

Anticyclonic - Rotation in a clockwise direction when viewed from above, similar to a high pressure area. Anticyclonic features rotate from right to left when viewed from the ground.

Anvil - The flat, spreading top of a cumulonimbus, often shaped like a blacksmith's anvil.

Beaver(s) Tail - A low cloud band with a relatively broad, flat appearance suggestive of a beaver's tail. It is attached to a supercell's updraft base and extends to the east or northeast.

Clear Slot - A local region of clearing skies or reduced cloud cover, indicating an intrusion of drier air. A clear slot is often seen on the west or southwest side of a wall cloud and is visual evidence of a rear flank downdraft.

Cyclonic - Rotation in a counterclockwise direction when viewed from above, similar to a low pressure area. Cyclonic features rotate from left to right when viewed from the ground.

Downburst - A strong downdraft resulting in an outward burst of damaging winds on or near the ground. Sometimes called "straight-line winds," downbursts may be large (macroburst) or small (microburst) in scale.

Downdraft - A column of air that rapidly sinks toward the ground, usually accompanied by precipitation as in a shower or thunderstorm.

Flanking Line - A line of cumulus, or towering cumulus, clouds connecting to and extending outward from the most active part of a supercell, normally on the southwest side.

Flash Flood - A rapid rise of swift-moving water, resulting in a threat to life and property. Flash floods can occur within minutes or hours of excessive rainfall.

Flash Flood Warning - An urgent weather product indicating a flash flood is imminent or occurring.

Funnel Cloud - A condensation funnel extending from the base of a thunderstorm, associated with a rotating column of air that is *not* in contact with the ground.

Gust Front - The leading edge of a thunderstorm downdraft that is often marked by a wind shift and gusty winds. Gust fronts are sometimes associated with a shelf cloud or roll cloud.

Gustnado - A surface-based circulation associated with thunderstorm outflow. Gustnadoes are not associated with updrafts and are not attached to cloud bases, so they are not considered true tornadoes.

High Precipitation (HP) Supercell - A supercell with a large amount of visible precipitation encircling the mesocyclone. HP supercells can be difficult to observe visually, as the precipitation often obscures the updraft-related cloud features.

Inflow Bands - Bands of low clouds, arranged parallel to the low-level winds, that move into or toward a thunderstorm. They may indicate the strength of the inflow of moist air into a storm, as well as a storm's overall intensity.

Low Precipitation (LP) Supercell - A supercell with little visible precipitation falling from it. LP supercells often have flared-out updraft towers with striations, thus they are easy to recognize visually. However, they can be difficult to detect on radar.

Mammatus Clouds - Rounded, smooth, pouch-like protrusions hanging from the underside of a thunderstorm anvil. Mammatus clouds often accompany severe thunderstorms, but do not produce severe weather.

Mesocyclone - A rotating updraft within a thunderstorm that is typically 2 to 6 miles in diameter. Mesocyclones are often found in the right rear flank of a supercell or on the front flank of an HP supercell.

Multiple-Vortex Tornado - A tornado in which two or more condensation funnels or debris clouds are present and often rotate around a common center or each other.

Overshooting Top - A dome-like protrusion above a thunderstorm anvil, representing a strong updraft.

Power Flash - A blue-green flash that is often a visual indication of damaging winds.

Rain Foot - A horizontal bulging of a precipitation shaft near the ground, forming a foot-shaped prominence. It is a visual indication of strong outflow winds.

Rain-Free Base - A pronounced outward bend of the precipitation shaft near the ground that has a foot-shaped appearance. It is a visual indication of strong outflow winds.

Rear Flank Downdraft - A region of sinking, dry air that wraps around the back side of a mesocyclone. It is often visible as a clear slot wrapping around the wall cloud.

Scud - Small, ragged, low cloud fragments that are unattached to the main thunderstorm cloud base but can become part of it.

Severe Thunderstorm - A thunderstorm which produces hail of one inch in diameter or greater, and/or damaging winds of 58 mph (50 kts) or greater, and/or a tornado.

Shelf Cloud - A low, horizontal wedge-shaped cloud, associated with a thunderstorm gust front. The shelf cloud is usually attached to the base of the parent cloud above it.

Special Weather Statement - A weather product used to inform the public of significant weather that does not reach severe storm criteria.

Squall Line - A solid or nearly solid line or band of active thunderstorms. Squall lines typically have updraft areas on the leading edge, above or just ahead of a large gust front.

Striations - Grooves or channels in cloud formations that are arranged parallel to the flow of air and are often observed with a rotating updraft. Striations often indicate the presence of rotation via a barber pole or "corkscrew" appearance.

Supercell - A thunderstorm with a persistent mesocyclone. Supercells are responsible for a high percentage of severe weather events: tornadoes, extremely large hail, damaging straight-line winds, and flash flooding.

Tail Cloud - A horizontal, tail-shaped cloud (not a funnel cloud) at low levels that extends from the wall cloud toward the thunderstorm's precipitation region.

Tornado - A violently rotating column of air in contact with the ground that extends from the base of a thunderstorm.

Towering Cumulus - A large cumulus cloud with great vertical development, usually with a cumuliform or cauliflower-like appearance but lacks the characteristic anvil of a cumulonimbus.

Updraft - A column of rising air, often associated with the active portion of a thunderstorm.

Wall Cloud - A localized, persistent, and often blocky or abrupt lowering of cloud from a rain-free base. Wall clouds indicate a strong updraft and are normally found on the south side of a thunderstorm.

Watch - A severe weather forecast product, indicating conditions are favorable for severe weather. Watches typically cover numerous counties and are valid for approximately six hours.

Warning - An urgent severe weather product indicating severe weather is imminent or occurring. Warnings are typically issued on a storm by storm basis and are usually valid for one hour or less.

What the NWS Needs to Know

- What is happening?
- Time of event?
- Location of event?
- Damage magnitude?

Reporting Methods

- Amateur Radio: WX5FWD
- Phone: 1.800.792.2257 & 817.429.2631
- Email: sr-fwd.webmaster@noaa.gov
- Facebook & Twitter: @NWSFortWorth

Hail Size Estimation

1/4" Pea	1.75" Golf Ball
1/2" M&M (plain)	2.00" Chicken Egg
3/4" Penny / Dime	2.50" Tennis Ball
7/8" Nickel	2.75" Baseball
1" Quarter	3.00" Tea Cup
1.25" Half Dollar	4.00" Grapefruit
1.50" Ping Pong Ball	4.50" Softball

Wind Speed Estimation

- **32-38 mph:** Whole trees in motion. Some resistance when walking.
- **39-46 mph:** Twigs and small branches (1-3" diameter) broken off of trees.
- **47-54 mph:** Chimney covers and roof tiles blown off. TV antennas damaged. Lots of twig and branch damage.
- **55-63 mph:** Roof damage begins. Small trees blown over or uprooted.
- **64-75 mph:** Widespread damage occurs. Large trees uprooted or blown over.
- **75-112 mph:** Severe and extensive damage. Roofs peeled off. Windows broken. RVs and small mobile homes overturned. Moving cars pushed off roads.

The Storm Spotters Checklist

National Weather Service

Dallas / Fort Worth

1.800.792.2257

sr-fwd.webmaster@noaa.gov

Supercell Clues

Mid & Upper Level Clues

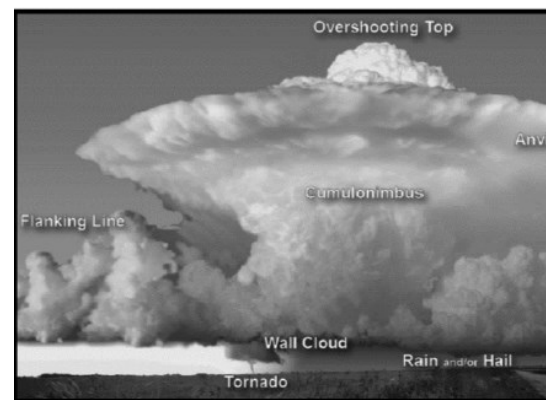
- Crisp, cauliflower texture to updraft tower
- Rounded Updraft Tower
- Striations (mid level cloud bands)

Low Level Clues

- Rain-free base
- Warm, moist air flowing into the storm (inflow)
- Inflow bands
- Shelf Cloud

Wall Clouds

- Are usually pronounced features
- Slope down and towards rain
- Maintain their position with respect to the rain (moves along with the rain)
- Form under a smooth, flat updraft base



Is the Tornado Threat Increasing?

- Circular updraft base
- Increasing spin in wall cloud / cloud base
- Increased inflow
- Rapid vertical motions near wall cloud
- Clear slot formation
- Rain burst develops behind the wall cloud or a rain curtain surrounds the wall cloud

Shelf Clouds

- Slope down and away from rain
- Changes position with respect to the rain (can move far ahead of the rain)
- Found near the front or middle of the storm

Additional Information:

weather.gov/fwd/skywarn

https://www.meted.ucar.edu/training_course.php?id=23

North & Central Texas Amateur Radio Frequencies:

<http://wx5fwd.org/CWAFrequencies>



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weather.gov/FortWorth