

### Overview

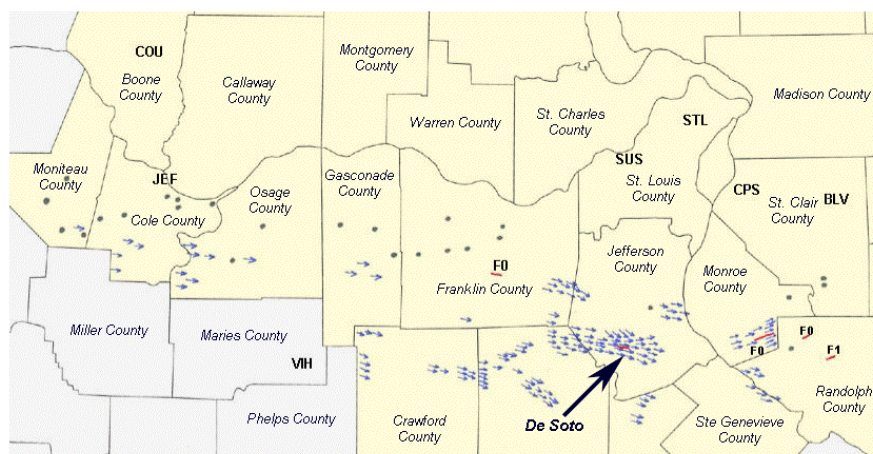
On May 6<sup>th</sup>, 2003, a broken line of supercells formed across central Missouri and moved east along a stationary front orientated just south of Interstate 70. The two southern most supercells intersected, developing convection ahead of the line and ultimately formed into a bow echo. The thunderstorm complex moved eastward producing scattered severe wind and hail reports from central Missouri to southwest Illinois. The worst damage was located in and around the town of Desoto, Missouri. Here, the thunderstorms produced a 20 to 30 minute period of severe winds estimated to be between 80 and 100 mph. It is believed that the bow echo moved across the town of Desoto first, and then shortly thereafter was followed by the intensifying mesocyclone from the northwest.

The storm produced a 10 by 13 square mile area of severe straight-line wind damage in the town of DeSoto, Missouri. From a storm survey conducted shortly after the event, it was determined that two weak tornadoes were also responsible for some of the damage that occurred that evening in the Desoto area. According to a damage assessment survey conducted by the state emergency management agency and the American Red Cross, 6 single family homes were completely destroyed, 27 had major damage, and over a hundred claimed minor damage. In addition, 2 businesses, a church, and a school sustained partial or major roof damage. Unfortunately, one fatality was reported due to flash flooding, and dozens of people were injured during this severe weather event.

*More Information:*

[Sieveking, J.E. and R. Przybylinski 2004, The Interaction of a HP Supercell Thunderstorm and Bow Echo To Produce A Prolonged Severe Wind Event in East Central Missouri. Preprints, 22nd Conference on Severe Local Storms Hyannis, MA Amer. Meteor. Soc., 7A.5.](#)

6 May 2003 Damage Survey Map

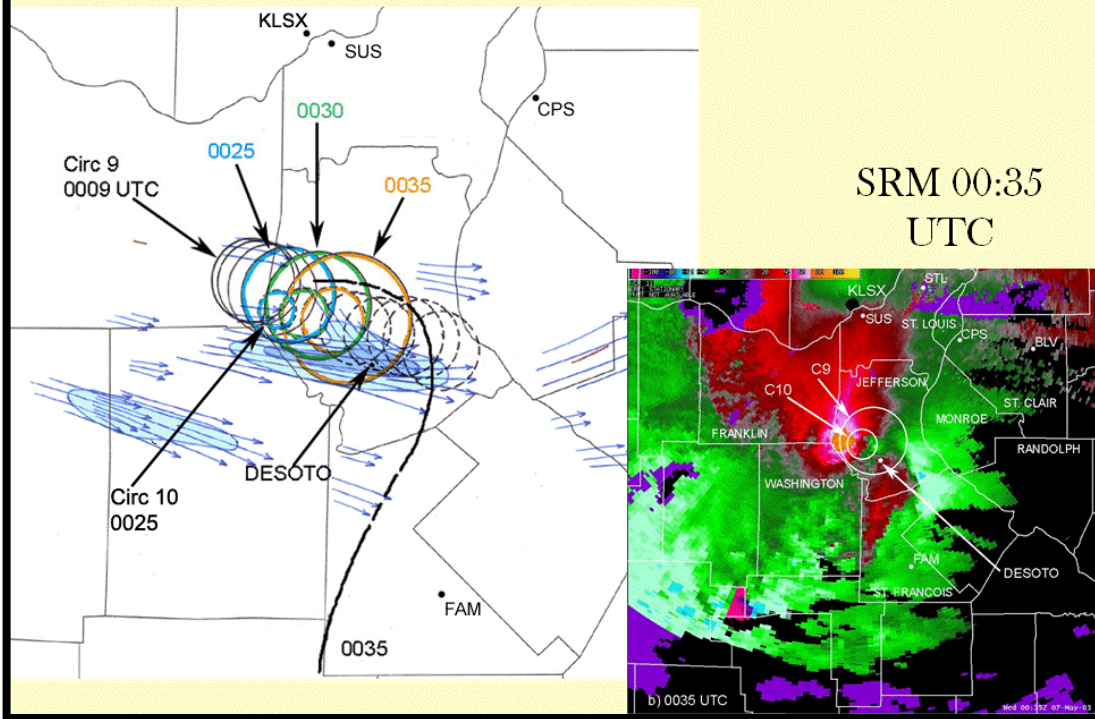


- Storm damage stretched from central Missouri to southwest Illinois.
- The most extensive damage occurred from 12 km west of De Soto to 5 km east-southeast of town. Numerous injuries occurred with one fatality which was a direct result of the flash flooding.

Damage survey analysis over east-central Missouri and southwest Illinois. The blue arrows, green dots, and red lines represent wind damage, severe hail, and tornado tracks respectively.

## Damage Survey Tracks

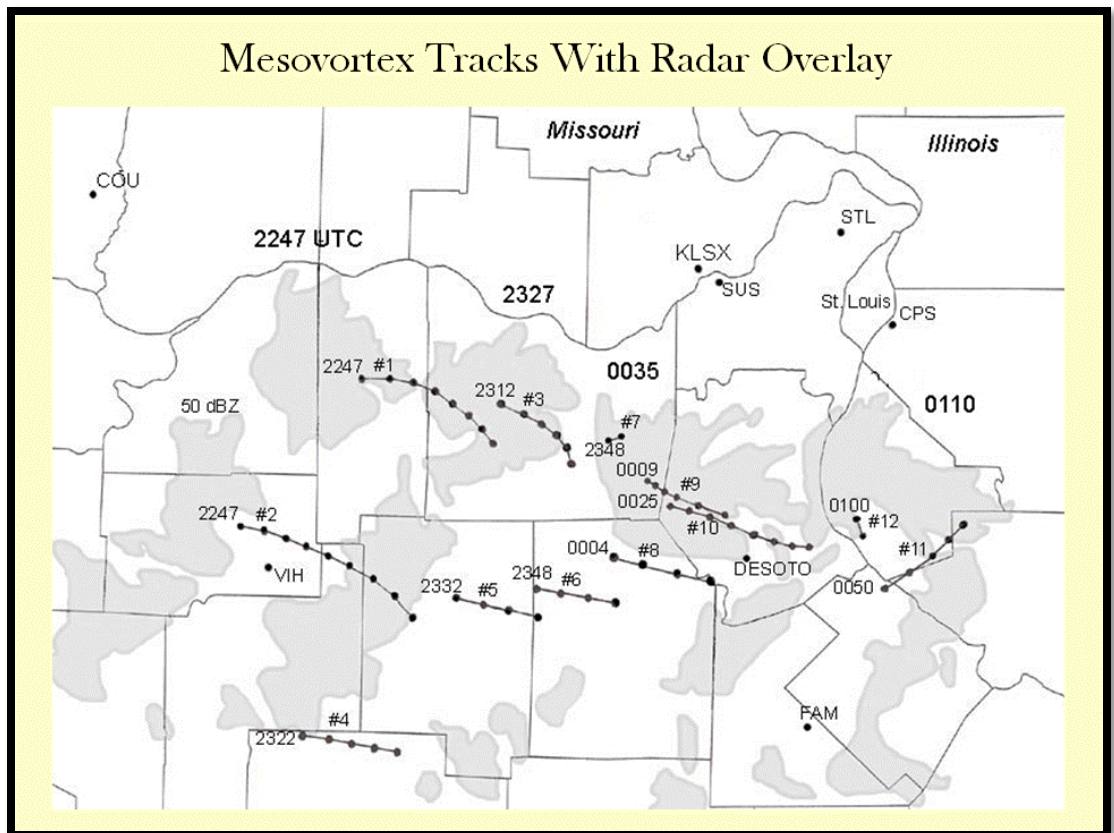
### Circulations 9 and 10 Superimposed Onto The Damage Map



Composite of the evolution of Mesovortices 9 and 10 with damage swaths overlaid. Shaded areas of light (dark) blue represents estimated winds of 30(40+) m s<sup>-1</sup> respectively. Red lines represent tornado tracks. Time is in UTC.

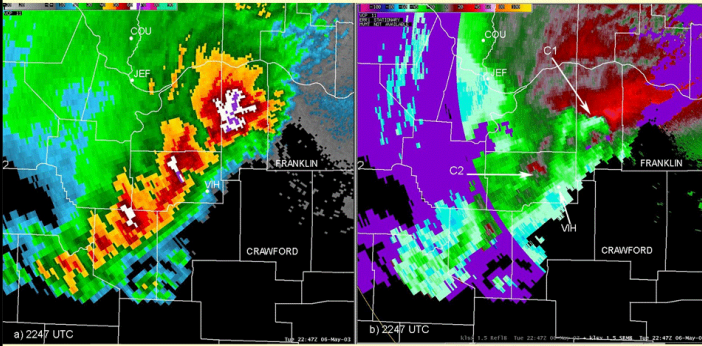
### Mesovortex Tracks With Radar Overlay

Radar composite of the 06 May 2003 Severe Storm System from KLSX radar. Solid contours are tracks of mesovortices. Times are in UTC.



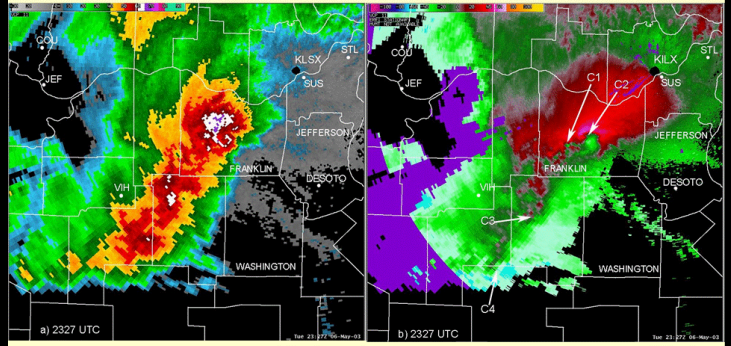
# Radar Data

Stage 1: Discrete Supercells 22:47 UTC



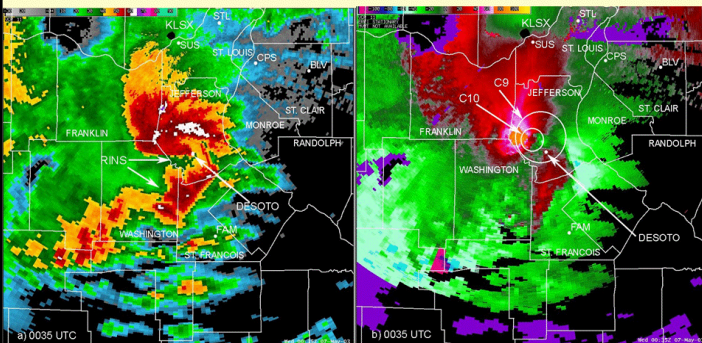
- The northern most storm revealed HP characteristics, while the others were more classic in nature.
- The most intense mesocyclone (C1) was identified with the HP supercell which was traveling along the warm frontal boundary.

Stage 2: Quasi-linear Convective System Development 23:27 UTC



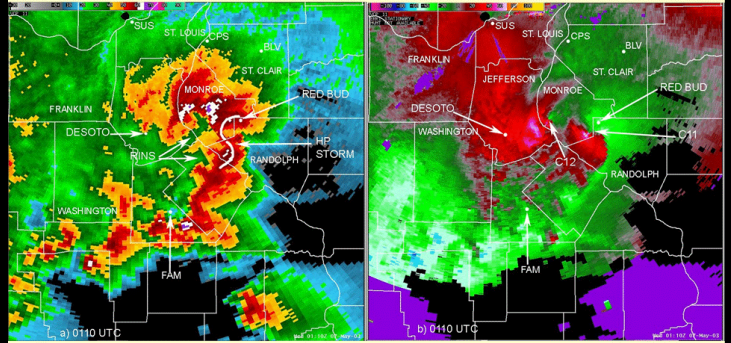
- Interactions/mergers are taking place with the southern supercells.
- The HP supercell shows cyclic mesocyclogenesis. The stronger mesocyclone (C2) develops toward the updraft region of the storm as the older and weakening mesocyclone (C1) is being “shed” to the rear of the storm.

Stage 3: Formation of the Bow Echo and Strong Mesovortex 00:35 UTC

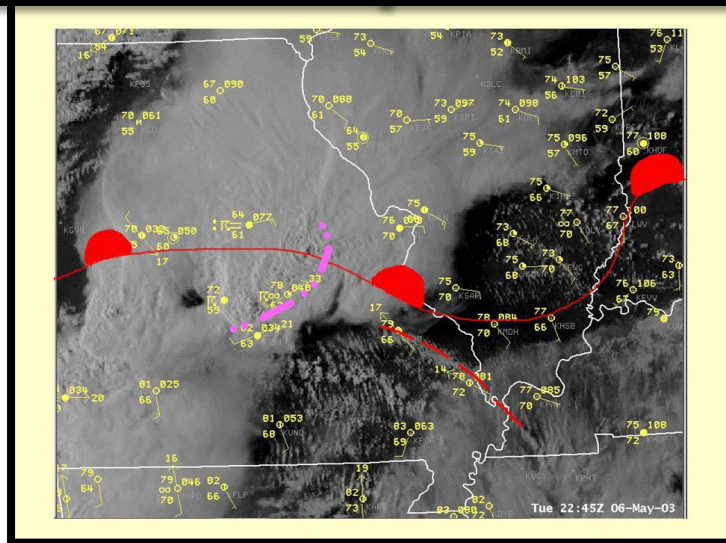


- After the collapse of the HP storm and line acceleration, the entire convective system developed into a classic comma shaped echo pattern.
- Intense mesovortices evolved within the large comma head (C9 & C10) and were responsible for two periods of severe winds in the De Soto area.

Stage 4: Embedded HP Supercell within the Bow Echo 01:10 UTC



- As the convective complex crossed the Mississippi River both classic and HP supercell structures evolved once again over parts of southwest Illinois and southeast Missouri where several weak tornadoes formed.



# Damage Photos



Please note that while the severe weather data presented in this event synopsis has been quality controlled, it is still considered unofficial. Official reports & statistics for severe weather events can be found in the **Storm Data** publication (<http://www.ncdc.noaa.gov/IPS/sd/sd.html>) or **Storm Events Database** (<http://www.ncdc.noaa.gov/stormevents/>), available from the National Centers for Environmental Information (NCEI) web page [formerly the National Climate Data Center (NCDC)].

More detailed tornado track information can be accessed using the National Weather Service Damage Assessment Toolkit for all tornadoes beginning in 2012. <https://apps.dat.noaa.gov/StormDamage/DamageViewer/>

***Any questions regarding this event review should be address to [w-lsx.webmaster@noaa.gov](mailto:w-lsx.webmaster@noaa.gov)***