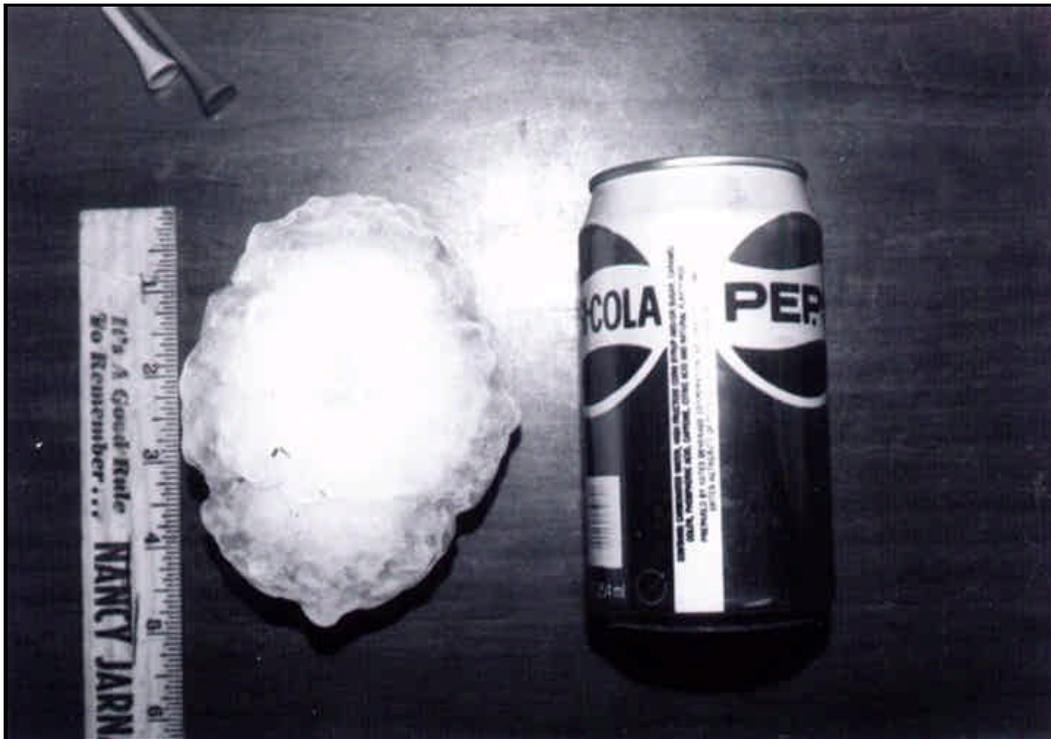


STORMTRACK



JULY 31, 1987

VOLUME 10 NUMBER 5



ALTUS AFB, OK MAY 14, 1986 COURTESY OF JASON BLAKESLEE

TIM MARSHALL, EDITOR

PHIL SHERMAN, ASSISTANT EDITOR

July 31, 1987
Tim Marshall, Editor
Phil Sherman, Assistant Editor
1336 Brazos Blvd.
Lewisville, Texas 75067

STORM TRACK
\$6.00/year



Vol. 10, No. 5
(Bi-monthly
(address orders
and letters to
Tim Marshall)

I. COMMENTARY

I still haven't recovered from this year's tornado drought. Although, there were plenty of storms to sample, they just couldn't hold together. Sure, I expected some chases to end with a hundred mile long shelf cloud on the horizon. Those days primarily occurred on high risk events! But, I saw over a dozen rotating supercells this year which didn't produce even a dust whirl. I even screamed at one prospective storm "I'll take a shear funnel, anything!" The problem shared on many days was the lack of mid-level wind flow and shear. Many storms literally drowned in their own moisture as weak mid-level winds could not push the precipitation out to the northeast. Not much dry air intrusion into the storms was allowed. So, it's wait until next year. Now comes HURRICANE SEASON!

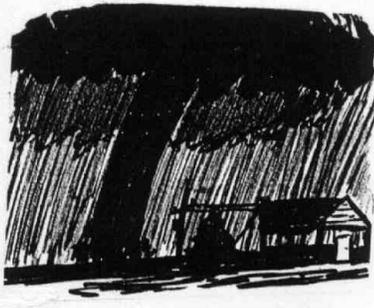
Here's my brief chase season roundup so far! On March 22nd, Phil and I saw an isolated supercell northeast of Canadian, TX (what a town)! We watched the storm through sunset. Naturally, the storm went on to produce a few tornadoes near Shattuck, OK that evening. This was the only day of the year with plenty of wind shear around. The first towers on the dryline were tilted about 70 degrees from the vertical leaning east. When the storm erupted, it took a few hours before a highly sheared flanking line evolved into a single, vertical updraft. We took a lot of pictures of this transition. April was dry, literally. No rain fell here in Lewisville.

In May, we chased from the 20th to the 28th. We saw a high based hailer near Hobart, OK on the 20th, and a pitifully looking Cb near Sherman, TX on the 21st. Three severe storms were sampled on the 22nd. from Graham to Abilene, TX. As you all have heard by now, the most severe storm was at the end of the line at Saragosa. The highlight of our season was on Memorial Day, when we saw four supercells near Happy, Tx, and two funnel clouds. The next day, isolated storms exploded again along the dryline; we picked a hailer near Midland, Tx. On the 27th, a severe storm blew up near Rotan, Tx. The next day, supposedly progged as a major outbreak day by some, yielded a large shelf cloud which nearly extended across the state of Texas. Tired and frustrated, we headed back to Dallas. The next day, an elephant-trunk tornado skirted west Lubbock. It figures. The last chase revealed was a deadly storm near Knox City, Tx on June 19th. The storm formed along a boundary and produced an ominous wall cloud and frequent cloud to ground lightning. Lightning was vivid, and too close. One bolt hit open field right next to my car; a blinding flash and deafening crack sound -all on video. One woman was injured in her car in Knox City.

As you can see, this issue of ST has a cover. Other improvements include half-toned photographs with a picture of the bi-month on the cover. How do you like it? Please send me a (yes or no) note how you like it. If most approve, this will be the new look. Otherwise, ST will remain the old fold-up version. The new subscription price would be \$7.00 per year to cover added printing and mailing costs, Printing would be 78 cents and mailing 39 cents per issue. ST is non-profit.

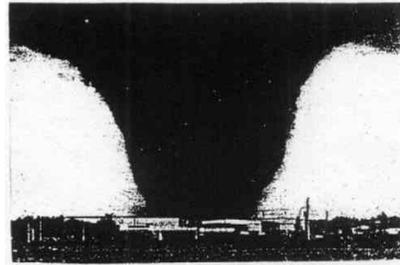
II. CHASER NEWS

Two brothers and their sister thought it was neat having their hair stand on end during a thunderstorm in a National Park in Colorado. They lined up together and had their picture taken. Moments later a lightning bolt struck killing all three- DPR, Apr 1987



A rare and deadly tornado struck Saragosa, TX on May 22nd, just after 8 pm, killing 30 people. Most of the clapboard homes in the town were levelled. The storm developed between a weak cold frontal boundary to the north, and the Barilla Mountains to the south. Surface moisture convergence may have been enhanced by these two features. Photographs of the tornado taken by Mr. Rosendo Carraseo show a narrow tube in contact with the ground just southwest of town. Many of the town's residents saw the first tornado form but thought it dissipated. Actually, this may have been a precursor to the big multi-vortex.

On July 31st, a wedge-type tornado struck Edmonton, Alberta killing at least 26 people and injuring 250. Awesome video was taken from three locations as the tornado formed and moved across the northeast portion of town. Videotapes show a high contrast tornado with rapid side motion.



III. LETTER/PHONE CALLS TO THE EDITOR

Stephen Levine was watching mid-afternoon thunderstorms blossom across the sky in southwest New Hampshire on June 13th. "Conditions appeared right for tornadoes-- something rather unusual for this area. A 100 mile chase netted me three funnels, a rainbow, and spectacular lightning. The first funnel formed under the towering cumulus where it connected with the westernmost Cb tower. The second funnel formed at the rear of the updraft and was lit white upon a dark background. After the funnel disappeared, the cloud where it came from rotated and slowly raised into the overcast. Within an hour, this storm produced a hook echo in central Massachusetts, about 45 miles south. Although there were no confirmed tornadoes, a warning was issued, and some areas reported golfball-size hail. The third storm exploded near sunset just north of Peterboro. It looked like a classic tornado producer and included an impressive tail cloud. A tiny, needle-shaped funnel was produced and lasted a few seconds. Within 15 minutes, the storm lost its base due to lack of support, and leaves a funnel-shaped anvil with mammatus lit pink in the twilight."

Dick Blattenberger is in search of the film "In Search of: Tornadoes" narrated by Leonard Nimoy. If any subscribers have information on where to get a copy of this film, please write him at 418 St. Cloud Terrace, Allentown, PA 18104.

Robert Welch III sent in an interesting newspaper article about a tornado which struck Hatteras Island on April 1st. The tornado struck the outer banks of North Carolina at dawn injuring five people. It first touched land two miles southwest of Cape Point and traveled northeast about a mile unroofing homes and destroying a boat yard. One eyewitness saw a big, dark, V-shaped cloud approaching. Large turbulent balls of water were coming out of the sound he estimated at 200 mph. At Mike Scott's

boat yard, 16 commercial boats were damaged including a 30 foot cruiser which was tossed out of the water. A home impacted by a mobile home was pushed 10 feet off its foundation. "That house was built in 1936 and has survived all those hurricanes", said the 64 year old owner. "For all these years, we've been worried about hurricanes, and now it's a tornado that gets us."

G. Zmijewski noted a small tornado touched down in St. Mary's County, MD, on June 9th. The tornado destroyed a few barns. He says most tornadoes in Maryland seem to touch down on the eastern shore instead of the west.

Jim Leonard saw his share of tornadoes this year. May 26th, Gene Moore and I saw a tornado near Cotton Center, Tx, northeast of Lubbock. A clear slot wrapped in at the back edge of the cloud base. Strong rotation was evident in the occluded portion of the base, with condensation fingers extending downward. At one point, scud formed near the ground and roared upward to cloud base. The tornado was brief. I flew back home to Miami, FL on the 29th, then came back to chase Colorado storms on June 17th. I saw a funnel south of Denver and a tornado north of town on June 20th. A pair of tornadoes, side-by-side, was filmed on the 23rd near Hudson. The best tornado footage, I obtained was the next day when a tornado formed near Pumpkin Center. A cone shaped funnel protruded from the rain free base which tapered down to a churning dust column. I was in excellent position with good lighting.

Tim Vasquez and his group STATIC had five chases in Texas this year, On Feb 14th, we chased to Meridian, and saw a squall line. Better luck was obtained on April 12th, when an isolated multicell storm formed near Graham, TX. We saw excellent detail of the storm's development documenting it from the cumulus stage. Multicell storms were observed May 15th near Gainesville and May 31st near Plano. A broken line of severe storms was photographed on June 23rd where a wall cloud developed near Garland.

C. L. Vlcek left Washington D. C. on May 15th and drove west toward Iowa. I took I-74 across Indiana. It was a lousy road, filled with things that go bump all day. In Iowa on the 17th, the weather report on TV indicated a cold front would pass the area leaving me with a dry day. On the 18th, I noticed it was getting rather warm behind the front as I was having a picnic on the University of Iowa campus. I went back and turned on the TV at 5 pm, and was dumbfounded to learn it was indeed a chase day! Severe storm mania across east Kansas and Western Nebraska with several tornadoes. The front was actually west of me. I was really disgusted, When I finally saw a weather map for that morning, it had storms written all over it for SE Kansas. Basically, I blew it. The next several days I drove around searching for storms and visiting several weather services, On May 20th, strong cells formed to the south of Sioux City, IA on an old outflow boundary. No further strengthening resulted. I drove on to Grand Island, NE to set up the next day's chase. But I overcompensated as the front passed during the night. On the following day, I found myself roaring eastward playing catch-up with a storm which developed northeast of Iowa City, IA. I settled for some pretty pictures of a rainbow and anvil mammatus at sunset, I drove on to Norman, OK before heading home on the 25th, That's the day Texas lit up with storms.

Here's Marty Feely's chase account: "Bob Slater, Doug Curry, and myself observed a storm near Hobart, OK on May 14th which drifted slowly west. An inflow band on the southeast aide of the base had three funnel shaped clouds side-by-side. No rotation was observed. It was not virga, and no towers were seen above the cloud band. Ten minutes later, a small wall cloud developed under the cloud base to the west but did not rotate. On May 18th, we tracked a severe storm near Enid, OK seeing just heavy rainshafts. That was the day tornadoes struck central KS. The next day, Dan Zacharias joined us to survey the tornado damage at Toledo, west of Emporia. The day to get really excited about was May 21st. Many storms developed across central OK. We observed a thin rope funnel above Lookeba at 6:35 pm. The system eventually lined out. On May 6th, we saw a severe thunderstorm near Clinton, OK. Upward moving scud had converged and ascended into a small hole in the cloud base. On May 28th, Dan and I saw two cells develop near sunset at San Angelo, Tx. The next day, we headed west and tracked an isolated "LP" storm 12 miles south of Crane, TX. Upon our arrival, we saw a spectacular giant wedge shaped anvil. The next day, Dan and I saw severe storms near Jal, NM. Our last day, we got squall-lined along the OK-KS line on June 2nd."

IV. ROSTER

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

Name	Address	Chase country-range
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Shawn Wood	533 East Main St. Bridgewater, NJ 08807	
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Bibliography: "I'm 19 and currently a college student. I've been interested in meteorology since I was in 5th grade and I've always loved severe thunderstorms and hurricanes. I would like to hear from chasers in Oklahoma and Texas as to how the chase seasons are going. I plan to be in the Norman, OK area in January 1988 to study meteorology at Oklahoma University."

Bill Halterman	RR #2 Kinmundy, IL 62854	
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Bibliography: "I've chased for about 5 years around home with little success. Trying to work a job on the 2nd shift doesn't leave me much room to chase. Next year I'd like to go into the Oklahoma and Texas areas and try my luck. I've been interested in tornadoes since I was a boy and have studied most everything I can get my hands on pertaining to severe weather."

Ed Riddle	RR #2, Box 88 Carbondale, IL 62901	
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Bibliography: "I am a 21 year old college student in Electrical Engineering Technology. I am a member of the local Emergency Services and Disaster Agency, and also the Amateur Radio Emergency Service. I have been spotting for about 5 years, and am very anxious to have the time and opportunity to do some serious chasing. I have to say that the ST newsletter was my greatest discovery I've made since I fell in love with storms."

V. FEATURE 1: CHASING IN NORTHERN UTAH by RICHARD CONN

Don't laugh. The Great Plains do not have precedence over all the beauty and excitement of storm chasing. Equally as spectacular, if not more violent, are the flash floods, waterspouts, dust-storms, and hurricane force winds of Northern Utah. These can be very picturesque against the mountain scenery and wonderfully clear visibility of the Central Rockies.

In fact, it is the mountains along with other topography that "stays put", which help me to predict where and when convection will occur. The Great Salt Lake provides a permanent "cool island". These stationary parameters interact to form local "hot spots" where convection occurs in the same place, day after day. This is in contrast to what you have out on the Great Plains. Variable parameters such as the jets, moisture, and drylines contribute to produce optimum conditions in various areas throughout the center of the country. Chasers on the plains find themselves driving wildly for thousands of miles trying to reach the best place for severe weather. However, it is the fairly predictable and organized interaction of topographical features that help make storm chasing in Northern Utah a leisurely and frequently successful effort. Although severe storms in Northern Utah capable of whisking you off to the land of OZ are rare, the probability is high that you can drive within 30 miles of Salt Lake City to see 75 mph winds, 2 inch hail, and 3 inch rains in 20 minutes.

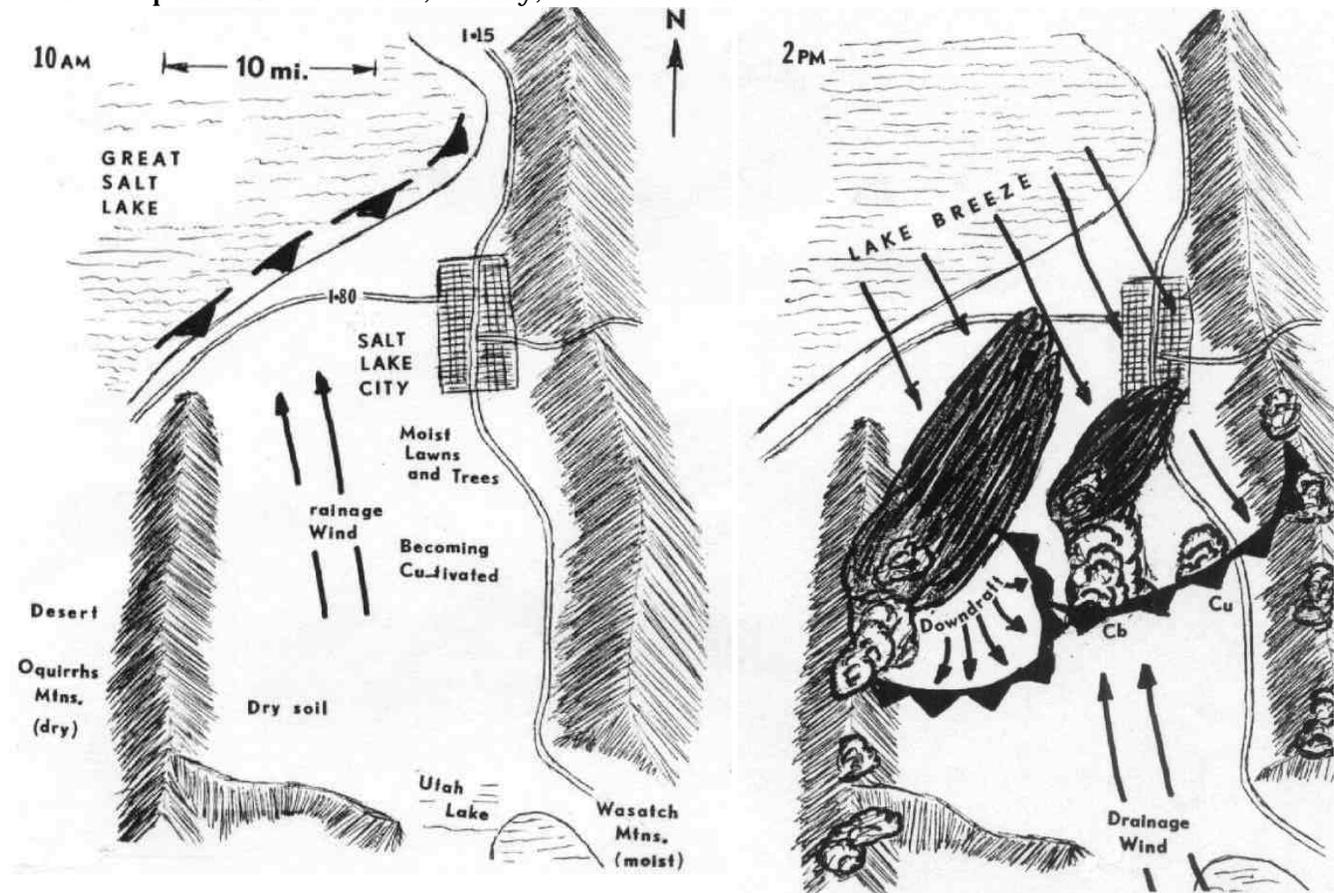
The Salt Lake Valley is a broad north-south oriented plain at around 4500 foot elevation. On each side of the valley are north-south mountain ranges which vary from 7500 to 11000 feet. Bordering on the north end is the Great Salt Lake. See Figure 1.

The typical chase day begins with high and middle clouds more abundant than usual and moving from the south at about 20 knots. Air at low levels is too dry to produce clouds. About 10 am, I leave home in downtown Salt Lake City to check the weather conditions at the National Weather Service. I look for the following conditions: 1) a potentially unstable air mass which will not give way to pesky intrusions of the Pacific High which ruins convection, 2) the strength of the southerly drainage wind in the valley is above average, 3) lower than average temperatures at 500 mb (-12C), and 4) a surface temperature forecast of 92 degrees.

At noon, I'd like to see the following conditions: 1) the Oquirrh Mountains, nearly devoid of vegetation with a dry desert south and west, produces the first large cumulus, 2) strong south winds still exist over the valley, 3) middle clouds are still present assuring moist air at that level to assist convection.

If all goes well, the first thunderstorms should develop over the mountains to the southwest about 2pm. Hopefully, they rain-out and produce a downdraft which is not too intense and spreads eastward slowly across the valley. Storm anvils should move north toward the Great Salt Lake leaving valley skies still clear for plenty of heating. Now a developing lake breeze from the Great Salt Lake reverses the surface winds and they start moving south. See Figure 2. The result is a classic intersection between a gust front and cold front about 15 minutes away from me.

At the intersection, a thunderstorm reaching 50,000 feet is not uncommon. Winds underneath the storm are calm with all the air flowing upward in spectacular turbulence with frightening circular motion at times. Beautiful colors of purple, black, green, and copper contrast starkly with the bright blues and whites of the mountains to the east. The downdraft begins with stinging dust at the surface and intense lightning. Then, zero visibility with rain, wind, and hail. At the storm center, 3 inches of rain can cause flash floods. Winds can push cars off the road, take roofs off buildings, and down trees. Temperatures can drop from 92 to 48 degrees. Dense fog forms over the one foot hail drifts. One fifth of the annual precipitation has fallen. There's a feeling of exhilaration seeing so much for so little expenditure of time, money, and distance.



VI. FEATURE 2:

CHASER PROFILE

Bill Read
 By Tim Marshall
 Fort Worth, Texas

When Bill Read was drafted into the Navy in 1970, he didn't know what he was in for. Bill thought he would be shipped to Guam, after all that's where meteorologists seem to go, Guam is a great training center for the tropical meteorologist. However, Bill was given the chance to join the weather reconnaissance squadron in Jacksonville, Florida. It was truly a volunteer position, he was told. "Sounds exciting, I'll take it" and Bill jumped at the chance. He didn't mention that he had only been on a plane twice in his life. Flying on a plane seemed like fun.

For the next two years, Bill spent more time in the air in a four propeller plane than on the ground. At least it seemed that way racking up 1200 hours in the air. The mission of the Navy reconnaissance crew was to fly through hurricanes, tropical storms, and nor-eastern storms during the winter to collect weather data for forecasters. Flight level was 500 feet, just below cloud base. Bill remembers Hurricane Agnes, a small storm by hurricane standards, but what a flight. It was dawn when Agnes struck Panama City, Florida. "We were flying along the shoreline watching waves pounding the beach and pieces of trees flying through the air", Bill recalls.

He explained that they had to fly low through the storm since part of their mission was to derive surface winds from watching the sea state. Around gale force winds (34 knots), the turbulent sea forms lines of white foam from the breaking waves. At about 100 knots, the entire sea surface is a frothy white foam as wave crests are ripped apart by the wind. Between rain bands, Bill said that the windows of the airplane would cake up with salt from all the suspended salt spray going by. Blinded by sight, the pilot would have to maneuver back into a rainband to wash clear the windshield.

The weather equipment on board was state of the art. A 10 cm radar was located in the belly of the plane and a 5 cm unit was in the tail. A radiometer measured sea surface temperature while dropsondes measured the temperature profile from the plane to the sea surface. Bathythermographs measured the vertical profile of water temperature under the sea surface.

What about turbulence? Many of the low level flights were surprisingly smooth in the tropical storms compared to the winter storms over Cape Cod. "The cold air mass over the warm gulf stream would create the most severe turbulence", Bill said. The plane would literally shudder. "Barf Bag Specials" they were called. Flights lasted 8 to 12 hours. Bill would never think of eating during the course of the flight. "Some people would eat sloppy stuff, but not me. I'd have a couple of grilled cheese sandwiches before the mission", Bill uttered grudgingly.

Bill recalled that one plane was nearly lost when it may have hit a hurricane spawned tornado. Penetrating a rainband, the plane was lifted from 800 feet to 2800 feet in seconds, banked 70 degrees, then plummeted 2500 feet before the pilot regained control of the plane. Severe structural damage resulted to the wing and tail sections, but the plane landed safely.

Bubble plexiglass windows on the side of the plane provided a 180 degree view of the impending storm. Bill photographed the sea surface through the window. He mentioned that the photographs weren't too good since the glass was scratched by debris impact which included an occasional pigeon or two.

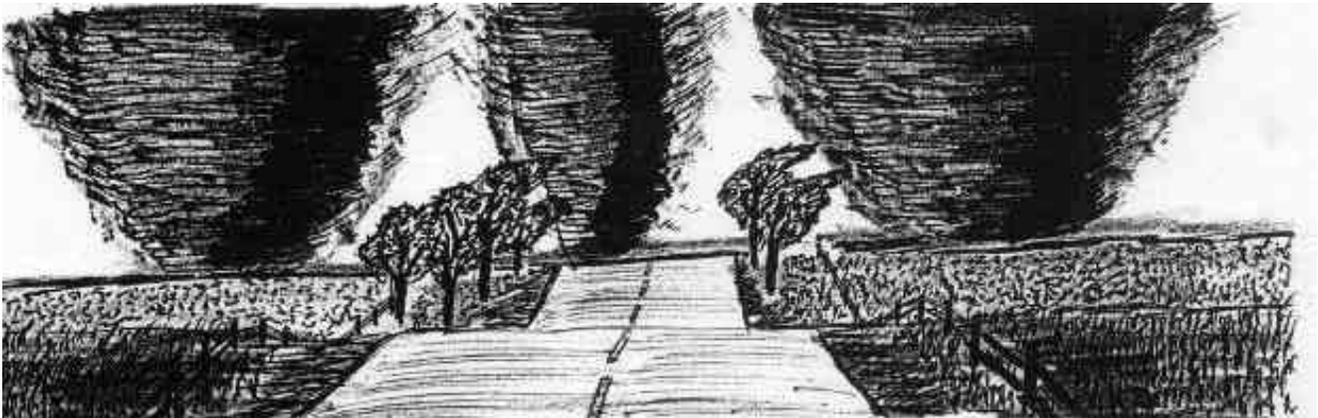
Lightning flash rates varied greatly from storm to storm. Bill recalled Agnes on approach: "It was a night flight, the lightning was nearly continuous. We had floodlights on the plane to illuminate the sea surface but hardly needed them in Agnes."

The squadron was decommissioned after two years and Bill went to Greenland to finish his tour of duty before returning to graduate school and then entered the Weather Service. Would he do it again? "Yep", he replied. A true storm chaser!

VII. FEATURE 3: THE AGRA, KANSAS STORM by AL MOLLER MAY 10, 1985

Driving toward the storm, I crossed a damage path just west of Agra; it was about 250 yards wide. The track disappeared to the northeast toward an ominous black storm complex. Just east of Agra, I passed beneath the storm's flanking line, encountering extremely strong wind shear. The wind shifted from northeast about 35 mph to southeast at 40 mph. I could see the main updraft to my north and the "beaver tail" cloud (Tim Marshall's pet name) which appeared to be situated in an east-west line along the pseudo-warm front. Turning north on Highway 8, I saw several funnel clouds beneath the flanking line to my west. I was not surprised at this after having experienced the wild convergence that was present along the flank. Vertical motion into the wall cloud/funnel was quite rapid. A mile or so further north, I caught a glimpse of another wall cloud, which was considerably larger. Within another mile, I spotted a tubular, rope-like tornado about 6 to 8 miles to my northwest. I believe this was the end of the Agra tornado as pictured in STORM DATA as a multi-vortex tornado earlier.

Ahead and to the right, I noticed a new wall cloud and mesocyclone. It was located on the inflow side of the older, occluded rotating updraft. Suddenly, a second tornado began as a single vortex cone-type. Moving northbound, I noticed startling changes were occurring! Within a minute, the tornado became a huge half miler then quickly changed character again into large swirling multi-vortex tornado. I was forced to take 1 to 2 second time exposures due to the low light. One dust whirl made an incredibly quick transition into a large condensation funnel. At this time, the south side of the multiple vortex tornado was within 3/8 of a mile from me. I could hear a high pitched jet engine type sound as a trailing dust whirl crossed over the road. The dust whirl moved through some of the trees on the right hand side of the road, and just over the crest of the next hill doing considerable damage.



After shooting a photo, I drove north and became engulfed in a swirling rain/small hail curtain that was wrapping around the backside of the tornado (radar hook). I watched the tornado change it's appearance quite rapidly as it disappeared into darkness and Nebraska. I took several more photos with the wall cloud/tornado. This was the longest chase after an existing tornadic storm I ever made. I didn't think I had any chance to catch the Hays/Agra storm. I was lucky!

VIII. FEATURE 4

When It All Comes Together

By David Hoadley

1987 was a good year for this chaser. I photographed six tornadoes and eight funnel clouds in Kansas, Oklahoma, Texas and Colorado. Regarding number of storms, it was my best year ever.

It began May 2, when I arrived in Dodge City, Kansas to do a forecast. Shortly afterwards, Pete Stamus and a crew of eager young chasers arrived from the PROFS program in Boulder. All of us were sizing up western Oklahoma, as was the National Weather Service (NWS) - which was calling for a "Moderate Risk" for that area. The way down to west-central Oklahoma, I passed Jim Leonard and Steve Wachholder from Florida - on a hilltop by the side of a road near Laverne. We exchanged greetings and compared notes under a mostly clear sky. The stratocumulus to the SW bubbled weakly in the heat but never developed. The PROFS crew and I happened to meet again near Hammon, looking for some positive signs - but it was not to be. I finally left them and about half a dozen cars (plus an eager-beaver TV news van/man) on a dusty mad north of Mooreland, playing frisbee and listening to country western at full blast. Sunday took me to a Wichita forecast and then to Salina, where I found a rapidly building Cb about 20 miles east of town - moving to the NNW around a 500 mb low over the Oklahoma panhandle. It rapidly developed a crescent shaped shelf cloud along the leading edge of the base - with slow, intermittent rotation at the center. Later, a second/small Cb to the SW produced a very small, high base funnel at 1755 CST.

On Monday, anticipated upper air support for the rest of the week failed to develop (as earlier forecast) and a persistent trough deepened across the eastern half of the U.S. Seeing the "writing on the [AFOS] wall," I consulted with the home front and decided to fly back - leaving my VW Rabbit in Wichita (first time for this sort of thing). Two weeks later, when the long awaited western trough began digging and moving onshore, I flew back on the 17th.

May 18 found me in Concordia, looking at a slight risk day across eastern Kansas. The morning sky had that hot, humid milky look - with small, soft clouds scattered about. My forecast called for east central Kansas, so I drove down to the Hutchinson area as a temporary observation site - just ahead of a weak northerly wind shift line. At Hutchinson, I was in very light but persistent northerly winds. It was mostly clear NE-SE-SW, with only scattered low clouds. No low and intermediate clouds were to my SW-W. Expecting possible recovery of strong southerly winds and buildups to the west, I waited and watched. Suddenly, a small golden dame began rising to the distant NE. I needed only 5 seconds to decide - and took off at full gallop to Emporia.



Initial Emporia tornado from 0.4 miles -- at about 5:27 PM CDT

"Flying low" up US 50, I passed Newton and crossed I-35, steering wheel in one hand

and hanging out the window with a camera in the other -snapping as I went. Dome became tower -became hard tower --became anvil. It was building fast -isolated and magnificent. The anvil back-sheared quickly and spread out like an atom bomb! About 5:20 PM CDT, a clear, urgent tone leaped from the car radio, and my adrenalin reached "critical." The Emporia FM station was giving the first tornado warning. Still too far to see anything, the accelerator went down and I passed that last trailer blocking a clear shot to the storm -and there it was!!



*Second tornado at 5:35 PM CDT
1.0 mile west*

As if coming out of a mist, the large cone took shape as I approached. It was conical at the top, with a tube to the ground. It then became a narrow tube to cloud base and - finally- broadened to a narrow cone with tube. Ground contact was maintained throughout these evolutionary stages -about 5-7 minutes. I stopped several times within a half mile, as it crossed an open field to my NE. The highway at this point had a narrow shoulder, so I had to film through an open window on the driver's side, with rain and small hail pounding in -pushed back against the seat to keep the camera gear from being soaked (Only minimally successful). It did 1/2 million dollars damage to at least 8 homes in Toledo -but fortunately, no casualties.

I then drove 5 miles east and filmed a second tornado at 5:35 PM as it touched down in a trailer park west of Emporia -destroying several trailers (again no injuries). Although the slides don't show it, I could see small debris rotating underneath. It lasted a few minutes.

A third tornado (as reported by NWS) formed at 5:45 PM just west of the I-35 exit to Emporia. A rise in the highway prevented a clear view of the surface, so I was personally unable to confirm ground rotation. This vortex persisted 4-5 minutes, mostly without ground contact, eventually tapering out into a persistent, smooth-sided rope funnel. With a new wall developing to the SE, I drove into Emporia looking for the highway south. The streets were strangely deserted. Another radio warning, and I looked up and filmed a small funnel directly overhead. Missing the right turns, I charged west of town (through golf ball hail) and then down to Hartford. South of there, I picked up another rotating wall cloud and a fourth tornado -which touched down 8 miles southwest of Gridley. Interestingly this one closely resembled the first Emporia area tornado -and was the initial vortex from a second Cb that developed SE of Emporia.



*Third tornado at 5:45 PM
from a second Cb that
developed SE of Emporia.
1.0 mile west*



*Fourth tornado at 7:25 PM CDT,
8.0 miles southwest*

Several days followed of fruitless chasing north (As far as Huron, South Dakota, where my path up a county road was finally blocked by a herd of meandering cattle --an obvious sign that it was time to turn back). On the 21st, I picked up two small funnels in central Oklahoma, 7 miles NE of Guthrie at 4:03 PM CDT and a small rope funnel from a cumulus pocket 3 miles S of Union City at 6:30 PM. The next rotation was a brief horizontal, sausage shaped funnel east of Springfield, Colorado on the 24th. Actually, the best part of that day was my transit through the NW Texas panhandle and a beautiful golden field of prairie flowers. It was one of those special moments that occasionally

and surprisingly occurs in the midst of a chase-when one is compelled to stop and pause to contemplate. Two wild antelope in the distance perfectly complemented the vista of gold and blue and white.

I started May 25 in Dodge City, Kansas but was soon charging south to Amarillo. There, I met up with Jim Leonard from Florida and the teams of Al Moller and Chuck Doswell (Texas and Colorado), Sam Barricklow and his wife from Texas, and Ed and Jerrine Verkaik from Canada. We all thought the northern Panhandle looked good, so decided to wait at the NWS Forecast Office until late afternoon for some definite development. When it came, it began almost simultaneously in both the northern and central Panhandle -on both sides of Amarillo. I charged north, and everyone else went south. I understood that Gene Moore and Jim Leonard caught a few south of Amarillo. I fared well, also.

Initially with soft, thin but moderately sheared towers, the convective area north of Amarillo soon coalesced into one strong Cb NW of Morse. As I approached, the anvil blossomed and backsheared strongly (shades of Emporia!). Heart racing, I finally turned onto Texas 136, it took me straight north to the storm



*First tornado at 6:12 PM, 4.0 miles
north*



*Initial formation of second tornado, at
6:18 PM, 2.0 northeast*

The first tornado that I saw dropped down briefly (20-25 seconds) at 6:12 PM CDT from the SE flank of the wall cloud -about 4 miles SW of Gruver and directly at the end of my road. Interestingly, this wall was much larger and had much stronger rotation than either of the two Emporia area wall clouds. Yet, ironically, the Emporia tornadoes lasted far longer (as much as 5-6 minutes). The second tornado dropped down briefly at 6:18 PM, then lifted into a persistent flat cone, until dropping once more about 1-2 minutes later (path length not more than 0.4 miles).

Professor Howard Bluestein and a crew of Oklahoma University chasers tried out their portable Doppler radar for the first time just south of this cell. I found them by the side of the road with what looked like two small TV satellite dishes, side-by-side (about 5 feet high), pointing at the wall cloud. The Gruver storm apparently reformed near Waco, Texas and caused slight damage there later that evening. I tried to follow it as it tracked northeast but missed a turn just south of my filming sight and had to go on south of Morse, before turning back northeast. By that time, nearby cells looked better, and I watched them until fading light and terminal exhaustion had taken their toll.

On the 29th, I went to Lubbock for forecast data but found that the AFOS was dawn for three hours. Therefore, I took the last best report - a slight risk for the area southwest of me - got same advice from local staff, and drove down to the last reported Cb near Fort Stockton. It was an old and declining storm when I arrived. I again had the pleasure of seeing Ed and Jerrine Verkaik - when we both happened to pick the same gas station for fillup. We then proceeded NW to Pecos, where we encountered a respectable - though small - CB with intermittent slow rotation in a well defined wall cloud. It was isolated, with clear air to the SE-SW-NW. However, other than a cracked windshield from 1-2 inch hail on the north side of the wall - I encountered nothing else significant that day (there was a public report of a funnel near Mentone), That was the end of Chase '87.

I have pondered many times over the difference a mere 5 minute earlier start would have made each of those two two days (18th and 25th). Closer and better pictures! However, in the same breath, I count it fantastically lucky that I didn't encounter road repairs (wait for the flagman, sir!) or have a flat tire!! Also, both roads took me straight to the tornadoes - which as most experienced chasers knew is often the most frustrating part of chasing, when back country roads don't go where you want. Therefore, I take a deep breath, express copious gratitude to the storm gods for what I have and say - like we all do - "wait 'till next year."

IX. FUNNEL FUNNY: World's Oldest Storm Chaser

A true storm chaser has a life long dedication to storms. They live by the motto: Old chasers never die, they just whirl away.

World's Oldest Storm Chaser

