toolbar normally appears near the top of the Coastal Explorer window just like in any other Windows program. However, in Cruise Mode and Full Screen Mode, the menubar and standard toolbars are not displayed. When using these modes, you can make the toolbars appear temporarily by moving your mouse cursor to the top of the screen.

The **Back** button will take you back to places on the chart that you were recently looking at. The **Forward** button takes you back to places you were looking at before using the **Back** button. These buttons work together in the same way that the Back and Forward buttons on a typical web browser work. You can also use the **Alt+Left Arrow** and **Alt+Right Arrow** keys.

**Find Control** This lets you easily find places by entering their name and clicking the **GO** button or pressing **Enter**.

**Zoom Control** Use the magnifying glass buttons to zoom in or out, or use the slider to get the scale you want.

**Select Tool, Zoom Tool, and Pan Tool** These buttons select between the three different mouse modes for selecting, zooming, and panning. The mouse mode determines what will happen when you press the left mouse button on the chart and drag the mouse. The Select Tool lets you select an area, which you can then Zoom To, Copy, or delete the objects within. The Zoom Tool just zooms to the area you drag across as soon as you let go of the mouse button. The Pan Tool lets you drag the chart around with the mouse.

While you might be more familiar with the Zoom Tool if you have used other navigation programs, the Select Tool is very versatile as it allows you to pan by clicking near the edges of the chart, zoom by selecting an area and then clicking inside of it, or select multiple navigation objects in order to perform some operation on all of them.

**Chart Window and Split Chart Window** These buttons let you decide if you want to see one large chart view, or two smaller chart views side-by-side.

**Chart Type Control** This lets you control what type or types of charts appear.

# The Navigation Object Toolbar

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The toolbar normally appears near the top of the Coastal Explorer window just like in any other Windows program. However, in Cruise Mode and Full Screen Mode, the menubar and standard toolbars are not displayed. When using these modes, you can make the toolbars appear temporarily by moving your mouse cursor to the top of the screen.

**Undo** Undo the last editing operation. **Redo** Redo the last undone operation.

**Highlight Objects** Washes out the chart image so you can see your Navigation Objects more clearly

**Add Route** Starts adding a route. After clicking this button, click on the chart at each place you would like a waypoint. When you are done, click the last waypoint again.

**Add Mark** Adds a Mark at the next place you click on the chart.

**Add Boundary Circle** Adds a Boundary Circle at the next place you click on the chart.

**Add Boundary Area** Starts adding a Boundary Area. After clicking this button, click on the chart at each place you would like to start a new side for the area. When you are done, click the last place again.

**Add RBL (Range/Bearing Line)** Adds a Range/Bearing Line between the next two places you click on the chart.

**Go To Boat** Pans the chart (if necessary) to ensure your boat's symbol is on the screen and resumes the last automatic scrolling mode you were using. Consecutive presses will change the current automatic scrolling mode between Follow Boat and Look Ahead. You can also press the **Home** key for the Go To Boat function.

**Browser Panel** Displays a menu of different Browser Panels to choose from and an option to close the Browser Panel.

# The Status Bar

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**REVIEW: Need a picture!**

The status bar normally appears at the very bottom of the Coastal Explorer window when in Planning Mode, but can be turned on and off in any mode by using the **View > Status Bar** command.

The status bar displays this information:

- A message. When you are using the menus or hover the mouse pointer over a toolbar button, this area will display a short description of the selected command. If you hover the mouse over the chart, it will display the name of the nearest place in the gazetteer. Sometimes Coastal Explorer will place other messages here too, in which case it will make a ding to alert you that there is a new message.
- The latitude and longitude at the mouse cursor.
- If the boat position is known, the range and bearing from the boat to the mouse cursor
- The depth range or units at the mouse cursor. When the information is available (from a vector chart), the range of depths in the area the cursor is pointing is shown. Otherwise the units of measurement for depth values is shown (depths on raster charts cannot be changed to match your preference).
- The status of the GPS signal. This will indicate whether Coastal Explorer is in Dead Reckoning mode, has not yet received anything from a GPS (NO GPS), or that you have a GPS or DGPS fix, or that the GPS signal has been lost (LOST GPS).

# The Task Pane

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**REVIEW: Need a picture that shows the tabs and a scrolling arrow!**

The Task Pane typically shows properties for the selected chart or Navigation Object, but can also display search results, nearby places, virtual instruments, and other information.

The Task Pane can be hidden or shown with the **View > Task Pane** option or by pressing the **Ctrl+F1** key.

The right side of Coastal Explorer window shows a list of available Task Panes and you can select a Task Pane to use by clicking on its name in this list. You can hide the Task Pane by clicking on the name of the Task Pane that is already shown.

If the Coastal Explorer window is not tall enough for the list of Task Panes, you can scroll the list by dragging it with your mouse, or clicking on the arrow buttons that will appear at the top and/or bottom of the list when scrolling might be necessary.

## The Chart Overview



The Chart Overview appears in the top part of the Task Pane while in Planning Mode and is an optional panel while in Cruise Mode.

The Chart Overview shows an overview of what the primary chart viewing area is showing. The Chart Overview is always oriented North Up.

Inside the Chart Overview is a rectangle that outlines the actual area displayed in the primary chart viewing area. One side of this rectangle has a dot on it to indicate which side is up in the chart viewing area.

The rectangle may be dragged around with the mouse to scroll the primary chart.

Double-clicking in the rectangle will zoom in and double-clicking outside the rectangle will zoom out.

If you have a scroll wheel on your mouse, using it while pointing at the Chart Overview will change the scale of the primary chart viewer.

# Property Panels

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**REVIEW: Need a picture showing tabs.**

Property Panels are a type of Task Pane that are used extensively in Coastal Explorer. Just about anything you click on in the Chart Area will cause details about that object to appear in the property panel.

However, the Property Panel is not always visible. If you need information about an object or chart feature and the Property Panel is not visible, you can click the right-mouse button on the object or chart feature and select the **Properties** option from the menu that appears. The **Alt+Enter** key will also cause the Property Panel to appear.

Most objects have more than one page of properties causing multiple tabs to appear in the property panel. Click on the tabs to see the different pages of properties. You can also use the **Ctrl+Page Up** and **Ctrl+Page Down** keys to switch between pages.

Clicking on Vector Charts will usually cause two tabs to appear, one has information about the Chart in general while the other lists all of the objects that are at or very near the location in the chart that you clicked.

Clicking on a Navigation Object will show all the properties of that object and allow you to adjust most of them.



# Using the Browser

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**REVIEW: Need a picture of a browser that has tabs and buttons on the title bar!**

The Browser integrates the Navigation Object Browser, Voyage Plan, Guide Book, Tide and Current Graphs, and some of the weather related features into a unified information panel that appears below the chart. When it is open, you can click on things on the chart to change what is shown in the browser.

You can show the browser with the **Browser Panel** button on the toolbar, the **View > Browser Panel** menu, several commands on the **Tools** menu, or by right-clicking on the chart and selecting one of the commands between **Guide Book** and **Weather**. Once the panel is open you can use any of those commands to change the type of thing the browser is showing (tides, currents, weather, etc.). You can also click on the title of the browser to quickly get to the list of different page types you can choose from.

When a browser is open, an extra layer of symbols may appear on the chart. Clicking on any of these symbols will cause the browser to show information for that symbol. For example, when the Guide Book Browser is open, symbols indicating the positions of other guide book entries will appear on the chart and clicking on those symbols will show those entries in the browser.

# About Virtual Time

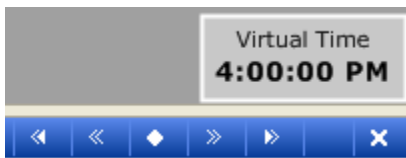
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Coastal Explorer lets you see tide level and tidal current predictions and weather forecasts for times other than "right now" by using a concept of "virtual time."

Normally the virtual time is the same as the current "real time" and as the real time changes, so does the virtual time. However, when you use any of the "time changing" functions described below, the virtual time is set to the time you select and is paused so as not to advance with the real time.

The time changing functions are found in the Browser toolbars for Graphical Weather Forecasts, Tide Level Predictions, and Tidal Current Predictions. Each of these has five buttons that let you move forwards and backwards in time by one hour or one day and to resume real time. You can hold down the forward and backward buttons to move by several hours or several days.

In Planning Mode, whenever a virtual time is in effect the Virtual Time panel will appear in the lower-right corner of the primary chart panel to let you know what that virtual time is. You can always go back to "real time" by clicking on this panel.



In Cruise Mode, the clock display in the top-right corner of the screen shows the Virtual Time. When the Virtual Time is different than the Real Time, a yellow warning bar pulses above the clock. You can click on the clock to see a menu of time-related options, including the ability to return to Real Time. **REVIEW: Need a picture of this!**

# Printing

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**REVIEW: This needs to talk about printing tide and current predictions!**

Coastal Explorer can print charts, tide level and tidal current predictions, and route details. When the **Route Details** panel is open and you use the print feature, the page will include a chart in the top half and the details of each leg of the route in the bottom half. When the Route Details panel is not open, the chart will cover the entire page.

Printed charts have the same level of detail and other formatting options as the displayed chart, so you should get the screen to look the way you want your page to look before starting to print.

When you are just printing a chart, the page will contain the same area that is on the screen plus an additional area needed to fill out the page. If you are printing in portrait mode (a vertically oriented page), then the middle of the page will probably contain the same as what you see on the screen and additional area will be charted at the top and bottom of the page.

When you use **File > Print Preview** before printing, you can see exactly what will appear on the page and even "nudge" the chart around and zoom in/out to get it just right.

When you are printing a chart with route details, the area of the chart that is printed is always the area covered by the route. In this case, you cannot fine-tune the chart placement in Print Preview mode.

The **File > Page Setup** command will let you adjust the page size and orientation, paper source, and margins for your pages.

# Introduction to Cruise Mode

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The standard Windows interface works great when you are sitting at the computer using your mouse and keyboard and are focused on the task of planning your trip. However, when you are cruising and you are focused on the water ahead of you and the hazards and other boats in the area, menus and toolbar buttons become much more difficult to use! This is the problem that Cruise Mode solves.

In Cruise Mode, Coastal Explorer takes over the entire screen and hides the standard menu and toolbars. In order to provide easy access to the commands you'll need while underway a few large, easy to press buttons appear at the top and bottom of the screen.

Cruise Mode starts automatically when your boat starts moving one knot or faster. It may be entered at any time by using the **Tools > Cruise Mode** command or by pressing the **F12** key. You can get back to Planning Mode with the **Planning Mode** command on the main menu or by pressing the **F12** key again.

Here is a typical **Cruise Mode** screen:



As you can see, Coastal Explorer does not look like your typical Windows application in this mode.

Across the top of the screen is a bar that contains various controls and indicators including:

**Program and Mode identification** -- click here to select a different Mode (e.g. Plan Mode, Cruise Mode, etc.), use any of the Browser Panels, open the Options window, or exit Coastal Explorer. See **Main Menu** below.

**Reset** -- Clicking this button will reset your display to some pre-determined settings. This is useful when you've been scrolling around, rotating the chart, zooming out, and splitting the window and just want to get back to the "normal" view around your boat. You can control what settings will be selected when you click this button.

**MOB** -- Clicking this button will start Man Overboard mode.

**Event** -- Clicking this button will insert an Event Mark at the current location of your vessel.

**GPS Status** -- This provides an indication of the strength and accuracy of your GPS signal. If you have more than one position source, you can click here to see a list of vessel position sources available and select a different one to use. You can also click here to turn tracking on or off and to set other tracking options.

**Battery Status** -- If your computer is running on batteries, and your batteries are getting low, you will see an indication of the battery level and an estimate of how much time you have before the computer needs to shut down.

**Date and Time** -- The current Real or Virtual Time is displayed. You can click here to select from the available time formats and to select between daylight, dusk, and night modes.

**Cursor Information** -- Across the bottom of the toolbar, you'll see the name of the place the cursor is pointing at as well as the lat/lon of the cursor and the range/bearing from your boat to the cursor.

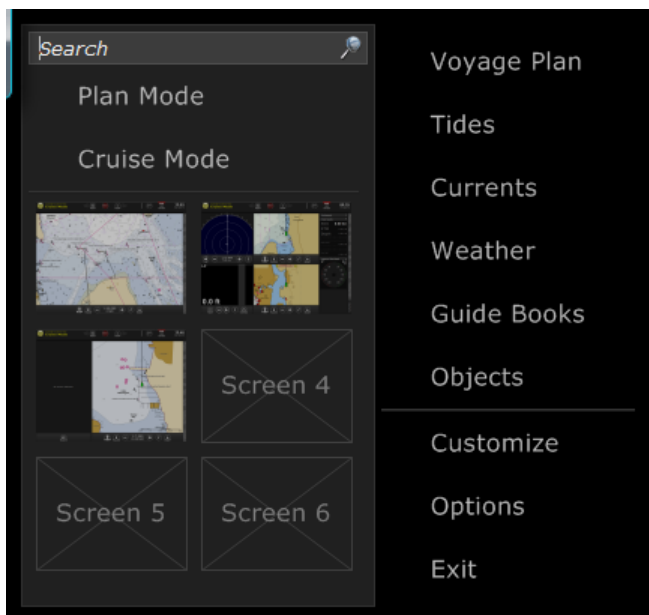
If you have a Rose Point Radar these controls will also appear on the toolbar:

**Radar Transmit/Standby** -- This will let you turn the radar transmitter on or place the radar in standby.

**Radar Controls** -- This will appear when the radar is transmitting and show you the current settings. Clicking on this control will change the toolbar to show more radar controls such as Gain, Sea Clutter, and Rain Clutter.

## Main Menu

Clicking on the Coastal Explorer logo causes the Main Menu to appear:



The Main Menu provides the following options:

**Search** Start typing to search for a place. The search results will appear below the search box as you type. You can press **Enter** when you are done, click on one of the results to go there, or press **Esc** to cancel.

**Modes** The operation modes appear next; clicking on one activates that mode.

**Screens** Your custom screen layouts appear as small screen shots (or a box with an X if you haven't customized a screen yet). Click on a screen to activate it. Press and Hold on a screen to quickly save the current layout to that custom screen.

**Browsers** A list of the Browser Panels starts the second column of the Main Menu. Click on one to open the Browser.

- Customize** Starts Customize mode where you can create new screen layouts, instrument panel pages, and even operation modes.
- Options** Opens the Options window (this is the same as **Tools > Options**)
- Exit** Exit Coastal Explorer (this is the same as **File > Exit**)

## Chart Viewer Toolbar

At the bottom of a chart viewer, you'll see a toolbar with these buttons:

**Orientation** -- Click this to cycle through North Up, Heading Up, and Course Up

**Follow Mode** -- Click this to cycle through Don't Follow, Center on Boat, and Look Ahead modes

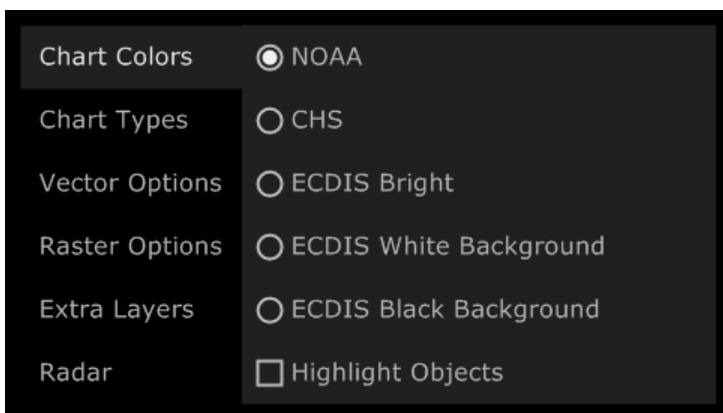
**Scale** -- Click on the + or - buttons to zoom in or out, or click in between them to see a menu of scales to choose from

**Information** -- Click this to see a menu of options that affect how the chart and other data is displayed. (See below.)

**Add** -- Click this to see a menu of Navigation Objects that can be added

## Chart Information Menu

The Chart Information Menu provides several pages of options that control types of charts to display and how to display them.



The first column is a list of pages; click on an item in the first column and the second column will display that page of options.

- Chart Colors** Use this to control which color set to use in Daylight Mode (Dusk and Night modes each only have one color set that can be used. This page is also where you'll find the handy **Highlight Objects** command.
- Chart Types** Use this to control the type or types of charts you want to see.
- Vector Options** This page provides access to vector chart specific options.
- Raster Options** This page provides access to raster chart specific options.
- Extra Layers** This page lets you turn on and off the display of various layers such as the Distance Scale and Chart Outlines.

**Radar**

Use this page to turn the display of radar tools such as Electronic Bearing Lines, Variable Range Markers, and Range Rings on or off.

# Custom Screen Configurations

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Coastal Explorer lets you save and restore custom screen configurations from the Main Menu in Cruise Mode.

Six separate screen configuration "slots" are available. These screen slots appear on the Cruise Mode Main Menu under the Find Box and each one can hold a configuration of one to four views including their relative sizes and their settings.

More specifically, each screen configuration consists of one to four views, where each view consists of a type and settings appropriate to that type of view. Chart views keep track of the latitude and longitude at the center of the view, the chart viewing scale, what types of charts are shown (raster, vector, topo map, etc.), the chart orientation, and the auto-scrolling mode. Video views keep track of which video source is being used. Radar views keep track of the off-center location and the status of tools such as VRM's and EBL's. In addition to these view settings, the screen configuration keeps track of the relative sizes of the views.

You can use saved screen configurations to quickly reconfigure Coastal Explorer for specific tasks. For example, you might normally cruise with a large chart view at a large scale in look-ahead mode alongside a smaller chart view at a small scale in center-boat boat. Then, when docking, you might prefer to have one large scale chart and a couple of video views. If you have a Coastal Explorer Radar, you might want a small radar-only view and a small overview chart as well as a large chart.

## To create screen configuration:

- Use the 1, 2, 3, or 4 keys to split the screen into that many separate views
- Right-click on views that you want to change the type of. The context menu that appears will contain a list of available view types (Chart, Video, or Radar (if installed)).
- Adjust the relative sizes of the views by dragging the "splitters" (the spaces between the views).
- Adjust the settings of the views (such as follow-modes, scale, orientation, etc).
- Save the configuration by clicking on the Main Menu and then pressing and holding the mouse button on any of the screen slots on the left side of the menu. Hold the button for two seconds and you will hear a beep and see the slot symbol change to a screen shot of your configuration.

## To load a screen configuration:

- You can quickly load a screen configuration by clicking on its screen-shot in the Main Menu.

After selecting a screen, you can make adjustments to the views if you want. However, any adjustments are not automatically saved if you select a different screen or exit Coastal Explorer. If you do want to save changes, just open the Main Menu and press and hold the left mouse button on the screen slot you want to save to.



# Charts

# Chart Compatibility

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**Coastal Explorer** utilizes various formats of charts from several manufacturers. Each type of chart has its own advantages and disadvantages, and many of these are subject to your individual tastes.

## Raster Charts

Raster charts are simply digital pictures of paper charts that also contain the information necessary to convert between locations in the picture and a latitude and longitude. Most raster charts also contain other information such as when the last update was made and the units of depths.

Some people prefer raster charts over the newer vector charts because they seem more familiar - they are just copies of paper charts after all. As you'll see later, though, vector charts have some major advantages over raster charts and will soon be the world-wide standard chart format.

Two major formats of raster charts are available: the so called "Maptech/BSB" format and the "SoftChart NOS/GEO" format. Both formats have a lot in common, but are different in the details. In both cases, a "chart" is made up of two or more files. One of these files is relatively small and has a file type of .BSB or .GEO. The other file (or files) contain the image of the chart and can be very large. These files have a type of .KAP or .NOS. Some charts, especially small-craft charts from Maptech will have more than one image file; one for each page, panel, or inset from the original chart.

Coastal Explorer is fully compatible with the Maptech/BSB4 and Maptech/BSB5 format charts which add copy protection to the basic BSB format. In order to use these charts with Coastal Explorer you must first use the setup program included with the charts to register them for use on your computer.

Nautical Data International, Inc. (NDI) is a distributor for Canadian raster charts which are sold under the brand name of "Digital Ocean." These charts are in the Maptech/BSB4 format and work fine in Coastal Explorer.

The older "PCX Format" and "RML Format" charts are also fully compatible. These formats are still used by several producers of digital charts covering areas outside of the United States. Be aware, however, that charts in this format tend to be pretty out of date.

## Photo Charts

Photo charts are a variation of raster charts. They are still a static picture, but rather than being a picture of a chart, they are a photograph of an area. Photo charts are especially handy for checking out shallow areas as they clearly indicate the location of shoals and channels.

Photo charts are usually derived from the Digital Orthographic Quadrangle (DOQ) photos created by the USGS. The originals are available in various forms on the Internet and Coastal Explorer can use the GeoTIFF format. The USGS does not offer the DOQs for download, but many states have universities that do.

Maptech's "Navigation Photos" and SoftChart's "PhotoNavigator" charts which are derived from the USGS DOQs are also supported.

## Vector Charts

Rather than storing the entire chart as a single image like a raster chart, vector charts are made up of many separate "objects" such as coastlines, bays, land areas, buoys, and depths. Some of the advantages of this method include:

- The display of individual types of objects can be controlled which allows you to control clutter on the screen
- The units of displayed measurements can be controlled
- The database of object descriptions uses much less storage space than an equivalent raster chart
- There is a greater amount of information stored in the database that computer software can take advantage of for advanced features such as route safety checking.
- There are really only three disadvantages to vector charts:
- Coverage of vector charts is not as complete as raster charts (yet)
- Many vector charts do not have as much detail as their paper counterparts
- The resulting display does not look as familiar as a paper chart

Vector charts are available in many different formats, including various types from C-MAP and Navionics, Passport from Nobeltec, BlueChart from Garmin, and many others. Coastal Explorer does not support any of these proprietary formats.

**REVIEW: Make a note about Navionics charts?**

The only non-proprietary vector chart format is called S-57, or ENC (short for Electronic Navigation Chart), and is the standard format used by just about every hydrographic office in the world for official government charts. S-57 ENCs are the only vector chart format approved for use as paper chart replacements on SOLAS (Safety Of Life At Sea) class vessels such as cargo and cruise ships.

One of the most surprising features of S-57 ENCs is that NOAA and the U.S. Army Corps of Engineers has decided to give them away for free! They are busy converting their paper charts into this format and are making them available on the Internet at the addresses listed below. At the time of this writing over 300 ENCs are available from NOAA and about 40 from the USACE.

Canadian ENCs may be purchased from Nautical Data International, Inc. under the brand names of "Digital Ocean Recreational Vector" or "Digital Ocean Professional." Many other countries make ENCs available through their hydrographic office or its distributor.

ENCs are made up of one or more files, usually stored in a folder that just contains files related to one chart. The most important file has a type of .000 which contains the chart database. Other files with the same name but different numeric file types (such as .001, .002, .003, etc.) may be in the chart's folder and contain updates to the database. Any number of other files, usually text or TIFF images, may be in the folder and contain extra information or pictures that are referenced by the database.

S-57 refers to the world-wide standard format of a vector chart database. Another world-wide standard, called S-52, refers to the way to present that database to a user in a graphical way. S-52 determines colors, line-styles, fill-patterns, text placement, and all of the other details that go into drawing a chart database on a computer screen. Coastal Explorer has complete support for S-57 ENCs drawn according to the S-52 specification.

Coastal Explorer includes vector charts for most of the United States. These charts are proprietary to Coastal Explorer but are made from the "Digital Nautical Charts" (DNC®) produced by the National Geospatial-Intelligence Agency (NGA). The Coastal Explorer Charts look and work much like the ENC, but are a completely different format of chart and you will notice some differences. Since the NOAA ENC is the "official" electronic chart of the United States, they will usually appear on top of a Coastal Explorer Chart when you have the same chart in both formats.

## Topographic Maps

Topographic maps are not suitable for navigation, but are very handy for hiking around that island you just anchored near! Coastal Explorer can use the topographic maps that are included in most Maptech ChartKits as well as the original USGS DRG files which are found in the GeoTIFF format. See also: **Using Topographic Maps**.

## Electronic Chart Manufacturers

These are just some of the chart manufacturers that create Coastal Explorer compatible charts:

**NOAA ENC®** These vector charts are available for free and cover much of the US coast.

**NOAA RNC™** These raster charts are available for free and cover the entire US coast as well as some lakes.

**U.S. Army Corps of Engineers Inland ENC** These vector charts are available for free and cover major U.S. rivers.

**Maptech Digital Charts** Maptech distributes raster charts for most of the world. Maptech's Digital ChartKits usually contain a marine facilities directory and aerial photos for the region and this information is used by Coastal Explorer as well as the charts and maps.

**Canadian Hydrographic Service** produces the official charts for Canadian waters. Both raster and vector charts are available from CHS chart dealers.

**U.S. Geological Survey** The USGS produces "DRG" topographic maps as well as "DOQ" photo charts the the GeoTIFF format which may be used with Coastal Explorer.

# Chart Portfolio

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**REVIEW: Need a screen shot of the Chart Portfolio!**

The Chart Portfolio is yet another mode focused on a particular activity which, in this case, is managing your chart collection.

You can get to the Chart Portfolio with the **Tools > Chart Portfolio** command. You can get back out with the same command or with the **Close** command on the Chart Portfolio's toolbar.

The Chart Portfolio shows you all of the charts on a particular hard drive, CD-ROM drive, removable storage device, or the combination of all of your hard drives if you have more than one. You can select which collection you want to see with a drive list on the toolbar.

You can also decide whether you want to see all chart types or only a particular type of chart. This works just it does in Planning Mode; just use the Chart Type selection tool.

The **Chart Portfolio** window displays collections of charts in several ways:

The **Details** view shows the name, number, scale, and type of each chart in the collection.

The **Thumbnails** view shows a small image and the name of each chart in the collection.

The **World Map** view shows a map of the world superimposed with the outline of each chart in the collection. Clicking within an outline will select a chart. When multiple charts overlap you may need to right-click which will show you a list of charts to select from.

You can select which view to use by selecting it from the toolbar, the **View** menu or the right-click menu.

The charts may be sorted in each of the views by selecting one of the **Arrange By** options on the View menu or the right-click menu.

When a chart is selected, the property panel shows an overview of the chart and just about all of the information that can be found in the chart file such as the name, original scale, the producing agency, and the date of the last update made.

In any of the different views, you can open a chart, print a chart, or copy a chart to a different disk drive by selecting it and using the menus, toolbar, or keyboard. Holding down the **Ctrl** key when selecting a chart allows you to select more than one chart at a time, and all of the actions will work with multiple charts.

## To Open selected charts, you can:

- double click on a selected chart
- press **Enter**
- or, right-click on a selected chart and select **Open**

## To Print selected charts, you can:

- use the Print button on the toolbar
- use the **Print...** command on the **File** menu
- or, right-click on a selected chart and select Print...

## To Copy selected charts, you can:

- use the Copy Charts button on the toolbar
- or, right-click on a selected chart and select **Copy to...**

A chart collection refers to all of the charts on a hard drive, CD-ROM, or USB Flash Drive. The Chart Portfolio window has a list of collections to choose from at the top of the window.

When a CD-ROM containing charts is inserted into a CD-ROM drive, that collection is automatically selected. If the CD-ROM contains charts that are not also on a hard drive, you will be asked if those charts should be copied to the hard-drive. Copying charts to a hard drive can significantly speed up the display of those charts.

# Installing Charts

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Coastal Explorer can use electronic charts from several different manufacturers and will automatically search for chart files in a few standard folders on your computer.

If you have compatible charts on your computer, but Coastal Explorer does not seem to know about them, you can easily tell it where they are or have it search your entire computer.

Some charts you buy may require you to use the manufacturer's installation procedure, but others can be installed by Coastal Explorer. If you insert a disk containing charts while Coastal Explorer is running, and it can handle installing those charts, it will provide you with on-screen instructions.

Coastal Explorer also has the ability to extract chart files from ZIP files which are a common way of combining multiple files together and compressing them in order to use less disk space and download from the Internet faster and easier.

## To change where Coastal Explorer looks for charts:

- Select the **Options** command from the **Tools** menu
- Click on the **Charts** tab.
- Click the **Chart Folders...** button.
- Follow the directions in the window to change the folders that will be searched for charts.

## To install charts from a CD or DVD:

- While Coastal Explorer is running, insert the CD/DVD into your computer's CD/DVD-ROM drive.
- Coastal Explorer should notice the new CD/DVD, scan it for charts, and guide you through the installation process.
- If this does not work, you may need to follow any directions provided by the chart manufacturer.

**Some chart manufacturers apply copy protection to their charts which must then be activated before they can be used. If you have copy protected charts, please follow the registration or activation instructions that came with them before trying to use the charts with Coastal Explorer.**

## To install vector charts from the Internet:

- Use the **Tools > Download Charts** command and follow the displayed instructions

## To install charts from a ZIP file:

- Use **File > Open** to find and open the ZIP file, or
- Drag the ZIP file from a folder window to the Coastal Explorer window.

# Chart Options

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## Tools > Options > Charts

This page of the options window provides access to various options regarding where Coastal Explorer should look for charts on your computer, which of them it should include in the chart quilt, and where it should install new charts.

**Chart Folders** This provides access to a list of folders that Coastal Explorer will search for charts in.

**Automatically install charts when a new CD is inserted** This option causes Coastal Explorer to search CDs that are inserted into a CD-drive for charts. If a CD is found to have charts that are not on any hard-drive, you will be given the option of installing them. When this option is turned off, you will need to use the **Install Charts** button on this option page to install the charts manually.

**Install Charts** Provides tools for installing or updating charts to a hard-drive from a CD or other source. You can also get to the Install Charts tools with a button on the toolbar in the Chart Portfolio.

**Chart Portfolio** This provides a quick way to get to the Chart Portfolio window where you can adjust which charts should be included in the quilt among other things.

**ChartKit Folder** This tells Coastal Explorer where to install and find non-chart data included with Maptech ChartKit products including Marine Facilities and Special Marks. This is normally "C:\CHARTKIT".

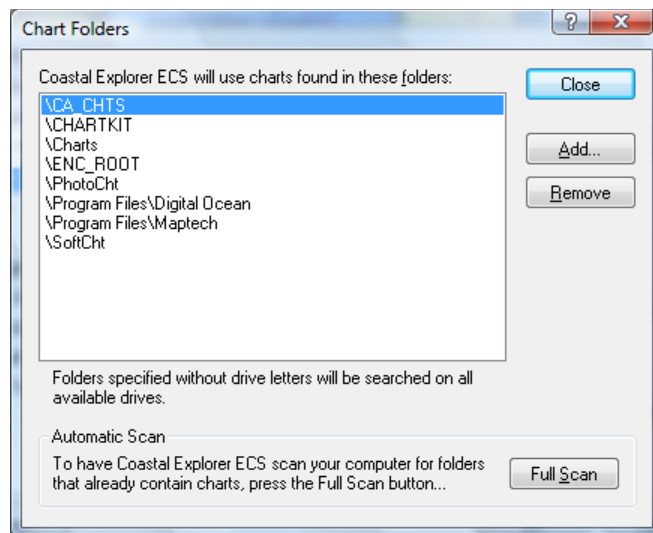
**Contour 3D Folder** This tells Coastal Explorer where to install and find Maptech Contour 3D data. The default location is "C:\3DCHARTS". This option only appears when the Maptech Contour 3D option has been installed.



# Chart Folders Window

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**Tools > Options > Charts > Chart Folders**



This window lets you choose the folders that Coastal Explorer will search for charts.

You can get to this window with the **Tools > Options > Charts > Chart Folders** command or from the **Install Charts** window.

Each time Coastal Explorer is started it will scan for changes in chart folders. You can install new chart files, un-install chart files, or update your chart files while Coastal Explorer is not running using your chart manufacturer's setup programs or with Windows and your chart portfolio will be updated the next time Coastal Explorer is started.

Coastal Explorer automatically scans several folders where charts are frequently found. If you have chart files in other folders, use this window to add those folders to the list. You can also have Coastal Explorer scan your entire computer for chart files and fill in the list for you.

This window displays a list of all of the folders that will be scanned by Coastal Explorer. In this list, some folders specify which drive they are on (such as "C:\Charts") and some do not specify a drive (such as "\Charts"). When a drive letter and colon are used, only the folder on that drive is included, but when the drive letter and colon are omitted, Coastal Explorer will search the folder on all drives on the computer (including hard drives and CD-ROM drives).

## To add a folder to the list:

1. Click the **Add...** button.
2. Enter the name of the folder and click **OK**

## To remove a folder from the list:

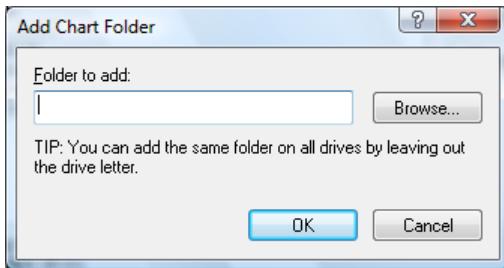
1. Select the folder you want to remove
2. Click the **Remove** button

## To have Coastal Explorer scan your computer for charts:

1. Click the **Full Scan** button

## Add Chart Folder Window

Tools > Options > Charts > Chart Folders > Add Chart Folder



This window is used to add a folder to list of folders that Coastal Explorer monitors for charts.

Enter the full path of the folder you want to add, or use the **Browse** button to look for the folder.

You can tell Coastal Explorer to monitor the same folder on all drives by leaving off the drive letter. For example, entering "\\Charts" will cause Coastal Explorer to monitor C:\Charts, D:\Charts, E:\Charts, etc.

# Install Charts Window

**Tools > Options > Charts > Install Charts**

**REVIEW: Need a picture of this window!**

This window lets you choose which charts to install from a CD-ROM or other chart volume.

This window will appear when you have inserted a CD-ROM containing new charts and choose to install them in order to improve performance. You can also get to this window manually with the **Tools > Options > Charts > Install Charts** command or the **Install Charts** button on the Chart Portfolio's toolbar.

Charts are installed in different folders based on the type of chart. You can change the folder for each type of chart by pressing the **Change Chart Installation Folders** button.

## To Install Charts from a CD-ROM or other Removable Storage Device

1. Select the CD-ROM drive that has the charts on it with the **Look In** list.
2. Check off the charts that you want to install. (The list will start out with all of the charts that are not currently on a hard drive checked.)
3. Press the **Install** button.

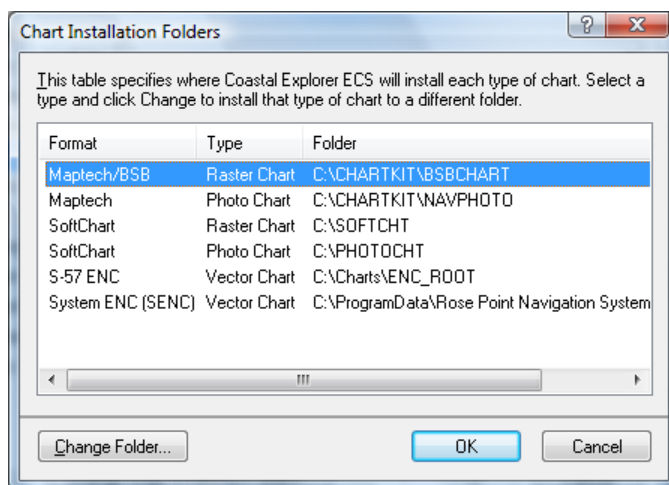
## To Install Charts that are on a Hard Drive

Coastal Explorer considers every chart that is on a hard drive to already be installed, however it may need to be told where to find them.

- Select the hard drive that has the charts on it with the **Look In** list.
- Click the **Chart Folders** button to change where Coastal Explorer looks for charts.
- Refer to the Chart Folders help page for more steps...

## Chart Installation Folders Window

**Tools > Options > Charts > Install Charts > Change Chart Installation Folders**



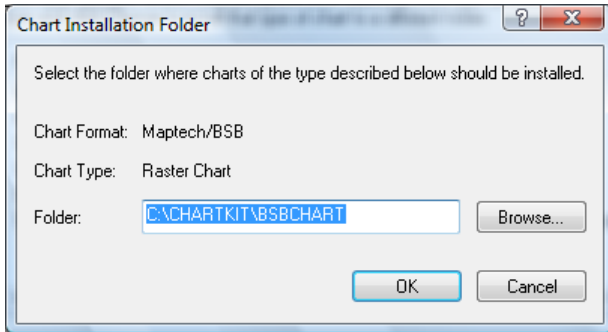
This window lets you choose where Coastal Explorer will install charts on your computer.

You can get to this window from the **Install Charts** window.

Each type of chart may be installed in a different folder or you can use the same folder for different types of charts. When Coastal Explorer is installed, most chart types have a default installation folder that is the same as the chart manufacturer's recommended location.

**To change where Coastal Explorer will install a type of chart:**

2. Select the type of chart from the list
3. Click the **Change Folder** button
4. Enter a new folder for that type of chart, or use the **Browse** button to find the folder
5. Click **OK**



# Using Topographic Maps and GeoTIFF Files

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## To use Coastal Topographic Maps from Maptech:

- Install the topographic maps from the Maptech Digital ChartKit CD-ROM
- Select **Topo Maps** from the Chart Type selection box on the toolbar

## To use USGS "DRG" topographic maps or other files in the GeoTIFF format:

If you have the "metadata" files (.FGD files) that usually come with the USGS DRG topographic map files, then you can use the GeoTIFF files just like they were normal charts by telling Coastal Explorer where to find the files in the **Tools > Options > Charts > Chart Folders** window.

If you do not have the corresponding metadata files, you must open the GeoTIFF files with the **File > Open** command.

**REVIEW:** This should include information about GeoTIFF capabilities and limitations...



# Instruments

# Setting up Instruments

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Many electronic marine devices have a feature known as "NMEA 0183". This is an electrical interface that allows different pieces of equipment to share data with each other. This shared data is made up of "sentences" which essentially say things like "the GPS is at 47.123N 122.321W", "the depth is 23 meters", and "the boat is moving at 13 knots through water".

**Coastal Explorer** can utilize information from many different instruments on your boat if they are connected to the PC through an NMEA 0183 interface. A GPS will be the most common type of instrument, but depth sounders, speed sensors, wind vanes, and even some RADAR units can supply useful information to Coastal Explorer.

Coastal Explorer can also send information to NMEA 0183 compatible devices such as autopilots, data displays, and RADAR units.

Coastal Explorer can also use the proprietary "Garmin" interface used by Garmin's very popular line of GPS receivers.

## NMEA Interfaces and Multiplexers

In order for Coastal Explorer to take advantage of your NMEA 0183 compatible instruments, your PC must be connected to them. Two different kinds of devices are available that provide an interface between NMEA 0183 and a PC's serial port (such as COM1 or COM2) or a USB port.

One of these devices is usually called an "NMEA Adapter" and allows a single NMEA 0183 device (usually a GPS) to be connected to the PC. The other type is called an "NMEA Multiplexer" and allows more than one NMEA 0183 device to be connected to a single serial port. The multiplexer is more complicated on the inside because it needs to merge the sentences from more than one source without mixing them up, but the way you hook them up is basically the same as an adapter.

One issue that arises with NMEA Multiplexers is that they are usually receiving data at the same rate that they can transmit it, but they are receiving it from multiple sources. There is no problem when the data comes in as small bursts from each source, but when too much data starts to come in, some of it will be lost. Some multiplexers can be setup to transmit at a higher rate than the default. If you have one of these multiplexers, you can use the Advanced NMEA Port settings (see below) to configure Coastal Explorer to accept the higher rate of data.

Some GPS devices have the ability to connect directly to a PC's serial port without the need for an adapter or multiplexer.

Many modern PC's no longer have COM ports built in, but one (or more) can be added using a PCI card that is installed to a desktop PC, a PC Card (PCMCIA) that is installed in a laptop, or a USB adapter that plugs into just about any PC. Any of these solutions will require a "driver" which is usually provided on a CD-ROM that comes with the adapter. Most manufacturers also provide updated drivers on their websites, and it is almost always better to be using the latest driver that was made for the version of Windows you are using!

## General Hardware Setup Steps

Every piece of equipment is different, so you will have to consult your equipment's documentation to find out how to get it connected to your PC, but the general process is:



1. Wire it up - connect the output from the device to the input of an adaptor or multiplexer and connect the serial port of the adaptor or multiplexer to the serial port of the PC. Your adaptor or multiplexer should have come with instructions specific to its installation.
2. Enable NMEA Output - some devices may need to have the output of NMEA sentences enabled; refer to the device's documentation.

## Configuring Coastal Explorer to Receive Instrument Data

- Select the **Options...** command from the **Tools** menu.
- Click on the **Instruments** tab.
- Click the **Auto Detect...** button to have Coastal Explorer automatically find the right port and configuration, or
- Click on the **Port Settings...** button if you would rather just select the right port and configuration.

## Configuring Coastal Explorer to Send NMEA 0183 Data

- Select the **Options...** command from the **Tools** menu.
- Click on the **Instruments** tab.
- Click on the **Autopilot...** button.
- Select your autopilot's manufacturer and model from the lists, or
- Use the **Options** and **Sentences** tabs to select the right options for your autopilot (you may need to refer to your autopilot's manual).

## Troubleshooting

Getting your boat to talk to your computer the first time can sometimes be a bit challenging. To help you with this task, Coastal Explorer has an Instrument Port Troubleshooter which will show you the NMEA 0183 data that is being receiving from your boat in a few different ways.

To access the **Instrument Port Troubleshooter**

- Select the **Options...** command from the **Tools** menu.
- Click on the **Instruments** tab.
- Click on the **Troubleshooter...** button.

More information about using the Troubleshooter is provided below.

# Instrument Options

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## Tools > Options > Instruments

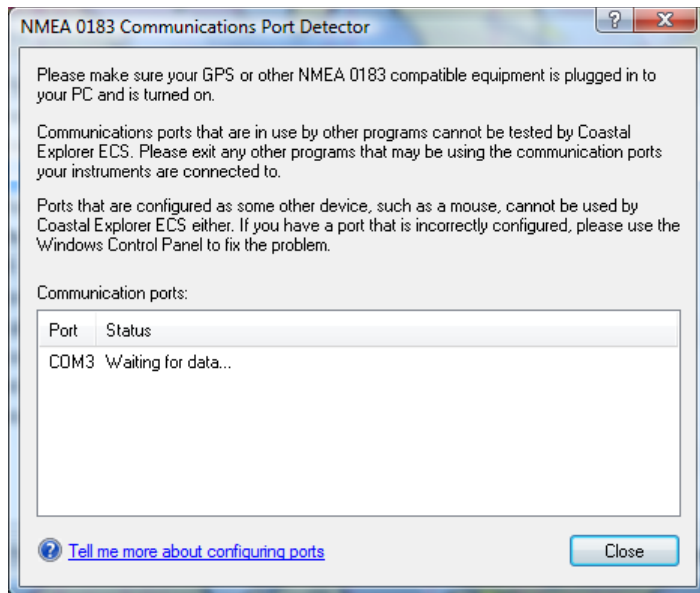
This page of the options window lets you control how Coastal Explorer interacts with instruments connected to your computer.

- **Auto Detect** This will search your computer's communication ports for one receiving NMEA 0183 data (from a GPS, for example) and set it up automatically.
- **Port Settings** This will allow you to manually configure your NMEA 0183 communication port.
- **Troubleshooter** This displays a diagnostic tool which will show you the NMEA 0183 data as it is received by your computer.
- **Data Logging** This provides access to options for recording all incoming NMEA 0183 data.
- **Autopilot** This provides access to all of the autopilot settings.

# Automatic Port Detector Window

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Tools > Options > Instruments > Auto Detect



This window may be used to have Coastal Explorer search for COM ports that are connected to compatible equipment (such as your GPS).

While the window is displayed, Coastal Explorer will attempt to open all of the COM ports on your computer and wait for navigation data to appear. If all goes well, Coastal Explorer will tell you what port it found navigation data on and save the appropriate settings.

While Coastal Explorer is scanning, you will see a list of the COM ports it found and the status of each port.

COM ports can only be used by one program at a time, so if some other program is already using a COM port, Coastal Explorer will show its status as being in use by another program. If that is the port that you want to use, you will need to figure out which program is using it and make it release the port. A common culprit is the synchronization software for PDA's, so if you are running something like that, you might check its settings first.

## Using a Garmin GPS

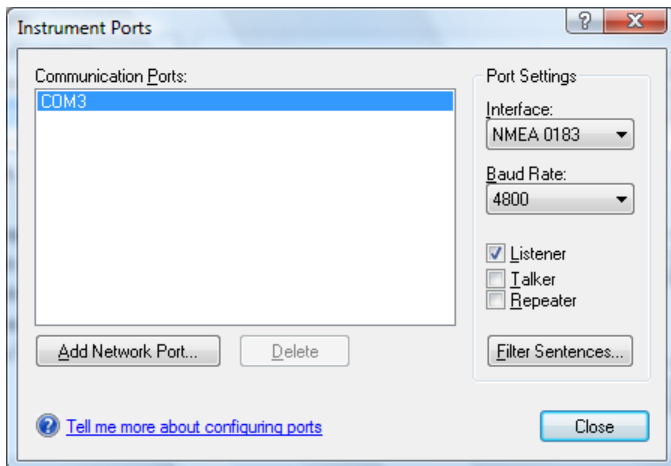
Many Garmin GPS products can transmit either NMEA 0183 or one of two proprietary protocols of their own. Coastal Explorer can only use the "NMEA 0183" and "Garmin" protocols, but it will detect the Garmin "Text Out" protocol and let you know if it is being received on a COM port. If this happens, you should use the menus on your GPS to select the NMEA 0183 or Garmin interface.

# Instrument Port Settings Window

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## Tools > Options > Instruments > Port Settings

This window lets you specify the COM ports and COM port settings for your GPS or other instruments. Coastal Explorer can usually determine these settings for you with the Automatic Port Detection feature, but this window gives you complete control over the settings.



To set up your GPS or other instruments:

- Select a COM port from the list.
- Select the appropriate Interface from the drop down list.
- Select a baud rate if necessary.
- Select the appropriate Listener, Talker, and Repeater options if necessary.

The **Interface** option determines the "protocol" used for communications between the PC and the instruments on the port. This should usually be set to "NMEA 0183" but if you are using a Garmin GPS, you can select the "Garmin" interface. It is important that the GPS be configured to use the same interface as the one selected here. Check the documentation for your GPS to see how to select which interface it will use.

The **Baud Rate** option determines the speed of communications between the PC and the instruments connected to the port. It is important that the speed selected here is the same as the speed selected on the instrument.

The NMEA 0183 interface standard specifies that serial communications occur at 4800 baud. However, some NMEA 0183 PC interfaces may require different settings. Check the documentation that came with your interface for more information.

Most AIS Receivers and Transponders use a high-speed version of NMEA-0183 which is called "NMEA-0183HS". This is exactly the same as NMEA-0183 except that the baud rate is 38400 so if you are connecting an AIS device, that is probably what you need to select here.

The Garmin interface standard specifies that serial communications occur at 9600 baud. However, some Garmin GPS receivers allow the baud rate to be adjusted so you might need to select a different baud rate here to match the setting in your Garmin GPS.

The Listener, Talker, and Repeater options are for the NMEA 0183 interface only and determine how data sent to and received from the port.

The **Listener** option indicates whether or not NMEA 0183 data should be received on the selected port. This option should be on for any ports that have instruments that send data such as your GPS receiver or depth sounder.

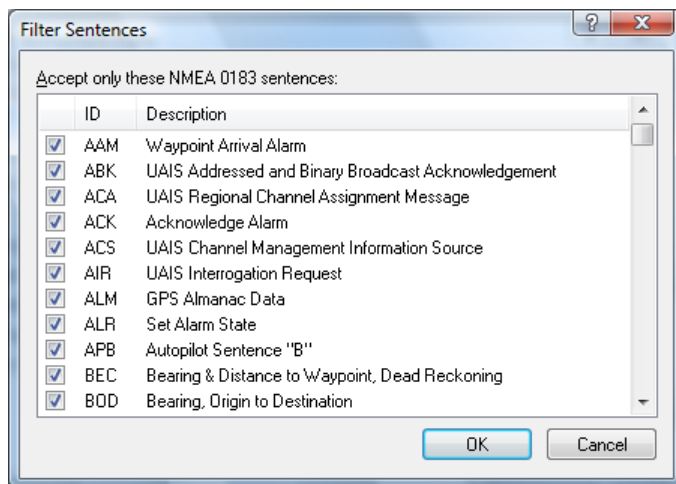
The **Talker** option indicates whether or not NMEA 0183 data should be sent to the selected port by Coastal Explorer. This option should be on for any ports that have instruments that need to receive information such as your autopilot.

The **Repeater** option indicates whether or not NMEA 0183 data that is received on any port should be repeated by sending it to the selected port. This is different from the **Talker** option which affects data that is generated by Coastal Explorer. **Be very careful with this option as setting it on a 4800 baud port when you have several ports configured as Listeners is likely to cause the port to become “clogged” and not be able to handle all of the data being repeated.**

The **Filter Sentences** option is also for the NMEA 0183 interface only and may be used to cause some sentences to be ignored when they are received on a port configured as a Listener. (When sentences are filtered out, they are not sent to Repeater ports so this is a good way to reduce the chances of ports getting clogged.) For more information, see **Filter Sentences Window** below.

## Filter Sentences Window

Tools > Options > Instruments > Port Settings > Filter Sentences



This window lets you configure which NMEA 0183 sentences Coastal Explorer should use and which ones it should ignore. Normally all sentences are used, but you might need some to be ignored if:

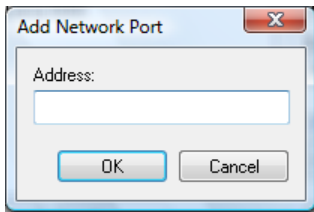
- you have a faulty piece of equipment that is sending erroneous data but other instruments are sending useful data to the same port
- you are receiving redundant or unnecessary information on a port and need to reduce the amount of data that is being sent to repeater ports

The Filter Sentences window contains a list of all standard NMEA 0183 sentences with a checkbox next to each one. Clearing a checkbox causes that sentence to be ignored. Each port has a separate list of filtered sentences.

**TIP:** You can also use the **Sentences** page of the **Port Troubleshooter** to filter sentences. The Troubleshooter is the only way to filter out proprietary sentences and it also allows you to filter out sentences based on the type of instrument that is sending the information.

## Add Network Port

Tools > Options > Instruments > Port Settings > Add Network Port



You can also use virtual serial ports to send and receive NMEA 0183 data over a network if your network has a compatible server. To use this feature, click the **Add Network Port...** button and enter the network address of your server. Once a network port has been added, it may be configured just like a normal COM port, or you can delete it with the **Delete** button. Network ports don't let you specify a baud rate because the data rate is based on the speed of your network.

To configure a network port, use this window to enter the address of the data server. The address should consist of the network name of the server or the dotted IP address of the server (e.g. 192.168.0.12). The name or address may be followed by a colon and the network port number that should be used.

Coastal Explorer uses a basic TCP/IP protocol similar to TelNet to send and receive NMEA 0183 sentences over the network. This protocol is compatible with many RS-232 to Ethernet Adapters, Internet-based AIS "feeds", and software packages that use, generate, or repeat NMEA 0183 information over networks.

Coastal Explorer cannot, however, be configured to share data directly with another Coastal Explorer running on another computer; some sort of server is needed to facilitate this sort of configuration.

# Instrument Port Troubleshooter

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Tools > Options > Instruments > Troubleshooter

REVIEW: Need screen shots!

REVIEW: Need information on how to troubleshoot!

The **Instrument Port Troubleshooter** was designed to help you track down problems with connecting your NMEA 0183 compatible equipment to your PC. It allows you to look at the data coming into your PC through a COM port in various ways and shows you the kind of instruments that your PC is receiving data from.

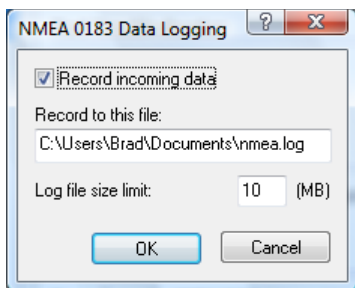
## To Use the Troubleshooter

1. Select the port you want to troubleshoot from the drop-down list.
2. Make sure the **Listener** option is checked if you want Coastal Explorer to "listen to" (receive) the data on that port.
3. Use the **General** page to see errors and warnings that may be detected on the selected port, or a list of instrument types that are sending data to that port.
4. Use the **Sentences** page to see a list of all of the NMEA 0183 "sentence" types that have been received on that port along with a description of the sentence and the last values that were sent with the sentence. Each sentence has a checkbox that can be used to filter it out; clearing a checkbox causes the sentence to be ignored and checking the box causes the sentence to be used.
5. Use the **Raw Data** page to see the raw data stream as it arrives at the port. The bottom of this page contains a box where you can type an NMEA sentence to send to the device connected to the selected port.
6. The **Talker** page is similar to the Sentences page, but shows the NMEA 0183 sentences that are being sent to the port.
7. The **GPS Status** page shows information about any GPS signal that is being received on the selected port.

# NMEA 0183 Data Logging Window

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Tools > Options > Instruments > Logging



Coastal Explorer can save a log of all of the NMEA 0183 data it receives. This data can be useful when diagnosing problems with the interconnection of equipment on your boat, or possibly in legal cases after a boating accident.

This window lets you enable or disable the logging feature, select the file to save the log to, and limit the size of that file.

When the log file reaches the set size limit, the oldest data is removed from it to make room for the new data. For a very large file, this process can be somewhat time consuming so we recommend keeping the limit to around 10 MB or less.



# Autopilot

## Tools > Options > Instruments > Autopilot

The Autopilot window controls all of the options for the data that is sent to your autopilot as well as any other NMEA 0183 "Listener" devices that are connected to your PC.

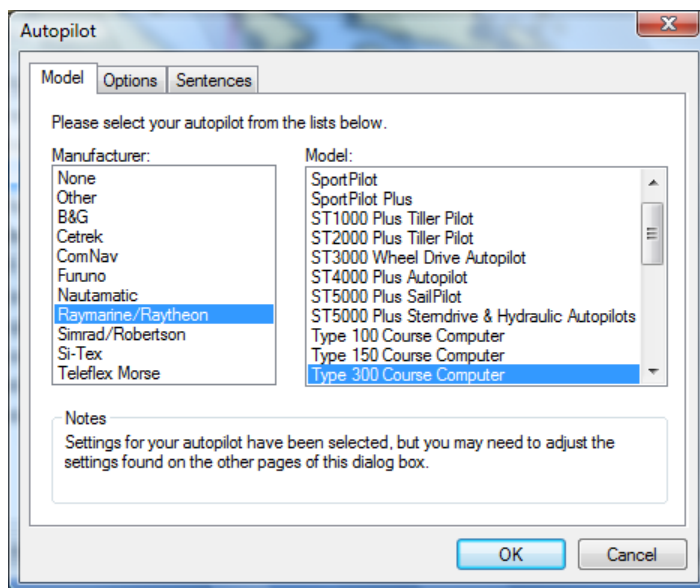
Unfortunately, the NMEA 0183 standard for communicating with an autopilot has been misinterpreted by some manufactures and has evolved over the years. This makes working with an autopilot less than automatic, and sometimes it can be downright difficult. Coastal Explorer tries to make it a little easier by having some built-in knowledge of how many autopilots work.

The first step in getting your autopilot working is to try to select the manufacturer and model in the **Model** tab of the Autopilot window. If your autopilot's manufacturer is not in the list, then select **Other** and then review your autopilot's manual and check the settings in the **Options** and **Sentences** tabs.

If you have other NMEA 0183 "Listener" devices connected to your PC, you might need to use the **Sentences** tab to add more sentences to the data that Coastal Explorer will send to those devices. Consult the documentation for your equipment to determine what sentences to send. Try not to select sentences that are not necessary as only a limited amount of data can be sent. If you attempt to send too much data, you will get "NMEA Port Clogged" messages from Coastal Explorer. When that happens, you can either turn off some sentences, or adjust the **Time between updates** value in the **Options** tab.

## Autopilot Model

### Tools > Options > Instruments > Autopilot > Model



This window allows you to specify the manufacturer and model of your autopilot so that Coastal Explorer can be automatically configured to work with your system.

### To Set Up Your Autopilot

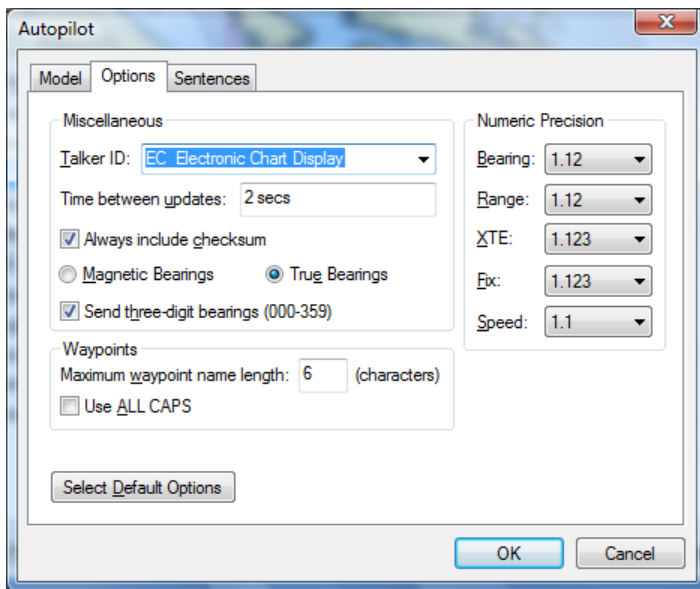
1. Select the manufacturer of your autopilot from the list on the left. If you do not see your manufacturer listed, select **Other**, or to disable autopilot support, select **None**.

2. Select the model of your autopilot from the list on the right. If you do not see your model listed, select **Other** and the settings most appropriate for autopilots from the selected manufacturer will be selected. You may need to adjust these settings based on your autopilot's documentation.

If you would like complete control over how information is sent from Coastal Explorer to your NMEA 0183 system, use the **Options** and **Sentences** tabs to make your adjustments.

## Autopilot Options

Tools > Options > Instruments > Autopilot > Options



This window lets you control various aspects of how Coastal Explorer formats the information it sends to your autopilot and other NMEA 0183 devices. The default settings should work with most devices, but if something is not working quite right you might have to make some adjustments here. Please refer to the documentation for the devices you want Coastal Explorer to send data to in order to find the appropriate settings.

**Talker ID** This is the type NMEA 0183 device that Coastal Explorer will claim to be when it transmits sentences. This should be set to **II - Integrated Instruments** unless you have equipment that requires something else (some Furuno autopilots are known to only listen to a **GP - GPS Receiver**, for example.)

**Time between updates** Specifies the number of seconds to wait between each burst of NMEA 0183 sentence transmissions

**Always include checksum** Checking this will cause Coastal Explorer to send a checksum value with every NMEA 0182 sentence it transmits; when this is not checked, only those sentences specified as requiring checksums will have them. A checksum is a simple method of ensuring data transmission reliability. We recommend that this option be left on unless you experience problems with older NMEA 0183 equipment.

**Magnetic or True Bearings** This specifies whether bearings should be sent as True or Magnetic (the default is True). Since the information about which option is selected is included with each bearing sent, most autopilots will work either way. However, some older autopilots ignore the true/magnetic settings and assume the bearing is one or the other. For these autopilots, you must select the appropriate option here.

**Send three-digit bearings (000-359)** Some autopilots require bearings to be specified as three digits with leading zeros added to bearings less than 100 degrees. When this option is on, bearings are always sent with three digits before the decimal point. When this option is off, bearings are sent without leading zeros.

**Maximum waypoint name length** Specifies the number of letters and/or digits that are allowed by your autopilot in a waypoint name. Names longer than this value will be truncated to fit (the default is 16).

**Use ALL CAPS** Specifies that the autopilot does not accept lower-case letters so waypoints names should be converted to all capital letters before sending them.

**Numeric Precision - Bearing** This specifies how many digits after the decimal point should be sent for bearings (the default is 2).

**Numeric Precision - Range** This specifies how many digits after the decimal point should be sent for ranges (the default is 2).

**Numeric Precision - XTE** This specifies how many digits after the decimal point should be sent for cross-track-error distances (the default is 3).

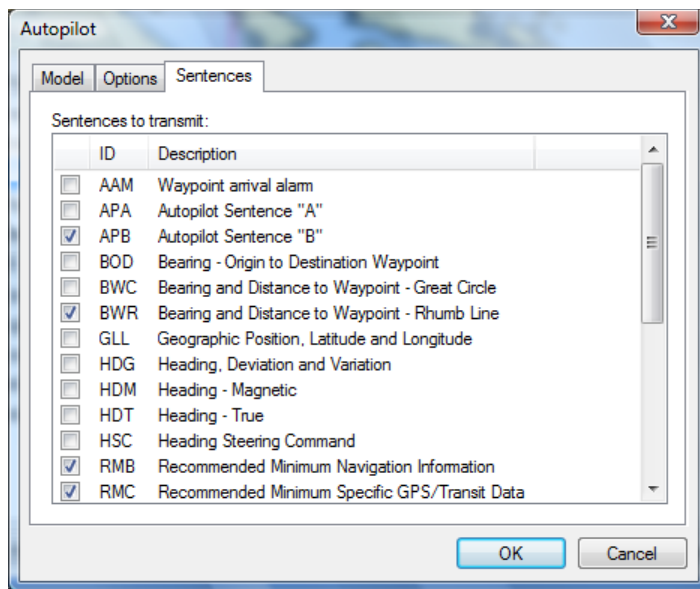
**Numeric Precision - Fix** This specifies how many digits after the decimal point should be sent for fixes (the default is 3).

**Numeric Precision - Speed** This specifies how many digits after the decimal point should be sent for speeds (the default is 1).

**Select Default Options** Press this button to restore all of the values on this page to their defaults.

## Autopilot Sentences

Tools > Options > Instruments > Autopilot > Sentences



This lists the various NMEA 0183 sentences that Coastal Explorer can transmit. You will need to refer to your equipment's documentation or experiment to find the right options. However, most autopilots will work with just the APA, APB, and BWC sentences selected.

Try not to select sentences that are not necessary as only a limited amount of data can be sent. If you attempt to send too much data, you will get "NMEA Port Clogged" messages from Coastal Explorer. When that happens, you can either turn off some sentences, or adjust the **Time between updates** value in the **Options** tab.

# Port Clogged

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**Port Clogged** is a warning condition unique to Coastal Explorer that is intended to help troubleshoot a common problem you might run into when combining the data from several NMEA 0183 instruments on a single NMEA 0183 port.

The problem stems from the fact that NMEA 0183 data is typically sent at a fairly slow speed and many devices send almost as much data as can be sent on a single NMEA 0183 port. When the data from more than one instrument is combined, there is sometimes more data to send than time will allow.

While Coastal Explorer can't do anything about incoming data that is garbled due to a clogged port, it can prevent itself from creating the problem. The PORT CLOGGED warning specifically means that one of your Talker and/or Repeater ports currently has too much data being sent to it. While this warning is in effect, Coastal Explorer will stop sending lower priority sentences as often in order to prevent the data it is sending from getting corrupted.

Several factors control the amount of data being sent to a port by Coastal Explorer. Probably the most important is the Repeat Rate which is found in the **Tools > Options > Instruments > Autopilot > Options** window. This controls how often Coastal Explorer will send updated data to the port. The number of seconds should be as small as possible to ensure that equipment that is using the data is always using relatively "fresh" data, but large enough that the port does not clog up. Two seconds is usually a good number.

Another major factor is the set of sentences that Coastal Explorer sends. These are selected in the **Tools > Options > Instruments > Autopilot > Sentences** window. Only the sentences that need to be sent should be checked, but figuring this out can be very difficult. Unfortunately, most electronics manuals list all of the sentences that the device is capable of using but they don't list the minimum or even preferred sentences. Most modern autopilots really only need the APB and RMC sentences, but some other models may require other sentences instead. Check [coastalexplorer.net](http://coastalexplorer.net) for information about your specific model of autopilot.

One other potential cause of port clogging is the Repeater option for NMEA 0183 ports. When this option is enabled, all of the NMEA 0183 data from all of the Listener ports and the data configured for Talkers is combined into a single stream and sent to the Repeater port. This option is almost never necessary, so think twice before turning it on.

You can hook as many "talker" devices to your PC as you want without ever getting the PORT CLOGGED warning; the warning only has to do with the data that Coastal Explorer is sending to "listener" devices. We recommend using a separate port for each device, or using an NMEA Multiplexer only for devices that don't send a lot of data.

It is important to realize that the **Tools > Options > Instruments > Autopilot** options really control all of your Talker ports. Typically this only ever means your autopilot, but sometimes you might have an NMEA 0183 data display or a radar that show navigation information, and the options set in this window will affect the data sent to all of these instruments.

# Using AIS

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If you have an AIS receiver connected to your computer, Coastal Explorer will show you the locations and other information that it receives from other vessels in your area.

To configure Coastal Explorer to use your AIS receiver, use the **Tools > Options > Instruments** window to setup the port the receiver is connected to. The automatic port detection should be able to find your AIS receiver. If you decide to manually configure the port, keep in mind that most AIS receivers use 38400 baud instead of the 4800 baud used by most other NMEA 0183 devices.

Once the port is configured, the AIS feature is mostly automatic; if Coastal Explorer receives AIS information, then the vessels will appear on the chart as small blue triangles pointing in the direction of the vessel's heading. If you zoom in on a vessel, and its size is being transmitted through the AIS, the symbol will scale with the chart (as long as the scaled symbol is longer than the normal triangle).

A few options are available in the **Tools > Options > AIS** window. These options let you control how long a track to draw for each vessel and whether or not to draw predictor lines and names.

To get detailed information about a particular AIS vessel, click on its symbol on the chart. Information about the vessel will appear in the Properties panel of the Task Pane. (If the Properties Task Pane has been hidden, right-click on the vessel's symbol and select the **Properties** option.)

You can also see a table listing various properties of all of the AIS vessels being tracked in the Navigation Object Browser. Use the **Tools > Navigation Object Browser** option and then select **AIS Ships** from the list of object types on the left side of the browser.

When a Coastal Explorer has not received a signal from a vessel for 90 seconds, it considers that target to be "Lost" and will draw the vessel as a hollow triangle with a line through it. Lost targets will also flash until they are acknowledged by clicking on them unless the flashing option has been disabled in the **Tools > Options > AIS** window. Targets that are lost for a total of three minutes are removed from the chart.

Coastal Explorer will calculate the "Closest Point of Approach" (CPA) for each AIS target and warn you if your course and the course of another vessel will come within 0.25 NM within the next five minutes. These targets are considered to be "Dangerous" and will flash red until they are acknowledged. The minimum allowed CPA and "Time to CPA" (TCPA) can be adjusted in the **Tools > Options > AIS** window.

## AIS Options

### Tools > Options > AIS

#### Vessels

**Show Tracks** causes a track to appear for each vessel picked up by the AIS receiver. The length of the track (in time) can be set with the **Track Length** option.

**Show Predictors** causes each vessel to display a predictor line indicating approximately where the vessel will be if it maintains the same course and speed for a period of time. The predictor time used for AIS vessels is the same as the time set for your own boat in the Boat Properties.

**Show Vessel Names** causes the names of vessels to appear near their symbol on the chart. (Coastal Explorer will attempt to prevent names from overlapping and causing too much clutter, so some vessel names may not appear even when this option is enabled.) When this option is disabled, you can selectively display the names of some vessels by right-clicking on a vessel and selecting the Show Name option.

**Show Vessels with Class B Equipment** can be used to show or hide vessels that are using Class B AIS Transponders. Normally this option should be enabled, but it can be used to help reduce chart clutter in areas with many smaller vessels.

**Show Dead Reckoned Position** causes the locations of vessels to be predicted and displayed every second rather than only when a position report is received. The predicted location of a vessel appears as a semi-transparent version of the vessel's symbol.

### Other Targets

**Show Base Stations** causes the locations of AIS Base Stations to be shown on the chart.

**Show Aids to Navigation** causes the locations of AIS Aids to Navigation (AtoNs) on the charts.

**Show Search and Rescue Planes** causes the locations of search and rescue planes (that are transmitting an AIS signal) to appear on the chart.

### Safety

**Flash Lost and Dangerous Targets** causes targets that have been lost or are considered dangerous to flash on the chart. (Targets are considered to be lost when a position report has not been received from them in the past 90 seconds.)

The **Hide Lost Targets After** option specifies how long a target should be displayed after having been lost.

The Closest Point of Approach (CPA) and Time to CPA (TCPA) for each vessel is calculated each time a vessel or your boat moves. These values indicate how close you will approach the other vessels provided no one changes course or speed. Vessels are considered dangerous when they will be closer than the **Danger CPA** distance option within the **Danger TCPA** time option. Dangerous vessels appear in red and may flash (based on the option mentioned above).

**Assume Stationary Targets are Safe** prevents a target that is not moving from being considered dangerous. This option is very handy when you are in areas with a lot of moored vessels that you will be passing close to, but are not likely to collide with.

# Guide Books

# Guide Books

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The Browser can display Guide Book information for areas that you select on the chart. This information comes from the Coastal Explorer Network, NOAA US Coast Pilot, NGA Sailing Directions, or other optional guide books you may have installed.

## To access the Guide Books

- use **View > Browser Panel > Guide Book** menu command, or
- use the **Browser Panel > Guide Book** command on the main toolbar, or
- use the **Guide Book** command on the Browser title menu,
- use the **Guide Book** command on the right-click menu for the chart.

While the Browser is open, clicking anywhere on the chart will show nearby information from the installed guide books. The title of the Guide Book Browser has a **Nearby Places** button that can be used to display the Nearby Places Task Pane which contains a list of nearby places that are covered by the Guide Books.

The US Coast Pilot books are an optional component and are not included if you selected the Minimum Install option when you set up Coastal Explorer. If you need to install the US Coast Pilot books, you may insert the original Coastal Explorer CD-ROM, run Setup again, choose the Custom Install option, and select the books you would like.

Additional Guide Books may be downloaded from [coastalexplorer.net](http://coastalexplorer.net).



# Community Guide Book

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Coastal Explorer and the Coastal Explorer Network offer a community driven cruising information system known simply as the "Guide Book." The Guide Book can be accessed from within Coastal Explorer as well as on the CoastalExplorer.net website.

To enable the Guide Book within Coastal Explorer, select **Tools > Options > Coastal Explorer Network** and enter your Coastal Explorer Network username and password.

Once your account information has been entered Coastal Explorer will automatically download updates to the Guide Book whenever you start the program or use the **Sync** command in the Guide Book Browser.

Guide Book Places will appear on your chart as small Coastal Explorer icons. Clicking on one of these icons will display a popup tip about the place. Double-clicking on one will display the Guide Book Browser Panel and show all of the information about the place.

## Contributing to the Guide Book

Coastal Explorer has a command called **Insert Guide Book Place** which can be found on the context menu for charts (the menu you get when you click the right-mouse button). This command lets you add information to the Guide Book.

Selecting **Insert Guide Book Place** will open the Guide Book Place Entry Editing Browser Panel. Enter a title for your Guide Book Entry and the Content of your article in the appropriate boxes. You can also attach photos or other files by clicking the Attach or Paste buttons.

The **Attach** button will display a file selection window to let you select the file you want to attach to your entry.

The **Paste** button will attach something that you have previously copied to the clipboard. It is possible to copy images from web pages and paste them into your entry. In this case, Coastal Explorer may make a thumbnail of the image and also attach a link to the original page in order to avoid copyright infringement.

The **Link** button displays a window where you can add a hyper-link to your entry. Enter a title for the link (what people will see) and a Link address (such as "http://rosepointnav.com/") before pressing OK.

When you have finished your Guide Book Entry, press the **Done** button on the toolbar. You will then return to the Guide Book Browser where you should see your new entry. Pressing the **Sync** button will synchronize Coastal Explorer with the Coastal Explorer Network which will send your new entry to the Internet and retrieve any entries that others have added since the last time you synchronized.



# Tides

# Tide and Tidal Current Predictions

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Coastal Explorer can predict the tide level and current set and drift for thousands of tide and current stations in the US and some other parts of the world. These predictions can be displayed as graphs over time in the Browser or for a particular instant directly on the chart.



**WARNING:** Tidal current predictions are based on observational data taken at the specific location. Since extremes of meteorological conditions have been excluded from the analyses and predictions, the predicted values should be considered as those expected under average weather conditions. During times when weather differs from what is considered average for the area, the user must be aware that actual water levels and currents may vary from those predicted. Generally, prolonged onshore winds or a low atmospheric pressure can produce higher levels than predicted, while the opposite can result in lower levels than those predicted.

All tide prediction times are adjusted for the local time currently selected for your computer. To change your computer's time zone or daylight saving option, use the "Date and Time" option in the Windows Control Panel.

Tide and current station symbols appear on the chart at the location provided by NOAA. In some cases the position is provided only to the closest degree and minute which means the symbol can only appear in the general vicinity of the station. Sometimes the symbols may even appear on land. The symbol's location should only be used as an indication of the general location of a station.

To prevent crowding the chart, reference stations are not shown at scales smaller than 1:10,000,000 and subordinate stations are not shown at scales smaller than 1:500,000.

**TIP:** Use the Highlight Objects button on the toolbar to make the tide and current stations stand out against the chart.

## Tide Level Prediction Procedures

### To see tide level predictions on the chart:

- Use the **Format > Tide Levels** command to show and hide the tide station symbols.
- Open the Tide Browser; the tide station symbols will appear whenever this browser is open.

### To see details about a tide station:

- Click on a tide station symbol to see its name, location, a prediction for the current time, and the trend (rising or falling).
- Right-click on a tide station symbol and select the **Properties** command to see more information about the station in the Properties Panel.

### To see a tide level prediction graph:

- Right-click on the chart where you want to see a prediction and select **Tide Level Prediction** from the menu. This will open the Browser on the nearest tide station.
- Double-click on a tide station symbol to show a tide level graph in the Browser. See **Using the Tide Level and Tidal Current Prediction Browser** for more information.

## Tidal Current Prediction Procedures

### To see tidal current predictions on the chart:

- Use the **Format > Tidal Currents** command to show and hide the tidal current station symbols.
- Open the Tidal Current Browser; the current station symbols will appear whenever this browser is open.

### To see details about a current station:

- Click on a current station symbol to see its name, location, a prediction for the current time, and the time of the next slack.
- Right-click on a current station symbol and select the **Properties** command to see more information about the station in the Properties Panel.

### To see a tidal current prediction graph:

- Right-click on the chart where you want to see a prediction and select **Tidal Current Prediction** from the menu. This will open the Browser on the nearest current station.
- Double-click on a current station symbol to show a tidal current graph in the Browser. See **Using the Tide Level and Tidal Current Prediction Browser** for more information.

# Using the Tide Level and Tidal Current Prediction Browser

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## Scrolling the graph:

- Drag the graph left or right with the mouse by pressing and holding the left mouse button.
- Move the mouse near the left or right sides of the graph until the cursor turns into an arrow and then press the left mouse button to scroll in that direction.
- Click the Select Date button on the Browser's toolbar and select a date from the popup calendar.
- Use the Left or Right Arrow Keys (you may need to click on the Browser first). Hold down the Shift key when using an Arrow Key to scroll faster.

## Zooming in and out on the graph:

- Use the + and - buttons on the Browser's toolbar to zoom in and out on the graph.
- Use the + and - keys (you may need to click on the Browser first).

## Adjusting the virtual time:

- Click anywhere on the graph to set the virtual time.
- Drag the Real or Virtual Time mark to a different time on the graph.
- Use the time changing buttons on the Browser's toolbar.

## Resuming Real Time:

- Double-click on the Virtual Time mark.
- Click the "Go To Now" button on the Browser toolbar.
- Click the Virtual Time panel in the lower-right corner of the chart panel.
- Press the Home key (you may need to click on the Browser first).

# Weather

# Weather

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Coastal Explorer can be used to download and view text weather forecasts and graphical forecasts, or "weather maps", which are overlaid on your chart. Both of these features require some sort of Internet access in order to retrieve the forecasts.



## IMPORTANT DISCLAIMERS

The coastalexplorer.net weather servers normally operate 24 hours a day, seven days a week, but we cannot guarantee they will always be available. Therefore, the weather forecast features in Coastal Explorer must not be relied upon as your sole source of weather forecast information.

Weather forecasts are provided "as is" and the user assumes the entire risk related to their use. Rose Point Navigation Systems, its licensors, and the National Weather Service disclaim any and all warranties, whether express or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose. In no event will Rose Point Navigation Systems, its licensors, or the National Weather Service be liable to you or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of these forecasts.

The computer models used to generate the graphical weather forecasts predict "typical" weather conditions and will not produce accurate forecasts for severe storms, hurricanes, etc. These predictions have not been validated by a marine weather forecaster and may be misleading. Mariners are urged to use these forecasts in conjunction with forecaster generated forecasts.

## Text Weather Forecasts

Text weather forecasts are prepared by skilled meteorologists at the National Weather Service based on many different data sources. These forecasts are similar to the reports you hear on the NOAA Weather Radio service.

To access a text weather forecast, click the right mouse button on the chart near the area you want the forecast for and select the **Weather** option from the menu. Alternatively, use the **Tools > Weather** option in Planning Mode or click on the Coastal Explorer logo in Cruise Mode and select the Weather option from that menu. The text weather forecasts appear in the Browser below the chart.

An Internet connection is required for downloading the text weather forecasts, but once a forecast has been downloaded you will be able to read it up until its expiration time even when you are not connected to the Internet.

## Graphical Weather Forecasts

Graphical Weather Forecasts are produced by computers from mathematical formulas based on known weather patterns. The graphical weather forecasts contain a geographical grid of predicted values for weather attributes such as temperature, air pressure, wind, etc. Coastal Explorer can superimpose these values on your chart and even animate them over time so you can see how the weather might affect your plans.

The general nature of the graphical weather forecasts makes them more suitable for long-range voyages rather than short trips (where the text weather forecasts are usually more appropriate).



To access a graphical weather forecast, open the Weather Browser using the **Tools > Weather** option or by right-clicking on the chart and selecting the **Weather** option from the menu. Then click on the **Graphical** tab at the top of the Weather Browser.

# Using the Graphical Weather Forecast Browser

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## Tools > Weather > Graphical

The Graphical page of the Weather Browser lets you select from several built-in weather maps, or create a custom map that better suites your needs. These weather maps are overlaid on your chart and may be animated through time to let you see how the weather might affect your journey.

The first thing you will need to do is get a weather forecast to your computer and Coastal Explorer provides two ways to do this. If you have Internet access on your computer, the easiest way to get weather is by pressing the **Download** button on the toolbar for the Graphical Weather Forecast Browser. This option leads to a window that lets you select the type of information you want and the area you want it for. After you've made your selections, the weather forecast data is downloaded from the coastalexplorer.net servers and will be displayed on your chart.

Coastal Explorer can use the weather data from coastalexplorer.net or from files known as "GRIB Files" which are an International standard for gridded weather forecast data. These files are available from NOAA and other locations on the Internet. To open a GRIB File, use the **File > Open** command or the **Open** button on the Graphical Weather Forecast Browser toolbar.

## Controlling What You See

The left side of the Graphical page of the Weather Browser provides you with a list of Weather Map options to choose from. Select one of these weather maps or choose **Custom** to make your own. To the right of the weather map options is a list of the layers (weather elements) used in the selected weather map. A legend is shown for each layer as well as the range of dates the loaded forecast data is valid for. As you move the mouse cursor over the chart, values for each layer at the mouse cursor will appear to the right of the legends. Underneath each value is a time offset which indicates how far into the forecast that value is for. Obviously, values further into a forecast should be trusted less than values closer to the beginning.

When you make a custom weather map, you can select the layers that appear in your map and how each layer is presented. Use the check boxes to turn individual layers on and off. To change the way a layer is presented on the screen, double-click on the legend and use the window that appears to select the style and colors for that layer.

The built-in weather maps are always presented the same way and are not affected by the options you select for your custom weather map.

The **Transparency** button on the toolbar lets you control how much of your chart shows through the filled-in parts of the weather forecast overlay. When you press this button, a slider will appear. Moving the slider all the way up will make the layers with the "gradient" style completely transparent, and moving the slider all the way down will make them completely opaque.

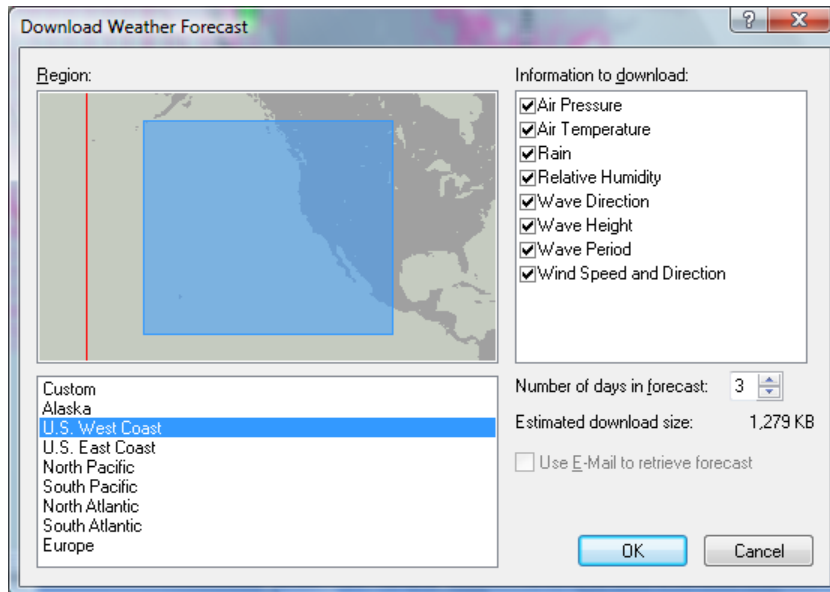
## Changing the Forecast Time

Five buttons on the toolbar let you control the Virtual Time which is used to determine the time of the forecast data you see. These buttons let you go back and forward one day or one hour at a time, or to reset the Virtual Time to the current (real) time. You can move time back or forward by more than one day or hour by holding

down the appropriate button. The weather forecast displayed on the chart will change to show the predicted values for the Virtual Time you select.

## The Downloading Weather Forecast Window

Tools > Weather > Graphical > Download



The Download Weather Forecast window let you download weather forecasts from CoastalExplorer.net. You will need an Internet connection for this. If you do not have Internet access on your boat's computer, but can visit a library or Internet Cafe, visit [coastalexplorer.net](http://coastalexplorer.net) to download weather forecasts to a floppy disk or USB Flash Drive.

To access the Download Weather Forecast window, click the **Download** button on the Graphical Weather Forecast Browser's toolbar.

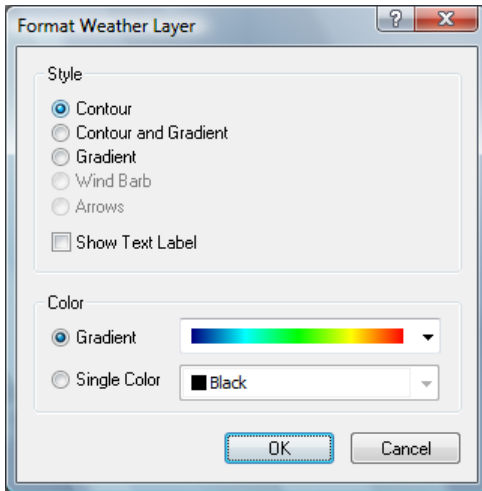
### To Download a Weather Forecast

- Select the region you want a forecast for. You can select one of the pre-set regions from the list, or draw a rectangle around an area on the map.
- Select the types of information you want to download. Each type, or layer, has a check box next to it and each layer that is checked will be included in your download.
- Select the number of days you would like to include in your forecast. You can select up to 15 days, but that much information might not be available. In this case, your forecast will include as many days as are available.
- Press **OK**

Your download will start and a progress indicator will let you know how much data still needs to be downloaded. You can continue to use Coastal Explorer as the download progresses.

## The Format Weather Layer Window

You can get to this window by selecting the **Custom** weather map option and then double-clicking on a weather data item in the Browser.



This window lets you control the way a weather layer appears on your custom weather map. The options selected here do not affect the built-in weather maps, just your custom weather map.

The **Style** of the weather layer can be:

**Contour** This shows contour lines indicating different values for the data. This style is commonly used for pressure.

**Contour and Gradient** This shows contour lines indicating major value changes as well as a color gradient so show more subtle changes.

**Gradient** This shows only the color gradient and is commonly used for temperature.

**Wind Barb** This shows wind as a standard meteorologist's "wind barb".

**Arrows** This shows wind as an arrow pointing in the direction the wind is blowing. The arrows get larger with stronger winds.

**Show Text Label** This option causes contours to be labeled with their value.

The **Color** of the weather layer can be:

**Gradient** Select from several sets of color ranges that are used to indicate values.

**Single Color** Select a single color to show all values, but use the value to control how transparent the color appears to be. This option is typically used for Rain.

# Virtual Instrument Panels

# Virtual Instrument Panels

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One of the Task Pane options is called **Instruments** and it displays information received by the instruments connected to your computer as well as some things calculated by Coastal Explorer. Many different Instrument Panels are available and you can decide which of them to display.

Each Instrument Panel has a menu that may be accessed by clicking the right mouse button while pointing at the instrument panel. The menu allows you to change what is displayed in the panel as well as close the panel or add another one. Some panels also add commands to the menu that are specific to that type of panel.

## Showing the Instruments

- To show the Instruments, click on the **Instruments** Task Bar tab on the far right side of the screen.

## Adding another Instrument Panel

- To add another Instrument Panel, right click anywhere in the Instruments Task Pane and select the **Add another panel...** option. This will open the **Add Instrument Panel** window where you can select the data you want to display and how you want it displayed.

## Removing an Instrument Panel

- To remove an Instrument Panel, right click on that panel and select the **Close this panel** option.

## Changing an Instrument Panel

- To change the type or format of an Instrument Panel, right click on that panel and select the **Change panel type** option.

## Scrolling the Instruments

- If you need to scroll your Instrument Panels because you have configured more than will fit in the Coastal Explorer window, you can do so by dragging from anywhere that is not a button or other control with the left mouse button. Some Instrument Panels use the mouse for other things, so if dragging doesn't scroll the window, try pointing at a different panel before dragging.
- If you have a scroll-wheel on your mouse, you can point to the Instruments and use the wheel to scroll. (However, using the mouse wheel over the Chart Overview will cause it to zoom in and out.)

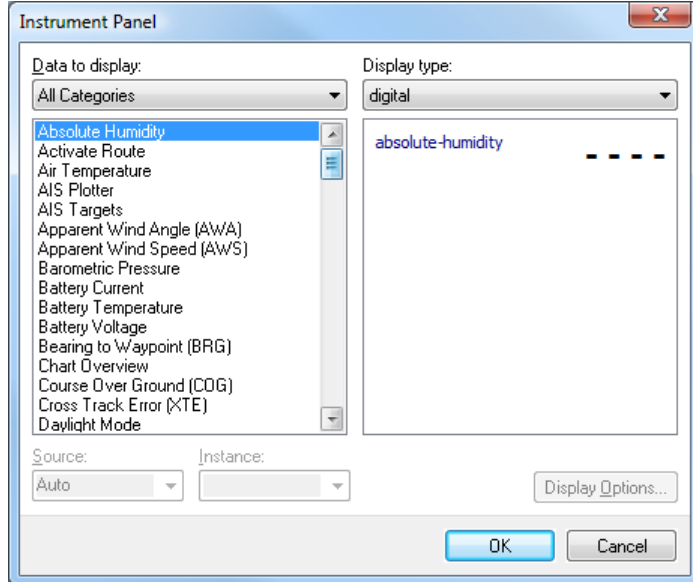
## Rearranging Instrument Panels

You can change the order of the Instrument Panels a few different ways:

- Hold down the **Alt** key and drag a panel up or down with the mouse.
- Enter **Customize Mode** and drag a panel up or down with the mouse. (The Alt key is not necessary while in Customize Mode.)
- Select the **Instruments** page of the **Customize** window, select an Instrument Page and Instrument Panel, and use the **Move Up** or **Move Down** buttons.

## Using the Instrument Panel Window

The Instrument Panel Window is used to add an Instrument Panel to the Instruments Task Pane or to change one that is already there.



The left side of the window has a list of data items that can be displayed. Since this list can be fairly long, a drop-down list of categories is provided that lets you first select the category of data items to see in the list. When the window first appears, All Categories are shown.

**REVIEW: The **Source** and **Instance** options have not been implemented yet so are currently disabled.**

The right side of the window has a preview of the Instrument Panel. Above the preview is a list of different display types that can be used for the selected data item. Below the preview is a **Display Options** button that will open another window to give you fine control over how the Instrument Panel appears. The display options are based on the data item and display type that you've selected, and not all combinations have options that can be changed, so the button will not always be enabled.

To use this window, first select the data you want to display, using the category option to help find the data if necessary, then select the display type you want, finally change any display options and press OK.

# Data Items

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Coastal Explorer can use and display many different “data items” that are either received from an instrument connected to your PC or are calculated by Coastal Explorer. These data items include:

Active Route Name	Engine Low Coolant Level	Relative Humidity
Active Waypoint Name	Engine Water Flow	Reset Display
Absolute Humidity	Engine Water in Fuel	Reset XTE
Activate Route	Engine Charge	Roll
Air Temperature	Engine Preheat	Route Overview
AIS Plotter	Engine High Boost Pressure	Rudder Angle
AIS Targets	Engine Rev Limit Exceeded	Search Results
Alarm Status	Engine EGR System	Speed Over Ground (SOG)
Apparent Wind Angle (AWA)	Engine Throttle Position Sensor	Start New Track
Apparent Wind Speed (AWS)	Engine Emergency Stop Mode	Tank Level
Barometric Pressure	Engine Warning Level 1	Tank Capacity
Battery Voltage	Engine Warning Level 2	Time To Go (TTG)
Battery Current	Engine Power Reduction	Tracking
Battery Temperature	Engine Maintenance Needed	NMEA 0183 Transducer (XDR)
Bearing to Waypoint (BRG)	Engine Comm Error	Transmission Gear
Bottom Look Ahead	Engine Sub or Secondary Throttle	Transmission Oil Pressure
Chart Overview	Engine Neutral Start Protect	Transmission Oil Temperature
Course Over Ground (COG)	Engine Shutting Down	Transmission Warning
Cross Track Error (XTE)	Estimated Time of Arrival (ETA)	Transmission Check
Date and Time	GPS Status	Transmission Over Temperature
Daylight Mode	Ground Wind	Transmission Low Oil Pressure
Deactivate Route	Ground Wind Direction (GWD)	Transmission Low Oil Level
Depth	Ground Wind Speed (GWS)	Transmission Sail Drive
Dew Point	Heading (HDG)	Trip Log
Engine RPM	Event	True Wind Angle (TWA)
Engine Alternator Voltage	Instant Route	True Wind Direction (TWD)
Engine Boost Pressure	RBL From Boat	True Wind Speed (TWS)
Engine Coolant Pressure	Lateral Slide	Vessel Position
Engine Fuel Flow Rate	MOB	Velocity Made Good (VMG)
Engine Fuel Pressure	Radar	Video
Engine Hours	Nearby Places	NoLand VS52 A1 Input
Engine Load	Next WP	NoLand VS52 A2 Input
Engine Oil Pressure	Previous WP	NoLand VS52 A3 Input
Engine Oil Temperature	Obstacles	NoLand VS52 A4 Input
Engine Temperature	Operating Mode	NoLand VS52 A5 Input
Engine Tilt/Trim	Pitch	NoLand VS52 Flo Input
Engine Torque	Radar Cursor (lat/lon)	NoLand VS52 Fhi Input
Engine Warning	Radar Cursor (rng/brg)	NoLand VS52 1/P1 Input
Engine Check	Variable Range Marker 1 (VRM)	NoLand VS52 1/P2 Input
Engine Over Temperature	Variable Range Marker 2 (VRM)	NoLand VS52 1/P1 - 1/P2 Input
Engine Low Oil Pressure	Electronic Bearing Line 1 (EBL)	NoLand VS52 D1 Input
Engine Low Oil Level	Electronic Bearing Line 2 (EBL)	NoLand VS52 D2 Input
Engine Low Fuel Pressure	Range to Waypoint (RNG)	Water Speed (STW)
Engine Low System Voltage	Rate of Turn (ROT)	Water Temperature

NOTE: Some data items are only supported via add-ons or interfaces other than NMEA 0183 (such as NMEA 2000).



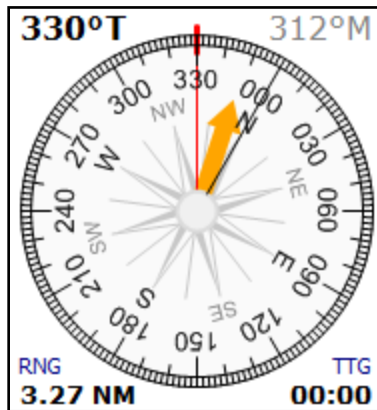
# Heading Displays

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## Navigation Compass

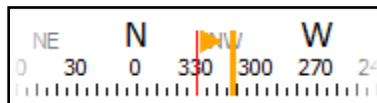
The Navigation Compass shows your vessel's heading (or course when the heading is unknown). Both the true and magnetic headings are shown numerically and an analog compass display shows either the true or magnetic heading depending on the bearing setting in the **Units of Measurement** page of the **Options Window**. The analog compass display shows the current heading at the top of the dial.

When a waypoint is active, the Navigation Compass also shows the range and bearing to that waypoint and the Time To Go to that waypoint. The bearing to the waypoint is shown as an arrow in the analog compass display. When the arrow is pointing straight up, aligning with the red lubber's line, the vessel is heading straight for the active waypoint. When the arrow is pointing to the right of the lubber's line, the vessel needs to be steered to starboard, and when it points to the left, the vessel should be steered to port.



## Mini-Compass

The mini compass uses a lot less space than the Navigation Compass, but also shows your heading and the direction to the active waypoint graphically.



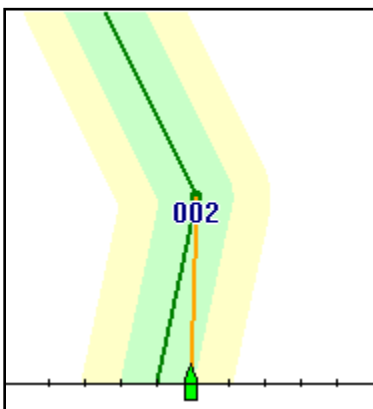
# Route Overview

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The Route Overview displays the active route at a constant scale and relation to your vessel. It is similar in concept to the "Highway" displays common in some navigation equipment. Your vessel is shown in the center of a scale near the bottom of the console. Each tick mark on the scale represents 0.25 nm.

The active route will appear in the console to show your relation to nearby waypoints. Leg lines are drawn as thick lines of three colors; the thin center line of a leg line represents the leg line as it was plotted, the green represents the area 0.25nm on each side of the plotted line and the yellow outside of it indicates the next 0.25 nm, outside of which the cross-track-error alarm will start to go off. A thin line is always drawn between the boat and the active waypoint to show its relative bearing.

To use the Route Overview, simply activate a route and then keep steering in such a way that the green part of the route is under the boat which means you are within an acceptable distance from the centerline of the route.



# Wind Displays

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All of the wind panels require an NMEA 0183 or NMEA 2000 compatible wind vane and anemometer to be connected to the PC and some require your speed over ground, course over ground, and heading information as well.

Digital displays are available for Apparent Wind Angle, Apparent Wind Speed, Ground Wind Direction, Ground Wind Speed, True Wind Angle, True Wind Direction, and True Wind Speed.

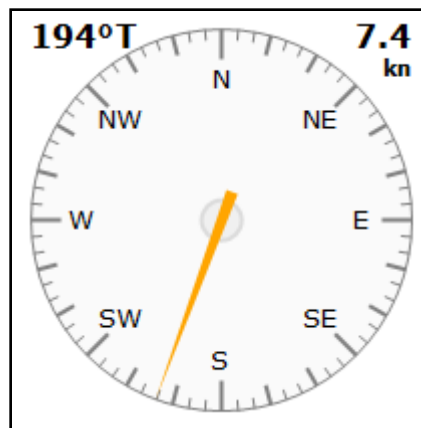
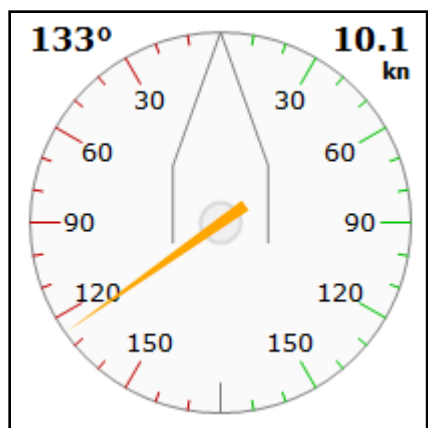
Four different large “analog” wind panels are also available:

**Apparent Wind Angle** This panel shows the apparent wind as it is measured from from your wind vane and anemometer.

**True Wind Angle** This panel shows the true wind calculated from the apparent wind and your speed over ground.

**True Wind Direction** This panel is similar to True Wind Angle, but the angle is converted to a compass direction by adding you heading. If your heading is not available from your instruments, your course over ground will be used, but the calculated direction will not be as accurate.

**Ground Wind** This panel shows the wind speed and direction over ground using a compass display. The calculations for Ground Wind depend on having an accurate course and speed over ground, heading, and apparent wind. If any of these values is not available from your instruments, the Ground Wind will not display.



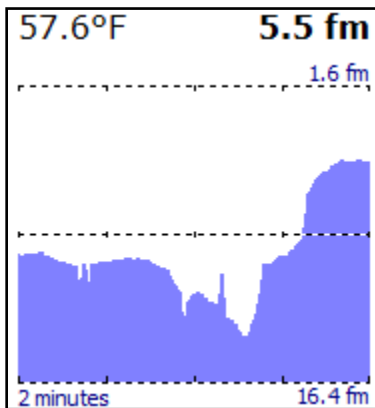
# Depth and Water Temperature

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These displays require an NMEA 0183 or NMEA 2000 depth sounder and the Water Temperature Console requires that it have a temperature sensor.

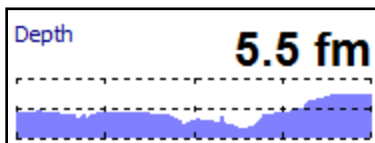
## Graphs

The depth and water temperature graphs panels display the current depth and water temperature along with an auto-scaling graph of the past two minutes. Both panels actually show the current values of both depth and water temperature, but only graph their own value.



## Mini-Graph

The mini-graph options are a more compact form and only show a single value (depth or water temperature):



# Obstacles

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The Obstacles Panel searches the chart database for obstacles and warnings in the area between the boat and the location along the current course that the boat will be in a few minutes at the current speed. A list of warnings is displayed in the panel.

This feature requires vector charts covering the area in question as there is no way to perform this kind of search on raster or photo charts. It also requires that you are moving and that the PC is receiving a valid GPS signal indicating where you are, what direction you are moving, and how fast you are moving.

Please keep in mind that Coastal Explorer cannot predict all obstacles (things like logs and other boats usually aren't listed in the chart database) and that the charts you have don't necessarily contain all the known obstacles.

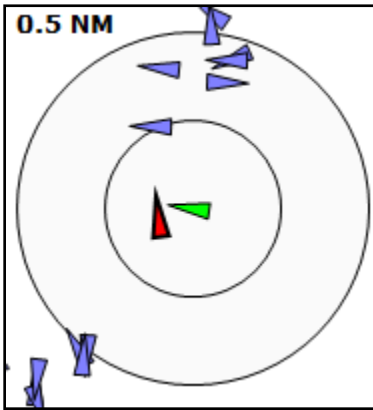
Although you will still need to keep a vigilant watch off your bow, the Obstacles Panel can alert you to many things you might not see out there such as warnings, covered rocks, regulated traffic zones, and military test areas.

# AIS Displays

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## AIS Plotter

The AIS Plotter is a North Up display centered on your vessel that shows AIS vessels within ½ NM. Your vessel appears as a green triangle in the center of the display and is oriented based on your heading (or course over ground if heading is not available). AIS targets normally appear as blue triangles, but “dangerous” targets are displayed in red. Use **Tools > Options > AIS** to adjust what AIS targets are considered to be dangerous.



## Nearby AIS Targets

The Nearby AIS Targets display shows the nearest 100 AIS targets in a list sorted by their distance to your vessel. Clicking on a target in the list will expand the information displayed for that target.

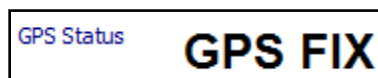
Nearby AIS Targets	
<b>VALOR (WDD8681)</b>	Underway with engine
<b>VALOR (WDD8681)</b>	Underway with engine
<b>HUNTER (WBN3744)</b>	Moored
0.10 kn 236°T	
<b>HUNTER (WBN3744)</b>	Moored
0.10 kn 236°T	
<b>SIOUX (WBN7617)</b>	Moored
0.10 kn 103°T	

# GPS Status Display

## Mini GPS Status

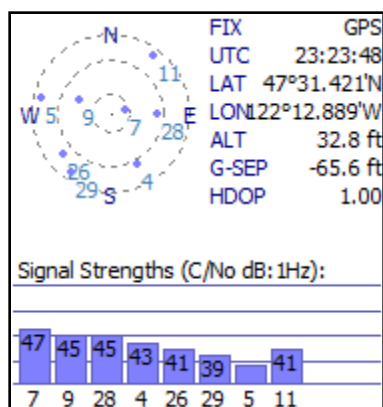
The mini GPS Status display shows only the type of fix being received and can be any of these values:

<b>D.R.</b>	Dead reckoning mode is active
<b>NO GPS</b>	No GPS fix has been received
<b>LOST GPS</b>	A GPS fix was received in the past, but not for some time
<b>INVALID GPS FIX</b>	The GPS is reporting that its fix is not valid
<b>GPS FIX</b>	The GPS is reporting a standard fix
<b>DGPS FIX</b>	The GPS is reporting a differential fix
<b>ESTIMATED</b>	The GPS is reporting that its fix was estimated
<b>MANUAL</b>	The GPS is reporting that its fix was manually entered
<b>SIMULATED</b>	The GPS is reporting that its fix is simulated



## Full GPS Status

The GPS Status Console shows which satellites are being used to determine your position as well as their locations in the sky, their signal strengths, and several other bits of information.



The top-left of the console shows a graphical view of where the satellites are in the sky. The dot in the sky graph indicates the position and the number identifies the satellite. The same numbers appear below the bars in the Signal Strength graph at the bottom of the console. The number inside or above each bar as well as the height of the bar indicates the strength of each signal.

The values in the top-right part of the console include:

**FIX** What kind of fix is being reported by the GPS. This may be INVALID if a fix is not being received, GPS for a normal GPS fix, DGPS for a Differential GPS fix, ESTIMATED if the GPS unit is making a guess, or SIMULATED if the GPS unit is in demo mode. While you are cruising, the fix should always be GPS or DGPS depending on the type of GPS you have and where you are.

- UTC** This is the Universal Time Coordinated received from the satellites. It is the current standard time in Greenwich, England which is the center of time on Earth.
- ALT** This is the altitude of the GPS antenna above mean sea level according to the GPS receiver. Please be aware that the vertical accuracy (altitude) of a GPS is very different from the horizontal accuracy (latitude/longitude).
- G-SEP** This is the geoidal separation (the difference between the geoid - mean sea level - and the WGS-84 ellipsoid) at your location according to the GPS receiver.
- HDOP** The current Horizontal Dilution Of Precision. This is a value that indicates the level of uncertainty in the horizontal position (latitude and longitude) that is being supplied by the GPS receiver. Lower values indicate better accuracy.
- STATION** This is the differential station identifier being used by the GPS receiver if it has a DGPS fix.
- DGPS AGE** This is the age, in seconds, of the last differential update.



# Miscellaneous Displays

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## Digital Display

Most data items can be displayed in a simple digital form like this:



## Chart Overview

REVIEW: Add this!

## Trip Log

REVIEW: Add this!

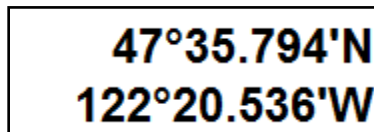
## Search Results

REVIEW: Add this!

## Nearby Places

REVIEW: Add this!

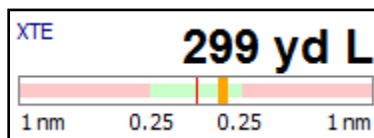
## Vessel Position



## Rudder Angle



## Cross Track Error



# Command Buttons

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It is possible to add command buttons to the Instrument Task Pane for some commands that you want instant access to but are not part of the other toolbars. The commands that are available include:

<b>Activate Route</b>	Displays the Activate Route window so you can select a route to activate.
<b>Daylight Mode</b>	Cycles between the daylight, dusk, and night color sets.
<b>Deactivate Route</b>	Deactivates the currently active route.
<b>Event</b>	Inserts an event at the current vessel location.
<b>Instant Route</b>	Starts Insert Instant Route mode; click on a chart where you want to navigate to in order to create the instant route.
<b>MOB</b>	Starts Man Overboard mode.
<b>Next WP</b>	Activates the next waypoint in the active route.
<b>Operating Mode</b>	Cycles between plan and cruise modes.
<b>Previous WP</b>	Activates the previous waypoint in the active route.
<b>RBL From Boat</b>	Inserts a range/bearing line from your vessel location; click on a chart where you want the other end of the line.
<b>Reset Display</b>	Resets the screen to the default configuration: one chart view, centered on boat, north up.
<b>Reset XTE</b>	Resets the cross track error.
<b>Start New Track</b>	Start recording a new track.
<b>Tracking</b>	Turn tracking on or off.

# The Chart Viewer

# Using the Chart Viewer



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In both Planning and Cruising mode, most of the Coastal Explorer Window is used to show the chart and the way you use the chart is exactly the same in each mode.

The chart may be scrolled around and zoomed in and out to show to show different areas. These are very common operations, so Coastal Explorer provides a few ways to perform them.



**WARNING:** Zooming in on a chart past its scale is like using a magnifying glass on a paper chart; it might seem “bigger,” but you aren’t seeing any more detail. With raster charts, the problem is fairly obvious as lines start to get thick and symbols get large, but vector charts don’t scale the same way and can cause a false sense of detail which can be dangerous. When the overscale indicator appears, make sure you are not relying on detail that is not really there!

This is what the overscale indicator looks like:  **OVERSCALE** 

# Selecting Chart Types

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Coastal Explorer can display vector charts, raster charts, photo charts, topographic maps or a combination of chart and map types.

The **Custom...** option on the Chart Type control on the main toolbar provides you with complete control over type types of charts displayed.

## To select chart types for display using the toolbar:

- Use the Chart Type control to select **All Charts**, **Vector+Raster** (both vector and raster charts), **Vector Charts**, **Raster Charts**, **Photo Charts**, **Topographic Maps**, or select **Custom...** to see a window with more options.

## To select chart types for display using the menus:

- Use the **Vector Charts**, **Raster Charts**, or **Photo Charts** options on the **Chart Types** sub-menu of the **Format** menu.

## To select chart types for display using the keyboard:

- Press the **V** key to show vector charts
- Press the **R** key for raster charts
- Press the **P** key for photo charts.

Hold down the **Shift** key when using **V**, **R**, or **P** to turn just that type of chart on or off. In other words, if you are viewing vector charts and you want to view both vector and raster, you can press **Shift+R** to turn raster charts on without turning vector charts off.

# Quilting

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Exploring an area or planning a trip usually requires multiple charts. "Quilting" is the technique of digitally "stitching" together multiple charts so that everything lines up correctly.

When quilting is on, Coastal Explorer will search your chart portfolio for the "best" charts to display given the area you are looking at, the viewing scale you are zoomed in to, and the type of chart you have selected, and then fill as much of the screen as possible with those charts.

When Coastal Explorer is picking the charts to include in the quilt, it will only select charts that have scales that are reasonably close to the viewing scale, so if you are not seeing the chart you think you should, you may need to zoom in or out for it to appear.

When the **View > Chart Outlines** option is enabled, an outline of each chart is displayed even when the chart will not be included in the quilt because of the difference in scale. When you use the Zoom Control on the main toolbar, the outlines of charts that are within range of the viewing scale are shown thicker than the other chart outlines.

Sometimes you may want the quilting feature to be on, but have a particular chart that you do not want included. You can hide or show a particular chart by clicking the right mouse button on that chart, selecting the **Charts Here** option from the menu, and then selecting the chart from the menu of charts.

When quilting is off, Coastal Explorer will search for the best chart that covers the center of the screen and display only that chart. You can override Coastal Explorer's decision and select your own chart to display by clicking the right mouse button on the chart and selecting a chart from the **Show Chart** list. Selecting the **Automatically Select Best Chart** option will let Coastal Explorer decide which chart to display again.

Whether quilting is on or off, the parts of the screen that are not covered by a real chart are filled with a base-map. While it may seem like a pretty detailed map of the world's coastlines, the base map must not be used for navigation as it lacks the detail that is necessary. Nonetheless, the base map may be used to locate features with the gazetteer and guide books, or get an overview of your Navigation Objects over a large area.

## To turn the quilting feature on or off:

- Use the **Quilting** option on the **View** menu.

# Scrolling and Zooming

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Scrolling and zooming are fundamental operations that you will do a lot in Coastal Explorer. With the quilting feature turned on, Coastal Explorer will automatically select the best charts to show from your portfolio as you scroll around and zoom in and out. Because scrolling and zooming are so important, Coastal Explorer provides you with several ways of doing them both using the mouse or keyboard.

When the chart window is split, all of the keyboard, menu, toolbar, and chart overview methods of scrolling and zooming will only affect the chart panel on the right. The mouse methods will affect whatever chart panel the mouse is pointing at.

## To scroll with the keyboard:

- The **Arrow Keys** will move the displayed chart area in the direction of the arrow.
- Holding down the **Shift** key while pressing an Arrow key will double the scrolling speed.
- Using the **Page Up** key will move the chart display in the direction of your boat's heading, or in the direction of the next waypoint when in Course Up mode. The **Page Down** key will move the chart display in the opposite direction.
- The **Home** key will move the chart display to where your boat is and resume the last used Auto Scrolling mode (Follow Boat, Look Ahead, etc.). Subsequent presses will cycle through the various Auto Scrolling modes.

## To scroll with the mouse:

- Click the mouse near the edge of the chart where the cursor changes to a big arrow. Once you've started to scroll this way, you can move the mouse around to change the direction and speed of scrolling.
- Select the **Scrolling Mouse Tool** with the button on the main toolbar. When this mouse tool is active, you can click anywhere on the chart to drag it around.
- When the **Select Mouse Tool** is active, hold down the **Alt** key when you click the left mouse button to temporarily activate the **Scrolling Mouse Tool** as you drag the mouse around.
- If your mouse has a middle (or wheel) button, press and hold that button while you drag the view around when the **Select Mouse Tool** is active.

## Overscale Warning

Because Coastal Explorer will let you adjust the viewing scale of the charts to anything between 1:1,000 and 1:100,000,000, there will be times that the chart image you see has been magnified to the point of implying more detail than is really there. This is pretty obvious with raster charts as they start to look blocky, but vector charts tend to stay nice looking at extreme magnifications. To warn you of this overscale situation, Coastal Explorer will display a yellow warning symbol next to the viewing scale in upper-left corner of each chart panel. When this symbol is displayed, at least one of the charts drawn on the screen is being displayed at more than twice its intended scale.

## To zoom in and out with the menu:

- The **View** menu has a **Scale** sub-menu with various scale options.

## To zoom in and out with the toolbar:

- Press the Zoom In or Zoom Out buttons, or
- Move the Scale Slider back and forth

## To zoom in and out with the keyboard:

- Use the **+** key to zoom in.

- Use the - key to zoom out.

The main keyboard + and - keys will work as will the keys on the number pad (if your keyboard has a number pad). When using the keys on the main keyboard, you do not need to hold down the Shift key even if the + is normally a shifted character.

#### To zoom in and out with the mouse:

- If your mouse has a wheel, roll the wheel up and down to zoom in and out.
- Click the left mouse button on the chart's North arrow and select a scale from the list or use the slider in the popup control panel.

#### To scroll and zoom with the Chart Overview panel:

- With the left mouse button, drag the view area outline around in the Chart Overview panel to scroll.
- While pointing the mouse cursor at the Chart Overview panel, use the mouse wheel to zoom in and out.

**REVIEW: Add the new Cruise Mode scale tool!**

## Bookmark

You can set a quick “bookmark” that lets you quickly get back to a particular chart view. Returning to the bookmark will restore the location, scale, and orientation that were in use when the bookmark was set.

#### To bookmark an area:

- Press the **F9** key to bookmark the currently displayed area.

#### To return to a bookmark:

- Press the **F10** key to return to the bookmarked area.
- Each time you press the **F10** key it will jump back and forth between the bookmarked area and the area you were looking at before going to the bookmark.



# Chart Orientation

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The chart display may be rotated so that either North or the top of the chart is "up" on the screen. These options are available on the **View > Orientation** menu. (Some raster chart images are oriented such that North is not at the top of the screen, but vector charts are always oriented with North being up.)

While you are navigating, two additional rotation options are available on the **View > Orientation** menu: **Course Up** will rotate the chart such that the active legline is pointing up, and **Heading Up** will rotate the chart such that the current heading of the boat is pointing up.

The Course and Heading options will rotate the chart as your course or heading changes in order to keep them "up."

In planning mode, the upper-left corner of the chart has a box showing the scale, an arrow indicating the direction of north, and the current orientation. It looks like this:



You can also change the orientation by clicking on the North Arrow and selecting from the list that appears.

**REVIEW: Add the new Cruise Mode tool!**

Finally, pressing the **U** key will cycle the orientation between the available options.

# Controlling the Amount of Detail You See

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The **Format** menu contains several commands that allow you to control how much detail is displayed on the chart. Vector charts provide the most control over the level of detail as they are made up of individual objects that can be hidden or shown based on their type.

In Cruise Mode, the Info menu on each chart viewer provides access to these options.

The **Base**, **Standard**, and **Full Object Display** commands provide quick access to three different levels of detail for vector charts. "base" shows the minimum set of objects necessary for planning, "standard" adds other objects that are necessary for safe navigation, and "full" shows everything in the chart's database that is intended for the chart's scale. The higher the level of detail, the more clutter you will see.

The **Vector Charts...** command leads to a window for formatting the vector chart display. With it, you can control how symbols look, how much text is displayed on the chart, and how lights and depth information are displayed.

The **Text Size** commands allow you to adjust the overall size of text shown on the chart. (Since raster charts are just an image of the paper chart that is then "stretched" to display on the computer screen, these commands cannot change the size of text on those charts.)

The **Chart Types** commands allow you to select the types of chart to display. If you have split the chart into more than one panel, these commands will only affect the left-most panel.

The **Chart Colors** commands allow you to change the colors of most of Coastal Explorer for use in low-light and night-time situations.

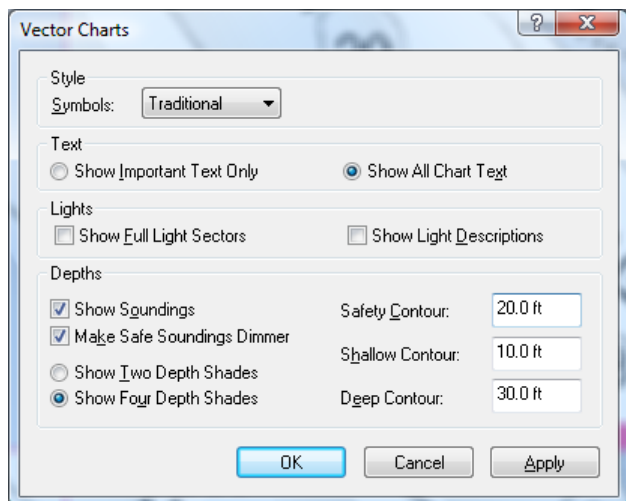
The **Marine Facilities**, **Aerial Pictures**, and **Chart Note Links** options control the display of certain features that come with Digital ChartKits from Maptech other companies that produce compatible products. If you have not installed the appropriate features from one of these products, these options will not have any effect on the chart display.

# Format Vector Chart Window

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## Format > Vector Charts

This window lets you control various aspects of how vector charts are displayed.



The **Symbols** list lets you select between simplified symbols designed specifically for use on computer screens and more traditional symbols.

**Show Important Text Only** and **Show All Chart Text** select between two different levels of detail for text display.

**Show Full Light Sectors** controls the display of light sectors, the part of a light that indicates its estimated visible range.

**Show Light Descriptions** controls the display of descriptions of lights. When the display is off, you can still see the description of a light by selecting it and looking in the property pane.

**Show Soundings** controls whether or not depth soundings are displayed.

**Make Safe Soundings Dimmer** controls whether or not depth soundings deeper than the safety contour are displayed in a color dimmer than shallow soundings.

**Show Two** and **Four Depth Shades** control how many different colors are used to indicate water depths.

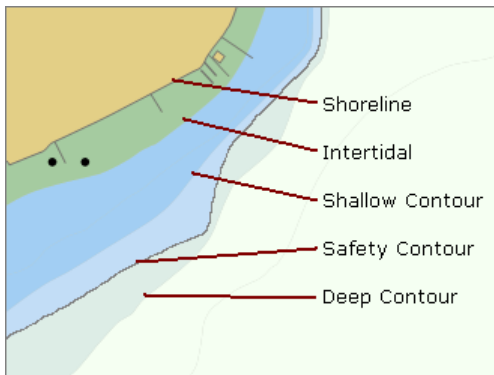
The **Safety**, **Shallow**, and **Deep Contour** options control the depths that are considered "safe", "shallow", and "deep". These depths are used in conjunction with the number of depth shades to determine how to draw the water on the screen. The chart's depth contour line that is the same or deeper than the safety contour is also shown thicker than other contour lines.

When the **Show Two Depth Shades** option is selected, any water areas that are less deep than the safety contour are displayed in a pale-blue color while areas that are deeper are shown in white (or black, depending on your chart color selection).

When the **Show Four Depth Shades** option is selected, depth areas between zero and the shallow contour are displayed in pale-blue, areas between the shallow contour and the safety contour in a higher pale-blue, areas between the safety contour and the deep contour in a very pale-blue, and finally areas deeper than the deep contour are displayed in white.

You should always set the safety contour depth to a value that you feel is safe for your boat. This allows Coastal Explorer to alter the colors used when drawing water areas on the chart such that safe areas are always shown in white, while areas that you need to be extra careful in (or stay out of) are shown in blue.

This diagram illustrates the various contours and shades that can be adjusted:



# Finding Places

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The toolbar has a box near its left side with a GO button next to it. This is called the **Search Control**. With it you can find places by name or location. Just click in the box (or press **Ctrl+D** or **Alt+D** to activate it), type the name of a place into the box and click the **GO** button (or press the **Enter** key).

Coastal Explorer will search for places matching the name you entered and center the chart view on the first one it finds. If more than one place matches the name you entered, the Task Pane will show the results of your search. You can click on any of the places listed to show that place on the chart. You can also use the **F3** key to select the next place in the list and the **Shift+F3** key to select the previous place.

The Search Control will not only find places from Coastal Explorer's gazetteer, but also from the Guide Books, tide and tidal current prediction stations, area weather forecast, your own navigation objects, even nearby ships if you have an AIS receiver installed.

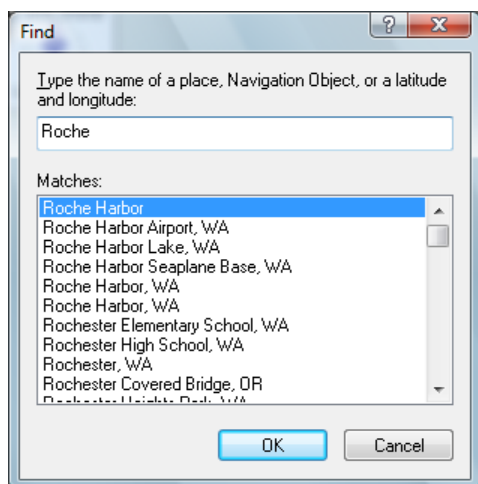
You can also use the Search Control to go directly to a location by entering a latitude and longitude, or to select a specific chart scale by entering the desired scale (as in "1:10,000").

Clicking the down arrow button between the search control and the GO button displays a list of the last few places you searched for. You can select one of these to quickly go back to one of those places.

## Find Window

### Edit > Find

Another way of searching is to use the Find window which can be accessed by selecting **Edit > Find** from the Planning Mode menu or pressing the **Ctrl+F** key. Enter the name of the place you wish to find in the box at the top of the Find Window. As you type, a list will show you places that match what you've typed so far. Click on an entry in the list to center the chart on that place.



## Gazetteers

Coastal Explorer includes an extensive gazetteer which covers the entire US as well as Canada and Mexico. Gazetteers for additional countries may be downloaded from the [coastalexplorer.net](http://coastalexplorer.net) web site.



# Voyage Plans

# Voyage Plan Browser

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The Voyage Plan Browser provides you with several ways of looking at a voyage plan. Tabs along the top of the browser let you choose between various views including:

**Route Details** This is a tabular view of a route where each row represents one leg

**Obstacles** This shows a list of obstacles that have been detected along the route

**Timeline** This view makes it easy to plan a departure time based on a desired arrival time as well as other time-related calculations

## To start the Voyage Plan Browser:

- Click the right mouse button on the route you want to see and select the **Show Route Details** option or just double-click on route.

## To close the Voyage Plan Browser:

- Click the **X** button on the right side of the top of the browser panel.
- Or press the **Esc** key. (The Esc key cancels several things so you might need to press it a few times to close the browser panel.)

## To change the size of the Voyage Plan Browser:

- Drag the bar that is between the Browser Panel and the Chart Viewer.

## Using the Route Details Page

The Coastal Explorer Route Detail Viewer displays one of your routes in a tabular format along with various information about the route as a whole. The Route Detail Viewer can also be used to calculate an ETA for each waypoint along the route.

The top part of the Route Detail Viewer displays information about the route as a whole, including the name of the route, when and where you intend to start navigating the route, and the total distance, estimated total time and estimated time of arrival. At the top-right corner of the Route Detail Viewer you will find two buttons. The **Options** button displays a menu described below, and the **X** may be used to close the Route Detail Viewer.

You will typically want to use the **Start using current date and time** option and the **Start at current boat location** options for routes that you are about the start navigating, and the other options for routes that you are just planning for later. These options affect how the ETAs are calculated, and the starting location affects the total distance calculation as well.

The rest of the Route Detail Viewer is a table where each row provides information about one leg-line of the route, including the waypoint at the end of the leg-line, the bearing to that waypoint in both True and Magnetic degrees, the distance to that waypoint, the total distance so far, the speed at which you expect to travel along the leg-line, the ETA to the next waypoint, the angle of the next turn, the ending position, and finally any notes you might have written about the next waypoint.

Some of the information in the table can be edited by double clicking the mouse button on the value you want to change. After changing the value, press the **Enter** key or click outside the value to accept the new value, or press the **Esc** key to cancel the change.

Values that can be changed include: the waypoint name, the intended speed, the waypoint position, and the notes. The rest of the values are being calculated by Coastal Explorer, so you cannot change them directly.



The **Options** menu provides these options:

- **Activate Route** Start navigating the route
- **Reverse Route** Turn the route around
- **Check Route for Obstacles** Look for obstacles and other warnings along the route
- **Set Speed of All Legs...** Display a window where you can specify a speed to be used for all of the legs
- **Show ETA to the Second** Show or hide the seconds on all ETAs

## Using the Obstacles Page

The Obstacles Panel searches the chart database for obstacles and warnings in the area between the boat and the location along the current course that the boat will be in a few minutes at the current speed. A list of warnings is displayed in the panel.

This feature requires vector charts covering the area in question as there is no way to perform this kind of search on raster or photo charts. It also requires that you are moving and that the PC is receiving a valid GPS signal indicating where you are, what direction you are moving, and how fast you are moving.

Please keep in mind that Coastal Explorer cannot predict all obstacles (things like logs and other boats usually aren't listed in the chart database) and that the charts you have don't necessarily contain all the known obstacles.

Although you will still need to keep a vigilant watch off your bow, the Obstacles Panel can alert you to many things you might not see out there such as warnings, covered rocks, regulated traffic zones, and military test areas.

## Using the Route Timeline Page

The Route Timeline Browser displays a route as a timeline rather than geographically. The primary use of the Route Timeline Browser is to estimate travel times and optimal departure times.

The timeline browser is a horizontally oriented time-based graph. Increasing time extends to the right. The graph can be scrolled by dragging it with the mouse, using the Arrow Keys, or pressing the mouse button near the left or right edges of the graph. A calendar button provides a means to scroll directly to a particular date.

The time scale can be changed with the plus and minus keys or similar buttons on the toolbar. The mouse wheel can also be used to adjust the time scale while keeping a particular point in time centered at the mouse cursor.

The timeline browser indicates sunrise and sunset times (based on the current vessel location).

A route is drawn as a straight horizontal line segment for each leg with gaps where waypoints have layovers. Each waypoints is displayed with its assigned icon (or the circle around a dot if no icon is assigned). The name of each waypoint is displayed in vertical text below the icon. The planned speed for each leg is displayed above the leg lines.

### Moving Waypoints through Time

Waypoints can be dragged through time to see the affect being at that waypoint at that time will have on the rest of the route. (For now, the recalculation does not occur until you let go of the mouse button but this will be changed in future updates.)

Moving the first waypoint of a route through time sets the planned departure time for the route. (Actually it's the planned time the vessel will be at that waypoint.) When the first waypoint is moved to a spot in time, the rest of the waypoints in the route are moved through time based on their respective estimated times of arrival.

The estimated times of arrival for each waypoint depend on:

- Planned speed (through water)
- Distance between waypoints
- Current predictions (when stations have been 'attached')
- Layover time

When a waypoint other than the first is dragged through time, the ETA for all other waypoints will be adjusted as well.

When a waypoint is moved to a new location, the ETA for it and all following waypoints will be adjusted.

When a waypoint is added to the route, the ETA for that waypoint and all following waypoints will be adjusted.

When a waypoint is removed from a route, the ETA for all following waypoints will be adjusted.

### Planned Speeds

When routes are created, each leg is assigned the default cruising speed that you have entered in **Boat Properties**. This speed can be changed in the Route Details panel by double-clicking on a speed in the table and entering a new speed, or by clicking on the **Options** button and selecting **Set Speed of All Legs**.

If you want Coastal Explorer to calculate the affects of currents on your route, the speeds you enter should be your planned speed through water (not over ground).

In future updates, it will be possible to set the speeds from within the Route Timeline Browser.

### Attaching Current Stations

In order to include predicted currents in the ETA calculations, you must first 'attach' current stations to legs of the route. This is done by right-clicking on a leg of the route and selecting the **Attach Closest Current Station** option. A dashed line will appear between the current station and the middle of the leg. When a current station is attached to a leg, the menu option changes to **Detach Current Station** so you can remove the association if necessary.

This technique is only temporary and later in the beta test it will be easier to attach specific current stations and to have Coastal Explorer automatically choose the right current station. It will also be possible to have more than one station affect different portions of a leg.

### Locking Waypoints in Time

It is possible to 'lock' a waypoint in time. This is useful when, for example, you really want to get to a pass at a particular slack time. When a waypoint is locked in time, adjusting other waypoints may require changing planned speeds. Time locked waypoints are displayed with a small padlock icon above the waypoint icon.

When a waypoint is locked in time, moving other waypoints will cause the planned speeds to be adjusted in order to maintain the right time at the locked waypoint.

# Navigation Objects

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Coastal Explorer lets you create several types of objects on the chart, including routes, marks, boundaries, and range/bearing lines. These are collectively called Navigation Objects and are described in detail in Help.

You can create a new navigation object by selecting the type you want from the **Insert** menu. The most common types can also be created by clicking the appropriate button on the toolbar.

After using an Insert command, you should click on the chart where you want the object to appear. For routes and boundary areas, click at each waypoint or corner that you want a waypoint or marker, and when you are done, click twice in the same spot. For a range/bearing line you will click once at the start of the line and once at the end.

After inserting an object, you can move it around by dragging it with the mouse (routes can't be dragged around, but their waypoints can).

Each type of object has various properties that can be seen and adjusted in the Properties panel that always appears on the right side of the Coastal Explorer window. The Help system has all the details about each of these properties.

Right-clicking on any object will display a menu of operations and options for that object. These menus are how you get quite a lot done in Coastal Explorer, including adding waypoints to routes, reversing routes, activating a particular waypoint to go to, or locking an object in place.

# Using Documents

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Unlike chart plotters and most other navigation software, Coastal Explorer uses document files to store your navigation objects. This gives you a lot of flexibility in how you organize things and provides some other features unique to Coastal Explorer.

The first time you started Coastal Explorer, an empty document called **MyRoutes** was created for you. You can create as many routes or other navigation objects as you like and keep them all in that document, or you can choose to create any number of your own documents and save them anywhere you like.

One application of this ability is to create a new document for each major cruise you go on. The document would start out with one or more routes that you will follow on that trip, perhaps some boundaries that you set up to remind you of areas to avoid, etc. Once you are back from your trip the document will also have a track of everywhere you actually went. This document can then be kept in your **My Documents** folder (or anywhere else you want) in case you want to copy one of its routes or just go back and see where you were. Meanwhile, you can create a new document for your next trip and not have the previous trips cluttering up the chart.

You might also start out just saving everything in one document, but decide later that you would like to organize things by cruising area. With Coastal Explorer, you can load the big document, drag a selection around all the objects in an area, use the **Edit > Copy** command to copy all of those objects to the Windows Clipboard, use **File > New** to create a new document, use **Edit > Paste** to paste the objects from the clipboard into the new document, and finally use **File > Save As** to save the new document with a name appropriate for that region.

If you are cruising with other boats, you can share a trip's document with another Coastal Explorer user by using the **File > Send To > Mail Recipient** command. This will start your e-mail program and create a new message with the current document attached to it. You just have to enter the recipient's e-mail name and send the message. When they receive the message, they just need to open the attachment with their e-mail program and Coastal Explorer will start on their computer to show them the trip!

Many people plan their trips with one computer and then use another on their boat. Coastal Explorer makes transferring documents to another computer easy with the other commands on the **File > Send To** menu. This menu lists each removable storage device on your computer (things like floppy disk drives and USB Flash drives). When you select one of these options, a copy of the currently open document is sent to the storage device which can then be taken to the other computer where the document can be opened with Coastal Explorer or by just double-clicking on its icon using the Windows Explorer.

## To Create a New Document:

A new document is created with the **File > New** command.

## To Open an Existing Document:

An existing document may be opened with the **File > Open** command.

The **File** menu also has a list of the most recently opened documents and you can open one by selecting it from this list.

When Coastal Explorer is started, it will automatically try to open the last document that was being used. If that document is missing (or you haven't had one open yet), a new empty document is create at start-up.

You can use the Windows Explorer to open a document by double-clicking on its icon or by dragging the icon over the Coastal Explorer window and dropping it.

If you receive a document as an e-mail attachment, you can also use your e-mail program's Open Attachment command to cause Coastal Explorer to open the document. Be careful, though, as the document file will probably be placed in a temporary folder by the e-mail program, so you might want to use the **File > Save As** command in Coastal Explorer to save the document in a known place.

### **Saving Document Files:**

A document is saved to a file with the **File > Save** and **File > Save As** commands.

The **Save** command will save the document to its original file while the **Save As** command saves the document to a different file name.

When you use the **Save As** command to save to a different file, you are essentially switching over to that new document. In other words, if you open a document called "one" and then save it as "two" then you are now using the document called "two" and "one" remains unchanged in its original file.

The **Send To** commands provide an alternative to using **Save As** when what you really want is a copy of the current document on a floppy disk or other removable storage device in order to take it to another computer. The **Send To** commands save a document file with the same name as the one that is open, but on a different drive. After the Send To command, you are still using the original document.

The **File > Export** command provides a way to save part of the current document to a new file which can either be a Coastal Explorer document, or some other file format for use with other programs.

### **Send To**

The **Send To** commands may be used to send the current navigation object document to another computer as an email attachment, or to a removable storage device such as a floppy disk or a USB flash drive.

#### **To send the current document as an email attachment:**

- Select the **File > Send To > Mail Recipient** command. Your email program will appear and display a message window already setup with the attachment. You can enter a message and then send just like any other piece of email.

#### **To send the current document to a floppy disk or other removable storage device:**

- Select the destination from the **File > Send To** menu. The document is saved in the root folder of the destination and has the same name as the current document. If a file with that name already exists in the destination, you will be asked if you want to overwrite it.

# The Clipboard (Cut, Copy, and Paste)

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Like most Windows applications, Coastal Explorer makes use of the Windows Clipboard to transfer objects from one place to another using standard **Cut**, **Copy**, and **Paste** commands.

The Clipboard is a temporary place to keep objects of just about any type. When you cut an object, it is moved to the clipboard and copying an object leaves the original alone but places a copy of it in the clipboard. Paste copies the contents of the clipboard to the current document.

Coastal Explorer lets you select more than one object at a time so you can move or copy a group of objects with one Cut/Copy and Paste operation.

## To move or copy an object from one document to another:

1. Open the document that has the object you want to move or copy.
2. Select the object that you want to move or copy.
3. Use the **Edit > Cut** or **Edit > Copy** command.
4. Open or create the document you want to move or copy the object to
5. Use the **Edit > Paste** command.

## To select more than one object at a time:

1. Select the first object by clicking on it
2. Select additional objects by clicking on them while holding down the **Ctrl** key

Or:

1. Drag a selection rectangle around a group of objects using the **Select Tool**.

**NOTE:** When you copy an area, the clipboard ends up with a copy of each object within that area as you would expect, but it will also contain an image of the selected area that can be pasted into an image painting program, word processing document, or even an e-mail message. You will also get an image of the visible area of the chart if you use the copy command when nothing is selected.

# Creating a Route

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## To create a new route:

2. Click the **Add Route** button on the Navigation Object toolbar, or select **Route** from the **Insert** menu, or press the **F8** key to begin the route creation mode.
3. Click on the chart where you would like the route to start; this will set the location of the first waypoint.
4. Continue clicking on the chart to add additional waypoints.
5. When you have added all the waypoints you want, click the last one again to end route creation mode.

While you are in route creation mode, the mouse cursor will gain a small plus sign to indicate that you will add a waypoint when you click. Near the edges of the chart, however, the mouse cursor will show a large arrow pointing outward from the chart to indicate that you are in the automatic scrolling zone. You cannot create objects in the automatic scrolling zone, but moving the mouse there will scroll the chart so that you can get the waypoint where you want it.

If you click on an existing mark while creating a route, Coastal Explorer will ask if you want to "Reuse the existing mark." Answering Yes to this question causes the route you are creating to use the mark that is already there as the next waypoint, sharing it with any other routes that might be using it too. Answering No causes a new mark to be created at the same location. The difference is that moving, deleting, or otherwise changing a shared mark will affect all of the routes that are sharing it, while changing a mark that is not shared will only affect the route that uses it.

You can avoid the "Reuse the existing mark" question by holding down the **Ctrl** key when you click to add a waypoint; holding down Ctrl will cause the mark to be reused.

After you have created the first waypoint, a line will be drawn between the last waypoint and the mouse cursor. This line represents the leg-line that you are about to create. The line will normally appear in black, but if Coastal Explorer detects an obstacle along the leg-line, the line will appear in red. A yellow line indicates there is something other than an obstacle along the leg-line that you should be aware of such as a ferry route. In some cases, a yellow bubble will point out the problem on the chart, but in any case you can check the property viewing area for a list of obstacles and other issues having to do with the leg-line you are creating.

In addition to the leg-line that follows the mouse cursor, you will see a dashed purple T-shape that extends from the leg-line to the edge of the chart and also perpendicular to the leg-line in both directions. This cross hair is there to help you line up your new waypoint with other objects or locations on the chart.

Finally, the distance and bearing of the leg-line is also displayed near the mouse cursor.

## To create a new route that starts the same as another route:

It is very common to have multiple routes that all start with the same few waypoints. You might keep your boat at a particular place which requires a few waypoints to get out of and then head in any of several directions when you get out, for example. Coastal Explorer has a feature that helps create this kind of route.

The **Fork Route** option, which is found on the menu for marks that are used in a route, will create a new route that starts out with a copy of each of the waypoints leading up to, and including, the mark that you clicked on to select the fork route command. The end result is the same as if you started creating a new route and then clicked on the first few waypoints of another route and answered Yes to the question about reusing the existing mark.

To use the Fork Route option, click the right mouse button on the waypoint that you want to start the fork at and select **Fork Route**.

### To quickly create a new route with only one waypoint:

With the **Instant Route** option you can create a route with a single leg-line that starts at your current location. This can be very handy if you are cruising around without a route and want to quickly start using your autopilot or Coastal Explorer's route following features.

To create an Instant Route:

1. Select the **Instant Route** option from the **Insert** menu, or if you are in Cruise Mode, select the **Instant Route** button on the Function Bar. A mark will be added at the boat's current location and you will be in route creation mode ready to add the waypoint.
2. Click at the point in the chart where you would like the waypoint. The waypoint mark will appear and the route you just created will be activated.

A route created as an Instant Route is just like any other route, so you can perform all the same operations on it, including adding more waypoints to the end.



# Manipulating Routes

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Any of these route operations may be performed by clicking the right mouse button on a leg-line of the route and selecting the appropriate option from the menu that appears. Some of them might also appear in other places for your convenience, but they will always work the same regardless of how you select them.

## Locking a route against changes

The **Lock Route Position** option will prevent a route from being moved. Routes have their positions locked by default, but may be unlocked in order to drag the entire route to a new location.

The **Unlock Route Position** option will allow a route to be moved.

## Activating a route

The **Activate Route** option will start navigation along the route. The first waypoint of the route is selected as the current target and Coastal Explorer will start issuing instructions to you and optionally your autopilot in order to get your boat there.

The **Deactivate Route** option will stop all navigation instructions.

## Reversing a route

The **Reverse Route** option will turn a route around so that the end becomes the start and vice-versa.

## Splitting a route in two

The **Split Route** option will turn the route into two routes by removing the leg-line that you clicked on to get the route menu.

## Adding waypoints to the end of a route

The **Add to end of route** option will re-enter route creation mode to let you add more waypoints to the end of the route.

## Inserting waypoints into a route

The **Insert new mark** option will insert a new mark at the point along the leg-line that you clicked to get the menu.

## Removing waypoints from a route

To remove a waypoint from a route, select the waypoint's mark and press the **Delete** key.

## Sending a route to your GPS or Chartplotter

The **Send to GPS** option will let you send (upload) a route (or several routes if more than one is selected) to your GPS or chartplotter.

## View or changes the properties and options of a route

Right-click on the route and select **Properties**.

## Route Properties

A route's properties may be viewed or changed with the Properties Task Pane when the route is selected. The properties of routes are:

### General Properties

- **Name** The name of the route. If you do not supply a name, Coastal Explorer will make one up based on the starting and ending waypoints of the route. The made up name will then be used everywhere that a route's name would normally be shown, except in the property panel.
- **Waypoint Style** Controls how turns at waypoints are displayed. The options are **Arrival Circle** which is the default and shows each waypoint as a hard turn with an arrival circle around it, **Wheel Over Line** which uses your boat's turning radius to determine where you should start turning in order to get to the next leg, and **Predicted Log Race** which also uses your boat's turning radius, but assumes you don't want to start turning until you reach the waypoint. See below for more information about these styles.
- **Direction Arrows** Controls the display of arrows point in the direction of travel at the end of each leg-line.
- **Display Leg Range/Bearing** Controls the display of the range and bearing values of each leg-line.
- **Total Length** The total length of the route (this value may not be changed).

### Format Properties

- **Color** The color to display leg-lines when no route is active.
- **Active Color** The color to display leg-lines when the route is active.
- **Inactive Color** The color to display leg-lines when some other route is active.

### Notes Properties

- **Description** An optional description or other notes about this route.

### Leg Line Properties

A leg line's properties may be viewed or changed with the Route Details Panel when the leg-line is selected in the table. The properties of leg lines are:

- **Speed** The speed at which you intend to run the leg. This is set to your boat's cruising speed by default.

### Waypoint Properties

A waypoint's properties may be viewed or changed with the Properties Task Pane when the waypoint is selected. The properties of waypoints are:

### General Properties

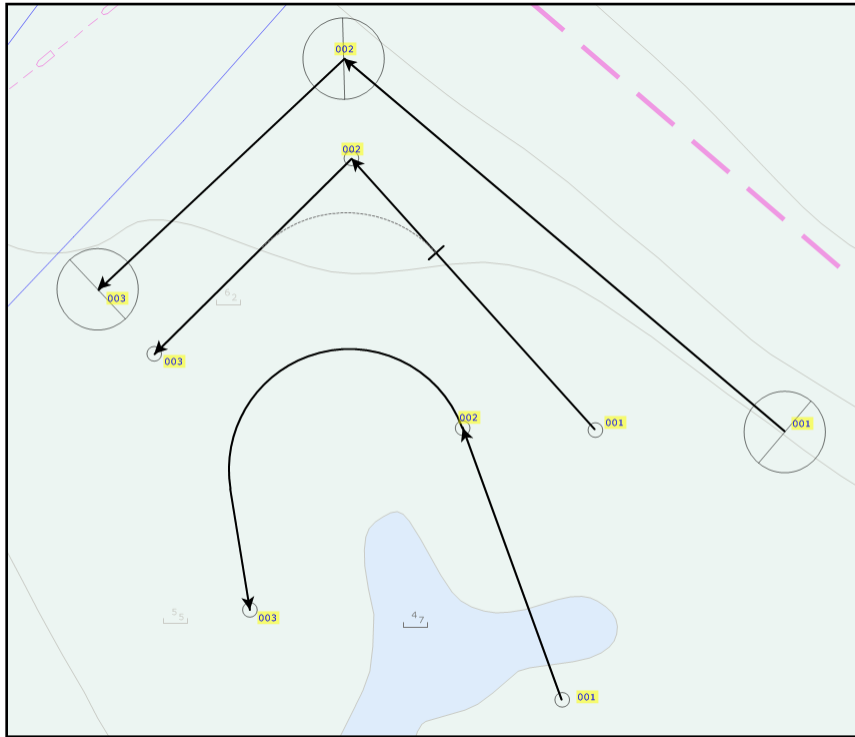
- **Name** The name of the waypoint.
- **Show Name** Whether or not to show the waypoint's name on the chart.
- **Color** The color used to draw the name.
- **Icon** The icon to show at the waypoint.
- **Position** The latitude and longitude of the waypoint.
- **Lock Position** Controls whether or not the waypoint may be moved.
- **Arrival Circle Radius** Controls how close the boat must get to the waypoint in order to have arrived.
- **Layover Time** How much time you intend to stay at this waypoint before proceeding to the next. This time will affect the ETA calculation and is useful for fuel and lunch stops.

## Notes Properties

- **Show Description** Controls whether or not the description is shown on the chart.
- **Description** An optional description or other notes about this waypoint.

## About Waypoint Styles

Coastal Explorer provides you with several different styles of waypoint. Normally you will leave this set to the default value of Arrival Circle, but the other styles are very useful in certain circumstances. Here is a diagram showing how the different styles appear:



**Arrival Circle** -- This is how most navigation programs, chart plotters, and auto-pilots work, at least in the recreational world. Basically a route is a sequence of waypoints and the vessel is supposed to follow the route by moving from waypoint to the next along the leg-lines formed between each pair of waypoints. When a vessel enters the "arrival circle" surrounding a waypoint, or passes a line bisecting the angle between two leg lines, the vessel has "reached" the waypoint and the next waypoint is selected or the route is completed. In Coastal Explorer, these waypoints are displayed as a circle that represents the "arrival circle" and a line representing the "passing line".

**Wheel Over Line** -- This is a feature of many non-recreational navigation systems and more correctly models how a vessel will travel through the water when following a route. In this mode, the radius of the turn that must be made to get from one leg to the next is considered. Then a "wheel over line" is displayed at the point along each leg when the turn should be started. (The wheel over line is a short line perpendicular to the leg-line at the point the turn should begin.) In Coastal Explorer, the predicted turn (based on the turning radius and angle between the leg-lines) is shown as a dashed curve starting at the wheel over line.

**Predicted Log Race** -- This feature is exclusive to Coastal Explorer and is intended for predicted log racers. If you don't know what predicted log racing is, then it probably won't make any sense to you! (See the North American Cruiser Association website, [www.predictedlog.org](http://www.predictedlog.org), for information about log racing.) In a nutshell, a predicted log race is a form of precision navigation oriented "race" for slow powerboats. In one of these races, the skipper

always strives to precisely reach each waypoint and then turn as quickly as possible to head towards the next. During the turn, a certain amount of "slide" is inevitable. The Predicted Log Race waypoint style uses your turning radius to predict this slide and adjusts the following leg line to show the turn and the bearing from the end of the turn to the next waypoint (rather than the bearing from the first waypoint to the next).

It is important to realize that the ONLY waypoint style that makes sense when using an auto-pilot is the "arrival circle" style since that is how auto-pilots interpret a waypoint.

# Using Marks, Annotations, Waypoints, and Events

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Marks, Annotations, Waypoints, and Events all behave the same but are created a little bit differently. Marks show up as a small icon with a name underneath, annotations are just marks without icons, and events are marks that are always created at the boat's location and with a name that describes when the event was created. Waypoints are marks that are created when you are creating a Route.

The operations that you can perform are all the same for marks, annotations, waypoints, and events. They are available by clicking the right mouse button on the mark.

**Lock Mark Position** - Prevents the mark from being moved.

**Unlock Mark Position** - Allows the mark to be moved (unless the mark belongs to a route which is locked).

**Hide Mark** - Hides the mark on the chart (the mark will remain visible as long as it is selected). You can show hidden marks and other objects using the **Navigation Object Browser**.

**Activate Waypoint** - Navigate to the mark.

**Show Name** - Shows or hides the name of the mark.

**Show Description** - Shows or hides the description of the mark.

**Delete Mark** - Delete the mark.

The properties that can be seen or changed in the Property Panel are:

## General Properties

- **Name** The name of the mark.
- **Show Name** Whether or not to show the name on the chart.
- **Color** The color to use for the name and description text.
- **Icon** The symbol to use for the mark on the chart.
- **Position** The latitude and longitude of the mark.
- **Locked** Whether or not the mark is locked against changes.
- **Arrival Circle Radius** How close to the mark the boat must be to have arrived at the waypoint.
- **Boundary Circle Off Limits** Used to turn a mark into a Boundary Circle. When this is set to Inside, an alarm will sound when the boat enters the arrival circle, and when it is set to Outside, an alarm sounds when the boat leaves the arrival circle.

## Range Properties

The range properties control the display of *range circles* which are circles that may be drawn around the mark at regular distances you specify. They are only used as a visual indicator to you, and should not be confused with the *Arrival Circle* which is used to determine arrival at a waypoint, or the radius of a Boundary Circle.

- **Display Count** How many range circles to draw around the mark.
- **Radius** How far out each range circle is drawn.
- **Line Thickness** How thick should the circle appear.
- **Color** The color of the circles.
- **Fill** Whether the circles should be filled or not.

## Notes Properties

- **Show Description** Whether or not the description should be shown on the chart.
- **Description** An optional description or other notes about this route.

# Using Boundary Circles and Areas

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An alarm is sounded when the boat crosses the edge of a boundary. Boundaries may be defined as a circle, a series of lines, or an enclosed area.

## To create a boundary circle:

1. Select the **Boundary Circle** option on the **Insert** menu, or click on the **Add Boundary Circle** button on the toolbar.
2. Click on the chart where you want the boundary circle to be centered.
3. Drag the edge of the circle with the left mouse button to adjust the size, or enter a size in the **Arrival Circle Radius** property.
4. Select whether the alarm should sound when the boat goes Inside the circle or Outside the circle using the **Boundary Circle Off Limits** property.

Once created, a boundary circle is really just a mark with the right properties set up. See [Using Marks](#) for a description of those properties and the operations that can be performed on these objects.

## To create a boundary area:

1. Select the **Boundary Area** option on the **Insert** menu, or click on the **Add Boundary Area** toolbar button.
2. Click on the chart at each point of your area or series of lines.
3. Click again on the last point when you are done.

A boundary area's properties may be viewed or changed with the Property Panel. The properties are:

### General Properties

- **Name** The name of the boundary area.
- **Display Leg Range/Bearing** Controls the display of the range and bearing values of each line of the boundary.
- **Color** Controls the color of the of the boundary lines.
- **Fill Area** Controls whether or not the boundary area should be filled in with the selected line color.

### Notes Properties

- **Description** An optional description or other notes about this RBL.

# Using Range/Bearing Lines

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Range/Bearing Lines, or RBL's, are lines drawn on the chart between two points with the range and bearing between the lines drawn at the line. RBL's can be between two arbitrary points, or one of the points can be the boat, in which case the range and bearing are continuously updated on the chart as the boat moves.

These operations can be performed on an RBL by clicking the right mouse button on the RBL and selecting the appropriate option:

**Lock Range/Bearing Line** - Prevents the RBL from being moved or changed.

**Unlock Range/Bearing Line** - Allows the RBL to be moved or changed.

**Reverse Range/Bearing Line** - Changes the direction of the RBL.

**Delete Range/Bearing Line** - Delete the RBL.

An RBL's properties may be viewed or changed with the Property Panel. The properties of an RBL are:

## General Properties

- **Name** The name of the RBL.

## Notes Properties

- **Description** An optional description or other notes about this RBL.



# Navigation Object Browser

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**REVIEW: Need a picture!**

While your Navigation Objects typically show up on the chart, Coastal Explorer includes another way to look at them called the Navigation Object Browser which you can access via the Tools menu or the Toolbar. The Navigation Object Browser appears below the chart and shows you a list of whatever type of navigation object you choose.

Selecting an object in the Navigation Object Browser will cause the chart to scroll to show that object, and vice versa. You can access a Navigation Object's menu by right-clicking on the object in the Browser or on the chart.

You can select more than one object at a time in the Browser by using the **Ctrl** key while clicking on an object to add it to or remove it from the selection or by using the **Shift** key along with the **Arrow**, **Page Up**, **Page Down**, **Home**, or **End** keys.

Each object in the browser has a check box that you can use to hide or show the object.



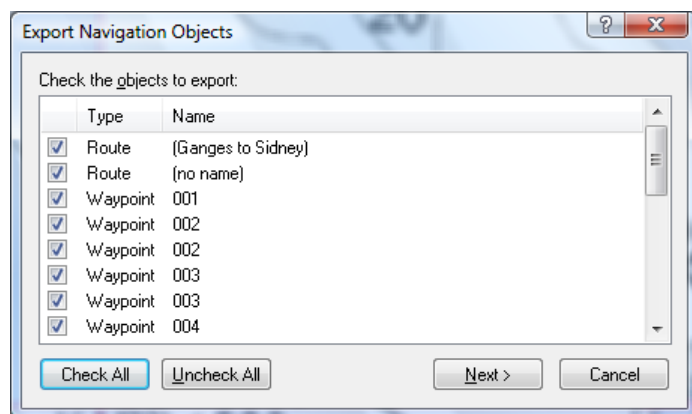
# Exporting Navigation Objects

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## File > Export

This window lets you "export" navigation objects to a file that can later be inserted into another navigation object document, imported by some other program, or just kept as a backup.

You get to the Export window with the **File > Export** command.



The window displays a list of all of the navigation objects in the currently open document. You can sort the list by the type or name of the object by clicking on the header for the column you want to sort by.

Each navigation object has a check box next to it which indicates which objects you want to export; just click the box to check or uncheck an object. You can select multiple objects using the Ctrl or Shift keys and then check or uncheck all of them at once. Buttons are provided to check or uncheck all of the objects as well.

Once you have selected the objects to export, click the **Next >** button. This will lead you to another window asking for the name and type of the file to create.

You can choose to create a "Navigation Object File" which is Coastal Explorer's own format and will contain exact copies of the selected objects, or one of several other formats for use with other programs. Because of limitations in the various file formats, some properties of your objects may not be saved, but most of the really important ones usually are.

The formats for other programs that can be exported include:

- **OpenNav** which is compatible with navigation software from Jeppesen Marine (Nobeltec®).
- **RXF** which is the format used by several of Maptech's chart programs for routes.
- **MXF** which is the format used by several of Maptech's chart programs for marks.
- **GPX** which is an open standard format used by many other programs.
- **KML** which is the format used by Google Earth™.

The **File > Send To** feature is similar to exporting, but always creates a navigation object file containing all of the objects from the open document. It is useful for instantly sending a copy of the current document to someone with e-mail, or to another computer with a floppy disk or other removable storage device.

# Send to GPS Window

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This window lets you send one or more routes and/or waypoints to your GPS or chartplotter. Coastal Explorer is capable of sending routes and waypoints to most GPS/chartplotter models that accept the standard NMEA 0183 RTE and WPL sentences as well as proprietary methods used by Furuno, Garmin, Lowrance, Magellan, and Northstar. Not all GPS and chartplotter equipment supports the ability to receive routes or waypoints, and many of them have limitations. Please refer to the user guide for your GPS or chartplotter to see what its limitations are.

## To send a route or waypoint to your GPS/chartplotter:

1. Right-click on the route or waypoint you want to send and select the **Send to GPS** option from the popup menu.
2. Select the type of GPS from the list labeled **To**.
3. Select the port the GPS is connected to from the list labeled **On**.
4. Press the **Start** button.

## Special notes for users of Garmin GPS units and Chartplotters

Most Garmin products can be configured to operate using one of two "protocols"; either NMEA 0183 or a proprietary Garmin protocol. Coastal Explorer can use either protocol, but must be configured to use the same protocol as the Garmin device. This can be done with either the **Tools > Options > Instruments > Auto Detect** feature, or with the **Tools > Options > Instruments > Port Settings** feature. Refer to your Garmin user guide for information on how to select which protocol (or "Transfer Interface") your Garmin device will use.

Some Garmin devices require you to use the Garmin Transfer Interface when sending routes or waypoints to them. Others will work in either mode. This is not always mentioned in the user guides, so please keep this in mind when trying to use this feature in Coastal Explorer.

## Special notes for users of Furuno GPS units and Chartplotters

Sending one or more navigation objects to most Furuno equipment will cause the equipment to erase all other routes and waypoints from its memory. If you have data that you don't want to lose saved on Furuno equipment, you should import all of it to make a backup file before sending a route or waypoint.

# Importing Navigation Objects from Other Programs

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**REVIEW:** This should be merged with the chapter about the Import command. The Insert File command should be considered a “shortcut” method.

Coastal Explorer can import routes, waypoints, and other navigation objects that were exported from some other programs. Importing a file will insert the navigation objects found in that file into the current document.

The file formats that are supported include:

- **Navigation Object Files** These files have the .NOB file type and are Coastal Explorer's normal document file format. These files may be exported from Coastal Explorer, or you can import a Coastal Explorer document file which will merge that document's navigation objects into the currently open document. Chart Navigator Pro from Maptech also uses the .NOB document file format.
- **Maptech Navigator Export Files** These files may be exported by Maptech's Chart Navigator and Offshore Navigator programs. Coastal Explorer can import Routes, Marks, and Named Waypoints from files called Routes32.txt, Marks32.txt, and Nwps32.txt respectively. These are the only files that the Maptech products will export these objects to.
- **Maptech Outdoor Navigator Files** These files may be exported by Maptech's Outdoor Navigator program.
- **Maptech Terrain Navigator Files** These files may be exported by Maptech's Terrain Navigator program.
- **Open Navigation Format** These files may be exported from Jeppesen Marine's (Nobeltec) VNS and Admiral products. Coastal Explorer can import all of the objects from the Open Navigation Format 1.1 specification which includes Marks, Routes, Tracks, Boundaries, and Range/Bearing Lines. Please contact Jeppesen Marine for more information on this file format.
- **The Capn Database Files** These files may be exported from The Capn by Nautical Technologies. Coastal Explorer can import route and waypoint files that have been exported by The Capn 5.0 and later.
- **NMEA Waypoint List Files** This is not a formal file format, but some programs (including The Capn' from Nautical Technologies) are capable of exporting these files which are simply a list of NMEA waypoint location sentences. Each one of these files contains a single route which is made up of the waypoints described in the file.
- **Lowrance USR Files** These files are used by some Lowrance GPS receivers and are typically stored on Flash Memory cards that can be moved between the GPS and your PC.
- **Magellan eXplorist Files** These files are used by the Magellan eXplorist line of hand-held GPS receivers.
- **GPX Files** This is an “open standard” file format that is used by many other programs.

## To import navigation objects into Coastal Explorer:

1. Select **Insert > Navigation Object File**
2. Use the window to find the file you want to import and click **OK**.
3. Coastal Explorer will determine the type of the file you selected, import the objects, and let you know what it found. You will also be given the chance to select all of the objects that were just inserted into your document.

**Or:**

1. Select **File > Import**
2. Choose the source you want to import from and press **Next**

If you find that you really didn't want to perform an import after it is done, you can use the **Edit > Undo** command to undo the entire import command.

**To export a route from some other program:**

Every program works a little differently, so please refer to the documentation that came with the other program to learn how to use it to export navigation objects.

# Importing Navigation Objects from a GPS or Chart Plotter

---

Coastal Explorer can import routes, waypoints, and sometimes other navigation objects from many different kinds of GPS and chart plotters. Importing will insert the navigation objects found on the device into the current document.

## To import objects from your GPS or chart plotter:

- Use the **File > Import** command
- Select the **My GPS or Chartplotter** option and click **Next**
- Select the type of GPS or chart plotter from the **From** list
- Select the port it is connect to from the **On** list
- Check the Import Routes, Marks, and Tracks options based on what you want to import
- Click the **Next** button
- Follow any additional instructions on the screen

## Manufacturer and Model Specific Notes

Because the NMEA 0183 standard for transferring routes and waypoints is rather limiting, many manufacturers have implemented proprietary methods for performing these tasks. Coastal Explorer supports several of these methods and the general capabilities are listed below.

### Furuno

Furuno GPS receivers and chart plotters use extensions to the NMEA 0183 standard in order to perform route and waypoint transfers. (Tracks cannot be transferred to or from a Furuno.)

When importing from a Furuno, you will need to use the Furuno device's menus to initiate the transfer. Exactly how to do this is covered in your Furuno manual.

### Garmin

Garmin GPS products use a proprietary protocol called "Garmin Transfer Interface" in order to transfer routes, waypoints, and tracks. A Garmin GPS must be configured through its menus to use the Garmin Transfer Interface and Coastal Explorer must also be configured to use the "Garmin" Interface in **Tools > Options > Instruments > Port Settings** before a transfer can take place.

Some Garmin products offer several sub-modes of the Garmin Transfer Interface. The correct mode to select is "Host Mode".

Coastal Explorer is capable of receiving GPS position information from a Garmin GPS while it is in Garmin Transfer Mode, so it is possible to just use this mode and not switch back and forth between Garmin Transfer Mode and NMEA 0183 Mode. However, Garmin's combination GPS and Fish Finder products will only send depth information when they are configured to use NMEA 0183.

### Other Devices

Several other proprietary interfaces are also supported, including Eagle, Lowrance, Magellan, and Northstar. Most of these transfers are started automatically when using the **Import** command.

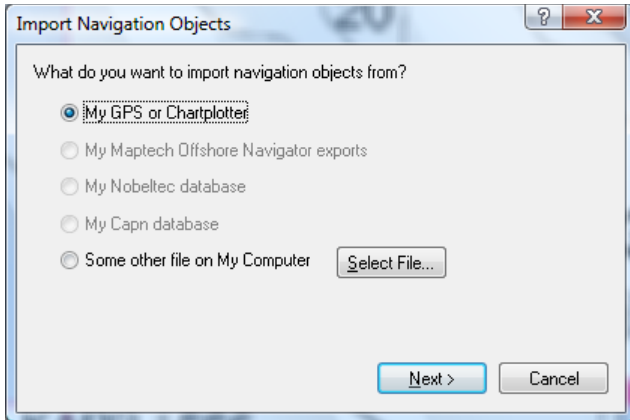
Many manufactures stick to the NMEA 0183 standard for transferring objects to and from their equipment so they are also supported. The standard does not provide a way to initiate a transfer, so you must use the menus

on these devices to get things started once you get to the last step in the **Import** command. Please refer to your equipment's manual for instructions on how to start the transfer.

## Import Navigation Objects Window

### File > Import

This window lets you "import" navigation objects from a file created by Coastal Explorer or another program, or from a GPS or chart plotter.



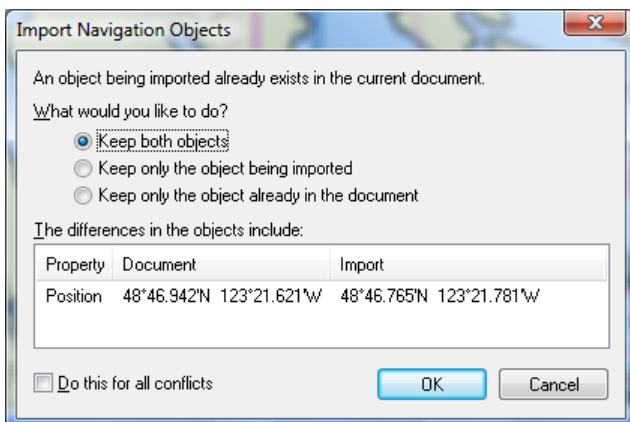
### To import navigation objects:

- Select the **File > Import** option
- Select the source of the objects you want to import
- Press the **Next** button and follow the on-screen instructions

### Resolving Merge Conflicts

If a navigation object is copied from one document to another, then modified in one of the documents, and finally imported into the other document, a "merge conflict" occurs and you are presented with a window that shows the difference between the two objects and asks what you want to do. Your options are to:

- Keep both objects
- Keep only the object being imported
- Keep only the object already in the document





# Navigation

# Using your Virtual Boat

---

When your position is known from a GPS, Coastal Explorer will draw your boat on top of the chart. This is what your boat will look like:



The icon in the center represents your boat and will show its location and heading (or course if the heading is not known).

The solid circle around the boat is a range circle which indicates a specified distance from the boat. This circle may be adjusted with the boat's property panel.

A magnetic compass rose appears around the boat with lines emanating to the edge of the screen every thirty degrees. These lines are intended to help you match up visual bearing with objects on the chart.

When the boat is moving, a dashed line called the predictor will appear between the boat and the point on the current course that is a few minutes ahead at the current speed. The amount of time may be adjusted with the boat's property panel.

A red track line will also appear where your boat has been. The track line may be configured to track a new point based on a time, distance, and/or heading change. You can access the tracking options by selecting the track line and using the Properties Panel.

## To enable the boat and move it somewhere without a GPS

You can move the boat to any location on the chart when you don't have a GPS connected by using the **Move Boat Here** option which may be found on the right-mouse button menu of a chart. These actions initialize Dead Reckoning mode.

## Changing the properties of your virtual boat

Your boat's properties may be viewed or changed with the Property Panel when the boat is selected. The properties of the boat are:

### General Properties

- **Position**
- **Color**
- **Locked**
- **Display Line to Active Mark**
- **Display Compass**
- **Display Predictor Line**
- **Predictor Time**
- **Predictor Color**

## Boat Properties

- Name
- Make Model
- Registration
- Length Overall
- Beam
- Draft
- Bridge Clearance
- Cruising Speed

## Range Properties

- Display Count
- Radius
- Pen Width
- Color

# Dead Reckoning

---

You can use Coastal Explorer in "Dead Reckoning" mode to move your Virtual Boat on the chart without the help of a GPS. This may be necessary if you have lost the ability to use your GPS, and it can be handy while learning how to use the program.

## To Start Dead Reckoning Mode:

- Right-click on the boat symbol and select the **Dead Reckoning** option.
- Right-click on the chart and select the **Move Boat Here** option.
- Drag the boat to a different location on the chart.
- Use any of the **Ctrl+Shift+Arrow Keys** as described below.

Basically, any action that you take to move the boat symbol will initiate Dead Reckoning mode.

While Coastal Explorer is in Dead Reckoning mode, the far right side of the status bar will flash "DEAD RECKONING". If a valid GPS fix is available, an alert will also appear in the upper-right corner of the primary chart to let you know that Dead Reckoning mode is active and that the GPS is being ignored. In Cruise Mode, the GPS Status Indicator at the top of the screen will also show "DR" under the strength meter (which will indicate no signal) and a yellow bar will flash above the strength indicator.

## To resume using the GPS position:

- Right-click on the boat symbol and select the Use GPS Position option.
- Click on the status bar where "DEAD RECKONING" is flashing.
- Click on the "Dead Reckoning" alert on the chart.

The **Ctrl+Shift+Left and Right Arrow Keys** will steer your boat and the **Ctrl+Shift+Up and Down Arrow Keys** will speed it up and slow it down.

# Navigating a Route

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Once you have created a route, looked up unfamiliar areas in the guide books, and double checked for obstacles and other hazards, you are ready to navigate. This section describes the process and tools Coastal Explorer provides to help you with this.

First, use the **Activate Route...** command on the **Tools** menu to select the route you would like to follow, or right-click somewhere along the route and select **Activate Route** from the popup menu.

Start your boat heading towards the first waypoint and Cruise Mode will become activated automatically. Or press **F12** to activate Cruise Mode manually.

Watch your heading and cross track error and steer appropriately. Coastal Explorer provides you with several tools to determine how far off course you are and which way you should steer.

In the chart viewing area, you will see your boat with a line between it and the active waypoint. If your cross-track-error is getting a bit large, you will see a small red arrow next to your boat indicating which direction you should steer to get closer to your intended track.

If you have selected the Navigation Compass Instrument Panel, it will show you a big orange arrow pointing in the direction of the active waypoint. The Course Overview Instrument Panel will show your route relative to your boat's position and course as well as a line between your boat and the active waypoint. It will also help you gauge your cross-track-error.

When you arrive at a waypoint, you will hear an alert and be given the bearing to the next waypoint. Waypoint arrival is determined by your boat entering the active waypoint's arrival circle, the radius of which is set with the waypoint mark's property pages, or by crossing the line through the waypoint and perpendicular to the leg line.

If you are off course and decide to go directly to the next waypoint without reaching either of these conditions, you can press the **Next Waypoint** button on the Function Bar to activate the next waypoint.

If your cross-track-error gets large enough to start causing alerts, but you decide to head directly to the active waypoint without getting back on course, you may press the **Reset XTE** button on the Function Bar. This will tell Coastal Explorer to reset the intended track to be from your current location to the active waypoint and the alerts will stop.

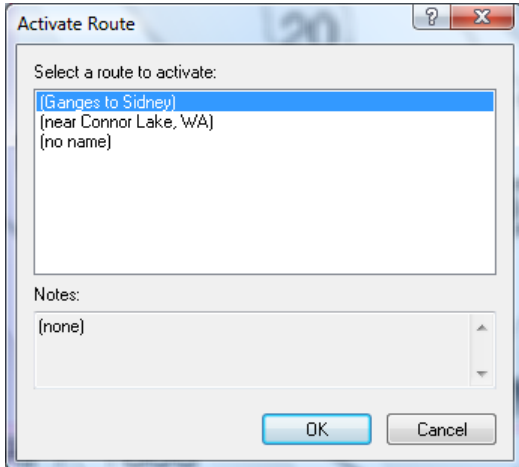
When you arrive at the end of the route, you will hear an alert and the route will be deactivated. You can return to Planning mode by selecting **Planning Mode** on the Function Bar (you may have to press the **More** button to see the Planning Mode command).

# Activate Route Window

---

## Tools > Activate Route

This window displays all of your routes and let you select one to activate for navigation.



You can also activate a route by right-clicking on the route and selecting the **Activate Route** option from the menu.

When you activate a route Coastal Explorer will normally activate the first waypoint of that route. However, it will try to determine if you've already passed some waypoints, in which case it will activate the first waypoint that hasn't been passed.

As long as a waypoint is active, Coastal Explorer will send information about that waypoint to your autopilot if one is configured.

A waypoint can be activated for navigation by right-clicking on the waypoint and selecting the **Activate Waypoint** option from the menu. This command does not activate a route, so once that waypoint is reached, navigation is complete. However, if a route is already active, you can use this command to select a particular waypoint from that route and in that case, the route remains active.

When a route is active, you can activate the next waypoint by pressing the **W** key or the previous waypoint by pressing the **Shift+W** key. This is useful if you decide to skip a waypoint.

# Using Tracking

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A **Track** is a Navigation Object that shows a line where your boat has been. Like all other Navigation Objects, Tracks are stored in the currently open document.

Tracking works by recording your position at certain intervals and then connecting those positions to make the track line. You can decide to record a position based on a time interval, an amount of distance travelled since the last point, an amount of course change since the last point, or a combination of these factors.

**NOTE:** Take care when deciding how to record your track as they can slow down Coastal Explorer or use a lot of disk space if they become too detailed!

## To enable or disable tracking:

- Use the Tools > Enable Tracking command.
- In Cruise Mode, click on the GPS Status Indicator at the top of the screen and select the Enable Tracking option.

## To start a new track:

- Use the Tools > Start New Track command.
- In Cruise Mode, click on the GPS Status Indicator at the top of the screen and select the Start New Track option.

## To convert a track to a route:

- Click the right mouse button on the track.
- Select the **Convert Track to Route** option.

## Changing the properties of a Track

A track's properties may be viewed or changed with the Property Panel when the track is selected. These properties determine when track points are added to the track. Changes you make to these properties will only affect the active track. The properties of a track are:

### General Properties

- **Name** The name of the track. This is set to the date and time the track was started, but you can change it.
- **Total Length** The total distance travelled along this track.
- **Tracking - By Time Interval** Indicates that a new point should be added to the track based on elapsed time.
- **Tracking - Time Interval** How much time to wait between each track point. (Only used if the above option is checked.)
- **Tracking - By Distance Interval** Indicates that a new point should be added to the track based on distance traveled.
- **Tracking - Distance Interval** How much distance should be between each track point. (Only used if the above option is checked.)
- **Tracking - By Course Change** Indicates that a new point should be added to the track based on course changes.
- **Tracking - Degrees** How much of a course change should be between each track point. (Only used if the above option is checked.)
- **Wake - Enable Wake** When this option is on, only a portion of the track is actually shown on the chart.

- **Wake - Length** The amount of time from the track that should be represented on the chart. (Only used if the above option is checked.)

### Format Properties

- **Color** The color to draw the track with.



# Video

# Video Overview

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Coastal Explorer can display the image from video cameras connected to your PC. It is possible to use "webcam" style cameras that typically connect to a USB port, a network video camera, or a standard video camera connected to a video interface device (USB or internal) on your PC.

Coastal Explorer will let you select a source from all of the cameras currently connected to your PC and display the video in either a small Virtual Instrument Panel in the Task Pane or in a larger view alongside your charts.

## Video Views

To display video instead of a chart in the main screen area, first split the screen into more than one view (use the 1, 2, 3, or 4 keys), then right-click on a chart panel (other than the Primary Chart View) and select the **Video** option from the menu that appears.

The Source button below the video panel lets you select the video source. Clicking this button displays a menu of all of the live video sources available on your computer as well as options to open a file or network stream.

Selecting Open Video File will cause a standard file selection window to appear so you can select a video file to play.

Selecting Open Network Stream will display a window prompting you for the network address of the video stream you want to display.

The rest of the options on the source menu represent the various video sources available on your computer. Selecting one will switch the video panel to that source.

## Video Instrument Panels

To display video in a Virtual Instrument Panel, open the Instruments Task Pane, right-click on the Instruments Task Pane and select the **Add another panel** option, select Video from the list of data items, and press OK.

Right-click on the Video Instrument Panel to access its options which will include the video source, any options provided by the video camera, and playback controls.

# Radar

# Radar Overview

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If you have the optional Rose Point Radar add-on module, the right-click menu for charts has a new option: **Radar Overlay**. Enable this option to overlay the radar image on the chart in that view.

You can also split the window into more than one view and then change one of the views to show a radar image without being overlaid on a chart. (This cannot be done to the chart view on the right because it is the Primary Chart View and cannot be changed.)

To set up a radar-only view, use the 2 or 3 key to split the screen, right click on one of the charts that appears on the left side of the screen, and select the Radar option from the menu.

## Radar Controls



When the Rose Point Radar option has been installed, extra controls appear on the Cruise Mode toolbar at the top of the screen. This subpanel contains a radar Transmit/Standby button and, when the radar is transmitting, a radar status/control button.

The Transmit/Standby Button indicates the current status of the radar transmitter which can be:

**OFF** - This indicates that Coastal Explorer has not detected the radar on the network which could mean that the radar does not have power or that the network is not configured correctly.

**Warm Up** - This indicates that the radar is warming up and cannot be used yet. A countdown timer will indicate how much time is needed to finish warming up (in 5-second intervals).

**Standby** - This indicates that the radar is ready to transmit. In this state, you can click this button to start transmitting.

**XMIT** - This indicates that the radar is currently transmitting. In this state, you can click this button to place the radar in standby mode (which turns off the transmitter).

The radar status/control button (to the right of the Transmit/Standby button) will only appear when the radar is transmitting. It displays the status of the major radar controls, which are:

**SP/LP** - Short or Long Pulse Length. This indicator will be dim for short pulses and bright for long pulses.

**EXP** - Target Expansion. This indicator will be dim when target expansion is off and bright when it's on.

**IR** - Interference Rejection. This indicator will be dim when IR is off, otherwise it will be bright and include the level of rejection (1, 2, or 3).

**GAIN** - This will be the word "AUTO" or a bar graph indicating the level of gain.

**SEA** - This will be the work "AUTO" or a bar graph indicating the level of sea clutter removal (STC).

**RAIN** - This will be the work "AUTO" or a bar graph indicating the level of rain clutter removal (FTC).

Clicking on the radar status/control button changes the main menu into the radar control menu which is where you can change any of these settings. To get back to the main menu, just wait a few seconds or click in the background area of the radar control menu.

## Radar Setup

Before the radar is used, various settings should be calibrated and this is done using the Radar Controls Task Pane. To access the Radar Controls Task Pane, click on the title of the Task Pane and select Radar Controls from the menu.

The Radar Controls Task Pane is made up of several pages. The first page includes several options and buttons that will display other pages. The options here include:

**Main Bang Suppression** - Enabling this erases the strong returns immediately surrounding your vessel (the "Main Bang").

**Auto Range** - Enabling this option will cause the radar's range to be determined by the chart views that include the radar overlay. If you are trying to use the radar-only view and the range controls aren't working, it's probably because this option is checked! This will be changed in the final product to somehow make it easier to switch between automatic and manual range setting.

**Reset** - This button will reset all radar related settings to their defaults.

**Tuning** - This buttons displays the Tuning page which lets you fine-tune the radar receiver. This should not ever be needed and the option will probably not be included in the final product.

**Initial Setup** - This button displays the Initial Setup page which is where all the calibration settings can be found. These settings include:

**Heading Line** - This is used to compensate for an antenna that was not installed at exactly the right angle.

**Parking Angle** - This is used to cause the radar antenna to stop at a particular angle when placed in standby mode.

**Trigger Delay** - This is used to compensate for the length of the cable connecting the radar antenna to the control box and other things that affect the range calibration. **It is very important that the trigger delay be calibrated correctly.** If it is not, targets will not appear at the correct range and the radar image will not line up with the chart.

**Auto STC Preset** and **Harbor STC Preset** - These values calibrate the automatic sea clutter (STC) for long (auto) and short (harbor) ranges.

**Manual STC Preset** - This value calibrates the manual sea clutter (STC) control. It is effectively the "coarse" control while the primary control on the radar control menu is the "fine" control.

**STC Curve Preset** - This value calibrates the STC controls to the height of the antenna.

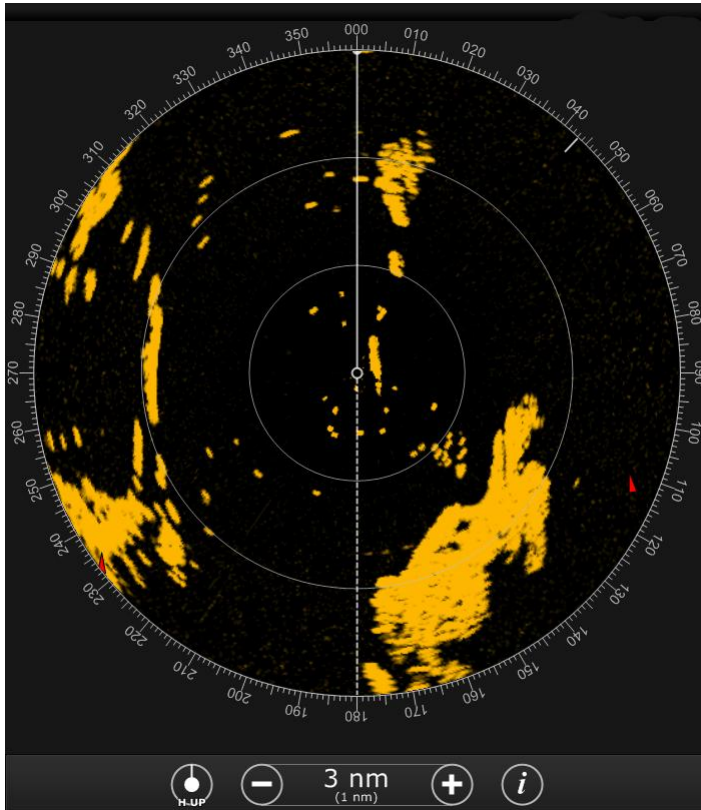
**Auto Gain Preset** - This is used to calibrate the automatic gain function.

**Manual Gain Preset** - This is used to calibrate the manual gain function. It is similar to the Manual STC Preset in that it effectively provides a coarse adjustment.

When you select one of the Initial Setup values to adjust, you will see instructions for making the adjustment in the task pane. Some of the settings require your vessel to be out on the water under certain conditions.

# The Radar-Only View

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Coastal Explorer's radar-only view looks and works very much like a typical radar. In this display, your vessel is represented by the small circle in the middle and the radar returns are shown as orange. This particular screen shot also includes range rings, a couple of AIS targets which appear as red triangles, a heading line which is the vertical line above the boat, a stern line which is the dashed line below the boat, a North marker which is the small solid line around the 43° mark.

## To open a radar-only view:

1. split the screen into more than one chart view using the **2**, **3**, or **4** keys
2. Right-click on a view other than the Primary Chart View
3. Select **Radar** from the popup menu

The radar-only view can be changed back to a chart view by right-clicking anywhere in the radar image and selecting **Chart** from the menu.

## The Radar View Toolbar

The radar-only view has a toolbar with the following options:

**Orientation** - This button indicates the currently selected orientation. Click the button to cycle through the options, which are:

**H UP** - Heading Up

**C UP** - Course Up

**N UP** - North Up

**Range** - This control lets you adjust the range.

**Info** - This buttons displays a menu of things that can be displayed on top of the radar such as range rings, bearing lines (EBL), range markers (VRM), guard zones, etc.

### **Off Center Display**

You vessel's location is indicated by a small circle in the center of the radar range circles. You can create an off-center display by dragging this circle around the view with your mouse. Double-clicking on this circle will cycle between centered and look-ahead modes.

**REVIEW: Need a lot more information here! Including all the display options, using the radar tools, etc.**

# The Radar Chart Overlay

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The radar image can be displayed as an overlay on a chart viewer. To enable or disable the radar overlay, right click on the chart and select the Radar Overlay option, or click on the Chart Viewer Toolbar's Info button and select Radar Overlay from that menu.

In order for the radar image to line up with the chart, Coastal Explorer must have an accurate vessel position and heading input and the Trigger Delay must be calibrated correctly. Just about any GPS is going to position your vessel close enough to the right location that GPS accuracy is not usually an issue. However, slightly incorrect headings can cause very large and noticeable misalignment of the radar and chart.

Most electronic compasses have some sort of setup procedure for building internal magnetic deviation tables which can increase the accuracy of the heading reported by the compass. Please refer to the installation manual for your compass to find the appropriate procedure (which usually involves moving the boat slowly through a few tight circles). You should also follow our procedure for adjusting the Trigger Delay to make sure that target ranges are correctly represented.

If you do not have an electronic compass (or your compass is not very accurate), it is still possible to use the radar overlay but it is important to understand certain limitations. Since the radar image is inherently relative to your vessel's heading and the chart is inherently North Up, Coastal Explorer must use your heading to rotate the radar image in order to line it up with the chart. If Coastal Explorer is not receiving a heading, then it will use the course-over-ground value from your GPS instead. A vessel's course over ground is usually the same as its heading, except when the vessel is crabbing, turning, moving slowly, or stationary. At those times that the course over ground is not the same as the heading, the radar image will not line up with the chart. In many cases, though, that doesn't matter as much as it might seem because the human brain is very good at making the mental adjustment necessary to determine how the radar should line up with the chart.

## Radar Tools on the Overlay

Radar tools such as range rings, variable range markers (VRM) and electronic bearing lines (EBL) can be displayed on the chart along with the radar image. These tools can be individually selected by right-clicking on the chart, select the Radar Tools option from the popup menu, and selecting a tool from the sub-menu.



# Options and Reference

# Options Window

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## Tools > Options

The options window provides you with access to most of Coastal Explorer's option settings.

The options window is split into several pages of settings and a page index is listed on the left side of the window. Click on a page in the index to display that page of options.

**TIP:** If you prefer to use your keyboard, the **Ctrl+PageUp** key will select the previous page of options and **Ctrl+PageDown** will select the next page.

The options window contains a Reset button which can be used to reset most options to the "factory defaults". (This button will not, however, reset your Instrument Ports or Chart Folder options.)

The pages of the options window include:

- **Measurements** Controls units of measurement and value formatting options.
- **Instruments** Controls NMEA 0183 port settings for your GPS, autopilot, etc.
- **Charts** Controls where and how charts are installed and quilted.
- **Alerts** Controls voice alerts for various events that occur while cruising.
- **AIS** Controls the display of AIS targets and determines which targets are dangerous.

# Measurement Options

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## Tools > Options > Measurements

This option page allows you to select which units to display values in. These settings will affect the values displayed just about everywhere in Coastal Explorer, including on vector charts, but not on raster or photo charts.

**TIP:** You may quickly select all of the English or Metric options by pressing the **Select All English Settings** or **Select All Metric Settings** buttons.

## Distances

**Distances** may be displayed as any of these:

- Kilometers and Meters
- Feet
- Yards
- Nautical Miles
- Nautical Miles and Yards
- Nautical Miles and Feet
- Statute Miles
- Statute Miles and Yards
- Statute Miles and Feet

The **Nautical Miles and Yards** and **Statute Miles and Yards** options will show distances larger than ¼-mile in miles and smaller distances in yards.

The **Nautical Miles and Feet** and **Statute Miles and Feet** options will show distances larger than ¼-mile in miles and smaller distances in feet.

## Depths

**Depths** may be displayed as any of these:

- Meters
- Feet
- Fathoms
- Fathoms and Feet

The **Fathoms and Feet** option will display fractions of a fathom as feet.

## Heights

**Heights** may be displayed as either of these:

- Meters
- Feet

## Speeds

**Speeds** may be displayed as any of these:

- Kilometers per Hour
- Knots
- Miles per Hour

## Temperatures

**Temperatures** may be displayed as either of these:

- Celsius
- Fahrenheit

## Volumes

**Fuel** volumes may be displayed as any of these:

- Liters
- Gallons

## Locations

**Locations** consist of a latitude and a longitude and may be displayed in any of these formats:

- Degrees, Minutes, and Seconds
- Degrees and Minutes
- Degrees

## Times

**Times** may be displayed in either of these formats:

- 24-hour
- 12-hour (AM/PM)

## Bearings

**Bearings** may be displayed as either of these:

- True
- Magnetic

# Alert Options

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## Tools > Options > Alerts

This option page allows you to control which events cause alerts and the sounds or voice used to deliver them to you.

The various alerts are:

- **Course update at waypoints** Selecting this option will cause an alert whenever you reach a waypoint. The alert will include the bearing to the next waypoint.
- **Boundary crossing** Selecting this option will cause an alert when a boundary area or circle is crossed.
- **Depth above** Selecting this option and entering a depth value will cause an alert whenever the depth goes above the depth value. This feature depends on a working depth sounder connected to the NMEA port.
- **Depth below** Selecting this option and entering a depth value will cause an alert whenever the depth goes below the depth value. This feature depends on a working depth sounder connected to the NMEA port.
- **XTE over** Selecting this option and entering a distance value will cause an alert whenever the cross-track-error exceeds the distance.
- **Obstacles (vector charts only)** Selecting this option and entering a **Look ahead** time period value (minutes and/or seconds) will cause an alert when a new obstacle is found on the path between your boat and the point looking that far ahead of your boat at your current speed.

## Speakers

Coastal Explorer normally uses a PC's "internal speaker" to sound alarms because these speakers cannot be turned off and are not affected by volume controls. However, some computers do not have an internal speaker, so Coastal Explorer can be configured to use normal speakers instead. You can use the **Test Beeper** button to determine if your computer has an internal speaker; press the button and listen. If you hear a beep, then your PC does have internal speakers. If you do not hear a beep, select the **Use default playback device** option and make sure your volume is set to a level appropriate for the alarms you want to be able to hear.

## Voice

The voice used to deliver alerts may be controlled with these options:

- **Enable Voice Alerts** Selecting this option allows the voice to be used
- **Which voice** Selects the voice to use
- **Time between alerts** Selects the amount of time to wait between alerts. This must be one or two numbers followed by the letter m for minutes, or s for seconds.
- **Volume** Selects the volume of the voice relative to other sounds. You may need to adjust the volume control of your computer if the voice is not loud enough when this is all the way up.
- **Speech Rate** Controls how fast the computer talks.

# Units and Abbreviations

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The following table describes the units and abbreviations that may be used when entering values in Coastal Explorer. You may also use the plural form of most abbreviations (such as fms for fathoms). You may also use upper or lower case letters interchangeably.

In most cases, you may enter measurements without specifying units. Coastal Explorer will assume you are using the units you have selected in the **Measurements** page of the **Options Window**.

## Distance, Depth, and Height

NM	nautical miles
km	kilometers
mi	miles
yd	yards
ft	feet
in	inches
cm	centimeters
mm	millimeters
m	meters
fm	fathoms

## Speed

mph	miles per hour
kph or k/h	kilometers per hour
kn	knots

## Temperature

C	Celsius
F	Fahrenheit

## Bearings

T	true
M	magnetic

## Periods of Time

h or hr	hours
m or min	minutes

s or sec      seconds

A period of time can include a combination of hours, minutes and seconds. For example: "3 hrs 15 mins" is a valid time period. If you do not specify a unit of time, then seconds are assumed, so "45" means 45 seconds.

## Time of Day

The time of day may be specified as h:m, h:m:s where h, m, and s are replaced with the hour, minute, and second. An hour of 0 or 13-23 indicates 24-hour format and a suffix of am or pm indicates 12-hour format. An hour of 12 with no suffix is assumed to be noon.

## Locations

A location is specified as latitude followed by longitude. You may specify each as a single number of degrees, two numbers of degrees and minutes, or three numbers of degrees minutes and seconds. You do not need to include the degree, minute, or second symbols after the numbers; as the number of numbers determines how they are interpreted. You may separate the numbers using spaces or hyphens. Before or after a latitude you must, however, include an N or S for north or south, and before or after a longitude you must enter an E or W for east or west.

Here are some example locations you can enter (they all refer to the same place):

- 48°36.565'N 123°09.237'W
- 48 36.565 N 123 9.237 W
- 48-36.565 N 123-9.237 W
- 48°36'33.90"N 123°09'14.20"W
- 48 36 33.90N 123 09 14.20W
- 48-36-33.90N 123-09-14.20W
- 48.6094°N 123.1539°W
- 48.6094N 123.1539W

# Keyboard Shortcuts

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<b>Ctrl+N</b>	Create a New Navigation Object File
<b>Ctrl+O</b>	Open an existing Navigation Object File
<b>Ctrl+P</b>	Print
<b>Ctrl+A</b>	Select All
<b>Ctrl+X</b>	Cut
<b>Ctrl+C</b>	Copy
<b>Ctrl+V</b>	Paste
<b>Ctrl+Z</b>	Undo the last editing action
<b>Ctrl+Y</b>	Redo the last editing action
<b>Del</b>	Delete
<b>Alt+Enter</b>	Display the Properties Panel
<b>Arrow Keys</b>	Pan the chart view
<b>Shift+Arrow Keys</b>	Pan the chart view faster
<b>Page Up</b>	Pan the chart towards the vessel's heading (or course in Course Up mode)
<b>Page Down</b>	Pan the chart away from the vessel's heading (or course in Course Up mode)
<b>Ctrl+Right</b>	Rotate the chart view clockwise
<b>Ctrl+Left</b>	Rotate the chart view counter-clockwise
<b>+</b>	Zoom the chart view In
<b>-</b>	Zoom the chart view Out
<b>U</b>	Cycle the chart orientation between North Up, Course Up, and Heading Up
<b>Home</b>	Center the chart view on the boat
<b>End</b>	Stop following the boat



<b>B</b>	Cycle the "Bearing Display Mode" between True and Magnetic
<b>Tab</b>	Select the next Navigation Object
<b>Shift+Tab</b>	Select the previous Navigation Object
<b>Enter</b>	Activate the property window when a Navigation Object is selected
<b>Esc</b>	Hide the chart tip, cancel an operation that is in progress, or dismiss an active alarm
<b>F1</b>	Get help
<b>F2</b>	Edit the name of the selected Navigation Object
<b>F4</b>	Man Over-Board
<b>F5</b>	Add event mark at boat location
<b>F7</b>	Add a new mark at the next click
<b>F8</b>	Start adding a new route
<b>F9</b>	Set a bookmark at the current viewing area
<b>F10</b>	Go to the bookmark set with F9
<b>F11</b>	Turn Full Screen mode on or off
<b>F12</b>	Switch between Planning and Cruising modes
<b>Ctrl+F1</b>	Turn the Task Pane on or off
<b>Ctrl+D or Alt+D</b>	Activate the find box on the toolbar
<b>Ctrl+F</b>	Find
<b>F3</b>	Find Next

<b>Shift+F3</b>	Find Previous
<b>V</b>	Display only vector charts
<b>Shift+V</b>	Turn the display of vector charts on or off
<b>R</b>	Display only raster charts
<b>Shift+R</b>	Turn the display of raster charts on or off
<b>P</b>	Display only photo charts
<b>Shift+P</b>	Turn the display of photo charts on or off
<b>Ctrl+I</b>	Cycle between day, dusk, and night colors
<b>Space (3x)</b>	Reset to Standard Display (tap the spacebar quickly three times)
<b>1</b>	Show one chart view
<b>2</b>	Show two chart views
<b>3</b>	Show three chart views
<b>C</b>	Show or hide the Tidal Current Predictions on the chart
<b>T</b>	Show or hide the Tide Level Predictions on the chart
<b>Shift+C</b>	Show the Tidal Current Prediction Browser Panel
<b>Shift+T</b>	Show the Tide Level Prediction Browser Panel
<b>W</b>	Skip the active waypoint and activate the next one from the active route
<b>Shift+W</b>	Activate the previous waypoint from the active route
<b>X</b>	Reset the Cross Track Error
<b>Ctrl+Shift+Up</b>	Speed the boat simulator up

<b>Ctrl+Shift+Down</b>	Slow the boat simulator down
<b>Ctrl+Shift+Left</b>	Turn the boat simulator to port
<b>Ctrl+Shift+Right</b>	Turn the boat simulator to starboard

The following keys require two key presses, **Ctrl+Q** followed by another key. The second key must be pressed less than one second after **Ctrl+Q**. These key combinations are intended to be used with programmable keypads and provide direct access to modes that are normally set by cycling through various options.

<b>Ctrl+Q C</b>	Select Course Up mode
<b>Ctrl+Q N</b>	Select North Up mode
<b>Ctrl+Q H</b>	Select Heading Up mode
<b>Ctrl+Q F</b>	Select Follow Boat mode
<b>Ctrl+Q A</b>	Select Look Ahead mode
<b>Ctrl+Q L</b>	Select Follow Leg-Line mode
<b>Ctrl+Q D</b>	Select Don't Follow mode
<b>Ctrl+Q S</b>	Select the Selection Mouse Tool
<b>Ctrl+Q Z</b>	Select the Zoom Mouse Tool
<b>Ctrl+Q P</b>	Select the Pan Mouse Tool
<b>Ctrl+Q M</b>	Display Magnetic Bearings
<b>Ctrl+Q T</b>	Display True Bearings

# Getting Program Updates

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## Help > Check for Updates

This window helps you download and install updates to Coastal Explorer.

You can get to this window with the **Help > Check for Updates** command.

In order to ensure Coastal Explorer is always as good as it can be, we make regular updates to the software to fix bugs, add features, and make things easier to use. These updates are made available on our website and you can download them with a web browser if you need to copy them to a floppy disk or other removable storage device in order to get them to a computer that is not connected to the Internet. However, if your computer is connected, then you can download and install the latest update by simply using this window.

Each Coastal Explorer program update is designed to contain all of the updates that came before it, so you don't have to worry about making sure you get every single one, but we do recommend that you update frequently so as not to miss out on the latest and greatest new features and fixes.

Sometimes when you start Coastal Explorer it may tell you that it has an update that is ready to be installed; that's because it was able to download an update "in the background" the last time you were using the program. This can make installing an update take only a second or two!

This window will display a list of all of the new updates that are ready for you to download and install (or let you know that none are available). Each update will have a short description and usually a link to the [coastalexplorer.net](http://coastalexplorer.net) web site for more details about what will change.

When you click **Install**, Coastal Explorer will have to exit and restart in order to get updates. You will be asked if that's okay, and the process will be quick and automatic.

The **History** button will show you a list of all of the updates you have installed so far.

### To get updates on a computer without an Internet connection:

1. You will need to use another computer to download the update from: **updates.coastalexplorer.net**
2. Follow the directions on that page to download the file to a floppy disk, USB Flash Drive, or other portable storage unit.
3. Insert the portable storage device on the computer you want to update
4. Use the **Help > Check for Updates** command.
5. Coastal Explorer will now find the update, apply it, and restart itself.

# Support Options

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You must register your copy of Coastal Explorer in order to receive technical support. You may register when you send us e-mail by including your full name and Product ID in the message. You can also register over the phone by calling the number below.

Your Product ID may be found with the **Help > About Coastal Explorer** command.

## Your Coastal Explorer Support Options are:

- Check the Coastal Explorer Network for answers at **support.coastalexplorer.net**
- Send e-mail to **support@rosepointnav.com**, or
- Call **(425) 605-0985** Monday through Friday (except holidays), 9am to 5pm Pacific Time. Please have your Product ID ready!

## About Coastal Explorer Window

### Help > About Coastal Explorer

Use this window to find information about your copy of Coastal Explorer, including:

- the copyright message
- what version of Coastal Explorer you are running
- the product ID for your copy of Coastal Explorer
- the End User License Agreement (EULA)

## Send Feedback

### Help > Send Feedback

This window may be used to easily send feedback to Rose Point Navigation Systems. You may optionally include a screen shot (if it will help make your point) and/or your application log by checking the appropriate options.

Feedback is sent using your email program and depends on having a MAPI-compatible email program (such as Outlook Express or Windows Mail) and an account profile already configured on your computer. If you use web-based email or your email program is not MAPI compatible, then you can send your feedback to **feedback@rosepointnav.com** without using this command.

While we do keep and review all feedback mail, we will not always respond. Please do not send feedback if you are in need of assistance, but contact our support department instead.