Can You See What I'm Saying? Some Thoughts on a Modified Basic SKYWARN Training Program for the Visually Impaired

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Who Am I?

- Professional Sociologist
- Ham Radio Operator
- SKYWARN net control operator
- Active WAS*ISer
- Incurable weather enthusiast
- Legally totally blind

The Visually Impaired

The 2008 National Health Interview Survey (NHIS) Provisional Report established that an estimated 25.2 million adult Americans reported they either "have trouble" seeing, even when wearing glasses or contact lenses, or that they are blind or unable to see at all.

http://www.afb.org/Section.asp?SectionID=15

That is roughly 8% of the American population – not including children.

Important Questions

- How do the visually impaired perceive the weather and specific weather –related phenomena?
- How can we make these phenomena more understandable to them?
- How might NWS Basic SKYWARN training programs be enhanced to include more detailed information that a visually impaired person can readily understand?

Sample Descriptions

Supercell: Large severe storm occurring in a significant vertically-sheared environment; contains quasi-steady, strongly rotating updraft (mesocyclone); usually moves to the right (perhaps left) of the mean wind…

http://www.crh.noaa.gov/lmk/soo/docu/supercell.php

A supercell is an organized thunderstorm that contains a very strong, rotating updraft. This rotation helps to produce severe weather events such as large hail, strong downbursts, and tornadoes. Supercell storms are usually isolated from other thunderstorms because it allows them to have more energy and moisture from miles around. These storms are rare, but always a threat to life and property.

http://www.wunderground.com/tornadoFAQ.asp

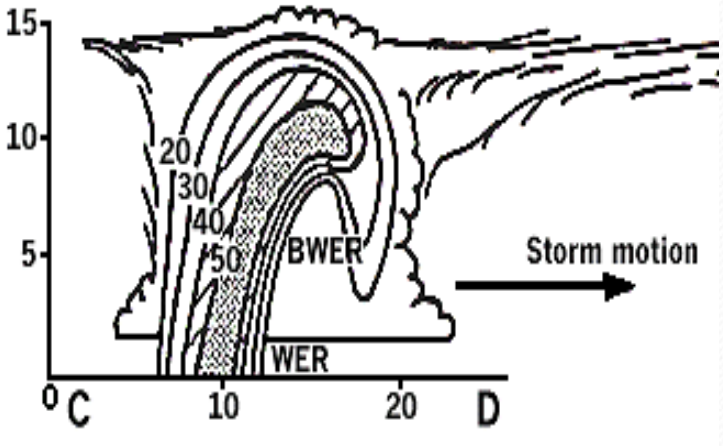
Let's try this for some specific thunderstorm features.

Shelf cloud	**Anvil top**	**Overshooting top**
Roll cloud	**Rain foot**	**Inflow/outflow**
Wall cloud	**Tilt**	**Updraft/downdraft**
Funnel cloud	**Rotation**	**Rain free base**

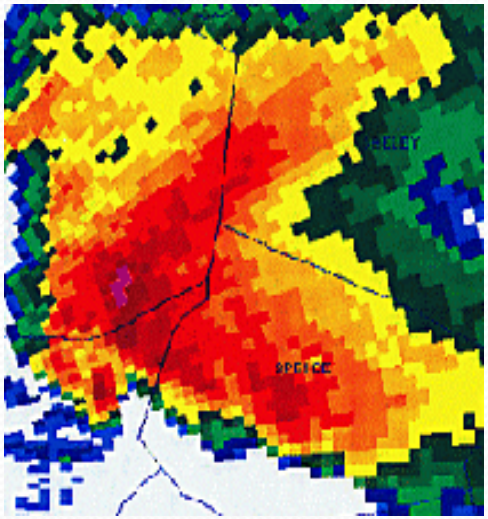
Sample Enhanced Description

"A thunderstorm needs to eat just like a person. The storm eats from the warm, moist inflow into the thunderstorm base and rises up through the storm. If the food source is cut off from the thunderstorm, the storm will eventually dissipate. Try to envision tossing several basketballs into the air, one after another. First we will toss the basketballs out and up to the right, one after another. You could do this for as many balls as you would like and, chances are, the balls would not block the next basketball's path as they were falling to the ground. Now let's toss those basketballs straight up into the air. No matter how high you toss them, eventually they will collide at some point above you. … You have blocked the path of the basketball by tossing them straight up and down. This is similar to a thunderstorm. If the warm, moist inflow encounters cold rain falling through the storm, the warm, moist air can no longer rise. If you create a slight tilt to the thunderstorm, the warm, moist air does not have to encounter the rain-cooled air falling through the storm. The rain-cooled air will fall away from the storm's warm, moist updraft (the food source), and the storm can survive longer."

Jamie Bielinski, WCM Grand Rapids, Mich. NWS Office February , 2009



Vertical cross-section of a typical classic supercell



Low-level WSR-88D Doppler radar image

Alfalfa , OK, 22 May 1981

http://www.crh.noaa.gov/lmk/soo/docu/supercell.php

Photo courtesy of NSSL

Can you describe these to me?

Perhaps we need a physical model

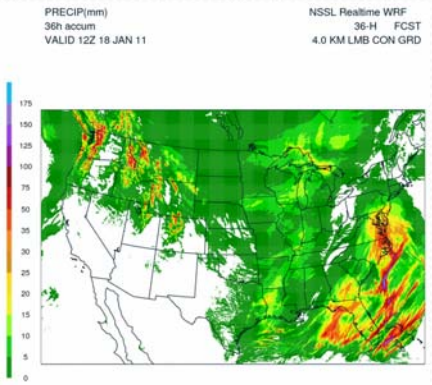
Looking south at the northern facade of a thunder storm -inferred movement is right to left (west to east).

Looking north at the southern facade of a thunderstorm – inferred movement is left to right (west to east).

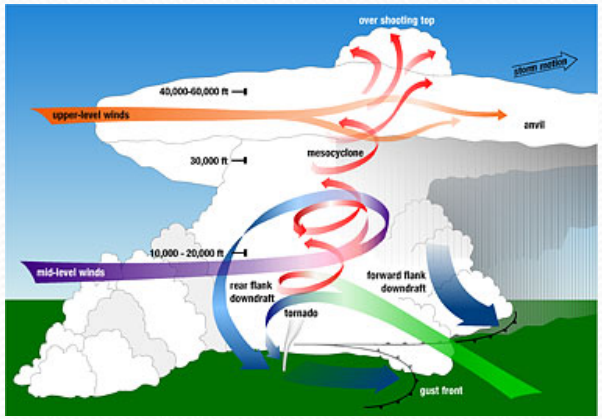
(Created by David Salmon, 2009)

The need for *more* physical models

How could we better illustrate:



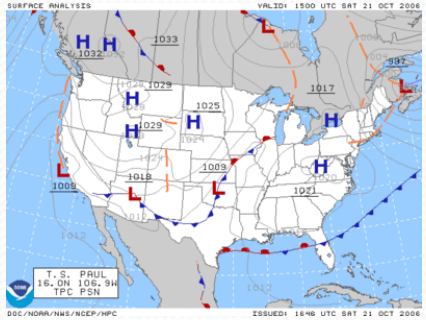
Cloud formations



Tornadoes

Radar Images

Frontal boundaries



Photos courtesy of NSSL

Benefits for the visually impaired

General visually impaired population:

Increased awareness of severe weather situations and steps to be taken to deal with involved threats

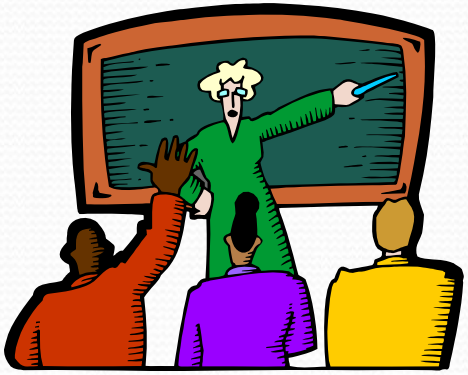
SKYWARN net control operators:

Better able to understand and interpret information communicated by field observers

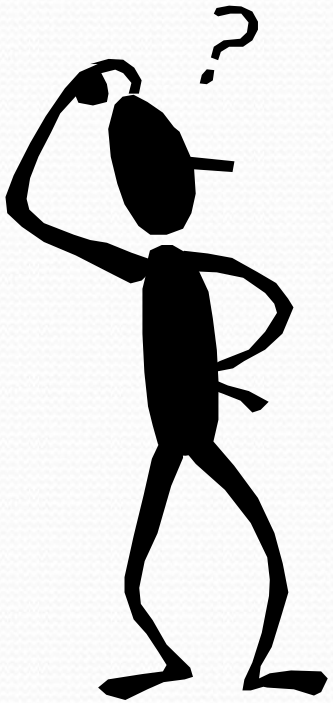
Benefits to the general public

- Increased understanding of severe weather threats by anyone attending Basic SKYWARN training

•Contribution to education and outreach efforts in the schools or other training situations



ANY QUESTIONS?



For more details:

Behler, G. Thomas. "Can You See What I'm Saying? Some Thoughts on a Modified Basic SKYWARN Training Program for the Blind." Weather and Society Watch. Volume 4, Number 1, October, 2009, pp. 2, 8-11.