

Hi All,

Here are my notes to help you navigate the models I described in our meeting on Oct 27, 2015.

Generally, the way I still study the wx for an upcoming flight is to start with the GFS models, (<http://mag.ncep.noaa.gov>). When you get to this landing page, choose "Model Guidance", then on the next page "Namer" and "GFS", then next page, choose the latest model run from the 4 across the top while keeping in mind these models take up to 5 hours to run. Therefore, an 18 UTC model run might not be available until 4 or 5pm our time. Then choose "850\_temp\_mslp\_precip" to start your analysis. This 850mb model predicts primarily precip over 16 days, (don't forget, 850mb is roughly 5000 ft msl). The first 10 days is forecast in 3 hours segments and the next 6 days in 12 hour blocks.

Green is precip predicted to fall over an area sometime in a block of 6 hours (first 10 days, 12 hours the next 6 days). This gives you a chance to see if there is going to be precip in the form of rain or snow, (and potentially low clouds & decreased visibilities) across your planned route, but really doesn't help you understand what is bringing in the precip. You have to look at another model to see the higher level picture of what's bringing in the weather. In the winter months, be particularly aware of the "blue line" on the 850mb chart. The "blue line" denotes where the atmosphere is 32 degrees or less at 5000 ft.

Everything shaded in green north of this line would produce snow rather than rain at 5000 ft, with ice being a big factor as well. Keep in mind that even though the "blue line" may be over Boise, it only means it will snow on Bogus because of its elevation, but rain in the valley (at 2800 ft).

Weather gets pushed around the globe mostly at the 500mb level of the atmosphere, which is roughly 18000 ft msl. To see the GFS predictions of these large scale (synoptic) systems, choose "500\_vort\_ht" instead of the 850mb model on the last page. As you run through this model you can see low pressure systems moving around North America and very often the source of the precip you see on the 850mb model. Ridges (high pressure), appear as upside down "U's" and troughs, (low pressure) as "U's". Also note the areas of yellow and brown. These are "shortwaves" of energy that have the potential to create lift in the atmosphere and result in storms and precip. This is especially prevalent when you see "westerly flow" - or a

stream of parallel contour lines running west to east, or where the contour lines take a sharp turn in direction. The highest area of lift is marked by an X and there will likely be precip and bad weather to the east of that X.

Also look at the "700\_rh\_ht" model. This predicts relative humidity (and thus clouds), at approximately 10k ft msl in the atmosphere.

There is a scale on the left to help you gauge the level of RH. I have found light green to be equivalent to scattered clouds, and the darker green to be a mostly overcast or completely overcast. This will also help you gauge winds at 10000 ft and see the lower level high pressure and low pressure, (similar to the 500mb charts). Don't forget - the absence of green here doesn't necessarily mean there are no clouds - just no clouds at 10k ft. There could be cloud layers lower or higher, but generally for many places we fly, high RH at 10k ft translates to rain and showers below. A similar chart is available for 850mb (5000 ft) - the "850\_rh\_ht" model. It has the same scale as the 700mb chart depicting relative humidity and thus clouds at the 5000 ft level as well as winds.

In planning for a cross-country trip, I look at these models frequently and watch the changes as the timing of the trip gets closer. Once the trip is within the 8 day window, I find these models to be very good at predicting the wx and helping me to make the go/no go decision. I frequently look at the Forecast Discussion from the weather forecasters over the area of my trip as well, to get their perspective.

You can find links to the Forecast Discussions here (<http://www.wrh.noaa.gov/zoa/cwa.php>).

As your trip gets closer there are number of websites that can give you insights to what may happen with the wx. Here's a list of the links:

The LAMP - Localized Aviation MOS Program -

<http://www.usairnet.com/cgi-bin/launch/code.cgi?Submit=Go&sta=KP69&state=ID>

<http://www.nws.noaa.gov/mdl/forecast/graphics/MAV/>

On the left side of this intro screen choose "Ceiling Height/Sky Cover" and in the drop down menu choose "Ceiling Height (cat)". This will give you a several day look ahead at ceilings over your route of flight.

Be careful with this one - I have had mixed results with this tool.

When ceilings are present, there can be mixed layers of clouds below or even fog, that might not be predicted by this model.

You can also use your NWS weather page to help you get a "grid forecast" of a particular area of interest. Simply bring up the NWS page [www.weather.gov](http://www.weather.gov), click on the area of interest, (might have to do this twice as you zoom in from a continental view to state view), then scroll down to the Geobase map on the lower right. Scroll the map to a specific area of interest, then click on it, and a forecast will appear for that particular point. Now scroll down again to the "hourly weather graph" and click on it. This will show you the predicted weather elements for that grid over the next 4 and a half days. Notice the summary information at the bottom of the graph as you move your cursor from right to left in time. This is a good tool to use right up to the time of your departure or even be able to refresh it while enroute.

Then the day before and day of your flight, these sites become helpful:

<http://skyvector.com>

<http://aviationweather.gov/adds/cv/displaycv>

<http://www.goes.noaa.gov/nhemi.html>

<http://www.aviationweather.gov/satellite/plot?region=lws&type=vis>

<http://www.intellicast.com/National/Radar/Current.aspx?region=default&animate=true> Actual Radar (keep in mind, there are large areas in Central Idaho with no radar coverage - nothing on radar doesn't mean it's clear!).

[http://www.nssl.noaa.gov/wrf/refl\\_loop.html](http://www.nssl.noaa.gov/wrf/refl_loop.html) Simulated Radar

<http://www.mccallaviation.com/webcams.html> Idaho Webcams from McCall Aviation

Best,

Bill