NEXRAD data is generated from multi-elevation scans of the radar, produced and delivered every 5 minutes during typical operation.

With Base Reflectivity, only the lowest available elevation of NEXRAD data is used to create the radar image. So while the radar may be able to detect severe weather in the area, the radar beam may undershoot specific pockets of hail or heavy rain, which would not be accurately displayed on the map. An example of this phenomenon is depicted in the image below, where a hail pocket (shown in purple) is missed by the Base Reflectivity product.

For this reason, Baron Services' creates a composite mosaic reflectivity product utilizing multiple radar elevation scans, allowing for much more comprehensive—and therefore accurate—weather detection.

A Base Reflectivity product uses only one radar elevation scan, which means dangerous storm elements may not be detected. Meanwhile, the Baron Services composite obtains data from multiple radar elevations, ensuring weather relevant to a pilot is accurately detected and displayed.

The image above shows in great detail the importance of multi-tilt processing. As you can clearly see, the more significant weather is detected above the first radar tilt in the red and blue areas.
Side by Side Comparison

Base Reflectivity

Composite Mosaic Radar Reflectivity
Side by Side Comparison

Base Reflectivity

Composite Mosaic Radar Reflectivity

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