VAISALA News

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The Chase Is On

For storm scientists and dedicated amateurs, chasing tornadoes is more than Hollywood fiction.

Tornado in south-central Nebraska May 24, 2004.

While teaching a meteorology class for a group of Vaisala employees in Louisville, Colorado, I was reminded of the power of the tornado. Discussing severe weather caught people's attention and triggered interesting questions.

It is no surprise that the springtime parade of thunderstorms is so compelling. Yet even residents of the U.S. Great Plains – home to more tornadoes than any other place on Earth – can go a lifetime without seeing one. I grew up on the plains in Oklahoma City, but it was not until I started storm chasing as a college student in 1980 that I saw my first tornado. Since then I have seen more than 35 twisters while chasing as part of research projects and for my own photography.

Driving alongside a severe thunderstorm is a humbling experience. It is a small-scale phenomenon that often defies even the best forecasters, changing from minute to minute. Even when a storm is well-behaved, the road network may not be. Floods, construction, and traffic are among the many hazards that impede storm chasing. A successful chaser calls on extensive knowledge of storm behavior and skills that include navigation, observation, communication, and physical intuition.

Serving science

Storm chasing for research began in Oklahoma and Texas in the 1970s. They helped catalog visible clues to storm behavior, such as low-hanging wall clouds that precede many tornadoes and lines of cumulus that extend like spokes from the rotating heart of a storm. Reports from the field also help when interpreting radar data. In 1987, I spent a summer with seven colleagues following storms across eastern Colorado. Each day we took note of the time and location of severe hail, tornadoes, and other weather features; meanwhile, the storms were being tracked by the prototype unit for what would become the U.S. network of Doppler radars.

Basic research on severe weather relies heavily on storm chasing. The largest such project, dubbed VORTEX, took place from Texas to Kansas in 1994–95. A follow-up is being planned for later this decade. Portable Doppler radars mounted on trucks are a vital part of this work. One such radar measured wind speeds of more than 460 km/hr just above ground level during a deadly Oklahoma tornado outbreak in May 1999.

Amateurs on the trail

Even before scientists started chasing, amateurs were on the trail. David Hoadley began chasing on his own in the mid-1950s as a teenager in North Dakota and still chases today. The 1997 film "Twister" inspired hundreds of nonscientists to take to the Great Plains with video cameras. Some of these newcomers join organized tours, where people from as far away as Japan and Great Britain pay more than $1200 US a week for the chance to see an elusive twister.

Although it is glamorized on television and in the movies, chasing offers far more boredom than excitement. Many days involve more than 700 kilometers of driving. Storms may not develop until an hour before sunset, if at all. Still, those late-day moments when the atmosphere comes alive can be spellbinding. It is the grand sweep of a storm against the sky, twister or no twister, that brings me back to the prairie each spring. ●

Robert Henson is the author of The Rough Guide to Weather. (Photo courtesy of Carlye Calvin)