

Date: 9/30/02 2:36 PM  
To: Bulletins  
From: Luis Soltero  
Copy:  
Subject: Weather Bulleting 4 for your review

Hello All,

A while ago I posted a series of 3 bulletins that described how you might receive weather via e-mail. The third bulletin of the series was an introduction to grib files and their use. In that bulletin I gave instructions on retrieving grib files via saildocs.com and displaying them with raychart.

Grib files that mariners are interested in originate from computer models created by NOAA. NOAA has several computer models that it uses for forecasting but only two of these model output data that we can use readily. The two models are "Global Forecasting System GFS" and "MMAB Operational Wave Model (wwave3)".

GFS is a monster. The program models everything from ice concentrations in the upper atmosphere through pressure gradients, temperature, thunderstorms, tornados, predicts weather for both ocean and land masses, etc. Basically every thing. It's an extremely complex model that creates several output forecast files divided into segments. Some of these include

- \* Short and extended range Alaska weather
- \* Short and extended range thunder storm activity
- \* Short and extended range Global forecast
- \* Medium range guidance
- \* Short range NGM (Whatever that means)
- \* + lots more...

In short it 's a **\*\*VERY\*\*** complex model. For people in the business of providing weather to cruisers the GFS extended forecast is really nice. It contains, pressure, temperature, wind dir/speed information all in one file. The grib file contains multiple forecasts computed in 24 hour time slices.

The second model (MMAB or wwave3) is a computer program specifically designed to predict wave height, direction, and time period. That is all it does. As a by product it forecasts the surface speed and direction of the wind since it needs this information for computing the wave parameters. Unlike GFS, wwave only computes wind speed over water. wwave generates a 5 day forecast with time slices computed every 3 hours.

As far as I have been able to determine there are 5 internet weather providers that extract forecasts from these models and repackage them for the mariner. These providers are:

- \* saildocs using extended GFS
- \* Raymarine using extended GFS
- \* navcenter.com repackaging wwave
- \* MaxSea (I have no idea what they do... Any one have a grib file I could look at?)

\* and us (Global Marine Networks) using wwave (More on this later).

wwave only predicts wind/wave conditions and does not yield any information on surface temperature or atmospheric pressure.

My recommendation is for you to use wwave3 data when available. As I mentioned before the only Internet provider of this data packaged in a way that is useful to you is Navcenter.com. The problem with their data is that it's too large for wireless access. Typical data sets consists of a 5 day weather file containing 42 forecasts computed in 3 hour intervals that are about 100-200 Kb compressed.

So this is where we come in... I have released our grib mail robot which repackages wwave data in a format that can be transmitted readily via wireless modes.

This program is a small portion of a comprehensive weather package we plan to release at the end of this quarter. (More on this subject in a future bulletin).

gmngrib@globalmarinenet.net is a straight forward robot that takes requests for data in the Subject line and returns the requested grib information as an attachment. The data can be viewed and animated with both maxsea and raychart.

To request information on it's use simply send e-mail to gmngrib@globalmarinenet.net and put the word "info" or "help" in the Subject line.

To receive a 3-5K 24 hour forecast of the Atlantic region, for example, you would enter "Atlantic 24" in the subject line. And to receive a 10K 1 day forecast ( 4 forecasts in 6 hour intervals ) that can be animated for the same region enter "Atlantic 1day" on the subject line.

The info file that is returned to you has detailed information on the command structure and use of the robot.

Here are few comments for viewing Grib files with the Free DEMO version of RayChart.

RayChart demo does not display all the information stored in a grib file. It looks at the date of the data plus some other parameters (I haven't been able to figure out what) and then decides if it wants to display the weather chart or not. So, if you download a 24 hour forecast and it fails to display I suggest you download the 48 hour forecast and it will display. Of course you could always pay the \$500 they want for the product to fix the problem.

To animate the data in a grib series such as the 1day forecast mentioned above you would use the "animate" tool bar. If "Animate" is not displayed on the tool bar simply do a right mouse button click on the gray area to the right of the bar and check "Animate". Animate has a speed control, start/pause button and a fast forward button. Once you have loaded the grib file push the start button and then adjust the speed control to your liking.

As I mentioned before the grib data provided only contains wind speed and direction information. You can adjust the "look" of the wind arrows by pushing the "layers" tool bar button, then double click on weather and select wind. "Barbs" give you same type of arrows you are accustomed to viewing on your weather faxes. The contour lines are nice since they give you regions of iso strength much like pressure gradient information obtained by isobars.

Details on the use of RayChart to view grib files is discussed in greater detail in Weather Bulletin 3.

One last note on the grib robot. Single weather forecasts are delivered as attachments in uncompressed format (3-5K). multi day forecasts (1day, 2day,...) are compressed in bzip2 format. MaxSea can read these directly. RayChart cannot read these directly so you will have to get a bunzip2 program. The grib robot info file gives instructions on where to obtain these.

The grib technology is very interesting and is worth experimenting with.

Download the demo version of raychart from [www.raymarine.com](http://www.raymarine.com) then send mail to [gmngrib@globalmarinenet.net](mailto:gmngrib@globalmarinenet.net) and give the technology a whirl.

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