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Navigation Software and Weather Data

Today's PC-based navigation software programs provide a dizzying array of features. Most also integrate some weather functionality. Because the capabilities of navigation programs are so extensive, we'll limit the scope of this article to only their weather functionality.

If you already use one of these programs, you may want to think twice before adopting a different one. You have a lot of time and money invested in the installation of the program, purchase of charts and ascending the learning curve. Adopting a new program can mean starting all over again. If you don't already own one of these programs, or you're looking to switch programs, weather capabilities may be a factor in deciding which one to buy, or you may decide a stand-alone weather solution better suits your needs.

The most common weather data incorporated into PC-based charting and navigation programs is gridded binary (grib) data. The term grib stands for, and simply specifies, a standardized formatting for any weather data.

When reading my comments on each navigation software program, please remember I am considering only weather functionality. If you don't intend to use their weather functionality, then it should not impact your purchase decision. Aside from weather-based routing, the best weather information is available in programs designed specifically to display weather.

Integration of weather and charting can produce real synergies, such as when the navigation program uses weather data to number-crunch and arrive at a weather-optimized route to sail. Only a few programs have this ability. Fast vessels can also benefit from overlaying real-time weather observations and short-term forecasts on a chart.

Fugawi (www.fugawi.com)
Strengths: Easy, intuitive program. All weather controls on-screen in "weather bar," so no digging through menus. Download weather via e-mail. Only program to compute and display the north-south (x-axis)/east-west (y-axis) components of wind.

Areas for improvement: Cannot display precipitation or QuickSCAT. Had problems with temperatures and sea surface currents.

Bottom Line: Good trade-off between ease of use and modest weather capabilities.

Expedition (www.iexpedition.org)
Strengths: One mouse click to access most weather choices. Only program (except GRIB Explorer) with pop-up window (right-click on the chart) listing conditions over time at cursor position. Displays 1,000mb heights and QuickSCAT data (no rain flag) with time stamp (click on a QuickSCAT flag to display time stamp). Manual scaling of weather parameters. Performs route optimization. Weather data via e-mail or integrated OCENS WeatherNet. Advanced

tactical/racing features.

Areas for improvement: I couldn't get direction or period of seas to display.

Bottom Line: Good weather functionality and route optimization with a good user interface.

Rose Point's Coastal Explorer (www.rosepointnav.com) and
Maptech's Chart Navigator Pro (www.maptech.com)
Rose Point's Coastal Explorer and Maptech's Chart Navigator Pro have the same weather interface and functionality.

Strengths: Two mouse clicks opens "weather bar" — lots of weather functions, and they're all controlled from the weather bar. Only program with an "Undo" button, a nice feature allowing you to undo the last action you took (no more aggravation when you press the wrong button and don't know how to undo it!). Color-filled contours, gradient colors, discrete values at the base of each wind flag and the best global transparency adjustment. Easiest weather downloads (including text forecasts), but requires Internet connection — also works well with separate Saildocs and OCENS WeatherNet.
Areas for improvement: Discrete value for all directions is limited to cardinal directions (N, NE, E, SE, S, etc.), rather than the specific compass degree. No sea surface current or QuickSCAT. Direction of seas displays backwards.

Bottom Line: If you can supply an Internet connection and you don't need weather-optimized routing, either Coastal Explorer or Chart Navigator Pro may offer the best combination of powerful features in an easy-to-use program.

Sailmath's Deckman for Windows v7.09 (v8 available with similar weather functionality): (www.bandg.com/deckman.htm)
Strengths: Two mouse clicks brings up a small "weather bar." Simple user interface for a program that performs weather-optimized routing. Good OCENS WeatherNet integration. High-end tactical program allows you to edit gribs and perform real-time analysis of how weather conditions and vessel performance are varying over minutes or hours. Other advanced tactical/racing features.
Areas for improvement: No ability to display seas or precipitation. Minimal customization of display properties.

Bottom Line: Powerful and capable program with a utilitarian/minimalist approach.

Raymarine RayTech RNS 6 (www.raymarine.com)
Strengths: Big buttons and layer after layer of menus should work well on touch-screen cockpit displays, and should be familiar to current Raymarine users. Manual scaling of weather parameters. Integrated weather information via e-mail or Internet. Performs basic weather-optimized routing. Good tech support.

Areas for improvement: Difficult user interface, complex program, not easy to "bring your own grib data," does not display seas, currents, QuickSCAT or 500mb. Somewhat limited adjustment

of weather display. Weather-optimized routing does not consider sea surface currents. I had to call tech support.
Bottom Line: If you like lots of features, you won't go wrong buying RNS 6 for all its navigation and other functions, and for weather-optimized routing, but use a different tool to analyze weather for yourself.

Nobeltec VNS 9 and Admiral 9 (www.nobeltec.com)
I tested Admiral. VNS 9 has the same weather functionality, except for integration of WeatherNet and optional XM WxWorx.

Strengths: Nice "weather bar" controls most (but not all) weather functions. Displays most weather parameters you'll want. Good integration of OCENS WeatherNet and also has XM WxWorx as an option.

Areas for improvement: Very limited adjustment of weather display.

Bottom line: Does most of what you need, but lack of adjustment options may mean you get less of a "feel" for the weather.

MaxSea 12 (www.maxsea.com)
Strengths: Sophisticated weather-optimized routing. Integrated weather data via e-mail, and works well with OCENS WeatherNet. Basic grib editing. Performs real-time analysis of how weather conditions and vessel performance are varying over minutes or hours. Other advanced tactical/ racing features.
Areas for improvement: Does not display precipitation, very limited adjustment of weather display, no animation except after routing optimization.

Bottom line: Plenty of advanced features for racers, or anyone interested in maximizing vessel performance, good route optimization; but if you plan to analyze weather yourself, you'll also want a stand-alone grib program.

GRIB Explorer (www.ocens.com)
Strengths: The best grib display program I've seen. Unique graphical display of all weather parameters at all time periods at cursor location. Gives you an intuitive "feel" for the weather. Displays all parameters you might want with wide range of display adjustment.

Areas for improvement: Not a full-featured navigation program — but it's not intended to be.
Bottom line: The perfect program for those who want the best grib weather analysis tool on the water, whether or not you display weather in your navigation program.

Other programs
Other grib viewers provide features roughly comparable to those in the average navigation program (though of course without any navigation functions) — among them Xaxero's WindPlot (www.xaxero.com), Mscan Meteo (www.mscan.com) and ViewFax (www.siriuscyber.net/wxfax).

OCENS MetMapper (www.ocens.com)
This new tool allows you to perform basic operations on conventional weatherfax charts, satellite images, radar and most other image products. OCENS georeferenced standard graphical weather products and, when viewed in MetMapper, you can click on a low-pressure system in one forecast period, click on the forecast position of that low in the next period, and MetMapper computes direction and distance the low is moving. Your position is plotted by MetMapper. MetMapper can compute range and bearing to the front on a synoptic chart, satellite or radar image.

DigiBOAT Software-on-Board (SOB) (www.digiboat.com.au)
We contacted DigiBOAT about their Software-On-Board (SOB) navigation software, as well. The next version of SOB will integrate grib functionality.

GPSNavX's MacENC (www.gpsnavx.com)
Apple Mac users shouldn't despair. MacENC from GPSNavX.com is a full-featured navigation program with integrated grib weather display capabilities.

Chris Parker is the author of Coastal and Offshore Weather and prepares forecasts for the Caribbean Weather Centre www.caribwx.com.