# Using RMS Express to request, receive, and view Grib Weather forecast files

Before you get your first Grib file you should spend a few minutes to learn what a Grib file is, what it represents, and a little on how to understand what the file shows the user. Two good internet sites that discuss Grib files are:

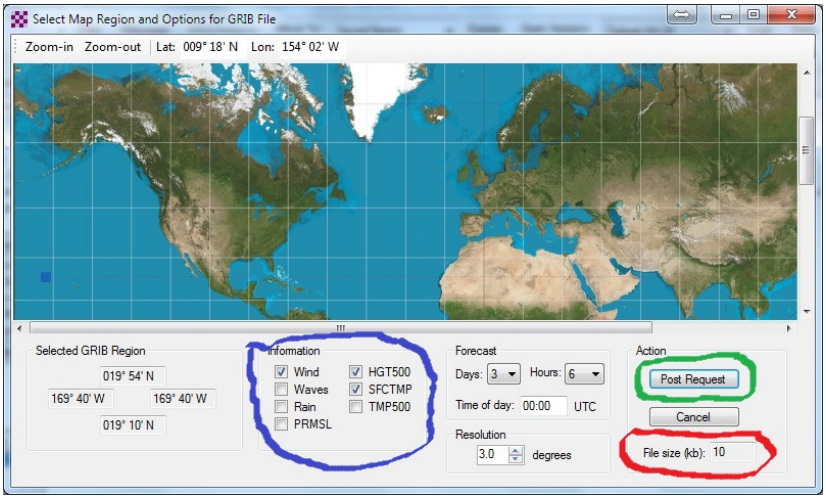
http://www.sea-tech.com/grib.htm

http:// weather.mailasail.com/Franks-Weather/Using-Gribs-And-Other-Objective-Forecasts

Use copy and paste to copy the links above and paste them into your internet browser and review the information.

## A. Getting a Grib file using RMS Express

1. Open Rms Express
2. Click Files - Grib files request
3. You will get a pop up window that looks like this



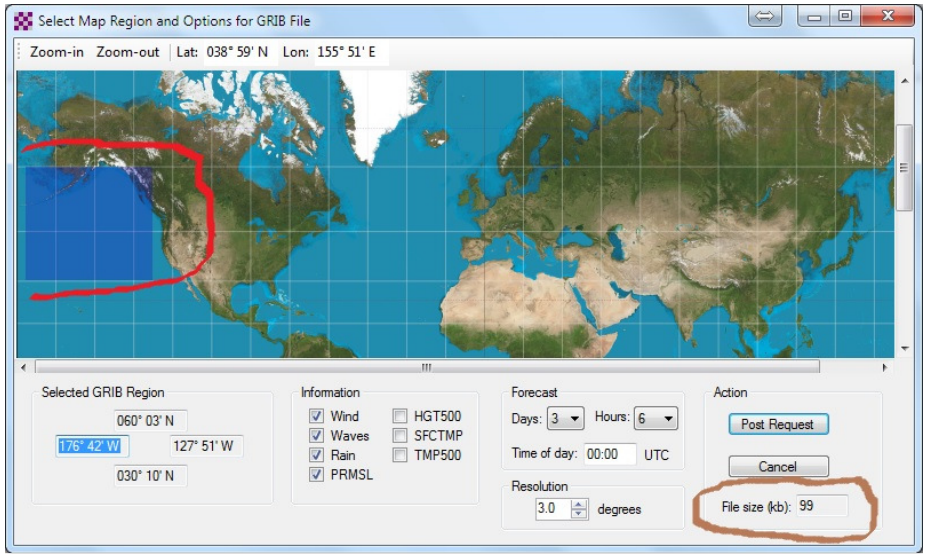

4. This is the interface that you use to request a Grib Weather Forecast.
5. There are some important sections of this window to quickly review
    i. The area outlined in blue

1. Here is where you select the elements of gridded information to collect. It is from these selections that you can learn to make fairly accurate weather forecasts
    a. Wind will give you a mapping of the current wind conditions showing speed and directions using wind barbs.
    b. Waves will show you the wave height in meters for the requested area. This is probably the least useful information for land based operations. But could be critical for offshore users.
    c. PRMSL will give you the mean sea-level pressure.
    d. HGT500 displays where, in the atmosphere, the pressure gradient is 500mb. This value is expressed in meters above sea level. A good discussion of this weather forecasting element can be read at: http://www.atmo.arizona.edu/students/courselinks/fall12/atmo336/lectures/sec1/info500mb.html
    e. SFCTMP will display the temperature at the surface for the requested area in Celsius. The data is displayed as a colored gradient and the Celsius temp is also displayed at the bottom of the viewer.
    f. TMP500 shows the temperature at the 500mb altitude.
2. My two favorite selections are Wind and PRMSL. From these two selections I can make accurate forecasts. However when I was working for the Fire Marshall's Office I would watch the SFCTMP during fire season to watch for approaching high temperatures or if there were active fires for lower temperatures to assist in containing the fires. I have also been told by professional forecasters that the HGT500 pressure information is critical to making their forecasts. When we were cruising we would look at the wave heights to try to avoid having too much sail up in heavy seas.

ii. The area outlined in red is critical to successfully getting a Grib file through the Winlink Network. There is a limit to file sizes that can pass through the network of approximately 120Kb. I try to limit my returned files to a maximum of 100Kb. If this number is larger than 100Kb when you are ready to send the request you must decrease the amount of data that will be returned from your request.
    1. Decreasing the returned file size may be accomplished by requesting a smaller area to evaluate, reducing the resolution of the area to get weather samples from, or requesting fewer data elements.
    2. To reduce the resolution of the data sampling makes the forecast less accurate. This is done by changing the numeric value to the left of the area outlined in red.

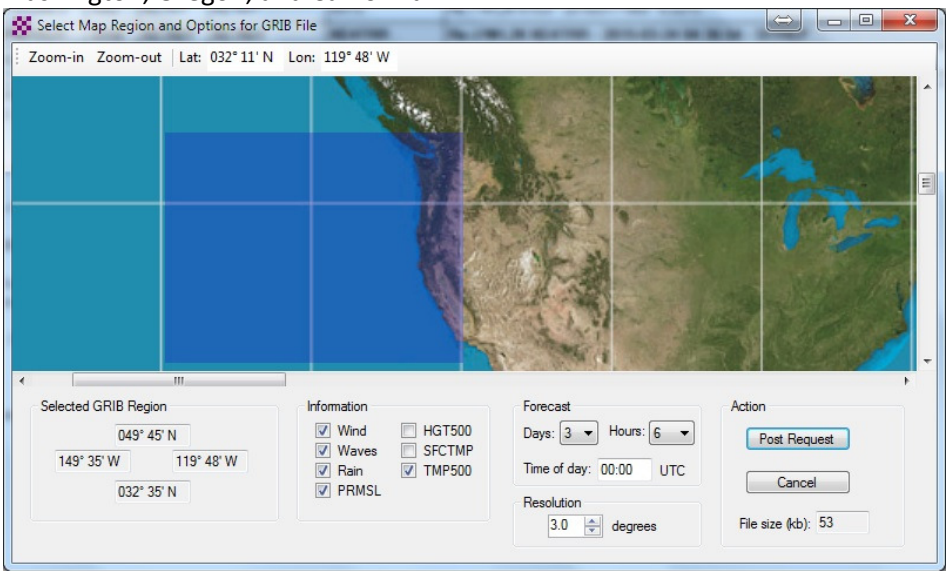
iii. The radio button outlined in green is clicked when you are ready to post the request into the outbox folder in RMS Express.

6. To select the region of the map you want the GRIB file to cover, scroll the map to the area of interest and zoom in or out as needed, then click the left mouse button while the cursor is on a corner of the region and move the mouse while holding the left button down. A blue translucent rectangle will be shown on the map indicating the selected region. If you make a mistake, release the mouse button, reposition the cursor, then click the left button again and select a different region.
   i. Your window will now look similar to this




   ii. Note the translucent blue rectangle in the North Pacific that is circled in red. This area will be included in a grib file request.
   iii. Also note in this example that the file size will be 99Kb; under the maximum file size of 100Kb.
      1. There is a lot of information being requested in this grib file when the wind, waves, rain, and PRMSL is included in the request.
   iv. Also notice in this example that the forecast is to span three days in 6 hour increments. This span of time will be explained in further detail during the section on viewing a grib file. For now I would suggest using these parameters in your request too.

7. If you are trying for a smaller, defined region for your request you can use the zoom in feature to make your selection of the area more easily accomplished.
    i. In the example below the window is zoomed into the Pacific coast off Washington, Oregon, and California.




    1. Note that the returned file size will be much smaller than the previous request. However the accuracy of the forecast is reduced by not knowing what is approaching the coast from further offshore.

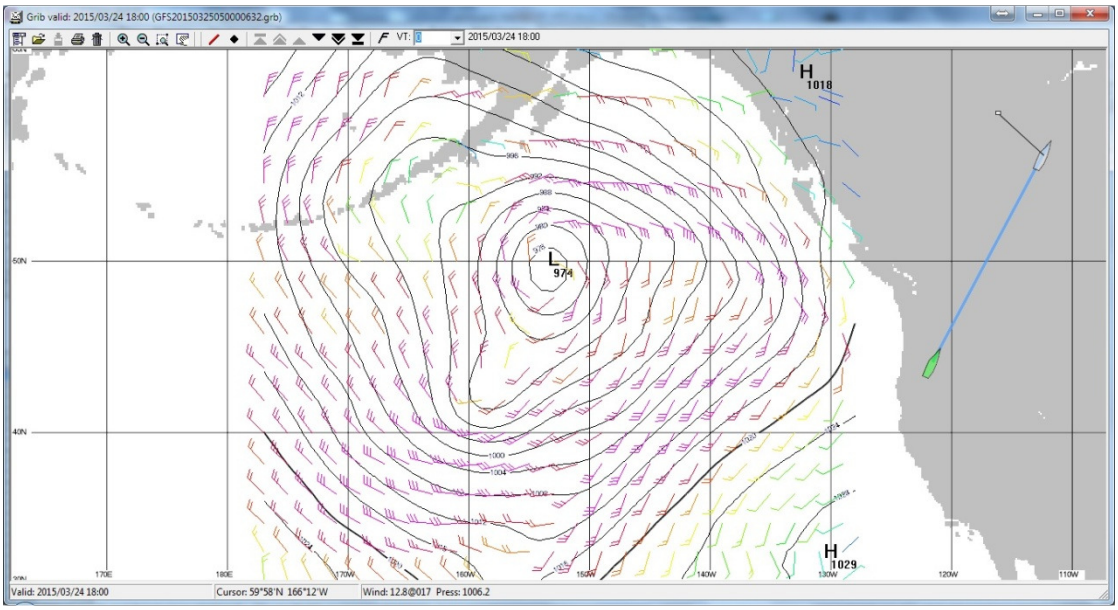
8. When you are happy with the grib file request click the “Post Request” button and your request will be moved into the Outbox folder of RMS Express.
    i. Next send the request as you would any other message.

**B. Viewing a Grib file when it is returned in RMS Express.**

1. Before attempting to view a grib file make certain that the viewer is installed.
    i. Look in the RMS Express directory for a file labeled Viewfax.exe
    ii. Older versions of RMS Express did not include Viewfax.exe . Recent versions have included Viewfax.exe and this application is installed when RMS Express is installed.
    iii. If Viewfax.exe is not installed it may be obtained at: http://siriuscyber.net/wxfax/viewfax5056.exe
2. After you have sent a grib request and waited an appropriate amount of time for the requested information to be returned check for messages using RMS Express inbox.
3. Look in the inbox for an entry similar to the highlighted one below

| | Date/Time | Message ID | Size | Source | Sender | Recipient | Subject |
|---|---|---|---|---|---|---|---|
| | 2015/03/25 03:36 | 1HPH0VTH33S8 | 3642 | SMTP | SMTP:query-repl... | NB7O | GFS:30N,60N,177W,128W |
| | 2015/02/18 22:20 | IOHYIF153PO3 | 1072 | KF7TGE | KF7TGE | NB7O | Re:K7SED |
| | 2015/02/17 22:22 | 9XHKWN9UKNI4 | 2314 | KE7NIY | KE7NIY | NB7O . | RE: //WL2K Issues with RMS Express message editor |

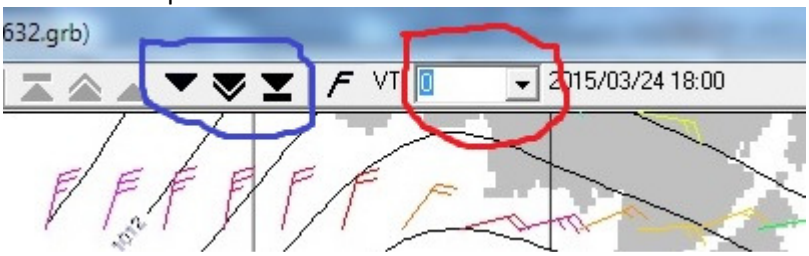
4. Notice that there is a paper clip icon on the far left of the message entry. This icon indicates that there is an attachment to this message. In this instance it should be the grib file.
5. Double click the paper clip icon to open the attachment.
    i. The grib file should automatically open with the viewfax program and should look similar to this




    ii. Your image will appear different because you probably selected different forecasting elements and a different area. This image the north pacific region with barometric pressure gradients and wind barbs.
        1. I would add that it shows a very compact low pressure system with high winds in the Gulf of Alaska that will come ashore in Canada within the

next 24 hours. I would not want to be offshore in that wind and would prefer to not be in its path when it comes ashore.

6. Some important controls to learn when using ViewFax
    i. The power of having a weather forecast system is its ability to project weather into the near future. ViewFax does just this using a grib file.
    ii. Note at the top of the ViewFax window are some controls

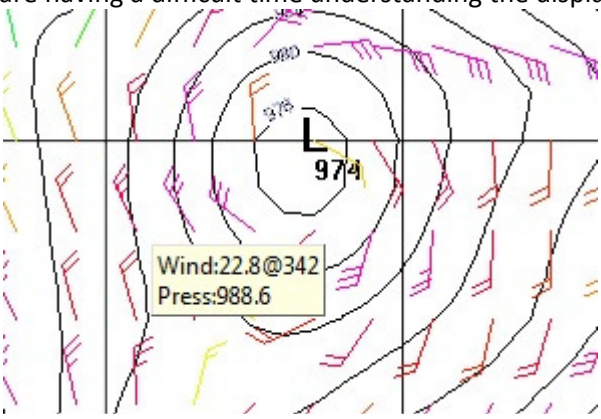



    iii. The controls circled in blue control the software's ability to project the view of the weather elements that you selected into the future.
    iv. The information circled in red shows where the display is on a time line. This display shows that you are at the zero hour as you move forward in time you will see where you are in the timeline in this box.
    v. The projection controls


        1. In green
            a. Moves the weather projection forward one time increment. The increment was set at the time that the grib file was requested. I usually set my interval increment at 6 hours.
            b. The same shaped icon that is greyed out will change to black after the projection is moved forward and will move the projection back on the timeline one time increment.
        2. In red
            a. Moves the weather projection forward one 24 hour period with each mouse click.
            b. The same shaped icon that is greyed out will change to black after the projection is moved forward a full 24 hours and will move the projection back on the timeline one 24 hour period.

3. In blue
    a. Moves the weather projection to the end of the grib file forecast timeline. I usually request a weather projection of 3 days.
    b. The same shaped icon that is greyed out will change to black after the projection is moved forward at least one time increment and will move the projection back on the timeline to the start of the projection.

7. If you selected wind or barometric pressure as an element of the grib file request and are having a difficult time understanding the display




    i. You can move your mouse around within the area of the weather projection and the software will convert the wind barb information to text showing wind speed in knots and wind direction. Also shown will be the barometric pressure for that position on the map.
    ii. A good discussion about weather map wind barbs is at: http://weather.about.com/od/forecastingtechniques/ss/mapsymbols_8.htm

Now that you have the ability to request and view grib files to achieve a weather forecast try requesting a few and making a weather projection for where you live and for one and two days in the future. See how accurate you are with your forecast. After you have some experience you can get very proficient in making a weather forecast for your area.

Imagine that you have an ARES Set in the near future and want to tell your unit members what to expect for weather during the SET, or that you have a family outing coming up in the future where you will be exposed to the weather elements, or perhaps you want to go on a hunting or fishing trip, or you are assisting your EM with an event in your area of operations and the EM needs to know what the weather will be for the next few days and cannot get a forecast from normal sources. You now have a new tool to help with all of these scenarios and many more. You can request a grib file, view it, watch what the model predicts the weather will do, and make learned decisions about the weather that you will have.

Invite your EM to meet you in the ARU for your county and demonstrate your ability to obtain a weather forecast and show the EM a grib file request and then review the weather forecast with the EM.