



@NWSFortWorth
weather.gov/FortWorth

The Storm Spotters' Checklist

National Weather Service

Dallas / Fort Worth

1.800.792.2257

sr-fwd.webmaster@noaa.gov

www.weather.gov/fwd/skywarn

How to Report

- Amateur Radio
- mPing (phone app)
- Phone
- Spotter Network (Twitter and Facebook)
- Social Media
- Email:
sr-fwd.webmaster@noaa.gov

What to Report

- Type: What are you reporting?
- Time: When did it occur? Now, or earlier?
- Location of event: Where did it occur? (secondary: your location)
- How? Measured or estimated
- Magnitude: Damage, injuries, etc

Hail Size Estimation

1/4" Pea	1.75" Golf Ball
1/2" M&M (plain)	2.00" Hen Egg
3/4" Penny / Dime	2.50" Tennis Ball
7/8" Nickel	2.75" Baseball
1.00" Quarter	4.00" Grapefruit
1.25" Half Dollar	4.50" Softball

Supercell Clues

Mid & Upper Level Clues

- ⇒ Crisp, cauliflower texture to updraft tower
- ⇒ Rounded updraft tower
- ⇒ Striations
- ⇒ Overshooting top

Low Level Clues

- ⇒ Rain free base
- ⇒ Warm, moist air flowing into the storm (inflow)
- ⇒ Inflow bands
- ⇒ Shelf cloud
- ⇒ Wall cloud
- ⇒ Tail cloud
- ⇒ Rising scud, becoming more organized with time

Wall Clouds

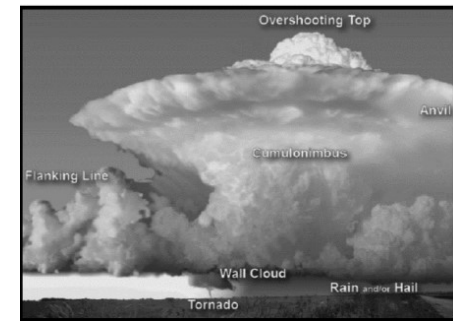
- Are usually pronounced features
- Slope down and towards rain
- Maintain their position with respect to the rain (moves along with the rain)
- Form under a smooth, flat updraft base

Shelf Clouds

- Slope down and away from the rain
- Changes position with respect to the rain (can move far ahead of the rain)
- Found in the forward flank (front) of the storm
- Have a ragged, choppy look underneath

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 behind the wall cloud or a rain curtain surrounding wall cloud



Flooding Reports

- Flood Magnitude: How high is the water? How high is "high"?
- Flood Frequency: How often does this happen?
- Floodwater Behavior: Is the water moving or standing? Is it moving fast or slow?
- Do you have a picture to send us?

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 damages. 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

North & Central Texas Amateur Radio Frequencies: <http://wx5fwd.org/CWAFrequencies>

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

Anticyclonic - Rotating in a clockwise direction when viewed from above, similar to a high pressure area. These features rotate from right to left when viewing 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; often seen on the west or southwest side of a wall cloud. A clear slot is visual evidence of a rear flank downdraft.

Cyclonic - Rotating in a counterclockwise direction when viewed from above, similar to a low pressure area. These features rotate from left to right when viewing 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 connected to and extending outward from the most active part of a supercell, normally on the southwest side.

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.

Glaciated - Having the appearance of a cirrus cloud, i.e., thin and fibrous in appearance. Glaciated clouds are associated with the tops of thunderstorms, especially those with weaker updrafts.

Gust Front - The leading edge of gusty surface winds from thunderstorm downdrafts; 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 and moving into or toward a thunderstorm. They may indicate the strength of the inflow of moist air into the storm and its potential severity.

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

Mesocyclone - A storm-scale region of rotation, typically around 2-6 miles in diameter and often found in the right rear flank of a supercell (or on the front flank of an HP storm).

Multiple-vortex Tornado - a tornado in which two or more condensation funnels or debris clouds are present, often rotating about a common center or about 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 dark, horizontal cloud base with no visible precipitation beneath it. It typically marks the location of the thunderstorm updraft.

Rear Flank Downdraft - A region of sinking dry air on the back side of, and wrapping around, a mesocyclone. It often is 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 tornadoes, hail 1.00 inch or more in diameter, or winds of 50 knots (58 mph) or more. Structural wind damage may imply the occurrence of a severe thunderstorm.

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.

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, arranged parallel to the flow of air and therefore depicting the airflow relative to the parent cloud. Striations often reveal the presence of rotation, as in the barber pole or "corkscrew" effect often observed with a rotating updraft.

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

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

Tornado - A violently rotating column of air in contact with the ground and extending 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 lacking the characteristic anvil of a cumulonimbus.

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

Virga - Precipitation which falls from a cloud base but evaporates before reaching the ground. Virga often has a streaky or stringy appearance as it hangs down from the cloud base.

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