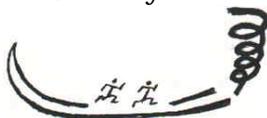


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and letters to  
Tim Marshall)

## I. COMMENTARY

Wow. Storm Track is ten years old. ST has grown throughout the years from a handful of subscribers to near two hundred. What keeps ST going is you, the subscriber. As long as you're there, this publication will be there for those who wish to write about the boiling sky with a perspective of adventure, excitement, and awe. For we are among the few who like driving in the rain. ST salutes those subscribers celebrating their 10th anniversary:

Roger Brown	Ronald Holle	Aylmer Thompson
Charles Doswell	Alan Moller	Charles Vleck
Dave Hoadley	Richard Peterson	John Weaver
		Randy Zipser

This issue marks a new year of ST. For many of you it is time to renew your subscription. Indication of renewal will be a small piece of paper stapled to the front page. Please renew and keep in mind that ST also makes a unique Christmas gift.

## II. CHASER NEWS

Rumor has it that an interstate is being planned from Denver, CO to New Orleans, LA via Oklahoma City. The road will cut diagonally across the state of Oklahoma. However, it will be the turn of the next century before such a highway would be completed. Just in time for our grandkid chasers.

For those of you who read about it in ST, now you can watch it in your living room. The Canadian, Texas tornado chase is now available on VHS videotape from the editor for \$30. The tape shows the forecast, the hunt, and three tornadoes where two lasted about twenty minutes each. 1 hr. 30 min. post. pd. Rated PG13, F0, F2, and F3.

## III. LETTERS TO THE EDITOR

Marty Feely recorded 11.25 inches of rain in his rain gauge between September 26 and October 4, 1986 in Norman, Oklahoma. Heavy rains flooded creeks and streams. Many rivers in northern Oklahoma and southern Kansas exceeded flood stage. However, October 2nd relit Marty's chase fever as a line of thunderstorms developed west of Norman around 5:15 p.m. "You can bet I was on the road in seconds", explains Marty. "From 2 miles southeast of town, a fairly high-based cone-shaped funnel was observed. Five minutes later, the sirens in town started to wail. It was over in an instant as a shelf cloud appeared. "I stayed with the storm to about 35 miles northeast of Shawnee taking good shots of the awesome shelf cloud and lightning.

A wall cloud and two more funnels were observed near Shawnee. After that, it became just another rainstorm. But for a while there it was quite a sight for October. "

Dave Gallaher writes: "On August 10, my girlfriend and I were leaving a movie theater in west Huntsville, AL when I glanced in my rear view mirror and noticed a distinct rain-free base between two rain shafts to the west. Sitting at a traffic light, I commented 'If this were spring, I'd be very interested in that storm back there'. My girlfriend is accustomed to this and handles it with polite boredom. We pulled into a fast-food restaurant drive-thru (Dairy Queen?), and watched the storm race northeast rather quickly. A bowl-shaped cloud lowering was located about a half mile from the southern edge of the rain shaft. I said, 'If this were spring, I'd be inclined to think that was a wall cloud'. My girl friend just smiled. I drove up to a police officer who was watching the sky intensely. He said the cloud was most suspicious. As I watched in disbelief, scud developed and rose up to the cloud forming a classic Oklahoma-type 'brake-drum shaped' wall cloud. Suddenly, a tail cloud appeared out of nowhere. I drove northbound toward the lowering. Soon bogged down in traffic, the gust front passed accompanied by 40-50 mph winds and a deluge of rain. Checking the news later, I learned that a tornado touched down in Marion County destroying a barn, but leaving the hay stacked neatly inside. "

Keith Brewster summarizes this year's Colorado chase season as somewhat disappointing. "There was only one gang-buster day on the Colorado plains, June 8th. Strong low-level southeasterlies brought the key moisture as well as cranking up the local forcing feature 'THE DENVER CYCLONE'. In early afternoon, storms fired along a convergence line running north from Denver roughly along Interstate 25. The key question was: 'Where on the line should one play?' Well, we got suckered on one storm that was one of the FIRST to blast skyward near the town of Prospect Valley. About 5 pm, a severe thunderstorm warning was issued on our storm as it unloaded a massive precip core. About the same time, we saw distant SW, a hollow tube of a tornado near Bennett. Other chasers from Boulder, Denver, and Fort Collins were more fortunate and saw that twister much closer; Doug Baugh of the Denver Weather Service also shot some good video of the action. Among the chasers was Ed Szoke who brought his family in their new Dodge mini-van. Ed brought the TV along to entertain the kiddos and provide a good source of radar information. However, the most destructive tornado of the day occurred in Aurora, an eastern suburb of Denver." The tornado was rated F2 intensity as it did damage some buildings; fortunately there were few injuries.

The remainder of the season was relatively quiet, except for a small tornado near Hugo, CO on June 10th. On a number of occasions, storms were observed to have tremendous mid-level structure, spiral inflow bands and even rotating bases but could not "spin-up" enough small scale rotation to tornado.

Keith sent a still photograph of a rotating cloudbase near Joes, CO taken May 21, 1986. The view looks southwest at about 4:40 pm. Keith said the rotating base was nearly stationary for 45 minutes.

A brief dust-whirl developed below the dish-like base. Very little precipitation reached the ground.



Eric Wendler relays his encounter with mother nature on July 2, 1982 in Littleton, CO: "I was mowing the grass about 3:30 pm and glanced out to the west and noticed a thunderstorm coming over the front range. The storm had an anvil with mammatus and an overshooting top. At 3:37 pm, a wall cloud dropped down and a funnel developed right in front of me. I grabbed my camera and photographed it. The upper part of the cloud mass was spinning slowly counter-clockwise. The visible funnel dipped toward the ground several times getting lower each time. The funnel stayed overhead for about 10 minutes and did touch ground. Damage was done to the roof of a K-Mart about a half a mile northeast of my location. A photo is enclosed."



Roy Britt says the area south and east of Richmond, VA was visited by tornadoes on October 13th. October tornadoes are rare in Virginia. Even more unusual is the time the tornadoes occurred. The first storm began producing damage at 6:50 am about 60 miles southwest of Richmond. Just after 7 am, the same storm cell produced a second tornado which completely destroyed two homes a hundred yards apart. No walls were left standing. However, these homes were poorly constructed supported on blocks. Damage appeared F2 intensity. A third tornado touched ground about 40 miles east of my house overturning a house trailer and destroying several outbuildings. A fourth tornado touched down briefly in Hopewell about 8:30 am. There were no storm warnings and radar only showed moderate intensity thunderstorms. I slept through the event; only moderate rain occurred at my house.

Editors note: This event parallels the December 13, 1984 storm which struck the Dallas area where a moderate intensity tornado developed in an area of general, moderate rain. These tornadoes are produced in less than marginal weather conditions occurring when least expected. It is these type of storms which pose the greatest challenge to the severe storms forecaster.

Dave Hoadley shares a letter from a future storm chaser, unedited: Dear Mr. Hoadley, My name is Steve Berson. I'm 14 years old and extremely interested in Meteorology. I have read about 30 books and learned a lot. I'm also subscribed to Weatherwise and that's how I got to know you. I have seen you and Sarah in National Explorers "Tornadoes" - to me the most fascinating things that exist. The strongest most spectacular forces of nature. I know almost everything about you. I know where you live, your phone number, and I know Sarah. I think she is the luckiest girl in the world. The reason for this is because she gets to chase with you and see the beautiful cumulonimbus clouds and see the formation from the beginning. I agree with your statement "A tornado is just about the most awesome thing you can see. Those who have seen and know what they have seen are ever unique and forever marked". I personally think that is an unforgettable phrase. My dream is to photograph a complete sequence of tornado development from the smallest cumulus to monster funnel, and to get this all for several minutes and with several cameras.

Dennis Ratzlaff, an Oklahoma State trooper, writes: I refer you to STORM TRACK Volume 8, Number 6 with regards to comments from Bruce Pettus of Seattle, Washington. I believe Bruce commented something about being detained by an Oklahoma State Trooper. Hi Bruce. This incident occurred near Tipton, Oklahoma on State Highway 5 "out in the sticks". The dryline had pushed (flew) through the area prior to Bruce's flying down "my highway". Poor ole Bruce just got too far behind. He said something about having a chat with the Norman, Oklahoma chase team chasing from Childress. And that radar detector you mentioned Bruce, I can't imagine what ..... I really did give him "a break". Also, Poor TOTO! The gang from the Severe Storms Lab dragging you up and down "my highway". I feel as though TOTO and I know each other personally as many times we've passed each other on the highways in southwest Oklahoma. Poor TOTO.

VI. FUNNEL FUNNIES: It Is Important to Obey the Rules of the Road (Fact and Fiction)

It is important to obey the rules of the road when tornado chasing. After all, as we are watching the sky, others are watching us!



V. ROSTER

The ST Roster lists names, addresses, and brief bibliographies of those persons interested in or willing to correspond with others about storms. Normally, only recent entries since the last issue appear.

Name	Address	Chase country-range
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Michael McCarty	P. O. Box 32079 Columbus, OH 43232	
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**Bibliography:** My interest in weather is currently just listening and reading. I monitor different Skywarn Amateur Radio Nets during severe weather on my 2 meter receiver (146.76). I subscribe to Weatherwise and AAWO. I'm a letter carrier at the Eastland Post Office in Columbus and plan to get my Novice radio license.

Dave Gallaher	832 Opp Reynolds Rd. Toney, AL 35773	Alabama
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**Bibliography:** Age 40, professional musician. I've been interested in tornadoes since viewing damage of the 1949 Amarillo storm and hurricanes since touring Carla damage. Equipment: fanatic attitude, experienced 1971 Buick. Desire correspondence.

By Kevin Helliker\*

Although U. S. Highway 54, which runs nearly the length of Kansas, has been designated the Yellow Brick Road by the state legislature, it hasn't a single yellow brick! In fact, the highway's new name is one of the best-kept secrets in Kansas. Many Kansans are upset. "I've always hated people from out of state asking me if my dog is named TOTO and if I'm always dodging tornadoes", says Merle Warner, the wife of a farmer.

To try to increase tourism, the state decided to make a big to-do of the role it played in the infamous movie. In Liberal, you can visit Dorothy's House, which the Governor declared: "the Gateway to the Land of Ahs and Oz". Then you can follow the road east through a town known as the Emerald City (Wichita). Of course, no one knows where in Kansas Dorothy's home was supposed to have been.

The states endeavor has attracted more controversy than tourists. Although tourism officials have insisted that the Wizard of Oz theme will give Kansas a new and exciting image, many Kansans argue that the movie is what cursed the state in the first place with its old image of a bleak and tornado-torn wasteland. Imagine, portraying Kansas as tornado alley where nasty old women ride bicycles across the flatlands. It's as if a seaside community would call itself "The Home of Jaws", said one disgruntled resident. "Nobody wants to go on vacation in a state where they think they'll spend most of their time in a storm shelter".

The controversy over the Land of Ahs has even gone beyond the border of Kansas. Connecticut began calling itself the Land of Ahs saying "If Dorothy and her friends had come to Connecticut, they would have stayed". Before long, newspapers in Kansas and Connecticut became embroiled in a smear campaign that didn't do either state any good. The Wichita Eagle Beacon mentioned that if Dorothy had gone to Connecticut, she would have been "mugged or lost forever in rush-hour traffic", and went on to assert that Connecticut was "created solely as a divider between Massachusetts and Long Island Sound".

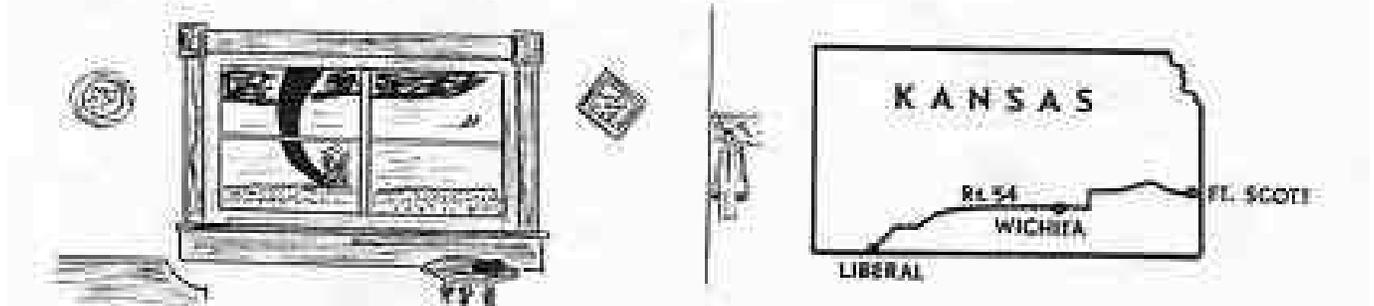
The Bridgeport (Conn.) Post fired back saying that the stolen slogan wouldn't have been noticed if Kansas had any tourists to keep them busy. Eventually, Connecticut agreed to stop using the slogan and the Post conceded that the Land of Ahs theme probably suited Kansas best "since the natives out there use ah so frequently: ah, yeah, there's ah lot to ah see in ah state."

Actually, there is a lot to see in Kansas. There's the worlds largest free swimming pool in Garden City, the largest man made prairie dog at Oakley, and the first U. S. flag ever made of concrete in Lucas.

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\* excerpts from the Wall Street Journal, March 9, 1983.

The Yellow Brick road starts in Liberal. There's a house on the corner of Yellow Brick road and Pancake Blvd. It's the house where Dorothy didn't really live! On this morning, there are two visitors here to see it. Curator Ludessa Prater leads them up a walk of yellow painted bricks, past a tornado cellar, and into the quaint, four room house, where she dares you to try to find any differences between Dorothy's bedroom in the movie. The room is complete with a wicker picnic basket, shiny red slippers, and yes, TOTO, complete and stuffed resting on a shelf. How about that for starters? But what fascinates visitors is a fake window which is painted with a dark ominous tornado whipping toward the house.



Buddy Piper is the town founder and self proclaimed Wizard. Mr. Pipers mother, he calls her Aunt Em, has lived in Liberal until she entered a nursing home recently. Mr. Piper plans to transform the town of Oz into a world famous mecca for thousands of tourists who are tired of the world and want to play the parts of Dorothy, the heartless Tin Man, the cowardly Lion, or the brainless Scarecrow. The Wizard plans to build a theater in Liberal where nightly performances of, you guessed it, "The Wizard of Oz" will be showing. Mr. Piper has a goat named TOTO and he calls his nephew "Tin Man" who is really Mr. Alger who is a potter.

Once you leave Liberal on Rt. 54, there is nothing to remind you that you are following the Yellow Brick Road. But you can stop in Greensburg (tornado hit in 1923) and pay 35 cents to climb down 109 feet into the worlds deepest hand dug well. After passing the Emerald City (Wichita) you can take a covered wagon ride in El Dorado (tornado hit in 1958) and then close in on Iola (tornado, 1919) to tour the infamous home of Frederick Funston. (Who's Frederick Funston? For those of you who forgot he was the explorer and hero of the 1901 Philippine insurrection.) Then onto Fort Scott, the site of an 1842 military post. Now, the Yellow Brick Road also begins at Fort Scott, for traffic flowing west. Town officials are considering splashing yellow paint of the first mile of Rt. 54 outside of the city.

Meanwhile, for those people concerned about the state's image as a place where people frequently get blown away, the tourism agency recently approved ABC television to film the movie "The Day After", which dramatized the dropping of a nuclear bomb near Lawrence (tornado hit in 1981). However, Miss Kruzic, the tourism director, said that the movie has caused a lot less controversy than the "Wizard of Oz". "There was an initial problem with some farmers", she concedes, "but it was cleared up after we convinced them it was okay for ABC to blow up their barns".

By Tim Marshall

You're out on the road day after day, driving hundreds of miles for that one chance of a lifetime. Tired and fatigued, you wonder who will pass out first, you or your chase car. Sun baked and dry, you both press onward across the plains. But, hey, it's your lucky day. A slow moving supercell pops up in front of you. Crisp towers boil through the sky. All your experience and expertise is there. You savor the chase, carefully maneuvering into position closing on the southwest portion of the rain free base. Suddenly, a wall cloud warps into view, and then a massive tornado forms. Excitement is suppressed as you think about the best location to set up your film equipment. You're cool. You just know this will be the best tornado footage ever. You imagine every newspaper and television station will pay top dollar for the film rights. You wouldn't even be surprised if you were invited to appear on the Johnny Carson Show. After all, you are one of the best, the Indiana Jones of storm chasing. Rounding the last hilltop, your jaw drops open, all thoughts are dashed. You're in shock, not because of the tornado, but by all the people eagerly filming "your" tornado!



Yes, video is popular these days. Just about everybody has one, or access to one. Such was the case on July 28, 1986 near Sioux City, Iowa. A slow moving supercell spawned a tornado which lasted over 20 minutes, was highly visible, and filmed by over a dozen people. The tornado moved southeastward across the Missouri River and struck an Iowa Public Service Power Plant causing about 30 million dollars in damage. I was impressed not only in the high quality of these films, but of tremendous scientific value they will have in the study of tornadogenesis.

The films clearly show the life cycle of a tornado can be extended by being "passed" to the next updraft. This tornado went from the organizing stage through the mature stage to the shrinking stage in ten minutes. As the tornado was roping out, a second wall cloud develops rapidly just to the east. The tornado now thin and contorted is pushed by the wrapping rear flank downdraft toward the new wall cloud. Over several minutes, the thin tornado enters the organizing stage widening into a massive cone-shape vortex. As it crosses the river, a shower of sparks indicates the tornado hit the Power Plant. The tornado heads southeastward in the mature stage for another 10 minutes. Finally, the tornado ropes out for good. I have never seen this cyclic behavior where one tornado is passed to two updrafts. Have any of you seen this happen? Burgess, Davies-Jones, Doswell, Moller, Snow? Any comments?

The films appeared on KTIV-TV 4 in Sioux City, IA on FOCAL POINT, a half hour program of local events. TV personality Van Carter narrated the show with National Weather Service guest John Wooldrige. A description of the best films follow:

Marvin Theobar filmed the beginning of the tornado. He was at Southern Hills Mall looking southwest. Through the rain, the outline of a wall cloud could be seen a few miles away. A funnel formed on the west end of the wall cloud then dipped toward the ground. A clock display on his camera screen showed 7:40 pm. The vortex appeared V-shaped with an occasional debris cloud. By 7:45 pm, the tornado had moved southeast away from him. At 7:48 pm, the tornado became narrow and two minutes later almost roped out about 7 miles away.

Robert Sikma was also in the rain at Riverland Estates near Ponca, Nebraska. He was looking south at the tornado from the Missouri river. The tornado was rope shaped and contorted about 10 miles away. Video was taken during the mid-life of the tornado.

David Jenkins from Dakota City, NE won the award for the most picturesque tornado. The cone shaped funnel formed just above him and touched ground on the the adjacent farmstead damaging some outbuildings. The funnel appeared a blue-white color. He was so close to it, he had to pan up and down the tornado from cloud base to ground. The video shows dust and debris being picked up in wisps. Dave got in his pickup and drove away from the tornado, one hand on the wheel, the other on the video camera. A few miles away, he felt safer, and stopped to film the tornado as it went into the rope stage, crossed the river, and hit the power plant in a shower of sparks.

Looking east, you can see the tornado begin to intensify again as it approaches the new wall cloud. Trees in the foreground bent southeastward in strong downdraft winds.

The storm chaser of the year award goes to Mike McKennah. Mike should be glad he is alive today as he was very close to the outer fringe of the tornadic circulation. Only half the base of the tornado is visible on portions of his video. The base of the tornado appears like a dish with rapid low-level inflow on all sides with outflow at about tree level. It is dark as night, and the vertical motion of the dust and debris is as awesome as the Brooklyn Center tornado filmed earlier this year.

Jay Severson was southeast of the storm and took excellent video of the updraft structure to anvil level. The updraft appeared as a vertical cylinder with helical cloud striations. The base of the updraft was like a dish, lowest in the center with a large V-shaped tornado. A truly isolated supercell storm

Other notable film stars were Loren Jorgensen of Sergeant, IA, Hal Dalhower of Homer, NE, Dave Smeddar and Jim Jacob from Ponca, NE plus three anonymous videos. As the television show ended, Van Carter's last comment was "The next time the tornado strikes, get out your camera!"

Coming issues include feature articles by Keith Brewster on the August 2, 1986 hailstorm in Longmont, CO; Greg Story and Kevin Walters discuss a tornado outbreak in central Iowa on September 28, 1986, and a new section entitled CHASER FILE presents a biography of notable and outstanding storm chasers. Subscribers are urged to continue sending in their storm accounts.