

SAILS

Supplemental
Adaptive
Intra-Volume
Low-Level Scan

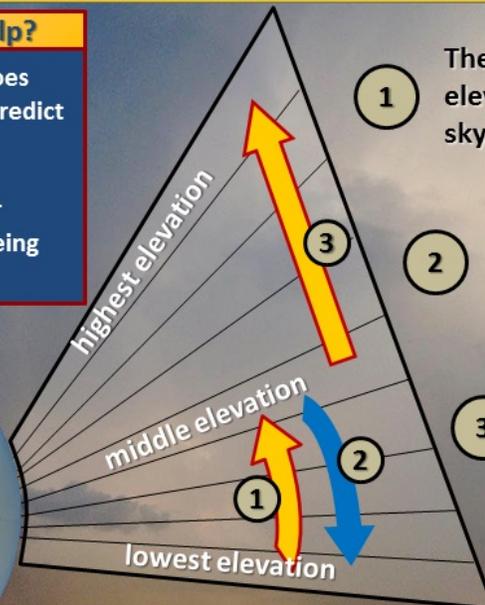


A New Way Doppler Radar Scans the Sky

How Should This Help?

Weak, short-lived tornadoes are the most difficult to predict and detect

Additional low-level radar scans will be crucial in seeing tornado formation



- 1 The radar starts at the lowest elevation and scans up through the sky for about two minutes
- 2 After scanning the middle elevation, the radar goes back to scan the lowest elevation again
- 3 The radar then returns to the middle elevation to scan up to the highest elevation

Total Time to Complete Steps 1-3
About 5 Minutes

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A new software upgrade installed at the National Weather Service (NWS) Wakefield Doppler radar (KAKQ), is improving severe weather operations. The software change allows the WSR-88D radar to obtain the lowest level radar scan more frequently during severe weather events.

With this upgrade, a new feature called SAILS (Supplemental Adaptive Intra-Volume Low-Level Scan) the radar conducts an additional 0.5 degree scan in the middle of a volume scan (see the illustration below for more details) providing more timely scans every 2 to 3 minutes of the low levels. Previous scan strategies allowed the radar to complete its lowest scan in 3 to 4.3 minutes (during severe weather), depending on the range of the storms from the radar. With SAILS, the radar can now perform this low-level scan every 1.9 to 2.5 minutes, obtaining a 0.5 degree scan almost twice as frequently as before and providing NWS meteorologists with the ability to observe rapidly changing weather phenomenon more frequently and issue more timely severe weather warnings.