

Hendricks County Amateur Radio Skywarn

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To: **Hendricks County Amateur Radio Operators**

Subject: **2008 Skywarn Procedures**

How are we organized?

Operationally, we act on behalf of the National Weather Service. We report to the NWS Forecast Office in Indianapolis and they give us direction regarding where to look and what information to report. In Hendricks County, Skywarn brings together volunteers from Emergency Management, RACES, ARES, and local clubs, though you do not need to be member of any of those groups in order to be a Skywarn weather spotter.

What frequencies do we use?

The assigned frequencies for Hendricks County Skywarn nets are, in order of preference:

147.015 MHz repeater (+600 kHz)

147.165 MHz repeater (+600 kHz)

442.900 MHz repeater (+5 MHz)

147.015 MHz simplex

147.510 MHz simplex

How is severe weather traffic passed?

During a net operation, our Net Control Operator, or our Net Liaison, report to the Central Indiana Skywarn Net, usually conducted on the 146.970MHz (-600kHz, 77.0Hz PL) repeater in Indianapolis. The Central Indiana Net passes information to us from the NWS and we pass reports to the NWS through the Central Indiana Net. By having one point of contact with the amateur radio spotters, through the Central Indiana Net, the number of inputs the forecasters have to deal with is considerably reduced. The Central Indiana Net prioritizes the information collected by the county nets and makes sure the NWS gets the information they need.

If the Central Indiana Net is not active, but we are active in Hendricks County, our Net Control or Net Liaison can call the report into NWS by telephone (317-856-0359 or 800-499-2133).

In either case, our Net Control will dispatch spotters per NWS request or our best assessment of the situation.

What does the NWS want from us?

The weather service wants accurate and timely reports of:

- Wall clouds, funnel clouds, or tornados (look for rotation)
- Hail – any size, but take note of the diameter
- Wind – sustained winds of 55 mph or greater or signs of wind damage
- Rain – at a rate of 1" per hour or greater or flash flooding

If it's not on this list or the weather service doesn't specifically ask for it, reporting it only ties up the net and distracts everyone from the task at hand. When in doubt, though, ask your net control operator.

How to be an effective spotter

Observe the cloud formations and movements. Measure, or estimate, the wind speed and direction. NWS has access to weather data, including radar, which is much more detailed and timely than any TV station or Internet site. The NWS uses that data to predict the movement and strength of convective cells. However, the NWS needs to know what severe weather events you are personally observing to give them the "ground truth" to prove what their data tells them. With that information, they can make accurate forecasts and warnings for the public.

Handy references

The following section lists terms and definitions associated with supercell thunderstorms. The terms and definitions are from the Glossary of Weather Terms for Storm Spotters (see Internet resources below)

Rain-free base: A dark, horizontal cloud base with no visible precipitation beneath it. It typically marks the location of the thunderstorm updraft. Note that the rain-free base may not actually be rain free; hail or large raindrops may be falling. For this reason, updraft base is a more accurate term.

Downburst: A strong downdraft resulting in an outward burst of damaging winds on or near the ground. Downburst winds can produce damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can occur with showers too weak to produce thunder.

Wall cloud: A local, often abrupt lowering from an updraft base. Wall clouds can range from a fraction of a mile up to nearly five miles in diameter and normally are found on the south or southwest (inflow) side of the thunderstorm. When seen from within several miles, many wall clouds exhibit rapid upward motion and cyclonic rotation. Rotating wall clouds usually develop before strong or violent tornadoes, by anywhere from a few minutes up to nearly an hour. Wall clouds should be monitored visually for signs of persistent, sustained rotation.

Tornado: A violently rotating column of air in contact with the ground. A condensation funnel does not need to reach to the ground for a tornado to be present; a debris cloud beneath a thunderstorm is all that is needed to confirm the presence of a tornado, even in the total absence of a condensation funnel.

Estimating Wind Speeds (miles per hour)

30-44	Whole trees in motion. Inconvenient walking into the wind. Light-weight loose objects (e.g., lawn furniture) tossed or toppled.
45-57	Large trees bend; twigs, small limbs break and a few larger dead or weak branches may break. Old/weak structures (e.g., sheds, barns) may sustain minor damage (roof, doors). Buildings partially under construction may be damaged. A few loose shingles removed from houses.
58-74	Large limbs break; shallow rooted trees pushed over. Semi-trucks overturned. More significant damage to old/weak structures. Shingles, awnings removed from houses; damage to chimneys and antennas.
75-89	Widespread damage to trees with large limbs down or trees broken/uprooted. Mobile homes may be pushed off foundation or overturned. Roof may be partially peeled off industrial/commercial/ warehouse buildings. Some minor roof damage to homes. Weak structures (e.g., farm buildings, airplane hangars) may be severely damaged.
90 +	Many large trees broken and uprooted. Mobile homes damaged. Roofs partially peeled off homes and buildings. Moving automobiles pushed off the road. Barns, sheds demolished.

Internet Resources

Hendricks County Skywarn – <http://www.hendricksraces.org/skywarn>

Central Indiana Skywarn – <http://www.w9nws.org>

Indianapolis National Weather Service Forecast Office – <http://www.crh.noaa.gov/ind>

NWS Storm Prediction Center – <http://www.spc.noaa.gov/>

NWS Online Spotter's Guide – <http://www.srh.noaa.gov/oun/stormspotting>

NWS Basic Spotter's Field Guide – <http://www.nws.noaa.gov/om/brochures/basicspot.pdf>

NWS Advanced Spotter's Field Guide – http://www.nws.noaa.gov/om/brochures/adv_spotters.pdf

Glossary of Weather Terms for Storm Spotters – <http://www.srh.noaa.gov/oun/severewx/glossary.php>

Storm Spotter Reference Guide – http://www.crh.noaa.gov/lmk/spotter_reference/index.php

National Center for Atmospheric Research Real-time Weather – <http://www.rap.ucar.edu/weather>