

NOAA REMEMBERS THE MIDWEST'S DEADLY 1965 PALM SUNDAY TORNADO OUTBREAK



April 11, 2005 ♦ On April 11, 1965, the worst tornado outbreak in U.S. history hit several Midwest states, leaving more than 250 people dead, 1,500 injured and property damage approaching half a billion dollars. Following that deadly tornado outbreak, the [NOAA National Weather Service](#) underwent changes to improve severe weather forecasts and warnings, including establishing the Watch and Warning Program that exists today and the weather spotter program, [SKYWARN](#). **(Click NOAA image for larger view of famous Elkhart, Ind., "double tornado" that hit the Sunnyside subdivision, which killed 36 people. Other eyewitnesses said it actually hit the Midway trailer park. [Click here](#) for high resolution version, which is a large file.**

Please credit "NOAA.")

Hours before the tornado outbreak began, some people in the Midwest complained about the heat, as the temperature rose to an unseasonable 83 degrees in some areas. Storms developed throughout the day as a strong low pressure system moving through Wisconsin drew warm, humid air into southern Michigan. Cooler and drier air at higher altitudes mixed with moist, warm air near the surface, resulting in highly unstable conditions.

The first tornado of the day occurred at about 1 p.m. local time in Clinton County, Iowa. Later rated an F4 (with winds between 207-260 mph) on the [Fujita tornado intensity scale](#), the twister was an omen of what was to come for the rest of the day.

By late afternoon, the storm system began to intensify over Indiana and spawned several killer tornadoes. Indiana's first tornado touched down at round 5:30 p.m., in Koontz Lake. The F4 tornado killed ten people and injured 180. Another tornado in Wakarusa, Ind., tore through the Midway Trailer Park. A third tornado touchdown occurred near Goshen, Ind., where only home foundations indicated that there was once life in the Rainbow Lake community.

- [Ohio's Second Deadliest Tornado Day: April 11, 1965](#)
- [Dearth of Communications Foiled Warning Effort in 1965 Tornado Outbreak](#)
- [NOAA Technology Takes Weather Detection to New Heights since Palm Sunday Tornado Outbreak](#)

An 800-yard-wide tornado killed 25 people near Kokomo, Ind., while the communities of Marion and Alto were severely impacted. The storm system rolled to the east and tornadoes moved from Indiana into Ohio, wreaking havoc along the way. A double tornado was spotted near Toledo.

Tornadoes continued to develop, and the only F5 tornado (with winds of 261-318 mph) of the day occurred near Elkhart, Ind. Some accounts indicated the famous "double tornado" hit the Sunnyside subdivision killing 36 people, while other eyewitnesses said it actually hit the Midway trailer park. High winds had taken out telephone and electrical lines, leaving residents with no way of receiving warnings of the tornado. With telephone lines down, emergency personnel in Elkhart could not warn southern Michigan communities of the danger approaching their area.

In Michigan, tornadoes hit as far north as Ottawa County, just east of Grand Rapids. All but

three of the southern tier Michigan counties (Berrien, Cass and St. Joseph) were hit by tornadoes. Near Detroit, a mile-wide tornado hit Milan, Mich. Among other damage, the tornado destroyed Wolverine Plastics, the town's top employer.

When officials of the U. S. Weather Bureau (known today as the NOAA National Weather Service) investigated the high number of fatalities, they were somewhat surprised by the reason—a failure in communicating the approaching storms to the public and community officials.

At that time, the weather radars were few and far between. The [1950s-vintage radars](#) (converted from aviation use) were only able to identify tornadoes if they picked up the tell-tale "hook echo" characteristic, but the radars weren't to blame. The danger in the storm system was identified early on and the Bureau disseminated warning information quickly. However, most of the public never received the warnings and those that did could not tell the difference between a forecast and an alert.

To reduce public confusion, the Weather Service launched its current Tornado Watch (conditions are prime for tornado development) and Tornado Warning (a tornado is on the ground or eminent) program. The agency began a massive public education effort to help prevent a repeat of the terrible toll of the Palm Sunday Tornado Outbreak. Technology has grown exponentially since 1965, as severe weather information is now transmitted via cable and satellite television, personal computers and the Internet, solid-state electronics, cellular phones and [NOAA All-Hazards Weather Radio](#).

Today, forecasters with the NOAA National Weather Service employ the latest technologies to detect and monitor severe weather, relay severe weather information to emergency managers and the public much quicker, and work with the media to ensure the public has the most current information about developing storms. All actions taken in effort to ensure the tragedy of April 11, 1965, is not repeated.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and providing environmental stewardship of the nation's coastal and marine resources. NOAA is part of the [U.S. Department of Commerce](#).

Relevant Web Sites

[NOAA National Weather Service Central Region](#)

[NOAA Tornadoes Page](#)

[NOAA Storm Prediction Center](#)

[NOAA Storm Watch](#)

[40th Anniversary of the Palm Sunday 1965 Tornado Outbreak](#)

[Palm Sunday Tornado Outbreak April 11, 1965](#)

Media Contact:

[Patrick Slattery, NOAA National Weather Service Central Region](#), (816) 891-8914