

Area Forecast (FA) Guidance Web Display

http://testbed.aviationweather.gov/data/products/fa_guide

Purpose: The intent of the FA Guidance web display is to allow the user to view multiple forecasts for the variables of interest when writing the text-based FA for a particular FA desk. The current forecast products that are available include: 12-km NAM, 13-km RAP, and the point-based TAF. The forecast variables of interest include: cloud base, ceiling, cloud top, visibility, wind speed and direction, wind gust speed, precipitation type, precipitation amount, convective cloud top height, low-level relative humidity, and a basic fog identifier. The products get updated for every new model run or TAF issuance.

Geographic Locations: The points available were selected to give some geographic diversity to each state in the lower 48. Sites were also chosen based on general aviation. Therefore, there are not too many major airports listed across the CONUS, although this was difficult to avoid in some circumstances. An effort was made to have a nearby TAF (within 50mi if not co-located) of the geographic site chosen. The model variables are a representative value from a 5x5 (~60km x 60km) box encompassing the chosen grid point.

Display Layout

The user will select the time of their particular FA issuance (based on desk and daylight time) and begin with selecting a state in their domain.

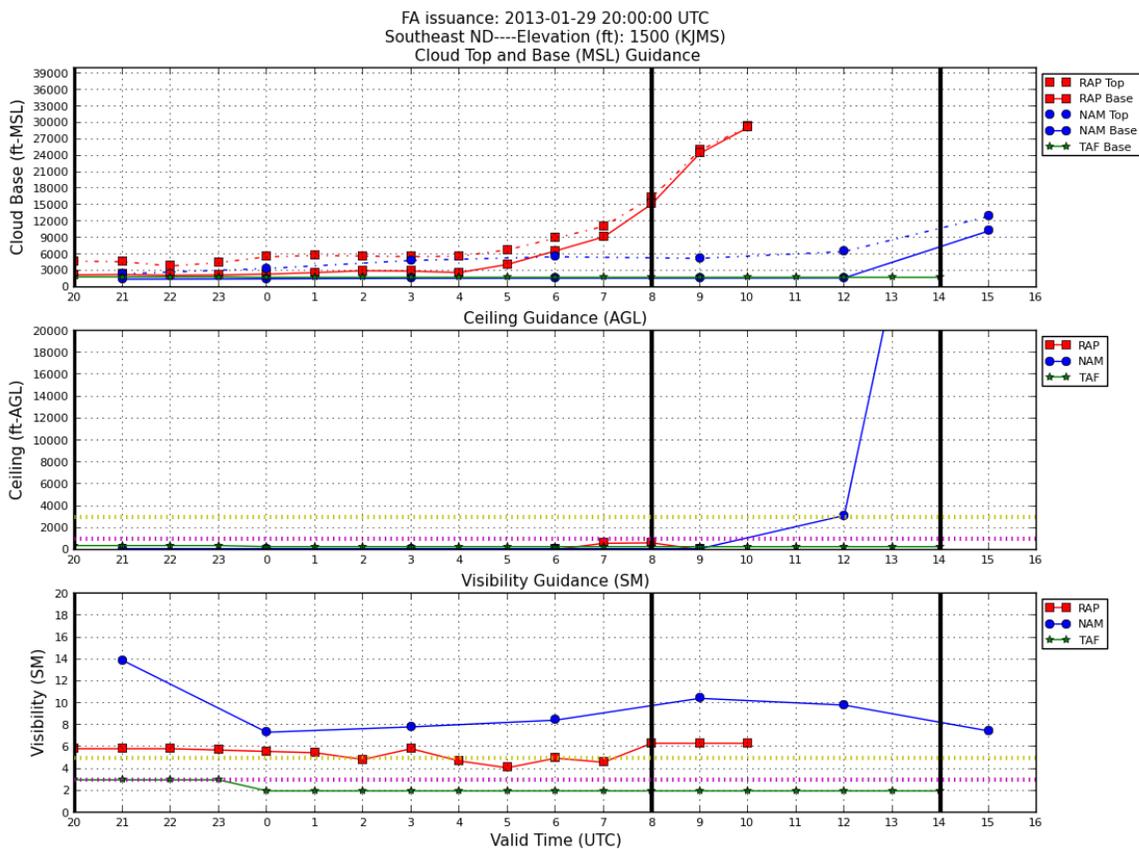
Summary of Impact: Once a state is selected a list of sites will populate in a summary view of impacts. The station used for the given geographic area is given with its station elevation. If a FA hazard occurs in the valid period of the FA an abbreviation of that hazard is given (C=ceiling, V=visibility, P=precipitation, W=wind). The number of forecasts predicting a hazard is given by the number after the abbreviation. The maximum number is 3 in this case if the site has a nearby or co-located TAF. See North Dakota's Example below.

North Dakota

Northeast	KGAF	Elev: 824ft	C2,N,N,W1
Southeast	KJMS	Elev: 1500ft	C3,V2,P1,W2
Northwest	KISN	Elev: 1983ft	C3,V3,P2,W1
Southwest	KDIK	Elev: 2592ft	C3,V3,P1,W2

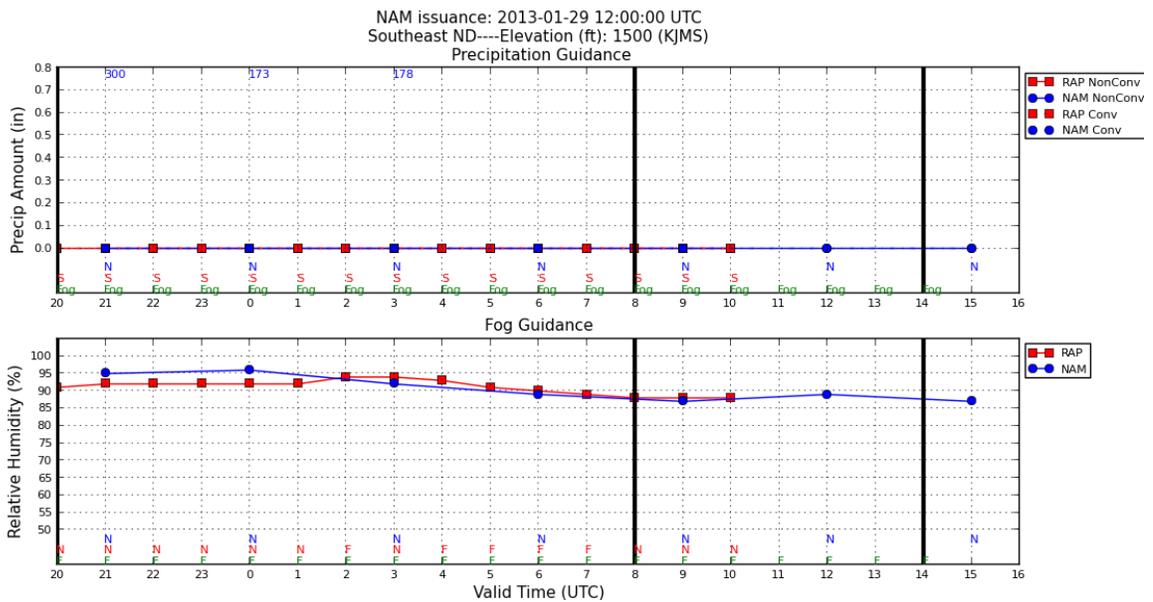
From the generated station list one can click on the region of choice (e.g. Northeast in the example above) and display cloud and visibility guidance, obstruction (precipitation/fog) guidance, and wind guidance.

Celling and visibility guidance: The top plot is the cloud top (dashed) and cloud base (solid) from the models (NAM blue, RAP red, TAF green). The cloud base from the TAF is the lowest level of recorded clouds (does not have to be BKN or OVC). The middle plot is the cloud ceiling from the models and the TAF. The ceiling is explicit in the NAM and the RAP ceiling is calculated by finding the height of the first level that exceeds 85% RH as a crude rule for BKN clouds. Station height is considered where necessary in the ceiling guidance. No plot means there is no given ceiling from the forecast. The bottom plot is simply the station visibility in statute models given from the 3 forecasts. Thresholds of interest for IFR and MVFR appear on the graphic for ceiling and visibility and correspond to the state summary.



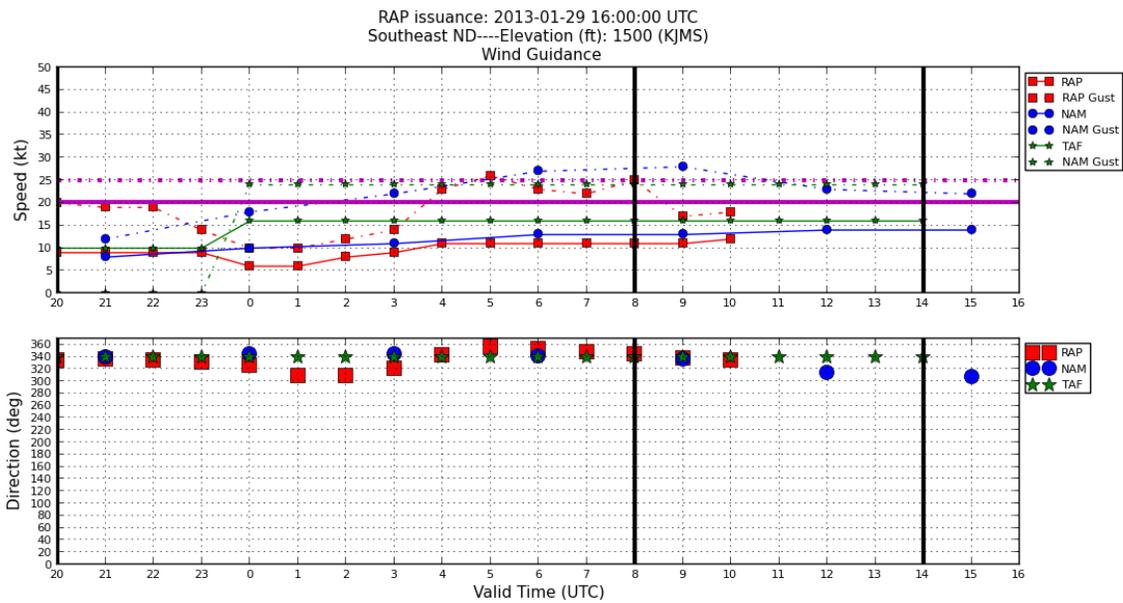
The FA issuance time is given at the top of the image.

Precipitation Guidance: The top plot gives the amount of precipitation expected from the NAM (blue) and the RAP (red). Convective precipitation is dashed while non-convective precipitation is the solid line. If there is a convective cloud top it is given at the top in blue numbers for the NAM and with red numbers for the RAP. The precipitation type is given at the bottom for the NAM (blue), RAP (red) and TAF (green). The bottom plot gives the RH from the model in the lowest 30mb of the atmosphere from the RAP and NAM. The letters at the bottom give the chance for fog in the model using a combination of RH, visibility, and wind for the NAM and RAP. Fog is taken directly from the TAF. If precipitation is greater than 0.01" it will be flagged in the state summary.



The NAM issuance time is given at the top of this plot.

Wind guidance: Wind speed and gust (kt) guidance for each forecast product is shown in the top plot. The NAM (blue), RAP (red), and TAF (green) are given for sustained wind (solid) and gust wind (dashed). If there is no dashed line for the TAF no gust is forecasted in the TAF. The bottom plot is the wind direction in degrees, for the NAM (blue circle), RAP (red square), and TAF (green star). Thresholds of interest for wind speed and gust speed appear on the top graphic and correspond to the state summary.



The RAP issuance time used for the plot is given at the top of this plot.