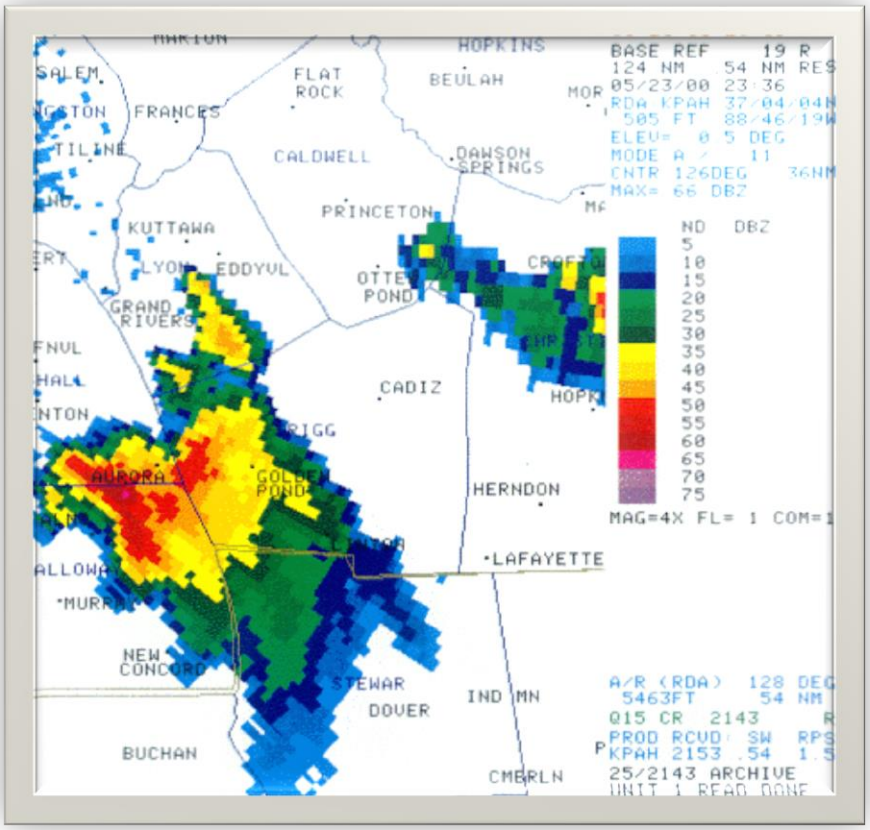
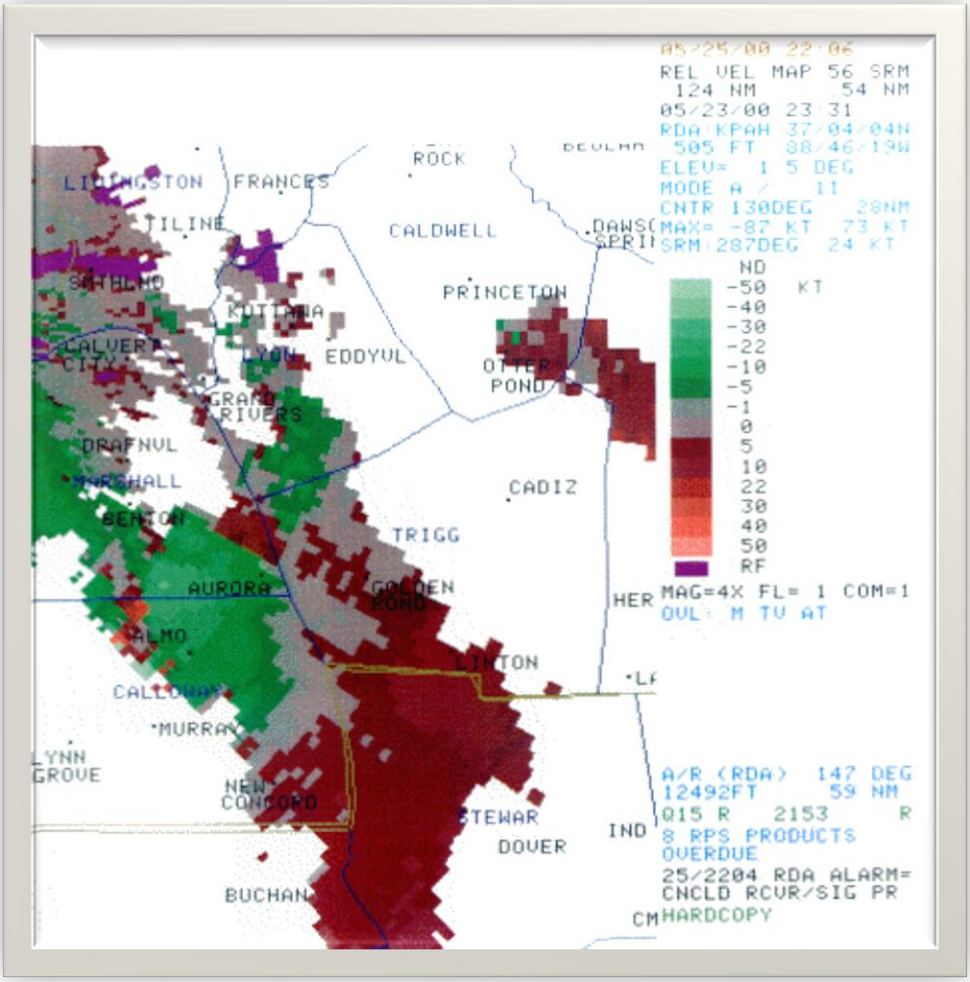
Storms of May 23, 2000

Overview: A significant severe weather outbreak occurred during the evening of May 23, primarily across the western Kentucky, southeast Missouri, and far southern Illinois counties of the Paducah County Warning Area (CWA). A cold front moved slowly south across central Illinois and Indiana during the day, and by evening, it was approaching the lower Ohio Valley. Thunderstorms developed ahead of the front in a warm, humid, and very unstable air mass. Late in the afternoon, temperatures were well up in the 80s with dew points in the lower 70s. An essential ingredient for severe storms, wind shear, was present. Winds in the mid levels of the atmosphere were northwest at close to 50 knots. Closer to the surface, they were southwest at 20 to 30 knots. As a result, the Storm Prediction Center issued Tornado Watch 334 at 650 P.M. for much of western Kentucky. A short while later at 728 P.M., another Tornado Watch (Number 335) was issued for southern Illinois, southeast Missouri, and the rest of west Kentucky.

Radar Images and Storm Evolution: The first storms actually occurred earlier in the day, including an F-3 tornado at Leitchfield, Kentucky, just east of the Paducah County Warning Area. However, in the Paducah CWA, the most significant activity was mainly during the evening. Isolated supercells began forming around 6 P.M. Radar showed distinct signs of rotation with one of the first supercells. This cell formed rapidly just east of Paducah, then moved southeast across Marshall County into Calloway County. The radar image below shows the storm along the Calloway/Marshall County border at about 6:30 P.M. Notice the hook-shaped feature between Murray and Benton, along the Marshall/Calloway County border. This feature is commonly seen with tornadic storms.

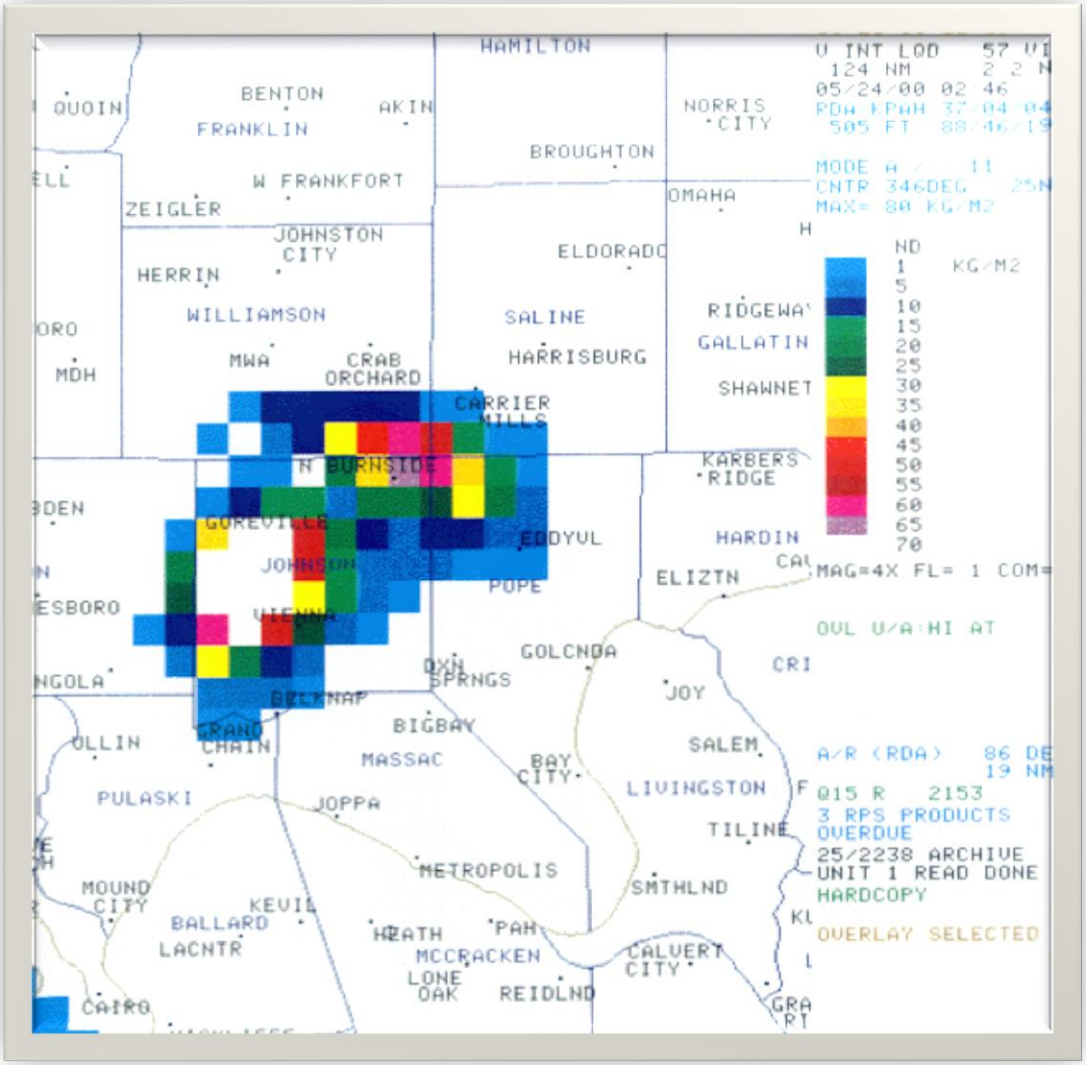


The next image below, which was taken just several minutes prior to the above image, shows atmospheric motion in the storm. Rotation is depicted by the red/green couplet. Notice the rotation coincides with the location of the hook-shaped radar echo. It was in this location, near Almo along the Calloway/Marshall County line, that storm surveys revealed an F-1 tornado touched down. Damage to roofs and trees occurred here. A funnel cloud was frequently observed with this storm from central Marshall County near Benton to the Tennessee state line southeast of Murray. Sporadic wind damage reports were received all along the path of this storm, as well as large hail up to an inch and a half in diameter.



Later in the evening, additional supercells began developing over southern Illinois. One cell that developed in the Carbondale area became a tremendous storm as it moved into Johnson County around 9:45 P.M. In the city of Vienna, along I-24 between Marion, IL and Paducah, baseball size hail fell around 10 P.M. The storm continued to frequently produce large hail as it moved southeast toward the Ohio River. As the storm approached the Ohio River just northeast of Metropolis, IL, rotation in the storm increased, and Tornado Warnings were issued for Massac and Pope Counties in Illinois. A funnel cloud was observed extending more than halfway to the ground.

The radar image below shows a radar product called VIL (Vertically Integrated Liquid). The VIL product is excellent for diagnosing the large hail potential of storms. The highest VIL values, over 70, are colored in white. On this day, VIL values over 70 corresponded to golf ball size hail or larger. The VIL values near Vienna at this time (9:46 P.M.) were actually in the 80s and corresponded to reports of baseball size hail. The correlation between VIL value and hail size depends on the thermal structure of the atmosphere. In winter, VILs as low as 35 can produce large hail, while in summer, VILs as high as 60 may not.



These are just a couple of the most severe storms of the event. There were numerous other severe weather events on the 23rd, including baseball size hail in Scott County, Missouri.

SOUTHERN ILLINOIS:

White County

Crossville	**23**	**0345CST**	**0**	**0**		**Tstm Wind/Hail**

Large quantities of marble size hail and wind gusts to 45 MPH accompanied a strong thunderstorm.

Johnson County

Goreville to Vienna	**23**	**2045CST 2100CST**	**0**	**0**	**7M**	**Hail (2.75)**

A supercell thunderstorm produced baseball size hail from northwest to southeast across parts of Johnson County. The total damage costs for dented cars, smashed windows, and damaged roofs in Vienna was estimated near 7 million dollars. The city's two car dealers sustained about 800,000 dollars damage to a total of 280 cars. At the Johnson County courthouse, the hail broke about 20 windows on the north side of the building and extensively damaged the roof. A funeral home reported hail wrecked the garage, siding, and windows of the funeral home, along with three personal vehicles, for a total damage estimate of 50,000 dollars.

Fellowship Baptist Church sustained 15,000 dollars damage. One building contractor estimated 90 percent of all the houses in

Jackson County

Gorham	**23**	**2112CST**	**0**	**0**	**20K**	**Hail (1.00)**

At least one cornfield in the Gorham area received major hail damage.

Massac County

2 NE Brookport	**23**	**2132CST**	**0**	**0**		**Funnel Cloud**

A supercell thunderstorm which began near Carbondale and produced baseball size hail as it moved southeast across Johnson County became tornadic over Massac County. Although no touchdowns were reported, a funnel cloud was observed quite close to the ground.

Union County

Cobden	**23**	**2145CST**	**0**	**0**	**50K**	**Hail (1.75)**

Local newspapers showed photos of the hailstones, some of which were nearly the size of golf balls. Strong winds up to 50 MPH accompanied the storm. A large tree was down across a street in Anna, and a large limb was down in Jonesboro.

Pulaski County

Grand Chain to Karnak	**23**	**2224CST**	**0**	**0**		**Hail (1.75)**

Union County

Jonesboro	**23**	**2227CST**	**0**	**0**		**Hail (1.75)**

This was the second of two severe thunderstorms that passed southeast across Union County in less than two hours. The main feature of both storms was golf ball size hail.

Johnson County

Belknap	**23**	**2340CST**	**0**	**0**	**10K**	**Thunderstorm Wind**

The roof was blown off a barn and into a house.

SOUTHWEST INDIANA:

Spencer County

Chrisney to Grandview	**23**	**0833CST 0839CST**	**0**	**0**		**Hail (0.88)**

Dime to nickel size hail fell across parts of the county.

Vanderburgh County

Evansville	**23**	**1832CST**	**0**	**0**		**Thunderstorm Wind (G56)**

WInds were estimated between 60 and 70 MPH on the east side of Evansville.

Vanderburgh County

Evansville	**23**	**1832CST**	**0**	**0**		**Hail (0.75)**

WESTERN KENTUCKY:

Henderson County
4 E Henderson — **23** **0740CST** — **0** **0** — **Hail (0.75)**

Daviess County
1 W Owensboro to Yelvington — **23** **0755CST 0810CST** — **0** **0** — **Hail (1.00)**
Quarter size hail was reported from the west side of Owensboro northeast to Yelvington.

Daviess County
Browns Vly — **23** **0810CST** — **0** **0** — **Hail (1.75)**

Carlisle County
Cunningham — **23** **0838CST** — **0** **0** — **Hail (1.00)**

Graves County
5 NE Lowes — **23** **0850CST** — **0** **0** — **Hail (0.75)**
Dime size hail fell in Melber, near the McCracken County line.

Marshall County
1 W Benton — **23** **1713CST** — **0** **0** — **Funnel Cloud**
A supercell thunderstorm that tracked across Marshall County produced a long-lived rotating wall cloud and occasionally a funnel cloud. A funnel cloud was observed between Benton and Oak Level. The funnel touched down in Calloway County.

Graves County
Symsonia — **23** **1715CST** — **0** **0** — **Hail (1.50)**
Ping pong ball size hail fell near Symsonia. This storm cell later tracked into Marshall County and became tornadic

Calloway County
.5 W Murray — **23** **1715CST** — **0.1** **20** **0** **0** — **Tornado (F0)**
Two reliable witnesses reported a very brief tornado touchdown on the west side of Murray, just north of Highway 121. The funnel briefly touched a house roof, but no real damage occurred.

Marshall County
Benton — **23** **1718CST** — **0** **0** — **Hail (1.50)**

Marshall County
1 SE Hardin — **23** **1729CST** — **0** **0** **10K** — **Thunderstorm Wind (G61)**
Near the Calloway County border, there were six power poles down due to winds estimated around 70 MPH. Kentucky Route 80 was closed between Hardin and Aurora due to downed power poles.

Calloway County
3 N Almo to 1.5 N Almo — **23** **1730CST 1736CST** — **1.5** **100** **0** **0** **50K** — **Tornado (F1)**
A relatively weak F-1 tornado with maximum wind speeds near 80 MPH moved southeast across the "Almo Heights" area. Three houses sustained roof damage, mainly due to trees falling on them. The storm that spawned the tornado displayed excellent supercellular characteristics on radar throughout its path across Calloway County. Videotape of the storm's funnel cloud was shown on local media outlets. The funnel again briefly touched down in eastern Calloway County

Marshall County
Hardin — **23** **1733CST** — **0** **0** — **Hail (0.75)**

Calloway County
5 E Murray — **23** **1804CST 1805CST** — **0.2** **20** **0** **0** **4K** — **Tornado (F0)**
The supercell thunderstorm that produced the F-1 tornado near Almo Heights in Calloway County generated another weaker, short-lived tornado between Murray and Hamlin. Spotters and sheriff deputies chasing the funnel cloud clearly observed multiple brief touchdowns in open fields and woodlands. Tree limbs were torn off. There was no structural damage. The path width was estimated to be no more than 50 feet wide.

Christian County
Hopkinsville — **23** **1821CST** — **0** **0** — **Hail (0.75)**
Dime size hail was observed in the northwest part of Hopkinsville

Mclean County
Livermore — **23** **2249CST** — **0** **0** **2K** — **Thunderstorm Wind (G52)**
A couple of large tree limbs were blown down.

SOUTHEAST MISSOURI:

Bollinger County

5 W Patton to Patton Jct	**23**	**0709CST 0719CST**			**0**	**0**	**Hail (1.75)**

A severe thunderstorm moved slowly east across northern Bollinger County, producing quarter to golf ball size hail

Bollinger County

Sedgewickville	**23**	**0726CST**			**0**	**0**	**Hail (1.00)**

Cape Girardeau County

Jackson	**23**	**0755CST**			**0**	**0**	**Hail (1.75)**

Scott County

1 E Benton	**23**	**1619CST**			**0**	**0**	**35K**	**Hail (2.00)**

Hail larger than golf balls was reported on Interstate 55 near Benton.

Scott County

Lusk	**23**	**1640CST 1644CST**			**0**	**0**	**Hail (1.00)**

Bollinger County

Glenallen	**23**	**1818CST**			**0**	**0**	**Hail (0.88)**

This storm later produced hail up to baseball size in the Marble Hill area

Bollinger County

Marble Hill to Leopold	**23**	**1837CST 1841CST**			**0**	**0**	**1M**	**Hail (2.75)**

Spotters reported golf ball size hail in Marble Hill, and baseball size hail in Leopold. Two car dealerships in Marble Hill reported their entire inventory of vehicles received damage. One insurance agent in Marble Hill received hail-damage claims on 10 homes and 60 vehicles. Of those 60 vehicles, 20 were declared total losses. Damage to homes consisted almost entirely of roof damage. Newspaper photos showed baseball size hail covering the ground on Highway 51, 2 miles south of the Marble Hill city limit.

Bollinger County

6 E Marble Hill	**23**	**1848CST 1849CST**	**0.3**	**20**	**0**	**0**		**Tornado (F0)**

A spotter reported the funnel cloud "went down and back up." The path length was very short in a rural area.

Scott County

Oran	**23**	**1922CST**			**0**	**0**	**Hail (1.75)**

Bollinger County

2 SE Marble Hill	**23**	**1924CST**			**0**	**0**	**Hail (1.75)**

Golf ball hail was reported between Marble Hill and Leopold.

Scott County

1 W Morley to Chaffee	**23**	**1935CST 1950CST**			**0**	**0**	**Hail (1.50)**

Dime size hail was reported just west of Morley. Silver-dollar size hail fell at Chaffee

Cape Girardeau County

Arbor to Delta	**23**	**1945CST 1952CST**			**0**	**0**	**Hail (1.75)**

Golf-ball size hail was reported from Arbor to Delta in the southwest part of the county

Mississippi County

Bertrand to Charleston	**23**	**1957CST 2005CST**			**0**	**0**	**Hail (1.00)**

Scott County

2 N Blodgett	**23**	**2004CST**	**0.2**	**30**	**0**	**0**		**Tornado (F0)**

A trained spotter reported a funnel cloud briefly touched down in open rural farm country. There was no apparent damage. Large hail with the associated thunderstorm caused most of the damage.

Scott County

Morley	**23**	**2015CST**			**0**	**0**	**Hail (1.25)**

Half-dollar size hail fell at Morley.

Scott County

Benton to Lusk	**23**	**2025CST 2037CST**			**0**	**0**	**500K**	**Hail (2.75)**

Baseball size hail fell in the Benton area.

Mississippi County

1 SW Charleston	**23**	**2040CST**			**0**	**0**	**Hail (2.75)**