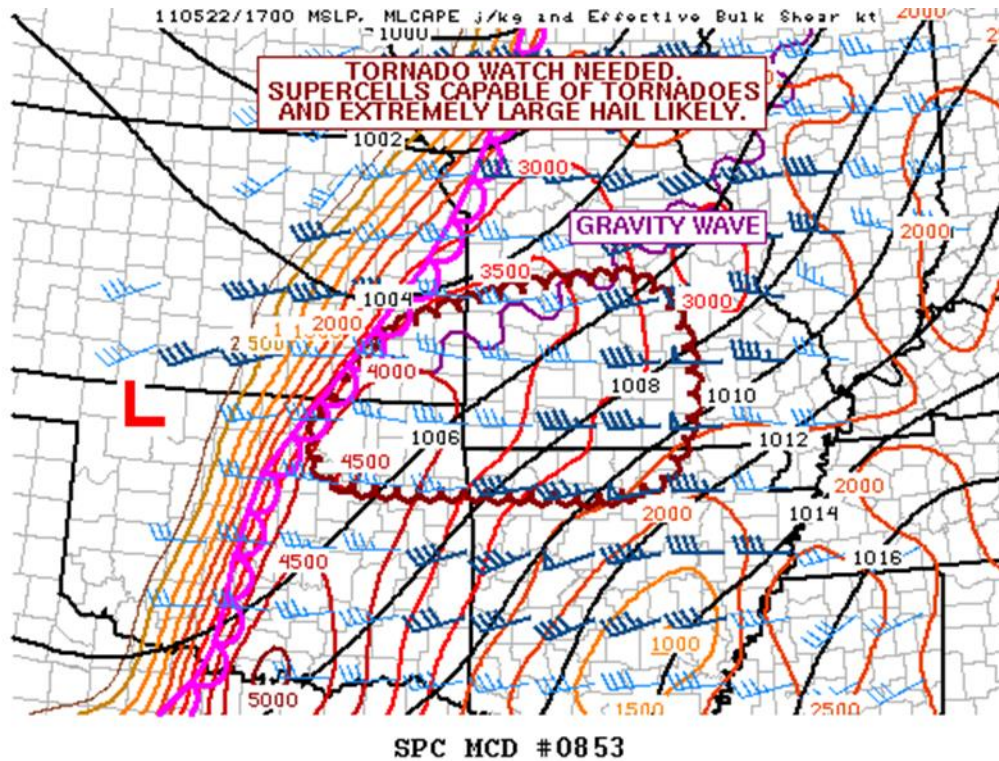


Appendix A

MESOSCALE DISCUSSIONS ISSUED ON MAY 22, 2011, THAT INCLUDED JOPLIN

A.1 MESOSCALE DISCUSSION 853

Source: NOAA (www.spc.noaa.gov/products/md/2011/md0853.html)



MESOSCALE DISCUSSION 0853
NWS STORM PREDICTION CENTER NORMAN OK
0106 PM CDT SUN MAY 22 2011

AREAS AFFECTED...ERN KS...NERN OK...MUCH OF SRN AND SWRN MO...NRN AR
CONCERNING...SEVERE POTENTIAL...TORNADO WATCH LIKELY

VALID 221806Z - 222000Z

A TORNADO WATCH WILL BE ISSUED SHORTLY.

AN EXTREMELY UNSTABLE AIR MASS HAS DEVELOPED E OF THE DRYLINE WITH DEWPOINTS NEAR 70 F BENEATH STEEP MID LEVEL LAPSE RATES. NEARLY ALL CONVECTIVE INHIBITION HAS BEEN ERODED...THUS EXPECTED CU ALONG THE DRYLINE TO ERUPT INTO INTENSE SUPERCELLS. EXTREMELY LARGE HAIL IS

LIKELY...AND ALTHOUGH LOW LEVEL SHEAR IS A BIT MARGINAL...IT WILL BE MORE THAN SUFFICIENT FOR TORNADES GIVEN EXTREME INSTABILITY.

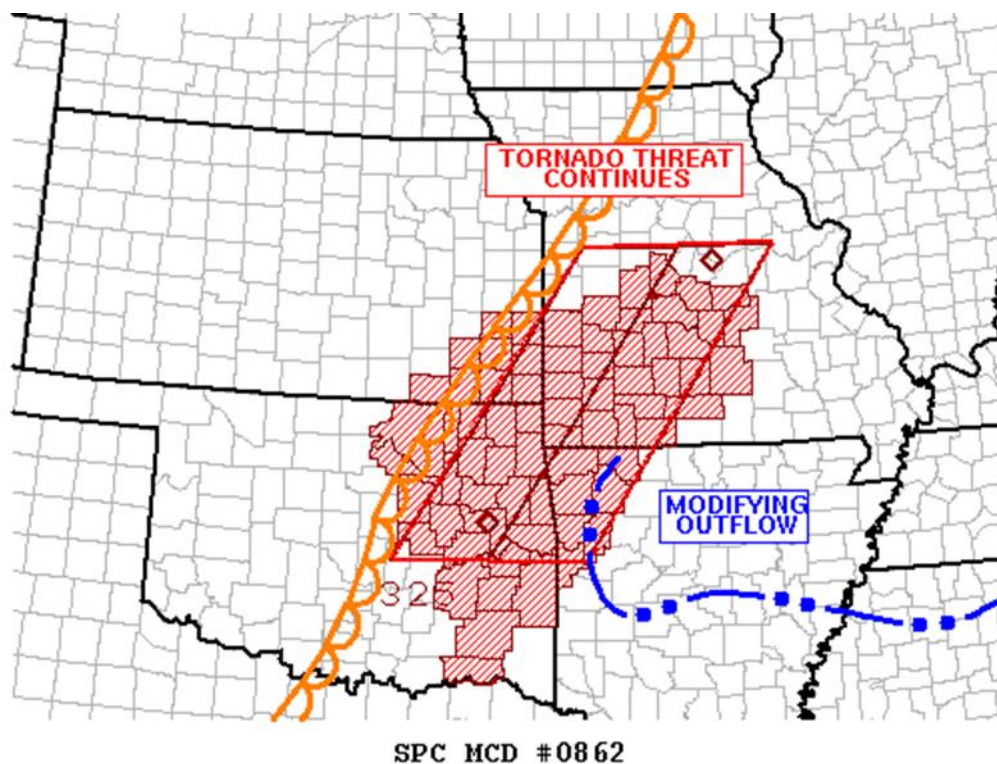
..JEWELL.. 05/22/2011

ATTN...WFO...LSX...LZK...SGF...EAX...TSA...ICT...

| | | | | | | |
|-----------|----------|----------|----------|----------|----------|----------|
| LAT...LON | 36619153 | 36159187 | 36009275 | 36049408 | 36049519 | 36099643 |
| | 36459673 | 36859655 | 37749573 | 38249409 | 38389294 | 38389201 |
| | 37969159 | 37169139 | 36619153 | | | |

A.2 MESOSCALE DISCUSSION 862

Source: NOAA (www.spc.noaa.gov/products/md/2011/md0862.html)



MESOSCALE DISCUSSION 0862
NWS STORM PREDICTION CENTER NORMAN OK
0348 PM CDT SUN MAY 22 2011

AREAS AFFECTED...ERN OK...SERN KS...SWRN MO

CONCERNING...TORNADO WATCH [325](#)...

VALID 222048Z - 222245Z

THE SEVERE WEATHER THREAT FOR TORNADO WATCH 325 CONTINUES.

VIGOROUS CONVECTION CONTINUE TO INTENSIFY ALONG THE DRYLINE FROM WRN

MO INTO SERN KS. A MODIFIED 19Z SGF SOUNDING USING OBSERVED SURFACE OBSERVATIONS ALONG THE DRYLINE YIELDS OVER 5000 J/KG MUCAPE WITH A 300 MB LI OF -19C. ALSO DEPICTED IN THIS SOUNDING...AND ON NDS AND CNW PROFILERS...IS 40-50 KT MID LEVEL FLOW ATOP VEERING LOW LEVEL FLOW...MORE THAN SUFFICIENT FOR SUPERCELLS. EXISTING STORMS WILL PERSIST WITH AN EXTREME HAIL THREAT AS WELL AS THE POSSIBILITY OF CYCLIC TORNADOES.

TO THE S...A SUBSTANTIAL CU FIELD REMAINS OVER NERN OK...AND SWD ACROSS ERN OK WHERE DEWPOINTS ARE IN EXCESS OF 72 F. HERE...SBCAPE IS AVERAGING 5500-6000 J/KG. HKL AND PRC PROFILERS ALSO INDICATE INCREASING MID TO UPPER LEVEL FLOW TO 50-60 KTS ABOVE 9 KM. STRONG HEATING PERSISTS NEAR THE DRYLINE...ALTHOUGH CONVERGENCE IS WEAK. TOWERING CU PERSIST ALONG THE DRYLINE. ANY ROBUST STORMS THAT DO FORM WILL CERTAINLY PRODUCE VERY LARGE HAIL AND HAVE A THREAT OF TORNADOES.

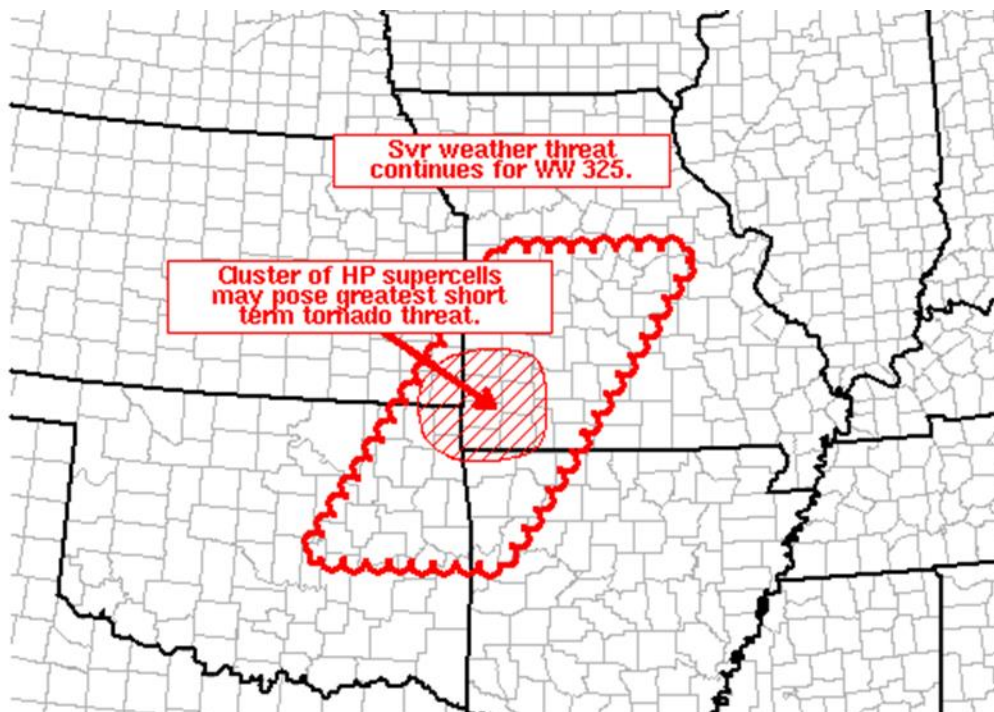
..JEWELL.. 05/22/2011

ATTN...WFO...LSX...LZK...SGF...EAX...TSA...ICT...OUN...

LAT...LON 35239402 35239668 38769406 38759127 35239402

A.3 MESOSCALE DISCUSSION 867

Source: NOAA (www.spc.noaa.gov/products/md/2011/md0867.html)



SPC MCD #0867

MESOSCALE DISCUSSION 0867
NWS STORM PREDICTION CENTER NORMAN OK
0610 PM CDT SUN MAY 22 2011

AREAS AFFECTED...CNTRL/SWRN MO...SERN KS...NWRN AR...NERN OK

CONCERNING...TORNADO WATCH [325](#)...

VALID 222310Z - 230015Z

THE SEVERE WEATHER THREAT FOR TORNADO WATCH 325 CONTINUES.

AT 2245-23Z...REGIONAL AND HI-RES RADAR IMAGERY SHOW A CLUSTER OF HP SUPERCELLS MOVING E-SE AT AROUND 30 KT. MOST SIGNIFICANT STORM /WITH A HISTORY OF PRODUCING A TORNADO/ IN THIS CLUSTER WAS LOCATED NEAR JOPLIN AT 2248Z. SGF VWP SHOWS ENLARGED LOW-LEVEL HODOGRAPH STRUCTURE...WITH 0-1 KM SRH NEAR 200 M2 S-2. GIVEN STRONG SHEAR PROFILES RESIDE DOWNSTREAM OVER SWRN MO...ALONG WITH AXIS OF MLCAPE VALUES FROM 2500-4000 J/KG...TORNADO THREAT /POTENTIALLY STRONG/ ALONG WITH VERY LARGE HAIL SHOULD PERSIST AS HP SUPERCELL CLUSTER MOVES ACROSS THE REMAINDER OF SWRN MO. FARTHER N OVER CNTRL MO...CLUSTER OF STORMS WAS MOVING E ACROSS AN ENVIRONMENT CHARACTERIZED BY STRONG INSTABILITY AND FAVORABLE SHEAR PROFILES FOR SUPERCELLS POSING A THREAT FOR TORNADOES...LARGE HAIL AND DAMAGING WINDS.

MEANWHILE OVER NERN OK...SUSTAINED STORM DEVELOPMENT APPEARS TO BE TAKING PLACE BASED ON RECENT REGIONAL REFLECTIVITY. WITH SURFACE CONDITIONS CHARACTERIZED BY TEMPERATURES IN THE MID 80S AND DEWPOINTS IN THE LOW 70S...AND 700-500 MB LAPSE RATES AROUND 7 C/KM...EXTREME INSTABILITY RESIDES AHEAD OF THIS NEW DEVELOPMENT /MLCAPE VALUES NEAR 4000 J PER KG/. AREA VWP/S AND RUC SOUNDINGS SHOW FAVORABLE WIND PROFILES FOR SUPERCELL DEVELOPMENT AS THIS ACTIVITY MOVES DOWNSTREAM ACROSS NERN OK INTO NWRN AR...WITH THE POTENTIAL FOR VERY LARGE HAIL AND TORNADOES CONTINUING INTO THE EVENING HRS.

OVER S-CNTRL OK...LEFT MOVING SUPERCELL IS RAPIDLY MOVING N TOWARD THE SWRN CORNER OF WW 325. THIS STORM WILL POSE A THREAT FOR LARGE HAIL IF IT PERSISTS INTO E-CNTRL/NERN OK.

..GARNER.. 05/22/2011

ATTN...WFO...LSX...LZK...SGF...EAX...TSA...ICT...OUN...

LAT...LON 38779404 38769126 35229404 35229670 38779404