

# *Tornado Warnings: How the National Weather Service Tracks and Warns The Public*

*Congressional Hazards Caucus Alliance  
April 5, 2006*

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NOAA's National Weather Service*



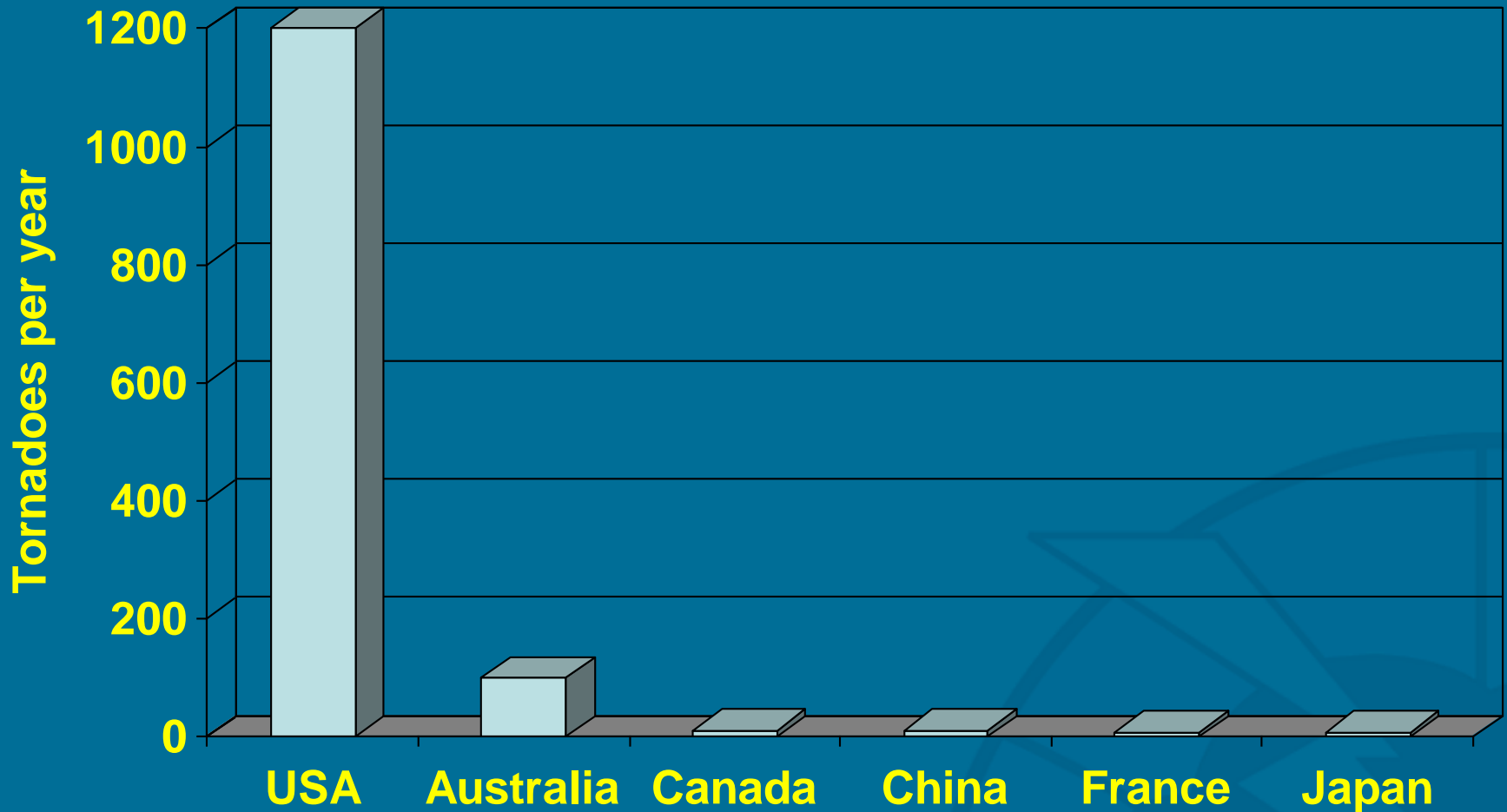
# NWS Mission

## *Congressional Organic Act of 1890*

- To provide public weather forecasts and warnings for the protection of life and property and to provide weather information for the Nation's economic well-being*



# Comparison of Tornado Events



*NWS Tornado Warning Program*

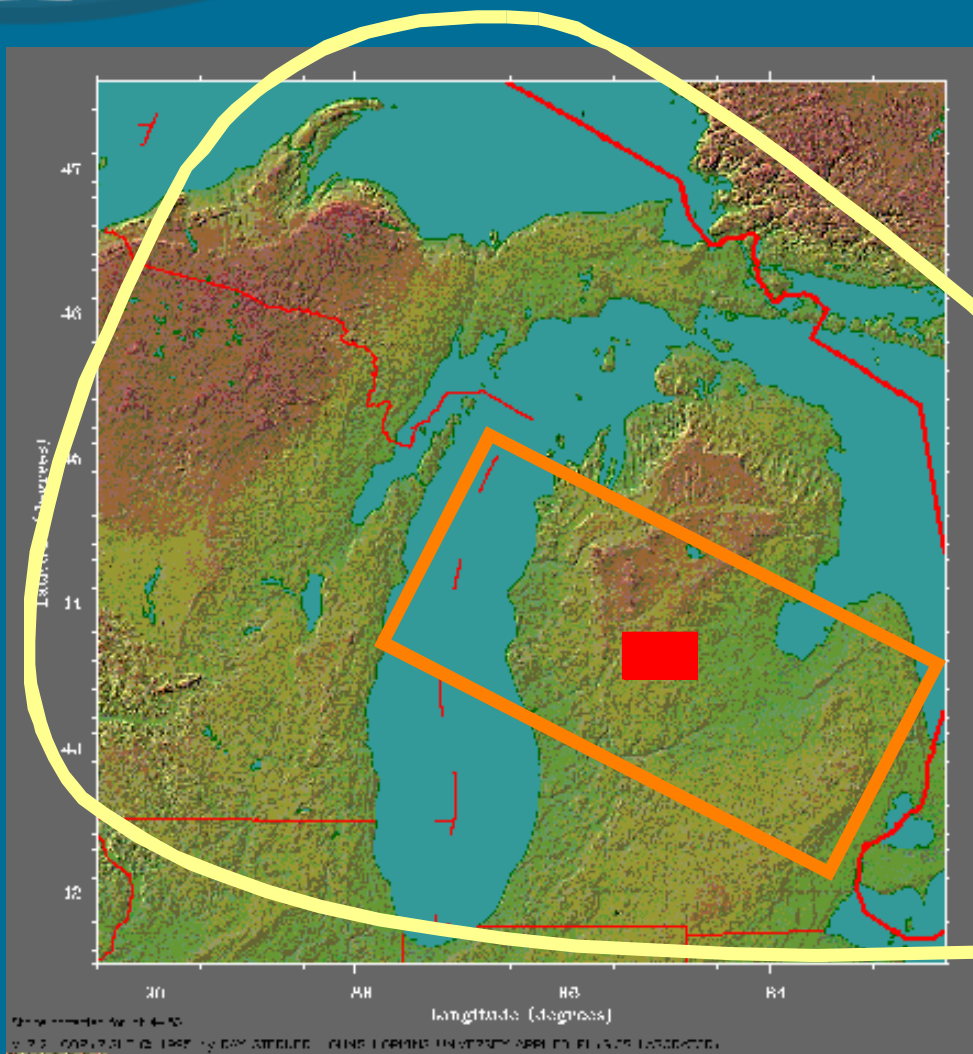


# Tornado Products

## *Multi-Tiered Concept*

- Convective Outlook
  - Potential exists for a severe weather event in the next 1 to 3 days
- Tornado Watch
  - Conditions are favorable for a tornado event in the next 6 hours
- Tornado Warning
  - Issued when a tornado has been sighted by weather spotter or indicated by weather radar
  - Indicates imminent danger to life and property.

# Overview of Warning Process



## Outlook

- 1 to 3 days
- Large area

## Watch

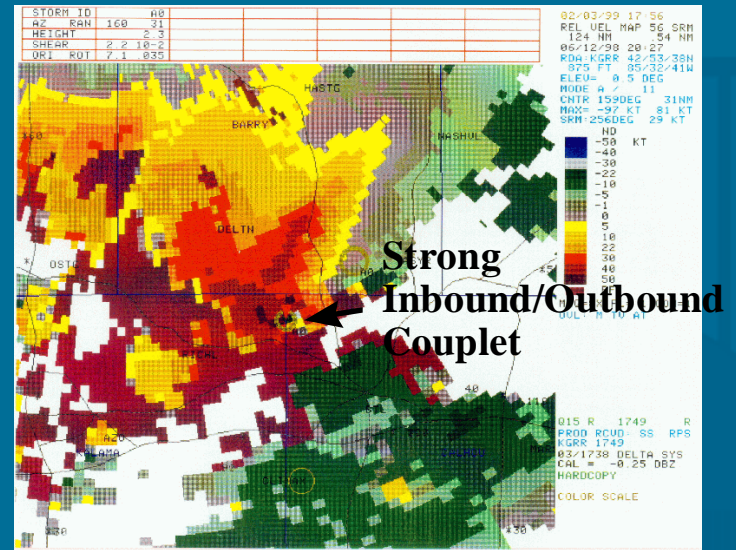
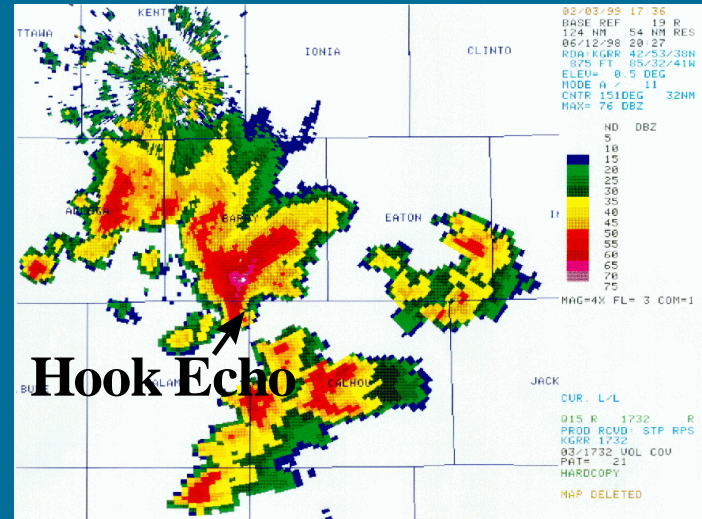
- 1 to 6 hours
- Smaller Area

## Warning

- up to 1 hour
- County size



# Radar Detection



# Role of Amateur Radio and Weather Spotters



# Tornado Warning Bulletin

[www.weather.gov](http://www.weather.gov)

BULLETIN - EAS ACTIVATION REQUESTED

TORNADO WARNING

NATIONAL WEATHER SERVICE NORMAN OK

610 PM CDT WED OCT 19 2005

THE NATIONAL WEATHER SERVICE IN NORMAN HAS ISSUED A

\* TORNADO WARNING FOR...

WOODS COUNTY IN NORTHWEST OKLAHOMA

\* UNTIL 710 PM CDT

\* AT 610 PM CDT...NATIONAL WEATHER SERVICE DOPPLER RADAR AND WEATHER SPOTTERS INDICATED A SEVERE THUNDERSTORM CAPABLE OF PRODUCING A TORNADO 8 MILES SOUTHWEST OF FREEDOM...MOVING EAST AT 35 MPH.

\* LOCATIONS IN THE WARNING INCLUDE AVARD AND FREEDOM.

A TORNADO MAY FORM AT ANYTIME. TAKE COVER NOW. ABANDON MOBILE HOMES AND VEHICLES. IF POSSIBLE... MOVE TO A BASEMENT OR STORM SHELTER. OTHERWISE... MOVE TO AN INTERIOR ROOM OR HALLWAY ON THE LOWEST FLOOR. STAY AWAY FROM WINDOWS.

THIS STORM WILL ALSO PRODUCE DAMAGING HAIL AND DAMAGING WINDS.

LAT...LON 3683 9925 3667 9904 3668 9868 3695 9868

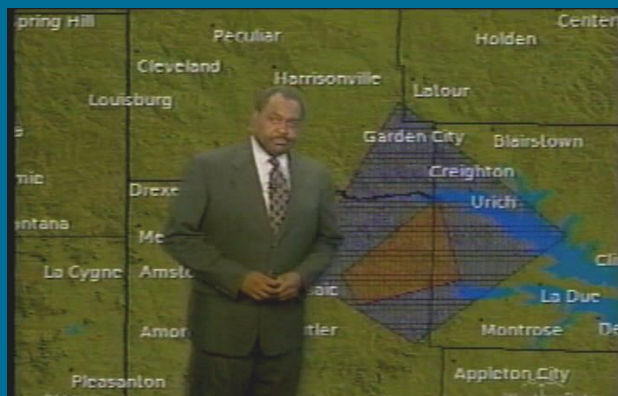
*NWS Tornado Warning Program*





# Warning Dissemination

- Tornado Warnings disseminated directly to
  - NOAA Weather Radio
  - Private weather vendors
  - Emergency Managers
  - Broadcast Media
- Warning information is available via
  - Media broadcasts
  - weather radios
  - cell phones
  - PDAs

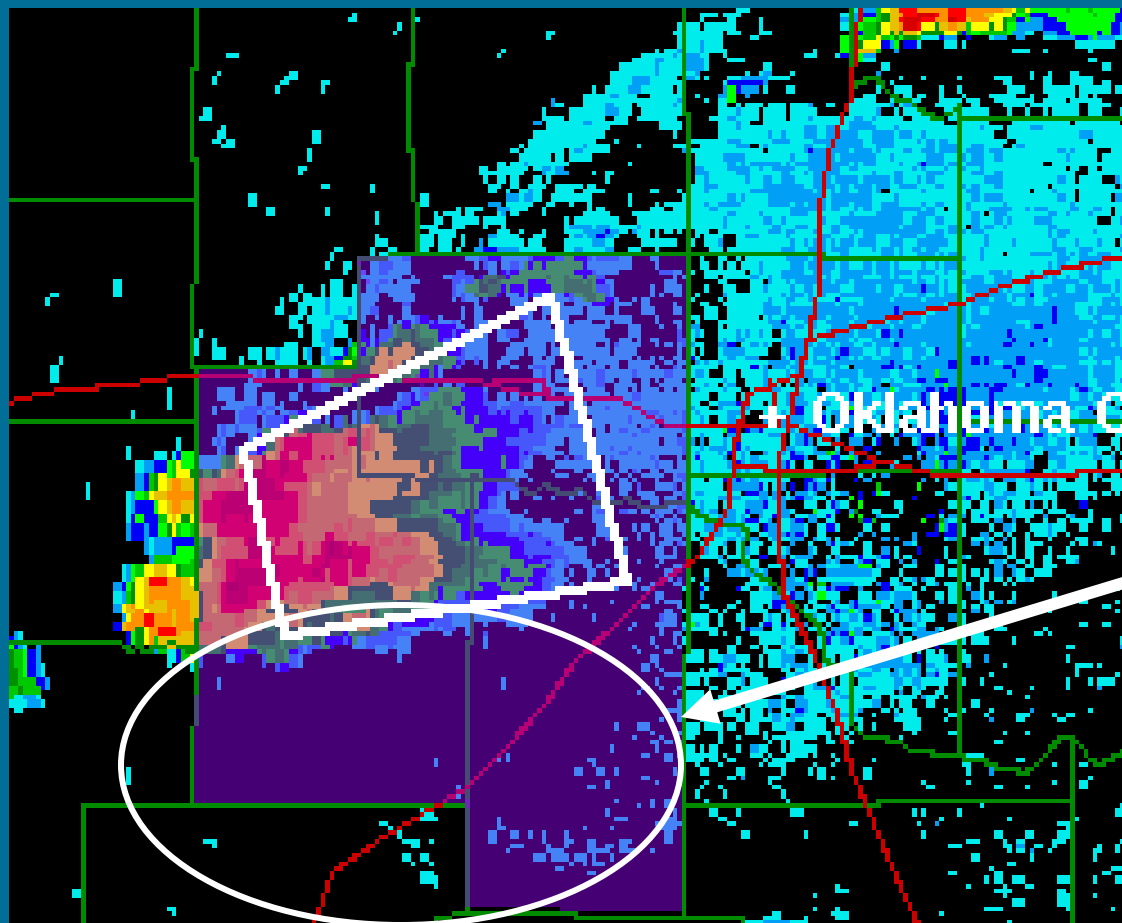


# Tornado Warning Performance for FY05

- Lead Time = 13 minutes
  - More than doubled since 1993 (6 minutes)
  - Time difference between warning issuance and report of tornado
- Accuracy = 75%
  - 83% improvement since 1993 (41%)
  - How often a tornado occurred during the valid time of a tornado warning
- False Alarm Rate = 78%
  - How often a warning was issued without receiving an actual tornado report from a reliable spotter



# Goal – Improving Warning Service



Polygon Eliminates  
False Alarm for this  
Area

National Weather Service  
warning and forecast information:

[\*www.weather.gov\*](http://www.weather.gov)

Any Questions or comments?

