

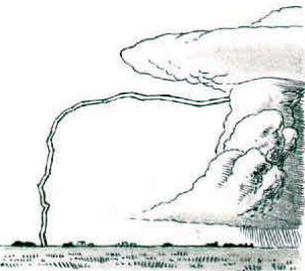
## I. COMMENTARY

It's that time of year again, when nervous anticipation grips storm chasers everywhere. The inexorable cycle of the seasons turns, as the first warm days breeze in among still bare limbs. On sun warmed slopes of somber fields, a slowly opening quilt unfolds in scattered streaks -- the first rainbow buds of gem-like lavenders and gold. While, far overhead, the constant sky deepens into cerulean and ultramarine, as silver mare's tails silently sweep the rim of space -- and distant towers brighten ominously in the sun. Once again, creator and destroyer walk, with irony, upon the land.

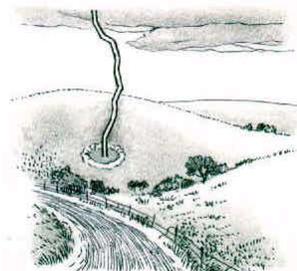
In this respect, storm chasers should remember to be circumspect in expressing their enthusiasm for tornadoes and severe storms, while visiting local weather stations, restaurants and other public places. Some of those within earshot have experienced great personal tragedy and financial loss from these storms. A few still lie awake at night listening to distant thunder and remembering. They won't understand your attitude, so you should make an effort to anticipate and understand theirs.

You are also reminded to be considerate when dropping in on local National Weather Service (NWS) or Federal Aviation Administration (FAA) flight service stations, during a chase. Even when storms are already building nearer, and you're impatient for access to the data or quick answers, be courteous. Their primary job is to provide general forecasts to a wider public, briefing pilots on specific weather problems, and sometimes providing life saving information. The handful of people who chase storms are, appropriately, farther down on their scale of priorities. Also, remember that they've been sitting there all day, week after week, doing an often-monotonous and tedious job. When you breeze in for five minutes, don't expect instant reaction or intelligent answers to strange questions like, "Where are the tornadoes?" Also, don't ask endless questions, expecting to be educated on everything you should know. Study the charts first, make some reasoned guesses, then ask a few questions and leave! Don't hang around like Aunt Matilda, where they'll stumble over you whenever they turn around. In fact, you will find most such staff to be cheerful, helpful and sometimes even interested in what you're about. But keeping them that way depends on being patient and considerate. This will make it easier on other chasers who follow you -- and the return visit much more agreeable. And you will return, again and again, because we need this information and the willing cooperation of those who provide it.

Oh, yes. Be sure you are there to return. LIGHTNING, LIGHTNING, LIGHTNING!!! This is the greatest, single danger to storm chasers. Think lightning safety anytime you're within 5-10 miles of a storm. I

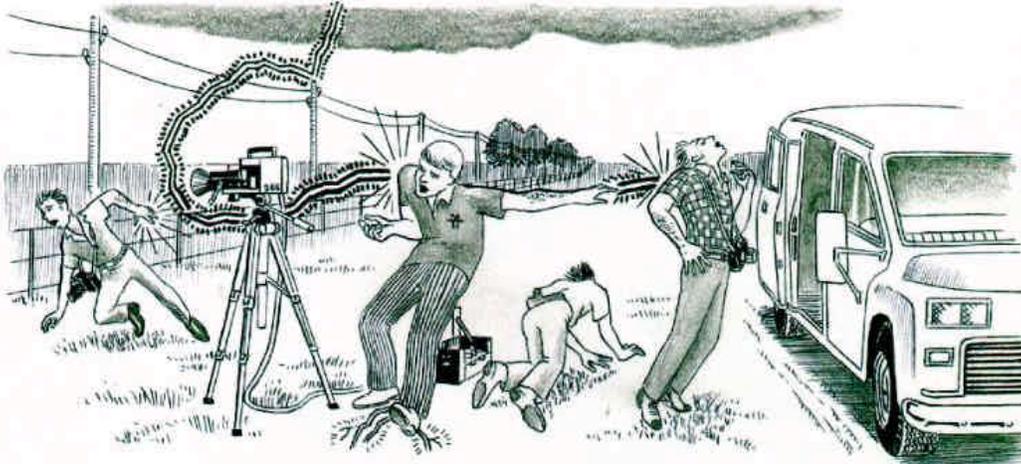


have seen a charge arc out from a mid-afternoon, central Indiana thunderstorm, seemingly a "bolt from the blue" that struck ground 5-8 miles from the base and a mile from the anvil! I've also seen lightning strike a prairie hillside, almost 100 feet below the crest (so much for the high-ground-always-gets-the-strike theory)! Sometimes, even extensive experience can give a false sense of security (The following account is adapted from an earlier ST



article by John Weaver). --- One of the most skilled chasers, Gene Moore, has been twice struck! The last time was on May 23, 1981, while with a local Oklahoma City television station film crew (UHF 43) out looking for tornado film footage (he did their weather shows at that time). Near Katie, about 50 miles southwest of Oklahoma City, they found their storm. "The scene was almost pastoral. A mile and a half to the north-northwest, a tornado had touched down. It was quiet -- birds could be heard singing in the vicinity. They had seen no lightning, heard no thunder, nor felt even a drop of rain. Another group of chasers had arrived, and one (Chuck Robertson) was leaning against a wire fence which ran beside the road. The location seemed perfect. Then, all hell broke loose. -- Gene suddenly began hearing a loud, continuous buzzing, and his hair reacted to the static by literally standing on end. An anvil to ground bolt struck a nearby power pole. The charge traveled down the pole, to the fence, and jumped out, to Gene before he realized what was happening." (Gene told the Editor that he just had time to say "Oh.." and was knocked to the ground, ten feet back, before he could finish "...God!") "Gene flew off his feet, spinning, and as he did so a spark, accompanied by a loud crack of sound, flew from his hand" (like a Darth Vader storm trooper) "and hit Steve Cone. Steve went down. Mike had already been knocked to his knees, when the charge crossed the cable connecting the mini-cam to the support package. Gene landed near the road, on the brink of consciousness, feeling 'numb' from head to toe. Meanwhile, Chuck Robertson, who had been leaning on the fence, caught the brunt of the shock in his hands, and rushed out into the road. Gene raised himself to look around. Mike Neese of the camera crew was trying to rise. The

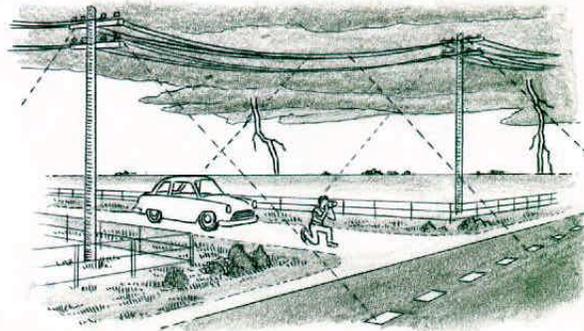
other crew member, Steve Cone, was up on his feet but a little wobbly. As Gene sat up, then stood, a tingling washed over his body similar to what one feels when a foot or leg has been asleep.' The tingling was overpowering and forced him to sit back down." He found that he had great difficulty concentrating on anything, such as looking at one's sock but not really understanding why it was there or what its function was -- in other words complete perception but without logical understanding.



'After a few more minutes of recovery time, the group tried to resume the chase" (Gene told the Editor that, after driving a few miles up the road, one of his two passengers asked why he was driving north while the tornado was moving east. Gene turned around and said something to the effect that, "Why, I'm chasing the tornado." At which point, one of the crew turned to the other and said, "I think we've got problems." At this point, they took Gene home to recover). The next day, Gene reports, all of them had symptoms very similar to the flu; namely, a feverish feeling, nausea, aching muscles/points and an overall weakness. Within 48 hours, small portions of Gene's hair had turned gray. However, all subsequently recovered, and none reported any long-term effects. Of course, each was exceedingly lucky not to have fried to the spot where he stood!

The purpose in this repeat of an earlier ST article, which many new readers have not seen, is to emphasize such dangers -- especially when least expected. With lightning, preventive precaution is essential! Don't plan on a second chance if you slip up! The safest place to be, when out chasing, is completely within your car (no arms hanging out) and looking through an open window. With intense, local lightning, you should not be touching any metal trim. However, I have seen very few accounts of

any automobiles ever being struck. People in the Midwest and plains seem to drive safely through all kinds of electrical storms, so your car is a pretty safe bet. If you must leave it for a better photographic angle, the safest place to park and exit may be midway between two utility poles and underneath the connecting power or utility line. Together, they should form an approximate 45 deg "cone of protection" from the poles and along the line to the ground. However, be sure not to stand near to either pole, especially on wet ground, since a strike to either



pole can send a lethal ground-conducted charge more than a hundred feet and end your day, vacation, and 'ever after' right there. Warnings of imminent discharge which may be present are (1) static on your car's AM radio band, especially a steady "buzz" or "zipper" type sound (antenna discharging) or (2) hair standing on end, when in the open. If the latter happens, drop immediately down on your haunches; don't lie flat, since wet ground can carry the charge to you, and is more likely the more of you that is in ground contact. One extreme hazard and temptation to the professional photographer is in use of a metal tripod to steady the camera in gusty inflow winds. Other chasers have encountered electric shocks from such set-ups. This is a high risk exercise! Please note, this advice is only based on informed conjecture and on limited personal experience. No one should assume 10 ft protection, and all take a calculated risk when exposing themselves to lightning. (Storm Track disavows any responsibility for advice given in this regard or for any other safety advice from prior or future STs.)

## II. ROSTER

An omission in the last issue's ROSTER left out Tim Marshall. At that time, it couldn't be verified if ST had permission to include him here. This was later confirmed, so here is his entry.

Name	Address	Chase country - range
------	---------	-----------------------

Timothy P. Marshall	#907, 1811 Frankford Road Carrollton, Texas 75007	Texas to Oklahoma
---------------------	--	-------------------

Biography: Former chase team leader at Texas Tech University, author of several technical studies and chase procedures. Currently works for a Texas firm that does damage assessments of weather related structural losses (Is that foundation crack really due to strong wind or uneven settling of the ground?). Tim's wife is a specialist in the area of museum science and an ornithologist. Thus, when the Marshall's go chasing, they're never completely frustrated by a long wait, or a missed storm, since they can always take out the binoculars, settle back and study a wide variety of Texas birdlife. Each has benefited and grown from the different interests and knowledge of the other, so that now both share in an enthusiasm for the sky and the life that calls it home. Tim has also entered on a little commercial project --- For sale are three different slide sets of 36 slides each and a narrative text: (1) TORNADO: SPOTTER I - a supplement to the NOAA slide series, which deals with areas that were left out or incompletely addressed -- such as gustnadoes and multi-vorticity tornadoes; (2) TORNADOES AND BUILDING CONSTRUCTION - some tornado pictures and examples of building failure in tornadic situations, highlighting characteristic problems which lead to stress-failure; and (3) HURRICANE AND COASTAL CONSTRUCTION - similar to (2) but highlighting typical hurricane damage situations, with examples from hurricane Alicia. Each slide set sells for \$30.

Sam Barricklow	4202 Ashville Drive Garland, Texas 75041	North Texas and Oklahoma
----------------	---	--------------------------

(Ham Call - K5KJ)

Biography: Has been involved in the local "RACES" skywarn program since 1974. Most chasing has been done within a 150 mile radius of Dallas. Mr. Barricklow uses the HF and VHF Ham bands while chasing, with 7.213 MHz being the main frequency of operation, along with whatever "2 meter" frequency the local skywarn group uses. He is very interested in detecting unusual electrical phenomena, that may exist around storms, with most efforts having been in the VLF/ELF range. "Of course, my main activities are chasing and photographing storms. Lately, I've been trying to photograph cirrus wakes above Cb's."

(Now, the Editor is pleased to add the distinguished and internationally recognised Canadian sky photographer Arjen Verkaik, to the ROSTER. As with other entries in this Section, Mr. Verkaik is interested in corresponding with others about cloud photography and storms.)

Arjen Verkaik	R. R. 1, Box 21, Beamsville Ontario, Canada L0R 1B0(Chase year 'round)	Alaska to Mexico to Britain
---------------	---	-----------------------------

Biography: Age 37, new wife - Jerrine (an editorial and research consultant for his photography), two daughters (8 & 13), six cats and a yellow 1978 Chevette. Mr. Verkaik has chased for 12 years and 250,000 miles, using a Nikon with five lenses and a Bauer A-512 Super 8 movie camera for time-lapse films (over 12,000 ft of these). Has established his own company, "Skyart Productions" to handle the increasing demands for his work (The Editor has seen a few of his published photos and they are excellent!). Both will be attending the next severe storms conference, and each plans to present a paper. Ed asks, "Are there any people or stops we can check out in the West on dead days? We hope to be in the western plains from May 8 or 15 (depends on upper flow) until after mid-June." Professional background includes many exhibitions (including Oxford) and publications in books, magazines and encyclopedias; technical papers and a cloud manual. All of this the more remarkable, since Mr. Verkaik has overcome a serious physical handicap, resulting from a near-fatal accident when he was 21. However this did not deter him from a life-long fascination and love of the sky. What he has accomplished does credit to all of us. And don't be surprised if, the next time you sell several slides to a magazine or museum (as I recently did to the Maryland Science Center Planetarium in Baltimore), you find that Ed's already been there. His work does get around.

(Editor's Note: I apparently have an incorrect address for Marty Feely or else he has recently moved from 316 South University Boulevard, Norman, Oklahoma 73069. If any of you know his current whereabouts, please let me know. Thanks.)

† †  
† †

## III. LETTERS/PHONE CALLS TO THE EDITOR

(Please note that the Editor considers any written or phoned material to him to be eligible for

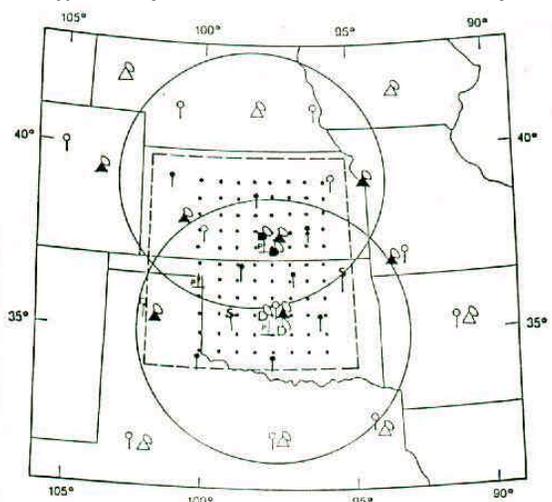
inclusion in the newsletter, unless specifically identified by the author as private in nature. Naturally, he tries to use good judgement on what is included and how it is edited. Unless you indicate otherwise, he will continue in this respect.)

Once again, the mail bag is full to overflowing with good letters, inquiries and comments. I will include as many as possible here, considering their immediate interest to readers. Storm Track is going out a little early this month to give you timely information on the following two meetings.

Walter F. Kelley, the Emergency Management Coordinator for Potter and Randall Counties in the Texas Panhandle writes that Amarillo is planning a "Severe Weather Seminar" for Saturday, March 30. "I am planning to invite emergency personnel, local officials and interested parties from throughout the Texas Panhandle. We will have sessions throughout the day from local, State and Federal agencies, and intend to beef up our tornado preparedness and spotter procedures." For additional information, you should contact Mr. Kelley (806-378-3022).

Dr. Joseph H. Golden, from the National Weather Service headquarters, has provided information about a forthcoming NEXRAD Symposium (Next Generation Weather Radar) from April 1-3 at the University of Oklahoma in Norman. Discussion subjects will include (1) Timely flood warnings; (2) Comprehensive aviation weather radar information; (3) Precise hurricane and coastal storm warnings; (4) Accurate thunderstorm tracking; (5) Water resources management; and (6) Improved tornado warnings. Sponsoring agencies are the Departments of Commerce, Defense and Transportation. Some of the sessions will address aviation concerns on windshear, microburst and downburst hazards; controllers display needs; military requirements; private meteorological uses; media applications; etc. Due to the lateness of this notice, the registration form has not been copied, but -if interested in attending- you may phone SES, Incorporated at 703-644-9472 (8AM to 5PM EST). Your Telex or computer can also be used by calling 910-350-4499 SESINC UD. Registration fee is \$50 -- no refunds or any cancellations after March 29.

Another news item from Dr. Golden is information on the PRE-STORM field research program beginning this spring and continuing for the next two years. It is part of a multi-year study program to improve warnings and predictions of stormscale phenomena. PRE-STORM (Preliminary Regional Experiment



- Boundary of Measurement Network
- △ Existing NWS WSR-57 Radars
- ⊞ NSSL Doppler Radars
- ▲ Existing NWS WSR-57 Digitized Radars (RADAP II)
- ⊞ Proposed Doppler Radar Sites
- Solid line circles indicate range of lightning location sensors
- ⊞ Existing NWS Rawinsonde Sites
- ⊞ Proposed Rawinsonde Sites
- ⊞ Proposed Profiler Locations
- Proposed Surface Mesonet Sites
- ⊞ Proposed Safesonde Sites

for Storm Control) will investigate slow moving, mesoscale convective systems (MCSs). These are the large clusters of cells that occasionally develop, maybe covering half a state, in a complex, interacting and massive rain/storm shield. They are responsible for most of the beneficial rainfall and nearly all the severe weather that occurs in the spring and summer. Specifically, PRE-STORM will address field testing and evaluation of sensor systems and sensing strategies as well as collect preliminary data. These findings will contribute to the MCS study goals of STORM-Central, whose intensive phase will be during the spring/summer of 1988. That study will focus on developing fundamental understandings on the genesis, evolution and structure of MCSs and the techniques to forecast them. STORM-Central, in turn, will be just the first of three major phases of the National STORM Program. PRE-STORM sensors will include airborne Doppler radar and a dense surface network with (a) seven digitized WSR-57 radars; (b) two dual Doppler radar pairs (Norman/Cimarron and in south-central Kansas); (c) four NWS sounding sites (every three hours on active days); (d) twelve supplemental rawinsonde sites (some soundings up to 90-minute intervals); (e) three wind profiler

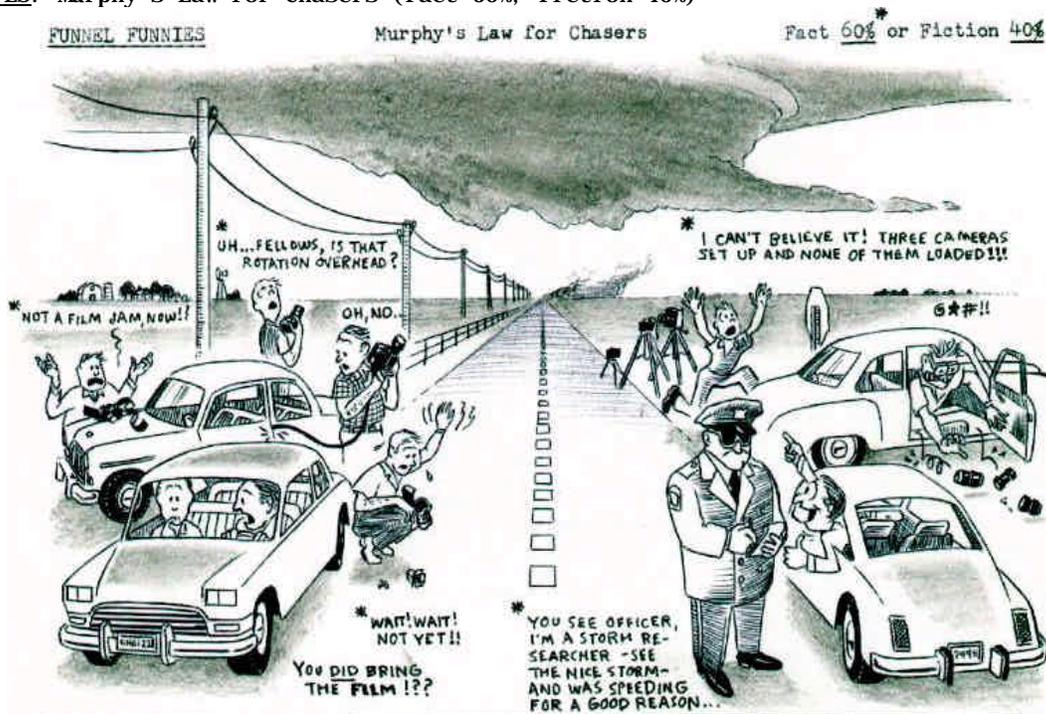
**PRE-STORM** systems; and (f) about 80 automated surface (Mesonet) measurement systems spaced at intervals of about 50 km and over about two-thirds of the experimental area (See illustration above). Additional information may be obtained from Mr. John Cunning, NOAA/WRP; Dr. William Hooke, NOAA/WRP; or Dr. Edwin Kessler, NOAA/NSSL, among others.

Pat Market writes from Pennsylvania that "I found a little equation in a book, which I believe was titled 'Experiments in Meteorology' by Leslie Trowbridge. It is used to find approximately the base-height of convective cumulus. The equation is  $227 * (T_o - D_o)$ ; where  $T_o$  is the true air temperature at the ground and  $D_o$  is the dew point temperature at ground level" (The Editor assumes a Fahrenheit scale was intended). "I sent the same equation to Dr. Robert Ross at Millersville University in Pennsylvania. His reply was that it worked fairly well for convective cumulus."

Sam Barricklow (K5KJ), from Texas, has sent a list of VLF/LF Weather Beacons, Ham Radio Weather Nets and other HF Ham Radio Nets. Due to space limitations, we can only include the U.S. spread. His international list will appear in a future ST. "Not knowing how familiar you are with Ham Radio and its relationship to Skywarn activities, let me explain a little about this subject. The primary band of operation for actual spotting activities is the 'two-meter' band, 144 to 148 MHz. The two meter band is capable of 'line of sight' communications -- on the order of maybe 50 miles maximum. The HF bands are used for communication over a larger area, possible due to ionospheric propagation. The HF spectrum covers 3 to 30 MHz. The Ham bands located in this part of the spectrum are used to pass information about weather events between geographically separated groups. If a disaster of some type occurs, Ham groups will typically set up operations in the disaster area and provide supplemental communications for various relief and law enforcement organizations. ... Ham radio is an excellent source of information, when you're out chasing. Oh yes, if you witness a tornado in an isolated area and there is a need for assistance, you may be the only timely means of obtaining help, assuming you have the required equipment and license.

The HF Weather Nets usually 'meet' daily during the week and relay weather data to the Weather Service. This data includes maximum, minimum and current temperature, wind speed and direction, relative humidity, barometric pressure and sky conditions. The other nets listed are used during emergencies or for general traffic handling. Also included is a crude sketch map showing two-meter

**FUNNEL FUNNIES:** Murphy's Law for Chasers (Fact 60%, Fiction 40%)



repeater frequencies in the southern plains that have Skywarn activity. -- If you're interested in purchasing a receiver to pick up these nets and beacons, let me suggest the Kenwood products, specifically one of the following: Model R1000, R2000 or the F600. Of all the general coverage shortwave receivers on the market, these are the best for the money. If you're interested, pick up a copy of QST magazine, published by the American Radio Relay League (ARRL) in Newington, Connecticut. There are lots of ads for this type of equipment. If you're interested in getting your Ham Radio license, the ARRL can steer you in the right direction. Having a Ham radio transceiver in your car can be very valuable, not only as an information source but also as a possible source of help in an emergency.

Hopefully this information will be of use to you and other chasers. Oh yes, I generally use either 7.213 MHz\* (an informal mobile net) at mid-day or 3.900 MHz\* (Oklahoma Weather Net frequency) at night, depending on propagation and my location. Good luck."

LF/VLF WEATHER BEACONS	HF WEATHER NETS (WN) -Central Time	OTHER HF NETS OF INTEREST
206 KHZ Houston, Tx.	Arkansas WN 3.995 MHz As needed	Arizona... 3.950 MHz 8:30AM
230 KHZ Shreveport, La.	Colorado WN 3.945 MHz 7AM Central	Arkansas.. 3.995 MHz 6:30PM
236 KHZ New Orleans, La.	Kansas WN 3.920 MHz 7AM & 6PM	Sooner Net 3.850 MHz 5:30PM M-F
305 KHZ Roswell, N.M.	Missouri WN 3.963 MHz 5:30PM Daily	Oklahoma.. 3.6825 MHz 7PM
326 KHZ Amarillo, Tx. & Pensacola, Fl.	Mid-States WN 3.940 MHz 6PM	Oklahoma.. 3.740 MHz 9PM TTSS
350 KHZ Oklahoma City, Ok.	West Nebraska WN 3.950 MHz 8AM Mon-Sat.	Missouri.. 3.963 MHz 6PM
365 KHZ DFW Airport, Tx.	Oklahoma WN *3.900 MHz 5:45PM	Kansas EC..3.920 MHz 7PM Tues.
375 KHZ Orlando, Fl.	S. Dakota WN 3.960 MHz 7AM Mon-Sat.	Informal
		Mobile Net*7.213 MHz Daytime



Last May, when I took my VW Rabbit diesel in for its normal pre-trip checkover, a crack was found in the cylinder head (at 125,000 miles). This was discovered on Tuesday and repaired on Wednesday. Counting myself fortunate not to have had that problem a thousand miles from home, I authorized the expensive repairs. Relieved to have this behind me, I was then flooded Wednesday afternoon by word from the garage that I must have the new cylinder head retorqued between 800 - 1,000 miles. In only two days (Friday evening), I was scheduled to be on my way. Fresh on the heels of the Carolina tornadoes and with apparent indications of a very active May, I was very anxious to leave. However, the immediate options were difficult (1) Do I drive 1,000 miles to Arkansas and then sit there all day Sunday and part of Monday (two days wasted), with possibly indifferent service from a VW dealer who knew he'd never see me again? or (2) Drive around the Washington area until Monday and lose three days -- but get possibly better service on a very expensive repair from my own dealer? or (least logical and almost impossible) (3) Drive off the 800 miles between Wednesday evening and Friday morning, when it could be returned for a brief re-torque adjustment before going to work. I figured I could put on 400-500 miles each of the two evenings after work (and into the morning). I discussed these options with Nancy, and she said with hardly a hesitation, "Why can't we drive those miles by Friday?" Wow! She was concerned that I would drive out Friday evening, thoroughly exhausted, on the usual 1,500 mile, 1 1/2 day charge west. Was I relieved! So, Wednesday evening, she gave me a sack dinner, and I headed out right after work. I drove almost to Bristol, Virginia (SW corner of State) before returning at 5:00 AM, over 500 miles later. After an obligatory three hour sleep Thursday morning, I went to work, and Nancy took over the last leg of this bizarre effort. She drove almost 400 miles more, in moderate to heavy rain and through sometimes blinding spray-wakes from passing trucks. But, we did it! Friday morning, I was first in line for the retorquer job. The service manager couldn't believe we had actually driven 900 miles in just 37 hours, since picking the car up Wednesday evening. The work was finished, and I left on time late Friday afternoon. Without a true chaser's wife, that never would have happened! It's one of those little stories on us that we'll always remember. With support like that at home, you can be sure I count myself damn lucky!!

#### IV. BULLETIN BOARD/COMMERCIAL MARKET - \$- FOR PICTURES

#### V. CAMERA TIPS

#### VI. TRAVEL TIPS

#### VII. FEATURE #1

#### Addendum to Last Issue's Article on Terminology and Dynamics

John Weaver writes "When I made my comments on your tornadic thunderstorm diagram, it was late at night, and I had a lot of other projects on my mind. It didn't occur to me that my suggestion regarding the vorticity along the storm's micro-warm front would develop into anything as complex or formal as it became. Since the situation evolved as it did, I would like the opportunity to expand a bit. In particular, there are two points.

First, on re reading my note, I agree with Chuck Doswell that the emphasis on the horizontal circulation at the micro-warm front may have seemed too strong. My comment could easily be understood to mean that most meteorologists believe this circulation to be the primary vorticity source for tornado production. This is not the idea I wanted to convey. I personally do not believe there is any single vorticity source which accounts for all tornadoes. However, for large tornadoes -- in supercell situations -- the micro warm frontal region probably does supply the low level vorticity requisite to tornado formation, as shown by Klemp and Rotunno. But I also believe that to realize this vorticity in the form of a tornadic circulation, a great deal of 'stretching' of the updraft is needed. This final ingredient (I think) is supplied with the onset of the rear-flank downdraft. Regardless of the final solution of the problem (i.e. the exact nature/order of the mechanisms of tornado production) though, my intent, was to convey that I felt it very important to at least show the feature in your figure.

Second point. In my letter, I said 'in stronger situations, I think this process becomes visible with the formation of the tail cloud.' Most readers apparently took this to mean that I think the tail cloud results from the warm frontal vorticity. Not so. What I meant was that I have actually seen the horizontal circulation in the scud along the micro-warm front in a few storms, which happened to have a tail cloud at that interface. Further, I'm sure we've all seen the larger cloud elements advecting into the updraft from the east. In this manner, the Klemp-Rotunno scenario is observed to occur in the real-life laboratory.

...even though my first remarks were written pretty hastily, I still think the discussion in the last Storm Track ... is an extremely interesting and informative exchange. The abstract does represent a look at the present 'frontier' of tornado research. Take care."

#### VII. FEATURE #2

#### Chasers Nightmare Summary of Typhoon Bill By Barbara White

On November 9, 1984, Al and I were flying back from the Philippines, after chasing Typhoon Agnes (Undang). The stewardess began handing out newspapers from Manila and Guam. I was pleasantly surprised to see a satellite picture of the West Pacific area for a change (Usually, the Joint Typhoon Warning Center, JTWC, only provides U. S. mainland photos to the media). It seemed too good to be true, when I

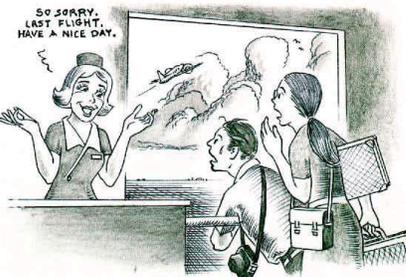
saw there was another tropical storm east of Guam. The thought of a third chase in three weeks was fantastic.

After arriving back on Guam and unpacking from the last chase, I rushed over to the Naval Air Station weather service office to see what was going on. I thought I was in heaven, when I found Guam to be under storm warnings for the third time in three weeks! Tropical Storm Bill had formed November 8, approximately 600 miles ENE of Guam. On November 11, 00Z, it was upgraded to typhoon status with sustained winds of 70 knots. The advisory was moving the typhoon west at 5 knots, while the satellite picture showed Bill to be expanding in size with very concentrated convection. The radius of 50 knot winds were 80 miles to the north of the center, but only 35 miles to the south.

With the typhoon being positioned ENE of Guam and a straight westward movement forecast, Rota Island was the closest point of approach (CPA). With Rota only 40 miles north of Guam and Saipan 120 miles NNE of Guam, I had to decide which location would receive the most impact from the storm. At the same time, the JTWC was forecasting Bill to pass just north of Rota, with a straight westward movement through the Mariana Islands. Bill could just as easily veer slightly south of due west and pass over the northern tip of Guam. The most likely possibility seemed to be a drift to the north of west, with Bill passing between Rota and Saipan. Tropical cyclones are notorious for fighting to turn northward. But a high pressure ridge to the north of the storm was strengthening rapidly, and Bill was forecast to increase its forward speed to 16 knots -- while passing through the islands. I had to make the crucial decision on whether to go to Saipan, Rota or remain on Guam. One rule of typhoon chasing is 'never position yourself on the south side. That is the weakest, with the radius of typhoon/gale force winds usually only 1/2 to 1/3 that on the north side; also, Guam has only been approached once since 1948 by a storm from north of due east.

There were three flights a day from Guam to Saipan and only one flight to Rota. Continental Air Micronesia flew to and from Saipan three times daily, but only twice weekly to Rota. If I had flown to Rota, I would have been stranded for three days. The schedule to and from Saipan was tolerable. I knew if I delayed much longer, I'd be pushing for gales. The radius of gale force winds was expanding as Bill intensified. On November 12, I bypassed the 6:30 AM flight to Rota and decided to take the 7:00 AM flight to Saipan. If I'd waited until the 2:30 PM flight, I'd be asking cancellation due to gale force winds. We arrived on Saipan at 7:25 AM and set up at the Surf Hotel (all of the hotels were located on the leeward side of Saipan, so there was no threat from storm surge. At 8:00 AM, the storm advisory placed Bill 300 miles ESE of Saipan, moving west at 8 knots, and forecast to pass 65 miles north of Guam by 6:00 AM, Tuesday, November 13. -- - Having slept only two hours the previous night, we decided to get a couple hours sleep before the gales arrived. Awakening at 1:00 PM, I became very concerned when I found the need to put on my sunglasses! The 9:00 AM advisory indicated 'An Eyewall Relocation!!!' For some reason, eye relocations always seem to be for the worse instead of for the better. Bill was relocated about 25 miles south of the last position, but no change was shown in longitude or forward movement.

At 2:00 PM, the new advisory was issued. I almost fell on the floor when I heard that Bill had changed course and was heading west southwest at 10 knots! Although the advisory said the typhoon could change course again, by then I knew it wouldn't. We threw everything together and rushed to the airport, missing the last flight out by 10 minutes! All other flights leaving Saipan for Guam were canceled due to the issuance of 'Condition One' on Guam. We tried every avenue to get a flight of some type to Guam but to no avail. It was obvious we were stranded on Saipan, while Bill was bearing down on Guam. It continued moving WSW, passing 12 miles



south of Guam (!) at its CPA, with sustained winds of 75 knots, gusting to 95. Winds at the Naval Air Station were recorded gusting to 61 knots, or just under typhoon force. Cocos Island and southern Guam were in the eye wall, and winds were estimated to have been sustained at 70 knots. -- - We arrived back on Guam at 4:00 PM, November 13 and did a thorough damage survey. The southern end of Guam received the most damage, with the banana crops totally flattened. Several of the poorly constructed houses (wood with corrugated tin roofs) were destroyed. There was flooding from mountain runoff but very little flooding visible from storm tides. Damage was very minimal.

Barbara ended her cover letter to me with a little homespun philosophy that every chaser will appreciate. Although that letter was regrettably mislaid, I recall the substance as follows: - - - While this chase was frustrating, chasers should understand that they can't always, or even often, be successful. This is also part of storm chasing and must be understood, so when success comes it is all the more appreciated. (Thanks Barbara!)

Out of space again. As per usual, the May 31 issue will be delayed several weeks, while the Editor is out chasing during this period. The May outlook is very uncertain. Despite several phone calls, most meteorologists are unwilling to commit that far ahead. All concede it's been quiet so far. Finally, despite a recent Weatherwise notice about a "Tornado Chasing" article from me (their idea), no draft has even been sent. Moreover, I have many misgivings about seeming to encourage such risk taking. So nothing is settled on this.