

## Severe Weather Identification Guidelines

The National Weather Service defines a severe thunderstorm as one that produces 1) hail 3/4 of an inch in diameter or larger; 2) winds at or above 50 MPH; and/or 3) a tornado. When attempting to verify warnings, the National Weather Service looks for these occurrences, in addition to other events that imply a severe thunderstorm, such as damage.

Use the following criteria when determining whether you are dealing with an actual severe weather event. REMEMBER, your severe weather reports are **vital** to the NWS, even hours or days after an event has occurred. Include the time and the exact location of the event when reporting.

**The following are considered to be severe weather events and should be reported as soon as possible:**

### TORNADO

1. A credible report of a tornado on the ground. If the funnel extends more than halfway from cloud base to the ground, or if dirt/debris are seen on the ground underneath the funnel, it should be reported as a tornado.

### DAMAGING WINDS

1. Measured thunderstorm wind gusts of 50 MPH or more
2. Estimated thunderstorm wind gusts of 50 MPH or more from trained spotter
3. Trees blown down or uprooted (more than 1)
4. Large limbs or branches blown down (more than 1)
5. Power lines blown down
6. Permanent signs blown down
7. Roof damage from the wind (large area of roofing material removed)
8. Windows broken by the wind
9. Structural damage to business, house, barn, shed, circus tent, etc
10. Radio tower or large antenna blown down
11. Home TV antennas blown down (more than 1)
12. Campers heavily damaged or destroyed
13. Mobile home damaged by wind

### LARGE HAIL

1. Hail 3/4 of an inch in diameter or larger (approximately dime size)
2. Windows or windshields broken by hail
3. Roofs or house siding damaged by hail

If you are in **doubt** as to whether an event/damage is severe or not, **make the report anyway!**

## Severe Weather Reporting Procedures

The National Weather Service relies heavily on YOUR reports of severe or hazardous weather. The following occurrences should be reported IMMEDIATELY...

### **1. TORNADOS**

- you may not see the funnel itself on the ground
- look for dust or debris on the ground underneath a funnel or wall cloud
- power flashes at night may indicate a tornado

### **2. FUNNEL CLOUDS**

- look for organized, sustained rotation

### **3. ROTATING WALL CLOUDS**

- should be persistent (tens of minutes) and organized
- rotating wall clouds are extremely dangerous

### **4. HAIL**

- report hail size and intensity
- report hail size in terms of well-known objects (coins, fruit) or in inches
- avoid using the term "MARBLE SIZE"

### **5. DAMAGING WINDS (preferably measured)**

- give best estimate of wind speed
- report winds of 50 mph or higher

### **6. STORM DAMAGE**

- damage reports are extremely important!
- report any damage caused by hail, wind, lightning, etc

### **7. FLOODING**

- report flooding that blocks streets, roads or highways
- report flooding that is a threat to life or property

### **8. EXCESSIVE RAINFALL**

- report excessive rainfall (more than one inch per hour)

### **9. DOWNED TREES or POWER LINES**

- report downed trees or large branches and give diameter
- report downed power lines (stay away!) and loss of commercial power

### **10. WINTER WEATHER**

- report any significant accumulation of snow or ice
- report significant problems caused by snow or ice
- report sleet or freezing rain
- report wind gusts in excess of 35 mph or more
- report downed trees, power lines, or any storm related damage
- report impassable or closed roads

## How To Report

When possible, all reports should be passed to a central point for relay to the NWS. This may be the Sheriff's office, police department, emergency management office, etc. Ask them to relay your report to the NWS in Sterling, Virginia

**Amateur radio reports should be relayed through the appropriate net to the NWS station.**

Primary Net is on WA4TSC 147.300+ Bluemont

Amateur Radio Station Call for NWS Sterling, VA is WX4LWX

**Individual spotters, and those who have no other options should call the NWS direct.**

If you have Internet access, you can send your severe weather or damage report via e-mail. [lwz-report@noaa.gov](mailto:lwz-report@noaa.gov)

**IDENTIFY YOURSELF AS A TRAINED STORM SPOTTER GIVE YOUR EXACT LOCATION**

(county and nearest town, major intersection, etc)

TELL **WHAT** YOU SAW (tornado, hail, wind, etc)

GIVE THE **TIME** THE EVENT OCCURRED

GIVE ANY OTHER **IMPORTANT** INFORMATION

Here's an example:

*"My name is Jane Doe and I'm a trained spotter calling from Jackson, Tennessee in Madison County. I am receiving quarter-size hail at this time. The hail is covering the ground and has been falling for about five minutes."*

## **NOAA WEATHER RADIO**

NOAA Weather Radio (NWR) broadcasts National Weather Service forecasts, warnings and more, 24 hours a day. For around \$40, you can own a special weather radio that gives you instant access to valuable weather information - information that might save your life.

NOAA Weather Radio is not just for emergencies. It's a round-the-clock source of weather reports and information that helps you prepare for the day ahead. Routine programming includes the current local weather conditions, 7 day forecast and short term forecast. Other more specialized information, including river stages and forecasts and climatological summaries are broadcast at specific times during the day.

During hazardous weather conditions, NWR is a lifeline for critical weather information. Routine programming is interrupted when severe weather threatens so that the latest watches, warnings and statements may be broadcast immediately. When a watch or warning is issued, it is preceded by a tone which activates specially designed receivers. The Specific Area Message Encoder (SAME) is a feature that allows the user to program his receiver to only alarm for watches and warnings affecting certain counties. The National Weather Service will use SAME technology to activate the Emergency Alert System (EAS) to warn of impending dangerous weather conditions. For more information about SAME, contact the NWS in Memphis.

**The Sterling, VA NWS office is responsible for the operation of six NWR transmitters.**

Baltimore (Pikesville) MD -- KEC-83 on 162.400 MHz at 1000 Watts  
Hagerstown (Clear Springs) MD -- WXM-42 on 162.475 MHz at 1000 Watts  
Manassas (Independence Hill) VA -- KHB-36 on 162.550 MHz at 1000 Watts  
Moorefield WV -- WXM-73 on 162.400 MHz at 500 Watts  
Frostburg MD -- WXM-43 on 162.425 MHz at 300 Watts  
Charlottesville VA -- KZZ-28 on 162.450 MHz at 1000 Watts

Storm spotters can play an **important** role in the NWR program by informing the NWS about problems with any of the weather radio broadcasts mentioned above. If the station is off the air, on low power or out of service for any reason, please call the NWS and let us know about the problem.

## LWX SKYWARN Amateur Radio Support Group

All amateur radio operators are encouraged to participate in the National Weather Service's SKYWARN amateur radio spotter program. This is the fastest way to get your critical severe weather report directly to the National Weather Service!

**SKYWARN** is activated by the National Weather Service in Sterling anytime severe thunderstorms threaten Maryland West of the Chesapeake Bay and East of Garrett County, Eastern West Virginia, Northern Virginia and/or the District of Columbia. Amateur radio operators man a station at the NWS office and collect reports from the entire area via a SKYWARN Amateur Radio Severe Weather Net.

**SKYWARN Amateur Radio Coordinator:** Chad Rudolph W1CAR [w1car@147300.com](mailto:w1car@147300.com)

**Assistant Amateur Radio Coordinator:** Randy Sly W4XJ [w4xj@147300.com](mailto:w4xj@147300.com)

**Assistant Amateur Radio Coordinator:** Virginia Legowik [ak4ea@147300.com](mailto:ak4ea@147300.com)

Remember these important **SKYWARN** frequencies:

**147.300 WA4TSC Repeater** PRIMARY SKYWARN Net Frequency

**146.910 NV4FM Repeater** ALTERNATE SKYWARN Net Frequency

**SKYWARN** also uses...

**The K4QJZ Link System:** 145.210- pl 141.3 & 51.94- pl 131.8 2,400' amsl on High Knob

**The Network Engineers Repeater Association system: (our SKYWARN Subnet Backbone)**

Washington DC	NERA	WA3KOK	449.975Mhz	-5Mhz	107.2	9 Receivers
Germantown MD	NERA	K3HOT	443.400Mhz	+5Mhz	107.2	
Cacapon Mountain WV	NERA	WA3KOK	442.450Mhz	+5Mhz	107.2	
Fork Mountain VA	NERA	K3HOT	443.250Mhz	+5Mhz	107.2	
Baltimore MD	N3CDY	N3CDY	449.275Mhz	-5Mhz	107.2	
Bull Run Mountain VA	NERA	WA3KOK	447.775Mhz	-5Mhz	107.2	
Frostburg MD	NERA	WA3KOK	443.400Mhz	+5Mhz	107.2	
High Knob Mtn VA	K4QJZ	N1TXI	442.725Mhz	+5Mhz	107.2	

**HF:** 80 meters through 10 meters if needed

**APRS:** via WX4LWX (reports can be sent to the NWS via the APRS text-messaging feature)

LWX SKYWARN Resource Website: <http://www.147300.com>

## SEVERE WEATHER SAFETY RULES

Knowing how to protect yourself and your family during severe weather is extremely important. As a spotter, you may be away from home when severe weather strikes, so having a pre-arranged plan of action is vital to the safety of your family. Mobile spotters are at increased risk and should also be keenly aware of the dangers of severe weather and of ways to protect themselves.

The National Weather Service values **your safety** much more than we do your observations. Your safety depends on you being knowledgeable about severe thunderstorms and the hazards they present.

**Advance planning is the key to survival.** Conduct periodic drills to be sure you can get to your shelter quickly. You may not have much time when a tornado is approaching.

### **TORNADO/SEVERE THUNDERSTORM SAFETY RULES**

Severe thunderstorms can cause as much damage as a tornado, and should be treated seriously. When a severe thunderstorm approaches, you should take the same actions as you would if it were a tornado.

#### AT HOME or WORK:

Try to get underground if possible (in a basement or storm cellar). If that's not possible, take cover in the center part of the building, on the lowest floor. Put as many walls between you and the tornado as possible. A small room, such a closet or bathroom is usually a good shelter. **STAY AWAY** from windows and doors! Use pillows and blankets to shield your head and body from flying debris.

#### IN OFFICE BUILDINGS or SHOPPING CENTERS

Go to the lowest floor and move to an interior room or hallway away from doors and windows. If the building has a designated shelter area, go there. Avoid wide, free-span roofs!

#### IN SCHOOLS OR CHURCHES

Follow advance plans and move to the designated shelter area, usually an interior hallway on the lowest floor. Evacuate portable classrooms and go to a more sturdy structure. Stay out of auditoriums, gymnasiums and other structures with wide, free-span roofs. **MAKE SURE YOUR SCHOOL HAS A TORNADO SAFETY PLAN** that includes school buses.

#### IN MOBILE HOMES

Mobile homes are especially vulnerable to high winds associated with severe thunderstorms and tornadoes and should be evacuated during any period of severe weather. Move to a sturdy building if possible. Do not use your car to try to outrun a tornado. If no other shelter is available, seek shelter in a ditch or culvert.

#### IN AUTOMOBILES

In open country, you may be able to drive away from the tornado **IF** you are certain about the location and motion of the tornado, and **IF** the local road network allows. In urban areas or when escape is not possible, leave your vehicle and get into a reinforced building. If no buildings are available and **AS A LAST RESORT**, leave your vehicle, get away from it and other vehicles, and seek shelter in culvert, ditch or other low spot (that is not flooded!). Wherever you seek shelter, try to make as small a target as possible and shield your head and upper body from flying debris.

## Staying Safe While Mobile Spotting / Storm Chasing

The best way to stay out of danger is to have a clear idea of the storm's structure and its movement. You cannot safely view a storm without knowing where it may be going.

Mobile spotters should travel in teams if it at all possible.

**ALWAYS** have an escape route available.

**Never** drive into rising waters, especially if you don't know how deep they are.

Lightning is a deadly threat from any thunderstorm. Lightning strikes can occur many miles away from the main precipitation area. Spotters on hilltops make an easy target for lightning.

When stopped to view a storm, keep your head on a swivel. Tornadoes can form in many places besides under a rotating wall cloud. Check the skies around and above you frequently.

If you are driving in rain and encounter hail that increases in size, stop, back up and go the other way. **NEVER drive through the core of a storm!!!**

Tornadoes are not the only threat from a severe thunderstorm. Winds in excess of 100 mph and large hail can cause serious damage, injuries and even death.

The safest place to view a tornado is USUALLY on the east or southeast side of the storm (unless the storm is moving in that direction). Again, you must know which way the storm is moving!

If you see a tornado and it appears to be stationary, it may be either standing still, moving away from you or **moving directly toward you**.