WEATHER SE

The Southern Plains Cyclone

A Weather Newsletter from your Norman Forecast Office for the Residents of western and central Oklahoma and western north Texas

We Make the Difference When it Matters Most!

Volume 3

Spring 2005

Issue 2

Meet Your Weatherman Jennifer Palucki



Hi! My name is Jennifer Palucki and I am your new newsletter editor and a Meteorologist Intern at the National Weather Service Office in Norman! As an intern, I get to perform many public service duties, such as quality controlling climate and hydrological data, and answering phone calls. I also prepare and track the weather balloon that is launched twice daily.

Growing up, I was always fascinated with weather. I did not know much, but I knew it was never the same, and therefore, I could not get bored easily! It was the only part of the news on television that I watched! I grew up in a suburb of Albuquerque, New Mexico and living west of the Rocky Mountains prevented me from seeing a lot of extreme weather. Warm and dry was the rule out there. Nevertheless, I stumbled upon a volunteer program at my high school where I could work at a place of interest and get high school credit. I chose to volunteer at the National Weather Service in Albuquerque. I volunteered approximately 10 hours a week for the semester, all the while gaining knowledge of how the office worked. Once I graduated, I was hired on as their Student Career

See Weatherman on Page 2

The Snyder Tornado of May 10, 1905

By Mike Branick, Lead Forecaster

One hundred years ago, Oklahoma became a tornado capital before it even became a state. A violent tornado struck the town of Snyder, 30 miles west of Lawton, on the evening of May 10, 1905, nearly wiping out the town and killing at least 97 people. A century later, it is still one of the two most deadly tornadoes in Oklahoma's recorded history (exceeded only by the Woodward tornado of April 9, 1947, which killed 116 people).

Historical records including numerous newspaper accounts, describe this nightmarish storm in horrifying detail. It was the most destructive of several tornadoes known to have occurred in Oklahoma Territory that day, and at least the second to be spawned by a monstrous supercell thunderstorm that formed somewhere near the southwest corner of the Territory. The first tornado formed early that evening south of Eldorado, and left a path of intermittent damage as it moved generally eastward near the Red River. The tornado intensified southwest of Olustee and turned northeast, taking a zig-zag course across rural areas and eventually making a direct hit on the small town of Lock, about 7 miles south of Altus. This tornado killed at least nine people before weakening east of Lock, but the storm reorganized and another tornado (or possibly two merging tornadoes) formed a couple miles to the southeast, near the Salt Fork of the Red River. This new tornado moved northeast along Otter Creek, and eventually left the creek basin and headed northeast directly toward Snyder.

According to eyewitness accounts, the storm approached Snyder with a

See **Snyder** on Page 3

The Blackwell Tornado of May 25, 1955

By Doug Speheger, General Forecaster

This May marks the 50th anniversary of the May 25, 1955 Blackwell tornado. This, like the Snyder tornado, is one of Oklahoma's most significant tornadoes.

The day started stormy on Wednesday, May 25, 1955. Between 8:30 and 9:00 in the morning, a thunderstorm produced damaging winds in Kay County where eyewitnesses estimated winds of 70 to 80 mph near Braman, Oklahoma. Unfortunately, this was a small taste of what the day would bring for some residents of northern Oklahoma.

These morning storms moved out of the area and weakened. Later that afternoon, more storms developed and produced a significant tornado outbreak from the Texas panhandle into Oklahoma and Kansas. The first significant tornado developed northwest of Wellington, Texas and moved in to western Oklahoma, killing two people southwest of Cheyenne, Oklahoma. Over the next few hours, many more tornadoes were reported across Oklahoma. Locations near Mayfield, Kingfisher, Camargo and Deer Creek all saw natures wrath that day. These storms were moving northnortheast across the state. At about 6:50 pm, radar detected a new storm developing very close to Oklahoma City moving north. This storm produced a tornado which initially touched down about eight miles west of Marland around 9 pm.

See Blackwell on Page 5

Experience Program (SCEP) student for the summer. The SCEP program allows you to gain experience and work towards your career goals.

In August of 2000, I began my bachelor's degree at the University of Oklahoma. Each summer I would go back to Albuquerque to work, and each school year I would work the books. Beginning my sophomore year, I began working part time at the National Weather Service in Norman during the school year. It was a busy schedule, but the knowledge I was gaining was invaluable. In May of 2004, I graduated with my Bachelor's of Science in Meteorology with minors in Math and Hydrology.

These days I stay at the Norman office year round. I was recently selected at the new Meteorologist Intern, so my part time SCEP days are over. I am also working on my Master's Degree in Meteorology at the University of Oklahoma. Being in the classroom while working in a professional setting has really allowed me to apply what was learned in the classroom in real life situations.

Outside of school and work, I am just a normal 20-something year old. I enjoy relaxing with my friends, watching football or movies, and sleeping! I also like to play with my two cats, Lucy and Lewie.

Otherwise, I am anxious to graduate and move forward in my career. I hope to be a forecaster someday soon. But for now, I am going to continue enjoying my job. If and when I have to leave, it will be very hard to leave my friends and coworkers at NWS Norman.



By Mike Branick, Senior Forecaster

Weather-related sayings and stories have been commonplace in many cultures since the beginning of time, many of which have been passed down through the years. Are they truth, or are they myth? Can they really be used to predict the weather? This column will examine a different popular weather saying in each issue, exploring its origins and whether or not there is any real meteorological truth upon which it might be based.

If you have heard of a particular weather-related story or saying that you've always wondered about and would like us to look into it, please e-mail your questions and requests to *Jennifer.Palucki@noaa.gov*.

This Issue's Topic – Estimating Lightning Distance. You can estimate the distance of a lightning strike by measuring the time between the visible flash and the first audible thunder.

This is true! Five seconds equals approximately one mile. So, if you see a lightning strike and start counting - one thousand one, one thousand two, etc. – divide the total number of seconds by five and you have the approximate distance in miles. If you count to five, the lightning strike was about a mile away. If you can count to ten, it was about two miles away. If you can only count to one, you were too close. That lightning strike was only about one-fifth of a mile away.

The principle here involves the speed of light and the speed of sound, the former being universally constant and the latter being constant enough to allow one to estimate distance by measuring time. The speed of light is approximately 186,000 miles per second, which means that any lightning flash that's close enough to be visible will be seen virtually at the instant that it occurs. The speed of sound varies some, depending on air temperature, pressure and even wind, but ranges from about 750 to 800 miles per hour near the surface with temperatures generally associated with thunderstorms (roughly 50 to 100 degrees Fahrenheit). At those speeds, it takes the first sound waves emanating from the lightning channel between 4.5 and 4.75 seconds to travel one mile. We can round this to 5 to derive a reasonable estimation of distance to the flash in miles.

Remember two things when trying this. One, you are only estimating; to obtain a more precise measurement would require an accurate clock, preferably a stopwatch, and you would need to know specific properties of the air to determine the speed of sound more accurately. Second, the effort can be risky if you go outside to make your observations. Although one lightning strike from a thunderstorm could be a mile or more away, the next one could be *zero* miles and strike you while you are counting the last one!



Climate Notes

By Jennifer Palucki, Meteorologist Intern



Seasonal Snowfall Totals. Several storms dropped snow across parts of Oklahoma this winter. This resulted in several stations receiving greater than normal snowfall amounts. The following are totals from some selected stations.

- Cheyenne 11 NW 11.6 inches
- Erick 10.0 inches
- Elk City 5 W 10.4 inches
- Fort Supply 3 SE 14.0 inches
- Great Salt Plains 11.5 inches
- Helena 11.6 inches
- Laverne 20.4 inches

- Vici 10.2 inches
- Woodward 12.2 inches

Warm Winter. Oklahoma City wound up with one of the warmest winters on record. With an average temperature of 43.3 degrees, this winter was the 8th warmest on record. The warmest was the winter of 1991-1992, with an average temperature of 45.3 degrees.

Dry Start to Spring. Oklahoma City and Wichita Falls have both been lacking in the precipitation department this spring. In March, Oklahoma City only had 0.44 inches of precipitation, just out of the top ten driest. Wichita Falls only had 0.41 inches of precipitation in March, which made it the 10th driest on record. April is no different. Oklahoma City received 0.29 inches of precipitation in April, which makes it the 3rd driest on record. Wichita Falls received 0.28 inches of precipitation, making it the 2nd driest on record. Hopefully, the much needed rainfall comes this May, otherwise, we may be in for a very hot summer.

The Southern Plains Cyclone

"fearful roaring" just before 8 pm. The road was said to be audible 12 miles away. Many residents thought it was an approaching hail storm, and several accounts say that the usual funnel-shaped cloud was lacking. (The tornado itself may have been obscured by rain or darkness, or it may have been so large that people failed to recognize it was a tornado.) A period of torrential rain and a frightful electric storm followed. One accounts said, "Electricity ran along the telephone wires with a hissing like a sky rocket." Numerous witnesses of the storm described a period of ominous, dead calm just before the tornado struck. Then, in moments, the lives of every inhabitant of Snyder were changed forever.



Tornado tracks of the Lock and Snyder, OK tornadoes of May 10, 1905. Map created by Doug Speheger, NWS Norman, OK.

The storm entered Snyder at about 8:45 pm, just north of the southwest corner of town, and churned northeast. In a period of less than three minutes, the "cyclone" slashed a half-mile wide path of total destruction, wiping out virtually everything in its path. It was said that not a single building on the north and northwest sides of town was left standing, and the debris was carried away to leave only exposed ground. Some even said the grass was torn from the ground. Only a few buildings in town were spared completely from the damage and destruction, those being mostly on the south and southeast sides of town.

The experiences of those who survived the storm are so horrifying that even the most eloquent writers of the time found them hard to describe. Peo-

Snyder: From Page 1

ple climbed from the debris of the wrecked town to find a scene that was totally unrecognizable. Dazed and disoriented, survivors emerged to hear the shrieks and cries of the unfortunate victims - parents calling out for their children, children crying out for their parents, and everywhere the cries and groans of the injured and dying. "Painful and "heartrending" were the words often used to describe the sights and sounds in the darkness immediately following the storm.

A sense of urgency eventually materialized, once it became clear that the poor town was in desperate need of help. Bodies of victims lay everywhere - so many, in fact, that the dead were left to be gathered later, as attention turned to the more immediate needs of the injured. Telephone and telegraph lines were "prostrated," leaving the town totally without wire communication with the outside world. Messengers had to be sent on foot to the nearest town - Mountain Park, three miles north - to break the news and call for help. The first messenger "talked so daffy that no one believed him." However, when others arrived with the same terrible story, the residents of Mountain Park gathered to head south and render aid. Meanwhile, word was sent from Mountain Park to Hobart by telephone, and from there the news and the call for aid were relayed to the rest of the world.

The response was swift and generous. Relief trains were organized from every surrounding city and town, from Quanah and Vernon in Texas, to Chickasha and Oklahoma City to the northeast. Soon scores of volunteers, doctors, nurses and trainloads of emergency supplies were on their way to Snyder. By morning, these trains were arriving every few minutes.

Temporary hospitals and morgues were set up in buildings that were not destroyed. A dry goods store became a makeshift morgue, and this would become the setting of some of the most horrible scenes of the entire traumatic event. Many of the bodies were horribly mangled beyond description, and many were covered with a thick layer of black mud that rendered them unrecognizable to even their next of kin. Clothing had been torn partially or completely from many of the victims. Workers improvised by removing their clothes and washing off the bodies the best they could. The dead men, women, and children in proportion-



View looking to the southeast at damage in the business section of Snyder. Photo credit: Western History Collections, University of Oklahoma Library. Used by permission via Don Burgess, NSSL and the WHC-OU Library.

ate numbers (the storm did not discriminate) - were then wrapped in while muslin and were placed on the shelves. They were laid tier upon tier, as there were so many of them that they had to be vertically stacked to make room. The morgue was then opened to the surviving public, and the cries of anguish began to come from those who recognized their lost friends and loved ones. Parents, children, husbands, wives, siblings, all of whom had been happy and well just hours before, had been taken. It was said that the strong and able men, who had not shed a tear in decades, wept freely at this heartrending scene.

At least 97 people are known to have been killed by the Snyder tornado. It is believed that the actual number is greater, and that the total number of people who died from this outbreak (including the first tornado, and possibly others that day) is closer to 120. The actual death count from this event will never be known for certain. An unknown number of victims were never identified positively. Their remains were laid to rest in a mass grave in Fairlawn Cemetery, just outside of Snyder. Today, a memorial marker stands next to this grave, in memory of the "unknown men, women, and children who perished in the cyclone of May 10, 1905."

For much more information on this historic and tragic storm, visit our website at *http://weather.gov/norman/wxevents/19050510.*

Norman Forecast Office Notebook – A Complete Look at Events and Happenings

By Rick Smith, Warning Coordination Meteorologist

Mark Trail Award. The Mark Trail Award recognizes groups or individuals who have helped promote the use of Weather Radio. This year, we are proud to announce that the General Motors Assembly Plant in Oklahoma City has been awarded one of this year's Mark Trail Awards. They are recognized for their use of weather radio on May 8, 2003, when a violent F4 tornado ripped through the large manufacturing plant. Safety officials at General Motors recognized the importance of having a severe weather safety plan and frequently practicing their plan. They also understood the importance of having multiple ways to receive critical warning information. They used television and weather radio to get critical warning information as the violent tornado bore down on their facility. Because of their dedication to preparedness, officials sounded the warning systems and were able to get more than 1200 employees to their designated shelter areas more than 15 minutes before the tornado severely damaged large sections of the plant. The award will be presented at a ceremony in Washington, D.C. in late May. Congratulations!

New weather radio in Throckmorton. The network of Weather Radio stations expanded this past winter with the addition of a new 1000 watt weather radio transmitter near Throckmorton, Texas. Although the new transmitter is not located in the NWS Norman County Warning Area, its signal provides weather radio service to parts of Knox, Baylor and Archer counties in western north Texas.

Spotter Training Wrap-up. Spotter training season officially ended on March 31st. Since we began the 2005 season in early January, meteorologists from the NWS in Norman trained more than 2500 spotters across Oklahoma and Texas. Each year, the NWS conducts spotter training at the invitation of local emergency managers who organize their storm spotter networks. We will begin scheduling the 2006 spotter training sessions sometime in the fall.

If you attended a spotter training session in 2005, and have ideas or sugges-

tions of how we can improve the training, please let us know!

New URL's for Norman website. Many of you have told us that you really like our website, but that we needed a shorter address to make it easier to get to the site. We were recently able to add four new URL's, all of which will take you to our website. We hope to be able to add more in the future. The new URL's are:

- http://weather.gov/norman
- http://weather.gov/okc
- http://weather.gov/wichitafalls
- http://weather.gov/texoma

We hope this makes it easier for you to navigate to our website!

Lightning Awareness Week. June 19th through the 25th in National Lightning Awareness Week. This is a time to remember how dangerous and deadly lightning can be. There is a website devoted to this week and it is a great source of information. It can be found at *http:// www.lightningsafety.noaa.gov/week.htm*.

NOAA Environmental Hero Award presented to Wichita Falls Storm Spotters. The National Weather Service presented the NOAA Environmental Hero Award to Charlie Byars and the Wichita County, Texas Amateur Radio Emergency Services at a ceremony held on May 10th in Wichita Falls. These dedicated amateur radio operators provide



This award was one of 37 such awards presented nationwide this year. Established in 1996, the Environmental Hero award is presented to individuals and organizations that volunteer their time and energy to help the National Weather Service and NOAA carry out its mission.

"On behalf of the 12,500 men and women working for NOAA, I am pleased to present you with this 2005 Environmental Hero Award," Lautenbacher wrote in a letter to the recipients. "Your dedicated efforts and outstanding accomplishments greatly benefit the environment and make our nation a better place for all Americans."

There are a total of 37 winners, of which, 34 were individuals (three posthumonous) and three organizations. For a complete list and more details on the a w a r d, g o t o: h t t p : //www.noaanews.noaa.gov/stories2005/s2423.htm



We are proud to announce the latest additions to the StormReady family in the Norman county warning area! In March, WFO Norman officially recoginized seven new communities as Storm-Ready, including the cities of Durant, Stillwater, Edmond, Kingfisher, Lincoln County, Oklahoma County and Shawnee/Pottawatomie County. By Rick Smith, Warning Coordination Meteorologist

Congratulations to these communities and their dedicated emergency managers! To see a list of all the StormReady communities in our area, go to *http:// www.stormready.noaa.gov/communities.htm.* Also, watch for more new StormReady communities in the next edition of the newsletter!

The Southern Plains Cyclone

It caused some light damage as it moved almost due north. The tornado passed to the east and northeast of Tonkawa and destroyed a few homes. Meanwhile, it was also producing baseball-sized hail in Tonkawa. The tornado continued north and moved through the east side of Blackwell causing complete destruction across much of the east side of town.



Map of the damage and intensity of the Blackwell, Oklahoma tornado. Map created by Doug Speheger, NWS Norman, OK.

Nineteen people were killed in Blackwell as well as one person to the northeast of Blackwell. The tornado passed east of Braman. then turned to the northnorthwest, crossed the Oklahoma/ Kansas border and dissipated to the southeast of South Haven, Kansas. As this storm passed to the east of Braman, another tornado developed about four miles north of Peckham that moved into Kansas and eventually killed 80 people in and near Udall. Kansas. Both the Blackwell tornado and the Udall tornado were rated F5 on the Fujita scale, although the Udall tornado only produced minimal damage in Oklahoma.

The tornado struck Blackwell at 9:27 pm and destroyed the east side of town. Approximately 80 blocks in town were damaged or destroyed. The Blackwell Journal-Tribune newspaper conducted a building-by-building survey across the east side of town listing approximately 85 homes and buildings as "damaged but occupied," about 70 homes and buildings

Blackwell: From Page 1

as having "extensive damage, but repairable," and about 190 homes and buildings as "completely destroyed." The information from this extensive building by building survey was smoothed and used to create the damage intensity map (left) of the tornado as it moved through Blackwell. The width of "complete destruction" was likely much more extensive at

> the southern limits of the city as there would be little to block the force of the wind. Almost everything between "D" Street and "F" Street was completely destroyed and over half of the fatalities in the city of Blackwell were within a block of "E" Street. Two of Blackwell's major industries (the Hazel Atlas Glass plant and the Acme Foundry) were destroyed and another was extensively damaged. The Riverside Osteopathic Hospital on East College Street suffered extensive damage and "doctors there labored for hours under candle light and

flashlight and didn't quit until they were certain that all patients were in the position to be moved to another hospi-

tal," according to the Blackwell Journal Tribune. A large number of police officers were already in the area that evening attending a meeting of the Northern Oklahoma Southern Kansas Peace Officers Association that evening.

To make matters worse, heavy rain that continued after the tornado, hampered rescue work that evening. It also caused the Chikaskia River to flow out of its banks into some low sections of towns the following day. To further spread resources thin, four

other tornadoes were reported in Kay and Grant counties on the evening of May 27th, just two days after the Blackwell disaster. Fortunately, this time these weak tornadoes stayed to the north of Blackwell and caused no injuries. When the warnings were sounded about this storm, "it was not necessary to tell people twice to get to a cellar" according to the newspaper account.

One eyewitness in Blackwell had an interesting visual observation of the tornado. Floyd Montgomery lived nine blocks west of the main path of the tornado and submitted his account to Weatherwise magazine in June 1956. As Mr. Montgomery looked to the east from the door of his storm cellar while the tornado moved through Blackwell, he described a "fire up near the top of the funnel looked like a child's fourth of July pin wheel. The light was so intense I had to look away." He describes the light as the "same color as an electric arc welder but much brighter, and it seemed to be turning to the right like a beacon lamp on a lighthouse."

A dedication will be held on the 50th anniversary of the Blackwell tornado to honor those who passed that day. The dedication will be at Memorial Park in Blackwell, May 25, 2005 at 6 pm. A marker will be presented with the names



Map of the tornado tracks of the Blackwell, OK and Udall, KS F5 tornadoes. Map created by Doug Speheger, NWS Norman Ok.

of the 20 victims inscribed on it.

More information on historic tornado events can be found on the National Weather Service Norman's website at *http://weather.gov/norman*.

Cooperative Observer Notes

Severe Weather Observing Tips

By Forrest Mitchell, Observations Program Leader

Now that we are into the spring season, our focus is changing from frozen ponds and fluffy white beauty, to scenes of waving wheat, greening lawns and the occasional threat of severe weather. As cooperative weather observers, you are the eyes that bring ground truth to what we see with radar images. We can detect the most likely place that hail, high winds, and tornadoes may occur, but we need your reports to ascertain if the event if even taking place, and if it is, the magnitude of the particular weather feature.

We will call you for a report whenever a warning is issued for your location, or if there is a storm of interest in your area. We will try to call you when the lightning threat is at a minimum, which is generally after the storm has passed. By the same token, feel free to call us first if there is significant weather occurring in your area. It works both ways.

When you report hail, we want to know the largest size that fell. Your property may be covered with pea size hail, but if there is one stone that is larger, we want to know about it! You can either measure it, or compare it to common things, such as coins, ping pong balls, golf balls, tennis balls, or grapefruits. We would like to request that you do not compare the hail to marbles. Marbles can come in various sizes. Also, if you do go outside to measure the hail, please be careful. Wait until after the storm has passed to ensure your safety.

On your weather form, there is a box you can "X" to document that you received hail. The size of the largest stone could then be written in the remarks section. Since hail is a type of frozen precipitation, you would enter a "T" for Trace in the same column you used for snowfall.

Hopefully you will never see a tor-

nado. If you do, take shelter first. You can document the experience after the threat has passed.

Damaging winds are more challenging. Unless you personally own wind equipment to directly measure wind speed, you can infer the magnitude by the damage that occurs.

Here is a guide for estimating wind speed:

- 25-31 mph: Large branches are in motion; whistling heard in overhead wires.
- 32-38 mph: Whole trees in motion.
- 39-54 mph: Twigs break off trees; wind impedes walking.
- 55-72 mph: Damage to chimneys; television antennas; pushes over shallow rooted trees.
- 73-112 mph: Peels surface off roofs; windows broken; trailer houses overturned.
- 113+ mph: Roof torn off houses; weak buildings and trailer homes destroyed; large trees uprooted.

On your weather form, there is also a box you can "X" for damaging winds and you can write the details in the remarks section. For example, let us know if tree limbs were blown down and the diameter of the limbs. Also, let us know if the tree was alive or dead and what type of tree it was.

All of you are doing an outstanding job of documenting and reporting the weather! You are a major reason why the Norman Forecast Office fulfills our mission of protecting life and property.

Remember to mail the previous month's cooperative observer forms and recording rain gage tapes by the 5th of the month!

New Observers

The NWS staff would like to welcome Billy Bankston to the NWS Norman cooperative observer program. We look forward to working with this new observer for many years to come.

Observers Needed

Are you interested in weather? Do you live in Apache or Thomas? Call 405-360-5928 for more information about becoming an official NWS cooperative observer.

Award Recipients

The following observers have recently received Length of Service awards:

Joe Britton - 10 years J.W. Hastings - 20 years Lahoma Research Station - 25 years Ruby Coats - 35 years Leroy Patton - 35 years Bonnie Jantz - 40 years Ernest Muncrief - 50 years

Thank you for the hard work and valuable meteorological data you have collected. We look forward to working with all of you for many more years.

Thomas Weather Observer Passes Away

Mr. Fred Hatter, Thomas cooperative weather observer, passed away this March. Mr. Hatter took daily precipitation measurements for the Norman Forecast Office for over three years. Mr. Hatter will truly be missed.

The Norman NWS Cooperative Observer Program Team:					
Daryl Williams	Forrest Mitchell	Jennifer Palucki	Ty Judd	John Pike	



In This Issue:

- \Rightarrow The Snyder Tornado of May 10, 1905
- \Rightarrow The Blackwell Tornado of May 25, 1955
- \Rightarrow Meet Your Weatherman
- \Rightarrow Tales, Legends, and Other Sayings
- \Rightarrow StormReady News
- \Rightarrow Climate Notes
- \Rightarrow Norman Forecast Office Notebook
- \Rightarrow Cooperative Observer Notes

National Weather Service Forecast Office 1200 Westheimer Drive, Room 101 Norman, OK 73069

Check out our text-based and graphical forecasts for your county at *www.srh.noaa.gov/oun*. National Weather Service Forecast Office Norman, OK

Phone Number: 405-360-5928

Web Page: www.srh.noaa.gov/oun

Meteorologist-in-Charge: Mike Foster

Warning Coordination Meteorologist: Rick Smith

Science and Operations Officer: David Andra

> **Editor:** Jennifer Palucki

Please share this with friends, relatives, and colleagues. Comments and suggestions are always appreciated, by phone at 405-360-5928 or by e-mail at Jennifer.Palucki@noaa.gov.