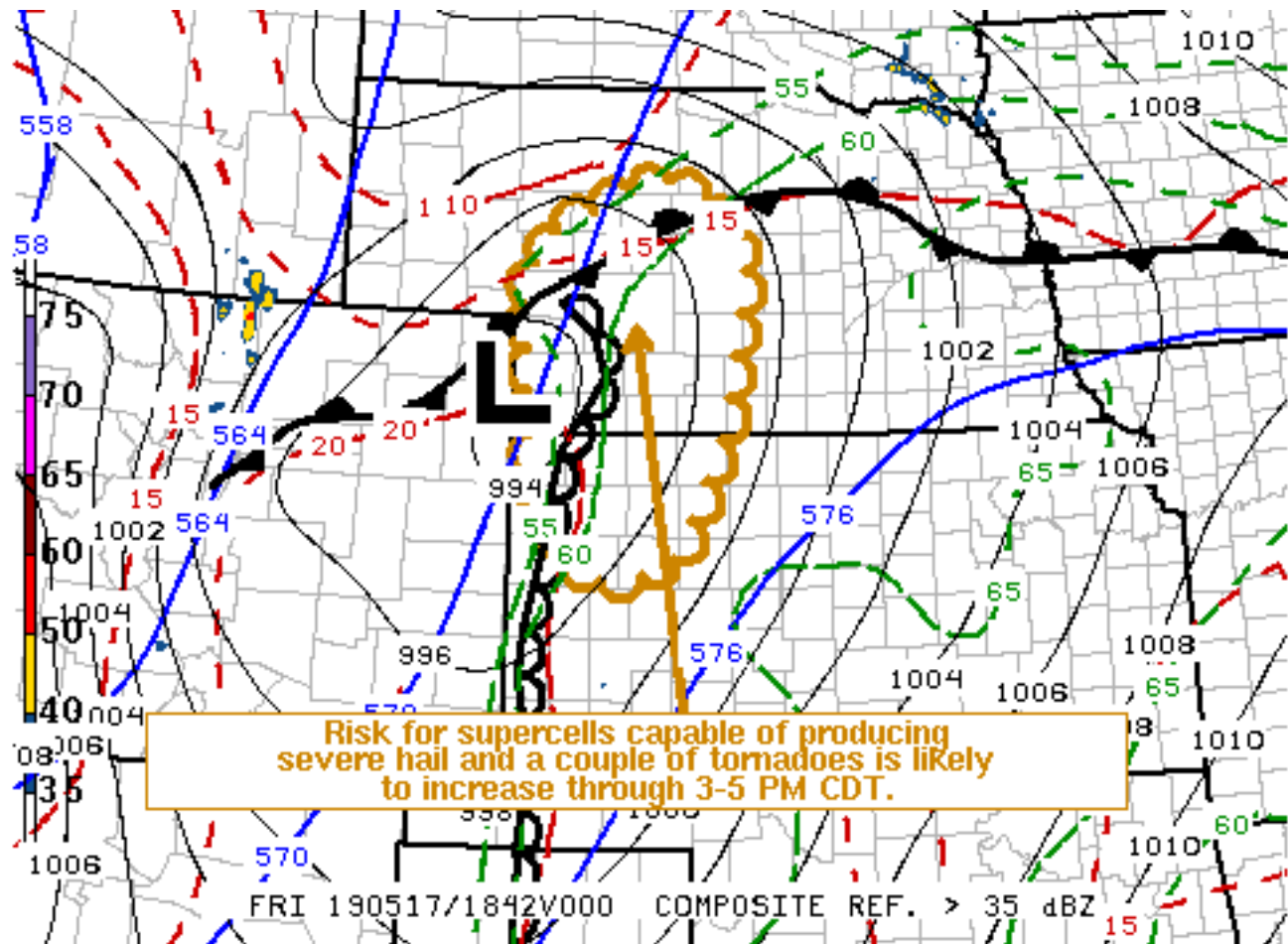


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## Mesoscale Discussion 649

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SPC MCD #0649

Mesoscale Discussion 0649

NWS Storm Prediction Center Norman OK

0155 PM CDT Fri May 17 2019

Areas affected...Parts of southwest into central Nebraska and western Kansas

Concerning...Severe potential...Watch likely

Valid 171855Z - 172100Z

Probability of Watch Issuance...80 percent

SUMMARY...The risk for supercells capable of producing large to very large hail and a couple of tornadoes appears likely to increase through 3-5 PM CDT.

DISCUSSION...A plume of warm and capping elevated mixed-layer air remains over much of the central and southern Plains. However, the leading edge of stronger mid-level height falls associated with amplified upper troughing is already spreading through much of the



high Plains. And an area of lower/mid tropospheric cooling and forcing for ascent associated with at least one embedded perturbation appears to be in the process of pivoting northeast of the Front Range.

In advance of this feature, insolation is contributing to moderate to large CAPE of 2000-3000 J/kg, mainly focused near/east of a deepening cyclone within lee surface troughing, across western Kansas into southwest and central Nebraska. Latest model output suggests that with additional surface heating and cooling aloft, inhibition probably will weaken sufficiently to allow for the initiation of thunderstorms as early as the 20-22Z time frame.

Strongest low-level convergence appears focused near a surface front/sharpening dryline intersection near/west of North Platte NE, where stronger 2-hourly surface pressure falls are now evident. This is where the initiation of sustained discrete supercells and subsequent upscale convective growth appears most certain, with at least isolated to widely scattered supercells possibly forming along/just ahead of the dryline, southward across western Kansas.

In the presence of strong deep layer shear, large to very large hail appears the primary initial severe weather risk. However, at least relatively weak/brief tornadoes also appear possible, and tornadic potential probably will increase near/northeast of the triple-point low, across southwest Nebraska, as southerly 850 mb flow strengthens and low-level hodographs enlarge closer to 18/00Z.

..Kerr/Hart.. 05/17/2019

...Please see [www.spc.noaa.gov](http://www.spc.noaa.gov) for graphic product...

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