DOWNLOADING GRIB FILES ABOARD YOUR BOAT IN THREE EASY STEPS
(for PC users)

by

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Gridded binary (GRIB) files are compressed weather maps specifically designed for efficient transmission to offshore vessels equipped with low bandwidth receivers – high frequency radios (Ham or SSB) or satellite phones. These special-request files are obtained by accessing NOAA weather databases to retrieve information tailored to the user. They offer almost unlimited flexibility in selecting weather information, with the user specifying the reporting area, the type of information required, and the forecast period. The information that can be downloaded includes wind speeds and directions displayed as wind arrows, surface pressure, 500-millibar charts, and wave heights for up to fifteen days ahead (though accuracy declines markedly after the first 24 to 48 hours). Figures 1 through 3 show GRIB files we downloaded when we were sailing down the west coast of the US this summer.

GRIB files are raw data plucked from NOAA databases without human intervention. They are not quality controlled, and they require interpretation by the user. They may not show compact systems such as meteorological bombs and tropical depressions. Further, they don't show local land influences on the weather. On the other hand, GRIBs are available on demand. You can choose to download them for as many periods as you wish and for whichever part of the ocean you designate. In spite of their shortcomings, GRIBs have replaced weather faxes as the preferred method on most boats for obtaining long-range forecasts.

To download GRIBs during an offshore passage requires a laptop computer and some way to upload and download e-mail from onboard. The transmission rates over high-frequency radio or satellite phone are too slow to access websites directly, but several different options exist for accessing e-mail including SailMail (SSB), AirMail (Ham) and UUPlus or Global Marine Net (satellite phone). To use these programs, you compose your e-mails offline, then dial up and connect to the server. The program will upload any e-mails in your outbox and download any e-mails waiting for you on the server. The program then shuts down, and you respond to e-mails offline. If you want to send out any responses, you have to dial up again, connect to the server and upload your e-mails.

Once your boat is equipped with a computer and one of the e-mail options, you can begin receiving GRIBs aboard by following these three easy steps.

1. Download a GRIB reader. In order to be able to decompress and display the GRIB file, you will need a program called a GRIB reader. There are many options available, from a wide variety of full-featured charting programs to freeware GRIB readers. The program we currently use most is called "ViewFax," for which we offer Jim Corenman (who also wrote the software for SailMail and AirMail) many thanks for making this program available to the public. Go to www.siriuscyber.net/wxfax for a free download. Click on the download link and you will get a 1Mb self-installing file. Before you double click on this file to install it, you need to create an empty folder called "Airmail" in your C:\Program Files folder if you do not already have one. "ViewFax" works perfectly as a standalone program but was designed as a companion program to the "Airmail" e-mail-over-Ham-radio program and it looks for this folder when installing.

2. Request a GRIB file. To get a GRIB file, send an e-mail to one of several GRIB robots that access the NOAA weather files. I usually use the free SailDocs GRIB robot which the SailMail team has also made available to the public. The subject line of the e-mail must be blank. To get started, try sending an e-mail that looks exactly like this:

To: query@saildocs.com
Subject:

send GRIB:40N,30N,140W,120W|1,1|0,12,24,36,48,60,72,84,96,108,120|WIND

"40N,30N,140W,120W" represents the boundaries of the area for which you are requesting weather. In this case, you are asking for weather from 30N to 40N and from 120W to 140W. The "1,1" represents how detailed you want the GRIB to be. In this case, you are asking for 1 degree by 1 degree of resolution. The "0,12,24,36,48,60,72,84,96,108,120" indicates that you want weather maps for each 12 hour period out to 120 hours. Finally, the "wind" indicates you only want wind arrows. You can get additional information, such as isobars and wave heights, but they make the GRIB file bigger and somewhat slower to download. Figures 1-3 show downloaded GRIBs that result including the isobars; the query above would return only the wind arrows shown in those figures. To get the GRIBs shown in the figures, you would simply delete the word "WIND" from the end of the command, ending with the vertical line.

Your e-mail program will close down after sending the request for the GRIB. The robots will reply in about 30 seconds, sending you an e-mail with the downloadable file you requested as an attachment. After a few minutes, you can retrieve your GRIB by dialing up and connecting once again to the server. I recommend creating a new folder called "GRIBs" to store these attachments. After you receive the e-mail, open it and save the attachment into your GRIB folder.

For more detailed information about requesting GRIBs from the SailDocs robot send an empty e-mail to GRIBinfo@saildocs.com . It will reply with comprehensive instructions.

3. View the GRIB. This is the easiest step. Open ViewFax. Use the File/Open menu, point at your GRIBs folder, and open the new file that was the e-mail attachment. ViewFax will display a map with coastal outlines and wind arrows showing the forecast wind strengths and directions for that day at 0000 UTC. When you click on the forward arrow you get similar weather maps for 1200 UTC and so on every twelve hours for 120 hours.

To give this a try from home, simply follow the three steps above using your normal e-mail address and you'll receive the GRIB back as an attachment in about 30 seconds.

The interpretation of weather maps is beyond the scope of this article. However, remember that this data has been taken from the NOAA site without interpretation and may therefore not be as accurate as weather faxes or text forecasts. In two cases, GRIBs may do a significantly worse job of forecasting the weather than other weather sources. First, GRIBs can under predict the winds in an extremely compact low pressure system or frontal system which is smaller than the GRIB resolution. Keeping track of text forecasts or the SSB weather nets in addition to downloading the GRIBs will give you warning of any significant systems. Second, the GRIB models are generally not very accurate near the equator, where the isobars are often widely spaced. In that area, we tend to rely on reports from other boats in the area and satellite pictures when crossing

the equator. While we do keep up with these other weather sources, the convenience and flexibility of GRIBs has made them our primary source of weather information.