

From Bill McGlynn: Here are some notes and web links from our wx class on Thursday, May 15 2014.

Generally, the way I 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 next page "Namer" and "GFS", then next page, choose the latest model run of 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 8 days is forecast in 3-hour segments and the next 8 days in 12-hour blocks. Green is precip predicted to fall over an area sometime in a block of 3 hours (first 8 days, 12 hours second 8 days). Also you can see temperature lines at this altitude. This gives you a chance to see if there is going to be rain or snow, (and potentially low clouds & decreased visibilities) across your planned route, but really doesn't help you understand what is bringing the moisture. You have to look at another model to see the weather systems traversing your route.

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 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 the likely 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".

Finally I 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 highs and lows, (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.

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. I frequently look at the Forecast Discussion from the weather forecasters over the area of my trip, 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 a number of websites that can give you insights to what may happen with the wx. Here's a list of the links:

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

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

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

[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

Bill's presentations can be found on the club web site under the [News!](#) Tab listing

### **Thank You Bill!**

**Density Altitude:** It won't be long and we'll be getting up in the 90's and a good review of the effects of Density Altitude is always in order. Review the DA article and DA Chart on the club webpage in the [Site Index](#) section. A dramatic YouTube video which you may have seen before, but worth review, showing the effects of DA can be found at [Bruce Meadows Accident 2012](#). The DA was approximately 9,050' at 2 PM the day of the accident.