



# National Weather Service Chicago Forecast Office

## Spotter Reference Sheet

What to Report	How to Report
<ul style="list-style-type: none"> <li>• <b>Injuries/Fatalities</b></li> <li>• <b>Damage:</b> <ul style="list-style-type: none"> <li>✓ Trees down (snapped or uprooted? Diameter?)</li> <li>✓ Branches broken (diameter?)</li> <li>✓ Power poles down</li> <li>✓ Structural damage</li> </ul> </li> <li>• <b>Tornado</b> (rotation? debris?)</li> <li>• <b>Funnel cloud</b> (rotation?)</li> <li>• <b>Wall cloud</b> (rotation?)</li> <li>• <b>Hail</b> (all sizes)</li> <li>• <b>Wind gusts</b> (40 mph or greater)</li> <li>• <b>Heavy rain</b> (1" or more)</li> <li>• Creeks out of banks</li> <li>• Water &gt; 6" deep with current on road</li> <li>• Water &gt; 2' deep standing on roads</li> <li>• Unusual road and/or bridge closures</li> <li>• Buildings filled with water</li> <li>• Mud or rock slides or debris flow</li> <li>• Ice jam, levee failure, dam break</li> </ul>	<p>Include:</p> <ul style="list-style-type: none"> <li>• <b>Who</b> you are</li> <li>• <b>Where</b> you are</li> <li>• <b>Where</b> the weather occurred</li> <li>• <b>When</b> it occurred</li> <li>• <b>What</b> was observed</li> </ul> <p>Report through your local spotter network. If the network is not active:</p> <p><b>Contact NWS direct via:</b></p> <p>Phone: <b><i>Provided in training class</i></b></p> <p>Web: <b><a href="http://www.weather.gov/lot">www.weather.gov/lot</a></b> (“Submit Storm Report”)</p> <p>Ham Radio: WX9LOT</p> <p>Share pictures via:</p> <p>Facebook: NWSChicago Twitter: @NWSChicago</p>

Hail Size		
Pea = ¼ inch	Half Dollar = 1 ¼ inch	Tennis ball = 2 ½ inch
Mothball = ½ inch	Walnut = 1 ½ inch	Baseball = 2 ¾ inch
Penny size = ¾ inch	Golf ball = 1 ¾ inch	Softball = 4 ½ inch
Nickel size = 0.88 inch	Egg = 2 inches	
Quarter size = 1 inch <b>***severe***</b>	Billiard ball = 2 ¼ inch	

Estimating Wind Speed	
40 to 55 mph (non-severe)	Trees swaying, twigs and small limbs break, loose, lightweight objects (trash cans, lawn chairs) blown around.
60 to 80 mph	Medium to large tree limbs downed, sheds, barns and weak structures damaged, truck pushed off the highway.
80 to 100 mph	Numerous large tree limbs downed, shallow rooted trees pushed over, buildings partially up-roofed, farm buildings, weak structures severely damaged.

Flash Flood
<ul style="list-style-type: none"> <li>• Person or vehicle swept away by flowing water, or rescued from deep standing water</li> <li>• A maintained county or state road closed by high water</li> <li>• A stream that flows out of its banks and poses a threat</li> <li>• 6 inches or more of flowing water over a road or 3 feet of standing water</li> <li>• Rainfall of an inch or more in an hour or less in an urban area or 2 inches in rural areas</li> </ul>

Helpful Internet Links	
NWS Chicago	<a href="http://www.weather.gov/lot">www.weather.gov/lot</a>
Weather Spotter’s Field Guide	<a href="http://www.nws.noaa.gov/om/brochures/SGJune6-11.pdf">www.nws.noaa.gov/om/brochures/SGJune6-11.pdf</a>
Online Spotter Training Course	<a href="http://www.meted.ucar.edu/training_course.php?id=23">www.meted.ucar.edu/training_course.php?id=23</a>
Weather Tutorial	<a href="http://www.srh.noaa.gov/jetstream">www.srh.noaa.gov/jetstream</a>

## Spotter Reporting Procedures

Effective spotter reports are a critical component of NWS severe weather operations. NWS meteorologists use science, technology, training, experience, and spotter reports when making warning decisions. An effective spotter report is one that is timely, accurate, and detailed. Spotters should use the following guidelines when reporting:

- Follow the specific reporting guidelines for your area.
- Remain calm, speak clearly, and do not exaggerate the facts.
- If you are unsure of what you are seeing, make your report, but also express your uncertainty.
- Your report should contain the following information:
  - **WHO** you are: trained spotter
  - **WHAT** you have witnessed: the specific weather event
  - **WHEN** the event occurred: NOT when you make your report
  - **WHERE** the event occurred, (not necessarily your location) using well known roads or landmarks

Immediate, real-time reports, are most helpful for warning operations, but delayed reports are also important, even days after an event. Delayed reports are used for climatological and verification purposes.

Weather events should be reported according to the instructions provided by your local NWS office. Here are some general guidelines on what to report.

### Tornadoes

- What damage did you observe?
- How long was it on the ground? When did it start and end?
- How wide was it? How far did it travel if known?

### Flash Flooding

- Report flooded roadways, rivers and streams, giving approximate water depth.
- Does the flooding consist of standing water or is it flowing?
- Is the water level continuing to rise, staying steady or falling?
- Is the flooding occurring in a known flood prone area?
- Any damage from the flooding or mud slides?

### Wall Clouds

- Report if clouds are rotating and how long they have existed.

### Funnel Clouds

- Watch for organization, persistence and rotation.

### Lightning

- Only report lightning when damage or injuries occur.

### Winter Weather

- Report any occurrence of freezing rain, ice accumulation and damage.
- How much heavy snow accumulation is there and is there any damage?
- Do blizzard conditions exist: winds 35 mph or more AND visibility  $\frac{1}{4}$  mile or less?

## Wind

- Report estimated or measured wind speed and wind damage.
- Wind speed estimation is difficult. A detailed description of moving objects or damage is often more useful.
- Details to submit for tree damage:
  - What is the height and diameter of the branch, limb or tree that was broken or blown down?
  - Was the tree healthy or decayed?
  - What type of tree was damaged, e.g., hardwood or softwood?
- Details to submit for damage to structures.
- Is the damage to a well-built structure or a weak outbuilding?
- What is the main building material for the structure: wood, brick, metal, concrete, etc.?
- If the structure is a mobile home, was it anchored down?

## Hail

- Report the size of the largest stone and any damage.
  - To estimate size, compare hail to well-known objects such as coins or balls, but not to marbles, or measure the hail with a ruler.

## Marine Hazards

Report the following marine events:

- Waterspouts: you must observe rotation
- Squall lines
- Heavy freezing spray
- Wave heights and winds that differ significantly from forecasted conditions
- Hydrometeorological phenomena that are not in the current marine forecast, e.g., thunderstorms, dense fog
- Waves greater than twice the size of surrounding waves
- Tsunami inundation and any damage
- **Coastal Flooding:** Inundation of people, buildings, and coastal structures on land at locations that under normal conditions are above the level of high tide
- **Lakeshore Flooding:** Inundation of land areas along the Great Lakes over and above normal lake levels
- **High Surf:** Large waves breaking in the surf zone with sufficient energy to erode beaches, move large logs, wash over jetties or exposed rocks, etc.

## Other Environmental Hazards

- Dense fog: visibility  $\frac{1}{4}$  mile or less
- Dust storms: visibility  $\frac{1}{4}$  mile or less
- Volcanic ash accumulation and any damage
- Any injuries or fatalities as a direct result of weather

## Spotter Safety Tips

The environment in and around severe storms is a dangerous place. Even though tornadoes are an obvious danger, other life-threatening thunderstorm hazards, such as lightning and flash floods can be just as deadly. Spotter reports are vital to your community and the NWS, but your safety should be your number one priority!

Before venturing out, you need to be aware of the hazards of thunderstorms and the recommended practices to minimize risk. As a spotter, it is your responsibility to stay safe while spotting. Please following the guidelines below for your personal safety and for the safety of those around you.

- Personal safety is the primary objective of every spotter.
- Adhere to the concept of ACES, defined below, **at all times**.
- Obey federal, state, and local laws and directives from public safety officials.
- Never put yourself in harm's way. This includes attempting to walk or drive over obstructions such as flooded roadways and downed power lines, and positioning yourself under objects that have a potential to fall or be blown over due to severe weather.

### **A photo—or video—is worth a thousand words!**

Spotters often observe amazing weather phenomena. Whether it is a tornado in the distance or ice taking down power lines, your local NWS Forecast Office learns a great deal from spotter photos and videos. If you are willing to allow the NWS to use your photo or video in our education and outreach efforts, please state that NWS has permission to reprint when you submit the file to us. If you would like us to credit you on the image, we will gladly do that. Multimedia files are a tremendous resource when conducting our spotter training courses and our weather safety education efforts.

### **ACES stands for Awareness, Communication, Escape Routes, and Safe Zones.**

ACES is a concept commonly used by emergency management personnel. If you remember ACES, you can remain safe in any situation, including spotting.

**Awareness** means you are constantly observing the situation around you. This type of observation is sometimes referred to as situational awareness. Continuously monitoring the risks around you can save your life, especially in rapidly changing weather conditions. Knowing that there is a river crossing, or observing the street is lined with power poles and trees, can prepare you for the hazards of severe weather. When you are aware of the imminent threats, and you are thinking ahead about possible outcomes, you can position yourself better to minimize these threats.

**Communicating** your whereabouts to others on a regular basis and having multiple lines of communication available can keep you and others safe from hazards.

**Escape Routes** are vital when you are entering a potentially dangerous area. As part of awareness, note the escape routes available to you, making sure you always have more than one and the safest way to get to that escape route.

If the event you cannot get to escape routes due to rapidly changing conditions, find your closest safe zones or shelters.

**Safe zones** are the areas where you will be safest if you need to get to immediate shelter. Knowing these locations will limit your risk.

**Remembering ACES:** to remain aware of your surroundings, have open lines of communication, know your escape routes, and know your safe zones wherever you are can increase your safety.

Here are a few basic tips that could save your life if you are watching a storm from your vehicle.

- Keep a buffer zone between you and the storm to allow for changes in storm movement and to keep your options open for an escape route.
- Travel in pairs so the driver can concentrate on driving, and so you can observe multiple areas of the storm.
- Always know where you are in relation to the storm, and which way the storm is moving. Remember that storms can change direction and speed.
- Never drive through the core of the storm, e.g., through heavy rain and/or hail, to get a better vantage point.