



The Mid-South Chronicle

National Weather Service
Memphis, TN

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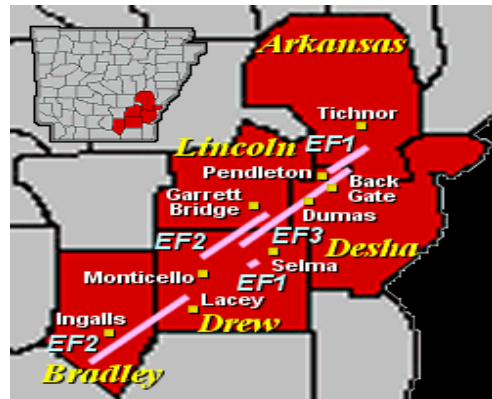
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How The NWS Surveys Tornadoes

By Jim Belles
Meteorologist-In-Charge

A tornado causes catastrophic damage to your community. Indeed lives and the very face of your city are changed forever. What degree of wind could cause such destruction? The answer to that question is what a National Weather Service Storm Damage Assessment Team is tasked to figure out. And it's a tough question to answer, especially since the wind speed in a tornado is very rarely ever measured directly.

After a significant severe weather event, our office will usually send trained meteorologists out to the field to survey the damage. What are we looking for? First we must determine whether the damage was caused by either a tornado or thunderstorms winds. Thunderstorm winds descend rapidly striking the earth from thousands of feet above. These "straight-line" winds are not twisting like in a tornado, but rather spread out in a fan-like pattern once they strike the earth. Their force can be considerable, causing significant damage to structures. Since straight-line



5 Tornado Paths Across SE Arkansas on Feb 24

winds are so strong, witnesses often report a "freight train" sound, typically associated with tornadoes.

Once at the damage site, our meteorologists will attempt to recognize the damage pattern. Since tornadoes exhibit a suction vortex, a convergent damage is expected; while straight-line thunderstorm winds produce a fan-like pattern from the point

Continued on Page 5...

Storm Based Warnings: A Sub-County Level Warning Methodology

By Rich Okulski
Warning Coordination Meteorologist

The National Weather Service has issued Tornado, Severe Thunderstorm and Flash Flood Warnings on a county wide basis since the 1960s. People are accustomed to seeing "The National Weather Service in Memphis has issued a Tornado Warning for Shelby County in southwest Tennessee until 945 pm..." Our knowledge of severe weather development and our observational tools such as the WSR-88D Doppler Radar have greatly improved over the past 40 years. We have the skill to issue these

warnings at a resolution smaller than whole counties. The challenge is how to define and describe these higher resolution warnings.

The NWS has included latitude/longitude point pairs at the bottom of Tornado, Severe Thunderstorm and Flash Flood Warnings since the late 1990s. An example of such a warning is shown below (the LAT/LON pairs are highlighted in blue):

Continued on Page 7...

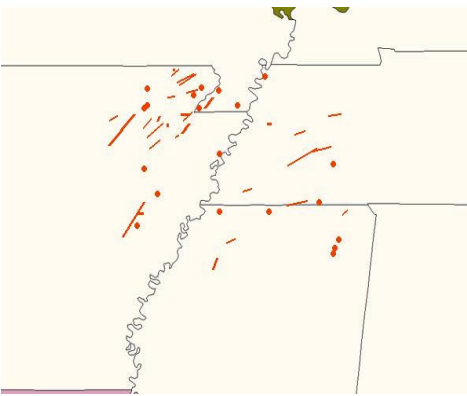


Mid-South Tornado Database Completed

by Scott McNeil
Senior Forecaster

After nearly two years of work, the Mid South tornado database is finished. The goal of this project was to create a comprehensive compilation of the tornadoes that have impacted the Mid South in modern times. Several sources of information were used for this task including, "Significant Tornadoes, 1680-1991 and Significant Tornadoes, Update, 1992-1995", both by Thomas P. Grazulis, The Storm Prediction Center Tornado Database, 1950-1995 and Storm Data, 1950-present. These sources were scoured for Mid South tornadoes that were

Mid-South Tornado Tracks In 1999



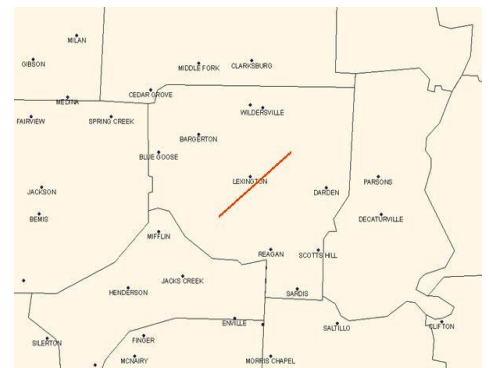
then placed into a database. The database includes the date, time, Fujita scale, injuries, deaths, path width, path length, event description and a map of each tornado track.

The first tornado recorded in the Mid South occurred on March 28, 1873. This tornado struck near what is now Downtown Memphis and damaged 50 homes. From 1873 to 2005 over 1,000 tornadoes were catalogued across the Mid South. Sixty percent of these tornadoes occurred from 1970 to 2005. Does this mean tornadoes are becoming more frequent? Not necessarily. As the population density of the Mid South continues to grow, it becomes more likely that a tornado will either be spotted or result in property damage. This is probably the main reason why Shelby County has recorded more tornadoes than any other Mid South county since 1873. It is simply the most populated county. Years ago a weak tornado may have gone completely unnoticed or may have been mistaken for straight line winds.

Also, limitations in communication systems may have prevented the dissemination of tornado damage information for many events. Email, mobile phones, internet and mass media make it much easier to relay damage reports in the year 2007.

This database will be a tremendous historical reference for educators, emergency management personnel and weather enthusiasts alike. After some needed hardware upgrades the Mid South tornado database should be available online sometime in 2007.

F4 Tornado Track that inflicted heavy damage in Lexington, TN on Apr 3, 1956



Terminal Doppler Radar Comes To Memphis

By Dean Klimt
Electronic Systems Analyst

In the never ending struggle for detection, increased lead time, and lower false alarms, NWS Memphis has a new ally in the war on severe weather. The Terminal Doppler Weather Radar, TMEM, became available for use on Feb 24, 2007. TMEM is owned by the FAA and is located south of Memphis in DeSoto County. TMEM's radar coverage coupled with the NWS's, KNQA, gives forecasters a powerful one-two punch in the early detection and tracking of severe weather throughout the Mid South.

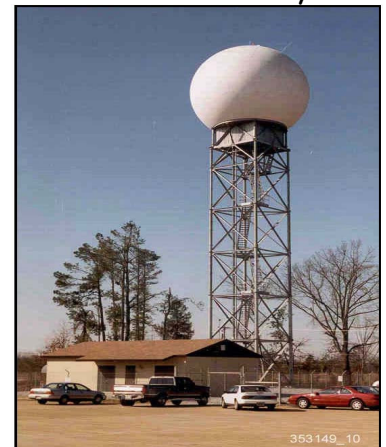
In other radar news, in conjunction with an increased internet bandwidth, the Memphis Information Consortium

(MIC), has completed configuration changes allowing more data to flow into the NWS from neighboring radars in Arkansas, Kentucky, and Middle Tennessee. This will allow forecasters to better examine thunderstorms in greater detail.

Meanwhile, what is new with KNQA? An upgrade has been completed which replaces many of the analog components in the radar's receiver with digital components. This will require less maintenance and have a lower failure rate. Next up on the horizon, Dual-Polarization and further down the road, Phased Array Antenna. So the future of weather radar is change, and

it is coming fast. As always, the Electronics staff is standing by to provide support.

TMEM in DeSoto County



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CoCoRaHS is Coming to Tennessee April 1st!

By Zwemer Ingram
Data Acquisitions Program Manager

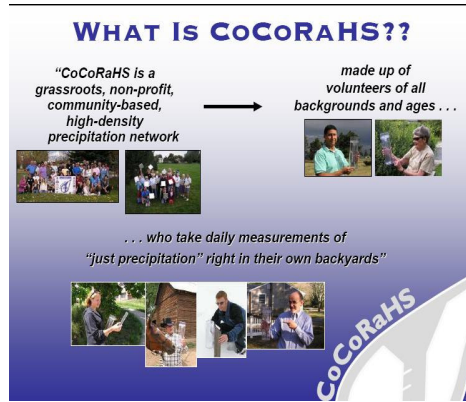
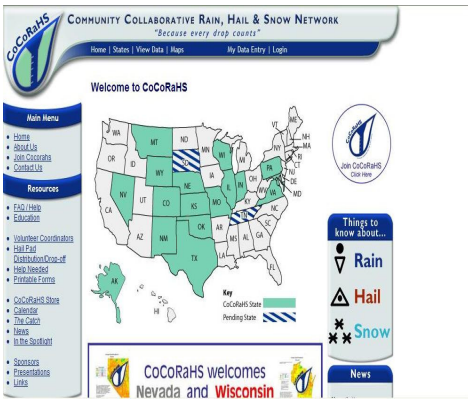
CoCoRaHS is a grassroots volunteer network of backyard weather observers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow) in their local communities. By using low-cost measurement tools, stressing training and education, and utilizing an interactive web-site, our aim is to provide the highest quality data for natural resource, education and research applications. The only requirements to join are an enthusiasm for

watching and reporting weather conditions and a desire to learn more about how weather can effect and impact our lives.

How does one join CoCoRaHS? Visit www.cocorahs.org. Then, click on the "How do I Join Circle" at the top right on the home page, then fill out and submit the handy form.

What do you need? You'll need the Login ID and Password that will be supplied to you after you submit your

form to join CoCoRaHS as well as an official 4 inch rain gauge and a suitable location to install your rain gauge. You can purchase a rain gauge by clicking on the link about midway down on the right side of the CoCoRaHS home page. All the training you need can be found on the CoCoRaHS home page. In addition, if you have any questions, feel free to contact your West Tennessee volunteer coordinator, Zwemer Ingram at 1-800-432-0875.



Local Meteorologist Visits The Storm Prediction Center

By Rich Okulski
Warning Coordination Meteorologist

Warning Coordination Meteorologist Rich Okulski travelled to the Storm Prediction Center (SPC) in Norman, Oklahoma in mid February. The purpose of Rich's recent trip was to enhance severe weather watch collaboration between NWS Memphis and SPC and to discuss ongoing severe weather climatology re-

SPC's New Building in Norman, OK



search at our local office.

The issuance of Tornado and Severe Thunderstorm Watches are a joint responsibility shared by SPC and local Weather Forecast Offices. SPC proposes a watch area based on environments conducive to tornadoes, damaging winds or large hail in the 0 to 6 hour time frame. SPC conducts a collaboration conference call with the impacted offices to discuss watch type, duration and areal coverage.

Rich shared with SPC employees the impact of watches on key partners such as broadcast meteorologists and emergency managers. For example, these key partners are more likely to call staff in for overtime for Tornado Watches as compared to Severe Thunderstorm Watches. In addition, the time of day often affects the duration of a watch. It is a good idea to issue a watch at 9 pm for potential

tornado events at 3 am in order to raise the public's situational awareness prior to them going to sleep for the night.

Forecasters Jonathan Howell and Scott and Kati McNeil just completed a severe weather climatology database. They are reviewing data from hundreds of past severe weather events in order to define atmospheric thresholds for tornadoes and damaging winds. The results for their work will assist WFO Memphis staff, SPC and surrounding local forecast offices in their analysis of the type of event the Mid South can expect when severe weather is in the forecast.

SPC was enthusiastic about the ongoing research project and offered to assist if needed. Members of the severe weather climatology team expect to travel out to SPC late this year and present the results.

Flood Safety In The Mid-South

By Corey Chaskelson
Forecaster

As temperatures warm, thunderstorms will occur across the region. Locally, across the Mid-South, the greatest producer of flash flooding is from slow moving or multiple thunderstorms moving over the same areas.

As development in cities and surrounding areas increase, the construction of buildings, highways, driveways, and parking lots will increase the amount of runoff occurring from thunderstorms which overwhelms storm drains.

Did you know that nearly half of all flash flood fatalities occur in vehicles? Contrary to popular belief, it takes as little as 6 inches of water to carry away a Sport Utility Vehicle (SUV) or a Truck when water is moving swiftly across a road. Hidden hazards also persist during flooding, especially in densely populated cities. Very often water erodes the road bed creating unsafe driving conditions. Under-

passes can fill rapidly with water while other areas remain relatively dry.

A roadway can be completely washed out or severely damaged and potentially claim victims as was the case in Tishomingo County Mississippi in August 2004. Your National Weather Service in Memphis recommends when driving down a road and you encounter a flooded roadway simply Turn Around and Don't Drown.

When a Flash Flood Watch or Warning is issued for your area, have a plan of alternate routes to use to arrive at a destination safely and listen to NOAA Weather Radio for the latest weather conditions. A few minutes of inconvenience is much better than being involved in a life-threatening weather related event.



What Should I Do When A Heat Wave Strikes?

By Jim Belles
Meteorologist-In-Charge

Long periods of stifling heat are common across the Southeast during the summer months. Often the heat is accompanied by high humidity which adds to the heat stress. It's during these oppressively hot periods that precaution against the elements is vital.

Between 175 and 200 Americans die annually from summer heat. Why is the heat so deadly? The body cools itself by perspiration, which evaporates and cools the body. Add extreme heat and humidity, and evaporation is slowed and the body must work extra hard to maintain a normal temperature. Elderly people, young children, the overweight, and

those who are ill are most at risk.

The National Weather Service has devised the "Heat Index" or HI, which is used to meas-

ure how hot it really feels when relative humidity is added to the actual air temperature. A HI of 90 to 105 means sunstroke, heat cramps and heat exhaustion are possible with prolonged exposure or physical activity. A HI of 105 to 130 means sunstroke and heat cramps are likely with prolonged exposure or physical activity. It's important to note that the Heat Index values were devised for shaded conditions. Exposure to the full sun can increase HI values by up to 15 degrees.

You can prepare yourself and family for excessive heat and humidity by listening for advisories and warnings issued by the National Weather Service (NWS).

The NWS issues a **Heat Advisory** when: 1) an afternoon HI of 105 degrees is forecast or observed during two (or more) consecutive daytime periods, with an intervening overnight minimum air

temperature of 78 degrees or greater, or 2) anytime the HI is forecast or observed to be 110 degrees or greater.

The NWS issues an **Excessive Heat Warning** when the HI will be 110 or greater for at least two days with nighttime lows of 75 degrees or greater.

The following are a few safety tips to follow during heat waves:

1. Drink more NON-alcoholic beverages
2. Wear light color and loose fitting clothes
3. Stay inside air conditioned places as much as possible. Check on those who live without air conditioning, especially the elderly. If you don't have air conditioning, stay near a fan.
4. Do outdoor activities in the early morning and evening hours, when temperatures are at their coolest.



How The NWS Surveys Tornadoes...continued

of impact.

Next, the survey will focus on the strength of the straight-line or tornadic wind. As mentioned, in most cases, direct wind speed measurements are unavailable; therefore, we must indirectly determine the wind speed from examining the damage to structures. This method utilizes the famous Fujita or F-Scale. The F-Scale was developed by the late Theodore Fujita, professor of meteorology from the University of Chicago. During his career, Dr. Fujita surveyed damage caused by hundreds of tornadoes and straight-lined winds. Recently the F-Scale was revised. This year an updated version called the Enhanced Fujita Scale (EF-Scale) will be used.

EF-Scale Wind Speed (MPH)	
EF0	65-85
EF1	86-109
EF2	110-137
EF3	138-167
EF4	168-199
EF5	200-234

Despite the EF-Scale guidelines, relating damage to wind speed can be tricky since not all structures are built with the same integrity. The meteorologist surveying the damage must gain insight into the quality of the structure that was damaged; only then can the EF-Scale be accurately applied.

Here is an example from the devastating tornadoes that hit west Tennessee in April 2006. The picture below shows a house ripped and destroyed from its foundation. Without regard to building integrity, based on the original Fujita Scale this tornado would rate an F4 or greater. However, upon close inspection we find that the house was essentially setting on a block foundation unattached. In addition, other objects nearby, trees and shrubs did not indicate wind speeds of an F4 or greater tornado. Consequently, this tornado was rated a high F3. Under

the EF-Scale, this tornado would also be rated an F3.

Remember the EF-Scale can apply for any type of wind damage, including straight-line or twisting. Research has shown that straight-line winds can occur up to 150 miles per hour; that's the strength of a moderate sized tornado! Now you can understand why straight-line winds of that magnitude can cause significant damage to a well constructed home or totally destroy a mobile home.



NWS Interns Earn Forecast Positions

By Dan Valle
Forecaster

Jason Beaman and Jody Aaron, former Meteorological Interns with the National Weather Service in Memphis, recently received promotions to General Forecasters. These promotions required Jason and Jody to relocate to Raleigh, North Carolina and Birmingham, Alabama respectively.



Jason Beaman

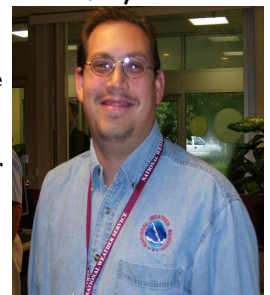
Jason worked in the Mid-South for 3 years and was a leader in the Memphis office. He was involved in several local research projects involving severe thunderstorms. He also per-

formed a considerable amount of outreach including the training of storm spotters and educating the public on the dangers of severe weather. Jason worked quite extensively with emergency managers and media prior to severe weather outbreaks to ensure that they were aware of the hazardous situations. Jason's radar experience was invaluable on April 2nd, 2006 as deadly tornadoes raced across Arkansas, Missouri and Tennessee. He helped to issue warnings that undoubtedly saved many lives.

Jody served in the Mid-South for 1 ½ years. Jody was a wiz when it came to statistics and performed intriguing research on the local climatological data. He was also a local expert with

regards to hurricanes and was a great meteorologist to have around during the deadly 2005 hurricane season. Jody was an excellent team player, especially during severe weather situations. His composure under tough situations ensured that forecasts and warnings were timely and accurate.

Although their talents as interns will be missed in the Mid South, they will continue to be very valuable assets to the National Weather Service family as forecasters.



Jody Aaron

Long Time Employee Retires

By Dan Valle
Forecaster

Gerry Rigdon, most recently Science and Operations Officer at the National Weather Service in Memphis, is prepared to retire at the end of March, 2007. Gerry received an undergraduate degree in meteorology from Penn State University and a Master of Arts in management from Central Michigan University. He began his career in January of 1968 at the United States Weather Bureau (now called the National Weather Service) in New York City. As an intern, working in Rockefeller Center, Gerry analyzed maps and performed weather broadcasts for area radio stations.

Seven months later, Gerry answered the call of duty from his country by joining the Air Force. He spent 3 months at officer training school in San Antonio, TX. Then, he was transferred to Dover, DE. Gerry spent a year and a half in Dover giving pilot weather briefings and issuing severe weather warnings for the base. In the summer of 1970, he was transferred to Fuchu Air Station outside of Tokyo, Japan. While in Japan, he performed map analysis and forecasts for all of Asia.

Gerry left the USAF in February of 1972 and rejoined the National Weather Service in Charleston, WV. He spent 2 years as an Intern/Forecaster before moving on to the National Meteorological Center (now called the National Centers for Envi-

ronmental Prediction or NCEP) in Washington D.C. As a meteorologist at the NMC, Gerry produced surface map analyses and forecasts for the U.S. In 1977, he became a General Forecaster at the NWS Forecast Office in D.C. He was responsible for issuing aviation forecasts, marine forecasts for half of the Atlantic Ocean, and the local forecast for Virginia, Delaware and Maryland. Later, Gerry became the Weather Service Evaluation Officer or WSEO for the Mid-Atlantic Region. As the WSEO, he inspected area Flight Service Stations and Weather Service Offices to ensure that they were issuing high quality forecasts. Also, Gerry helped to modernize the D.C. office by writing much of the software for AFOS (Automation of Field Operations and Services). This system was the backbone for how the weather service issued its forecasts for many years. All of this hard work earned him a promotion to Senior Forecaster in 1983 at the office in D.C.

In 1985, Gerry moved from D.C. to Houston, Texas. Gerry had a new challenge; he was put in charge of NASA's Space Flight Meteorology group. This group is responsible for issuing the forecast for the shuttle program. Gerry was tasked with leading this group to modernize the worldwide weather support for the shuttle by improving the computing technology and technique development. Gerry can recall the Challenger incident viv-

idly as he was in mission operations at the control center at the time of the accident.

In 1991, Gerry left Houston and moved on to Slidell, Louisiana to be a Senior Forecaster once again at the local NWS weather forecast office. In 1994, Gerry accepted the Science and Operations Officer position in Memphis. Gerry was a key component in modernizing the Memphis office by helping to install AWIPS (Advanced Weather Interactive Processing System). AWIPS is an improvement over AFOS in that it allows forecasters to receive and transmit weather information much faster. Gerry was also responsible for training the forecasters on this new system and their new radar, the Doppler radar. The training that Gerry has provided with AWIPS and the radar has undoubtedly saved hundreds if not thousands of lives by teaching forecasters how to issue warnings that are timely and accurate.

When asked his reason for retiring, Gerry says that the office is now modernized. His biggest accomplishment has been in modernizing offices. Gerry now plans to move to Florida with his wife of 15 years, Carolyn. He wants to learn how to golf, but mainly just wants some well deserved rest and relaxation.

Thanks for everything you've done for the weather service Gerry!



Polygons - A Sub County Level Warning Methodology

By Rich Okulski

Warning Coordination Meteorologist

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TORMEG
TNC023-113-152315-
/O.NEW.KMEG.TO.W.0052.051115T2245Z-
051115T2315Z/

BULLETIN - EAS ACTIVATION REQUESTED
TORNADO WARNING
NATIONAL WEATHER SERVICE MEMPHIS TN
445 PM CST TUE NOV 15 2005

THE NATIONAL WEATHER SERVICE IN MEMPHIS HAS
ISSUED A

* TORNADO WARNING FOR...
CHESTER COUNTY IN SOUTHWEST TENNESSEE
MADISON COUNTY IN SOUTHWEST TENNESSEE

* UNTIL 515 PM CST

* AT 442 PM CST...NATIONAL WEATHER SERVICE
DOPPLER RADAR INDICATED A TORNADO 7 MILES
SOUTHEAST OF BEMIS...OR ABOUT 8 MILES NORTH-
WEST OF HENDERSON...MOVING NORTHEAST AT 45
MPH.

* THE TORNADO IS WILL BE NEAR...
MIFFLIN BY 455 PM CST

LAT...LON 3561 8861 3559 8857 3552 8851 3550
8859 3547 8863 3541 8876 3554 8886 3557
8886 3570 8861

If you plot the point pairs, it depicts the "area of maximum impact" or polygon. The rest of the county outside the storm based polygon is often unaffected by a severe weather hazard, but people take cover because they are in the warning! The NWS conducted a 23 office demonstration in 2005. We found that using a storm based methodology reduces the false alarm area or area which did not need to be in a warning by up to 72%! Dr. Daniel S. Sutter, an economics professor at the University of Oklahoma estimated that polygon warnings would save the U.S. economy \$50 million dollars per year, and reducing the size of tornado warnings by 75% would have the same value as reducing the false alarm rate to 0%!

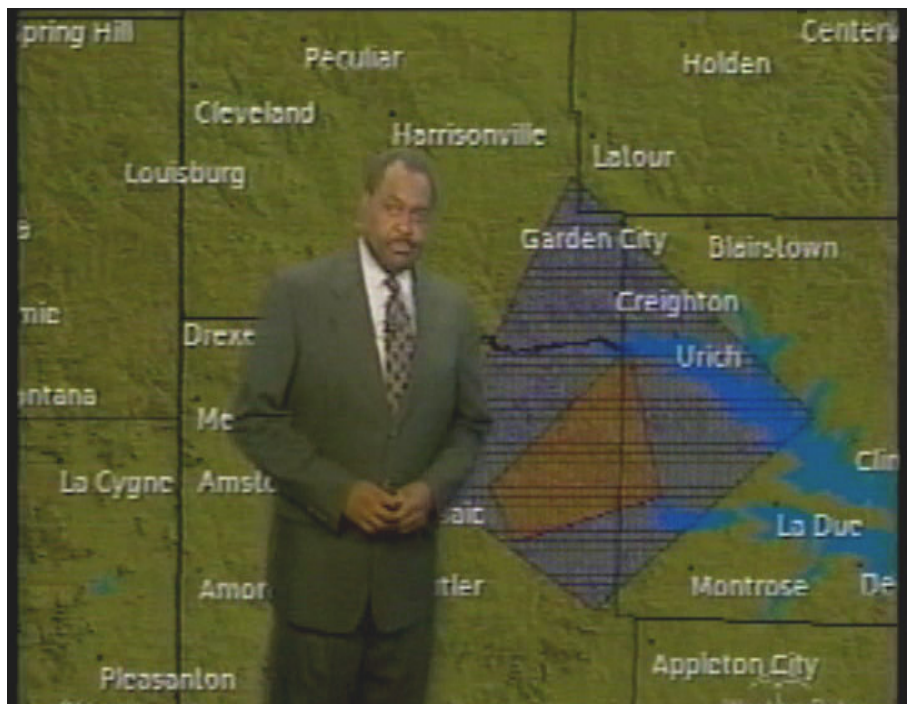
The senior leadership of the National Weather Service approved the transition plan from a county based warning system to a storm based system in December 2005. The NWS will officially transition to the

storm based warning methodology on October 1, 2007.

The most significant service changes besides the reduced area warned will be that polygons will no longer be able to expand beyond its original area within a county and multiple warnings will become more common in one county at the same time.

It will take several years to fully transition to polygons. Dissemination technology such as NOAA Weather Radio and the Emergency Alert System will need to adapt to storm based warnings. Television meteorologists are already adapting. A TV meteorologist in Kansas City in the picture below displayed a storm based tornado warning (in red) within a severe thunderstorm warning (in purple). In the past, an NWS forecaster would have to choose either a Tornado or Severe Thunderstorm Warning for four whole counties. The picture below is by far a more accurate meteorological description of the event.

I gave a storm based warning presentation in the spring of 2005 at the National Severe Weather Workshop in Norman, Oklahoma. At the end of the presentation, a Wal-Mart executive pulled me aside to discuss storm based warnings. He told me his company was very interested in storm based warnings. His stores shut down operations during Tornado Warnings for whole counties as part of their safety plan. A finer resolution warning saves his company money and increases employee and customer confidence that they are taking shelter for a good reason. I can think of no better reason for the NWS to transition to storm based warnings.



New Additions to The NWS Memphis Family

By Todd Beal
SCEP Student

The end of 2006 and the beginning of 2007 were filled with several staffing changes. The newest members of the National Weather Service in Memphis, TN are Phil Baker, Michael Scotten, and Krissy Scotten.

Phil Baker, after graduating from the University of Nebraska in 1991, began his National Weather Service career as a Meteorologist Intern in November 1992 at WSO Concordia, Kansas. Phil moved to Norfolk, Nebraska in October of 1994 and was promoted to General Forecaster at WFO San Angelo Texas in April of 1996. At that time, the San Angelo office was ramping up its operations to a full fledged forecast office. Phil was promoted to Senior Forecaster

in 1998 and served as fire weather and aviation program leader along with conducting Skywarn training sessions. He also served as the office webmaster in 1998 and continued in that role through 2006.

Phil transferred to NWS Memphis in the autumn of 2006. Although he grew up in Nebraska, Phil has always considered himself a Southerner at heart. His father's side of the family is from eastern Tennessee. After growing up in the Midwest and living in Texas for ten years, Phil is ready to call Tennessee home. His wife Jennifer is from Jonesboro, Arkansas, and she appreciates being close to home. In his spare time, Phil enjoys working on computers, especially with Linux

and Apple systems. Also, he is an avid motor sports fan with the Formula 1 and NASCAR series being his favorites.

Michael and Krissy Scotten arrived to the Mid-South shortly after the New Year. They come to us from the National Weather Service Forecast Office in Birmingham. Michael, originally from Plainfield, Indiana, received his meteorology degree from Penn State University. Krissy, originally from Athens in North Alabama, attended the University of South Alabama and majored in meteorology with a minor in mathematics. After graduating in December of 2001, Krissy decided to go to graduate school at Mississippi State University where she majored in Geosciences with an emphasis in operational meteorology.

Michael has been a part of the National Weather Service for 8 years. His career began as SCEP (Student Career Experience Program) student at the NWS Indianapolis. After completing graduation requirements, he worked at the NWS Northern Indiana office as an intern. In 2003, Michael was promoted to General Forecaster at the NWS in Birmingham, AL where he served as the aviation and digital forecast service program leader. Michael was promoted to Senior Forecaster in January of 2007. In his spare time outside the office, Michael enjoys watching sports, working out, traveling, and playing golf.

Krissy began her National Weather Service career as a SCEP as a student intern at the Birmingham office in June 2002. She was promoted to a General Forecaster position at the Birmingham office in January 2004 once she completed her Master's Degree. Her hobbies include sports, watching and participating and traveling.

Phil, Michael, and Krissy are very excited to join the NWS Memphis team and look forward to serving the Mid-South community for years to come!

Krissy Scotten



Michael Scotten



Phil Baker



A Preparedness Interview With Charlie Jones

By Jim Belles

Meteorologist-In-Charge

Is your community ready if a devastating tornado strikes? In a major weather disaster, years of preparation (or lack thereof) are tested in a 5 minute whirl wind of destruction. Charlie Jones, Emergency Manager from Caruthersville, Missouri knows what it's like to have his city face a devastating tornado. During the early evening of April 2, 2006 an F3 tornado struck Caruthersville changing the city forever. Although the destruction was great, miraculously there were no fatalities.

Recently, during a cold winter day, one so seemingly far from the warm and moist April afternoon that spawned tornadoes across the Mid-South, we talked to Charlie about his experience.

Jim Belles: Charlie, it's been several months now since the devastating tornadoes of April, as you reflect on that event, what is the single most important lesson that you could pass on to fellow Emergency Managers who are wondering if they are prepared.

Charlie Jones: Without a doubt it's receiving the tornado warning alerted on NOAA Weather Radio. This is more important than outdoor sirens because it's difficult to cover all portions of your county or city with an outdoor warning siren system. That's not to say that outdoor warning sirens

are not important, they are, but even more so is every citizen having a NOAA Weather Radio.

I'm also the fire chief in Caruthersville and I think the NOAA Weather Radio alert monitor is equivalent to the smoke detector. It's just as critical to saving lives. Whatever program available that helps get NOAA Weather Radio into the hands of your citizens is a good one. I can't tell you how many people have told me after the event, how important it was for them to have notification that the tornado was coming. It was fundamental to saving lives.

Jim Belles: What else would you suggest?

Charlie Jones: You've got to have a plan. We've got to stress to our citizens that they must know what to do when a tornado strikes. Obviously, they need to know for other disasters as well, such as earthquakes, floods, etc, but in the case of the April F3 tornado, knowing how to respond to the warning was critical. The tornado hit residential areas, churches and public areas. In all cases, people sheltered. Our educational programs are vital. Partner with your local community groups and get on their agenda to share preparedness ideas. Get with your schools and work with your local media to make sure the word is out.

Jim Belles: There are a lot of aspects to a disaster that often one can't anticipate. How did this event affect your awareness?

Charlie Jones: After the tornado our communication was down. This was coupled with a national media response to our disaster. Of course, family members watching at home from all parts of the country wanted to know if their loved ones survived the tornado. It was frankly overwhelming. My advice to people is to have a plan to notify your family outside of the area if a disaster occurs. I realize this may be difficult if phone lines are down, but if you can reach just one person to tell them you are ok, make sure you have them pass that information on to family members. Maybe a plan where the city can be contacted, so that a list of survivors can be made would be helpful. We had family members drive to Caruthersville from as far a way as Chicago, just to find out if their relatives were ok.

Jim Belles: Thanks for sharing that insight from your experiences with us Charlie. We hope that Caruthersville is spared in the future, but we know that tornadoes can strike soon again. Jackson, Tennessee is testament to that occurring, since two F4 tornadoes hit their city in 1999 and 2003. We must remain vigilant.

Charlie Jones (left) with Jim Belles (right)



F3 Tornado as it approaches Caruthersville, MO April 2, 2006



Severe Weather Safety Tips

By Jim Belles

Meteorologist-In-Charge

Severe weather is serious. People die; and the scary part is that severe weather can occur quickly. The Weather Forecast Office in Memphis issues warnings for 56 counties across Northern Mississippi, Northeast Arkansas, West Tennessee and the Missouri Bootheel. In 2006, Twenty-Six people were killed by severe weather in the Mid-South and many more were injured. Fortunately, by understanding a few simple safety rules, lives can be saved. Even if you have been a veteran of many severe weather seasons, a yearly review is always important.

On average 100,000 thunderstorms occur across the United States each year, causing property loss in the hundreds of millions of dollars and killing and injuring hundreds. Hail alone produces millions of dollars of damage to farms each year. However, one of the more lethal aspects of thunderstorms, lightning, is often one of the most ignored.

When lightning threatens, the best shelter is a building or home. Automobiles provide adequate shelter except in extreme winds and tornadoes. Natural lightning rods, such as trees, should always be avoided. Other danger spots include open fields, hilltops, rivers and lakes. Golfers should immediately discard their clubs. Stay away from metal objects like fences, rails and pipes. If you feel your hair stand on end, it means lightning is about to strike. Drop immediately to your knees and bend forward.

When a tornado strikes, the safest place is inside the basement of a home or building. Mobile homes are not considered reinforced shelter, so occupants should go to another structure

or to the designated tornado shelter included at many mobile home parks. If a basement is not available, go to an interior room on the lowest floor. Stay away from windows. Cover your body with pillows or cushions. If you are driving or caught in an open area, do not try to outrun the tornado. Instead, head toward a ditch or culvert and cover your body for protection.

Flooding along rivers is a natural and inevitable part of life. However, torrential rains from thunderstorms can cause flash flooding in areas that are

half of all flood related deaths are auto related. Believe it or not, it only takes 6 inches of water to make your car buoyant; and 4-wheel drive vehicles are not immune. Sadly, many fatal incidents involve motorists who don't heed road closures, which can clearly mark the flood hazard. Remember, if your car becomes buoyant, you no longer have control and can easily be swept away by the river current.

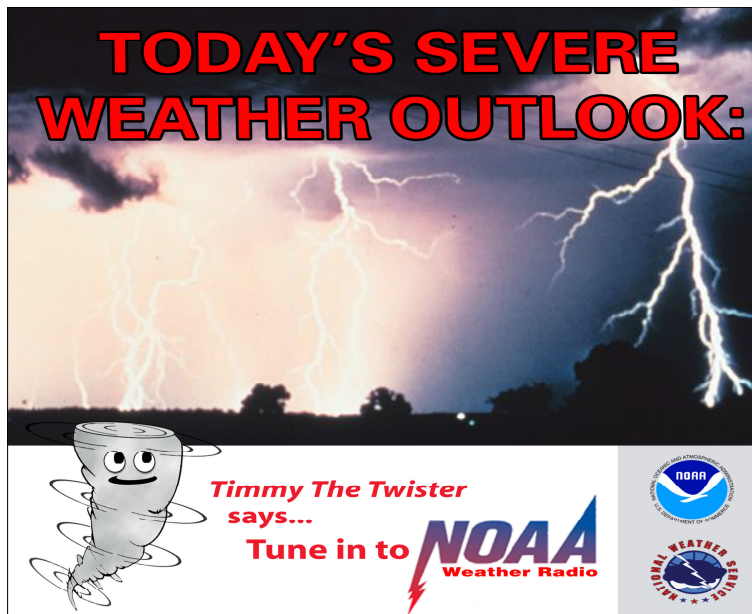
Playing or walking in the water can also be dangerous. Not only is there a health hazard but whirlpools can develop around storm drains. Unsuspecting people, walking near these areas have been sucked into the water, unable to fight the isolated current caused by the drain. Even 6 inches of fast-moving water can knock you off your feet.

Before the flood there are several steps that you can take. Know your flood risk and elevation above the flood stage. Store drinking water in various containers in case water services is interrupted. Keep a stock of food that requires

little cooking and no refrigeration in case electrical power is interrupted. Install check valves in building sewer traps to prevent flood water from backing-up into your home.

Throughout the season always keep handy a battery operated weather radio for the latest weather information. Weather Radio programming by the National Weather Service, will provide 24-hour updates on river stages and severe weather information.

Have a safe and enjoyable spring and summer!



far from any river or stream. Saving property during floods is not the only thing we must keep in mind during floods. Personal safety is also a serious issue. In fact, more people die across the United States each year in flood-related weather disasters, then are killed by lightning and tornadoes combined! That is a sobering thought, especially since floods don't develop as quickly as tornadoes or strike as rapidly as lightning.

Fortunately, flood related fatalities can be avoided by taking several precautionary steps. First, never cross a flooded roadway in your car. Nearly