

2006 Shareholders' Report



National Weather Service, Louisville, Kentucky



<http://weather.gov/louisville>

w-lmk.webmaster@noaa.gov

Return on Your Investment

Welcome to the second edition of the National Weather Service (NWS) Louisville Shareholders' Report. You are a shareholder in the NWS! As a taxpaying citizen of this country, you have invested

in the Federal government, of which the NWS is a part. The NWS was appropriated \$848,200,000 for Fiscal Year 2006. That equates to an investment of \$2.80 per person. As the Meteorologist-in-Charge of your investment, I feel it is my duty to report to you how your "holdings" have fared.

This report details activities of the NWS Louisville Weather Forecast Office (LMK WFO) and events in its county warning area (CWA) during 2006. Since

you are both a shareholder and a customer, I hope you find our activities have demonstrated the sort of stewardship you expect from your public servants. As always, I welcome your comments and suggestions as to how the NWS can be an even better investment for you.

John D. Gordon
Meteorologist-in-Charge
(MIC)



Major John Gordon flies through Hurricane Florence in September



Leadership Team

John Gordon, Meteorologist-in-Charge
john.gordon@noaa.gov

Ted Funk, Science and Operations Officer
theodore.funk@noaa.gov

Norm Reitmeyer, retired Warning Coordination Meteorologist

Joe Sullivan, Warning Coordination Meteorologist
joe.sullivan@noaa.gov

Larry Dattilo, Data Acquisition Program Manager
lawrence.dattilo@noaa.gov

Bill Whitlock, Electronic Systems Analyst
bill.whitlock@noaa.gov

Pam Lozier, Administrative Support Assistant
pam.lozier@noaa.gov

Inside this issue:

| | |
|----------------------------------|----|
| Fiber Optic Cable for Radar | 2 |
| Kentucky Mesonet | 2 |
| TRIMARC Partnership | 3 |
| Aviation Workshop | 3 |
| StormReady | 4 |
| NOAA Weather Radio in School | 4 |
| Tornado History | 5 |
| Special Outreach Events | 6 |
| Improving Severe Weather Service | 6 |
| CoCoRaHS | 7 |
| Fire Weather | 7 |
| Cooperative Observers | 8 |
| Award-Winning Staff | 8 |
| Weather Posters | 9 |
| HAZMAT | 10 |
| Research Activities | 10 |
| Continuing Education | 11 |
| Office Activities | 12 |
| Hurricane Hunter | 13 |
| Departures | 13 |
| Worst Weather of 2006 | 14 |
| Our Plans for 2007 | 15 |



National Weather Service, Louisville
6201 Theiler Lane
Louisville, Kentucky 40229

Phone 502.969.8842
Fax 502.968.5663

NWS Radar Now More Reliable Than Ever



The aging copper communications link between the remote WSR88D radar transmitter and the phone company switching station at Ft. Knox became a critical issue in early 2005. The line became increasingly less reliable especially during

thunderstorm activity in the Ft. Knox area. Local phone technicians made numerous attempts to locate and correct the problem but to no avail. The five mile stretch of cable was simply no longer reliable. LMK electronics specialists worked with communications specialists and recommended a fiber optic replacement for the copper line. NWS contracted with Bell South to install two separate five mile sections of direct burial fiber optic cable placed on each side of Main Range Road leading to the radar transmitter

location. The two independent fiber paths would merge at the radar site to form an electrical loop or "ring." This ring would provide a primary signal path from the radar site to the phone company switching station which then would connect to backup ring and provide a reliable communications link between the radar and the LMK office.

In January 2006, one side of the ring was complete and the fiber link from

...continued on page 15

Developing a "Mesonet"

Funding has been provided to the Kentucky Climate Center at Western Kentucky University to establish the first statewide real-time weather observation network: the Kentucky Mesonet. Other universities in the state, such as the University of Kentucky, along with the NWS, are participating in the process.

The weather stations will transmit observations of air temperature, wind speed and direction, humidity, and precipitation every 15 minutes. Other instruments for measuring soil temperature and moisture, along with solar radiation, may be added. The data will be made available to the public and research institutions, and will also be used in forecast and warning operations in NWS offices that serve Kentucky. Examples of the utility of this data include a better knowledge of temperatures in rural parts of the

state, and the ability to quantitatively verify wind gusts from thunderstorms.

Each NWS office that serves Kentucky, including Louisville, will help find quality sites within their respective areas of responsibility. Those potential sites are then surveyed for final

selection by personnel from Western Kentucky University. At this time, it is hoped that about 40 sites will be selected and installed in 2007. For additional details and updates, check out the Kentucky Mesonet website at kyclim.wku.edu/kymesonet/.

Characteristics of a good candidate site for the Kentucky Mesonet:

- Flat ground
- Grass cover
- Far from tall objects
- Access to AC power
- Cell phone access
- Low probability of land use change
- Minimal chance of vandalism
- Little change in property ownership



Mesonet site near Russellville, Kentucky

NWS Partnership with TRIMARC Protecting Travelers

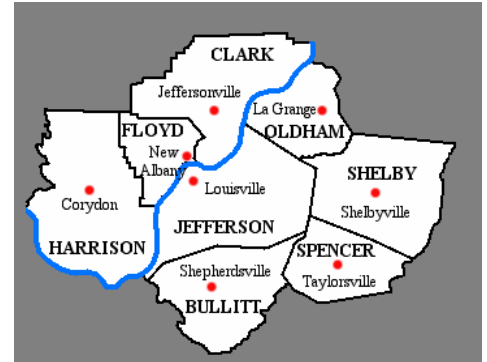


The core mission of the NWS is the protection of life and property. When citizens are driving on Louisville’s interstates, they may not receive severe weather warnings issued by the NWS. Motorists may be unable to hear tornado sirens due to factors such as distance from the sirens and ambient highway and vehicle noise. To circumvent these problems, NWS Louisville has worked out an agreement with Traffic Response and Incident Management Assisting the River Cities (TRIMARC) to put select warnings on their Dynamic Message Signs (DMS) and their High-

way Advisory Radio (HAR, 530 AM) during the most extreme weather circumstances.

If you are driving down a metro Louisville interstate and the NWS issues a Tornado Warning or Severe Thunderstorm Warning for 70 mph winds and/or hail at least 1 inch in diameter (for select counties...see figure), you will see a message on the DMSs saying “Severe Weather Alert - Tune to 530 AM.” Tune your radio to the HAR and you will hear all valid warnings and statements.

Armed with this information, motorists will be able to take an alternate route, seek shelter, or pull safely off the



Counties for which select warnings are

highway until the threat has passed. We want to allow motorists plenty of time to escape harm’s way and avoid entering into an area where the most dangerous part of a storm is located.

NWS Louisville Reaches Out to Our Aviation Community

The first-ever Louisville Weather Workshop for Pilots was held on August 12 at Louisville’s Bowman Field. It was a huge success. The feedback we received from the 65 attendees was decidedly positive.

There was a diverse group of speakers delivering talks on a wide range of topics, such as weather-related plane crashes, radar interpretation, wind shear, and how the NWS constructs aviation forecasts.

The aviation community enthusiastically supported the conference and we hope to have more in the future.

Many of the presentations from the workshop are available on our website at www.crh.noaa.gov/lmk/?n=avconf-lou2006



Science and Operations Officer Ted Funk delivers his talk on radar interpretation.

NWS Certifies Several More Communities as “StormReady”



Program Manager for Emergency Services Deon Lemieux and Mayor Teresa Isaac in Lexington

Nine out of ten presidentially-declared disasters are weather related, leading to around 500 deaths per year and nearly \$14 billion in damage across the United States. StormReady, a program started in

1999 in Tulsa, Oklahoma, helps arm America's communities with the communication and safety skills needed to save lives and property before and during the severe weather event.

In 2006, NWS Louisville certified Lexington, Frankfort, Fort Knox, the University of Kentucky, and ten area

New StormReady Communities in 2006:

**City of Lexington
City of Frankfort
Fort Knox
Floyd County, IN
Harrison County, IN
Mercer County, KY
Barren County, KY
Fayette County, KY
Spencer County, KY
Anderson County, KY
Hart County, KY
Grayson County, KY
Trimble County, KY**

counties as officially “StormReady.”

In order to become StormReady,

communities must meet several stringent requirements. There must be excellent lines of communication in place, both within the community and with outside sources of weather information such as the NWS. There must be primary and secondary communication methods, since during severe weather the usual ways to share information may not be available.

Once a community has satisfied the standards of the StormReady program, the certification lasts for only one year, and the community must re-certify annually through the NWS to keep its StormReady status.

Go to www.stormready.noaa.gov/ or contact our Warning Coordination Meteorologist, Joe Sullivan, for more information.

NWS Donates Life-Saving Weather Radios to Our Schools

The Federal government's Department of Education joined the Department of Commerce and the Department of Homeland Security in 2005 and 2006 to provide NOAA Weather Radios (NWR) to public schools. Kentucky and Alaska public schools received the radios in 2005 and all states were recipients in 2006.

On October 11, 2006, NWS Louisville participated in a ceremony donating a NOAA Weather Radio to Jasper Middle School in Japer, Indiana. NWS Central Region Director Lynn Maximuk and Congressman Mike Sodrel were on-hand to present the radio to the school.

NOAA Weather Radios provide the capability to receive audible and visual alerts for many weather and even selected non-weather emergencies.

For additional information on how NOAA Weather Radio works to protect our school children, see public-alert-radio.nws.noaa.gov, and for general NWR information go to www.weather.gov/nwr. Also, NWS Louisville has developed an informational NWR poster, as shown on page 9 of this report.

If you need help programming your NWR, or for any other questions, call us at (502) 969-8842.

MARK TRAIL CHAMPIONS NOAA WEATHER RADIO- THE VOICE OF THE NATIONAL WEATHER SERVICE



Mark Trail image courtesy of North America Syndicate, Inc., World Rights Reserved

Special Outreach Events

NWS Louisville hosted **media seminars** in the spring and again in the early winter. Media from the Louisville, Lexington, Bowling Green, and Hazard markets attended. Forecasters from UPS, Fort Knox, and Fort Campbell also participated. Some of the topics discussed included instant messaging with the



NWS/media seminar in Lexington

media, emergency manager conference calls, tornado events of January 2, 2006 and November 6, 2005, and the Enhanced Fujita Scale that is coming in 2007.

Lightning is one of the most prolific weather-related killers in our nation each year. To address this, forecaster Ben Schott set up a **lightning awareness** booth at a Louisville Bats game and at the Louisville Zoo in July. Ben spent his time educating the public on lightning safety.



In March, Senior Meteorologist Don Kirkpatrick participated in a radio call-in show in Bardstown, Kentucky discussing **tornado safety**.

NWS Louisville teamed up with NWS offices in Indianapolis, Chicago, and Northern Indiana to travel to Purdue University and Ball State University to speak with meteorology students about their **future in weather**. The undergraduates were exposed to a mixture of science, information about the NWS, job interview training, and a bit of weather trivia.

We met with officials from the University of Louisville to discuss their interest in developing a **meteorology program**. We also spoke with leaders from Western Kentucky University about upgrading their program to a full degree in meteorology.

Improving Our Severe Weather Service

On average, flooding is the number one weather killer. The flooding on September 22 and 23, 2006 resulted in six people losing their lives in the Louisville office's area of responsibility. Senior Meteorologist Don Kirkpatrick is nearing completion of a comprehensive project to map all known **flooding hot spots** in the area. With this knowledge, warning meteorologists can be extra vigilant to keep a close eye on these locations during episodes of heavy rain. We can also include this information in our warnings and statements, cautioning people to stay clear of these potentially deadly places.

Every year we train hundreds of local citizens on how to recognize severe weather. When these **"spotters"** observe severe weather occurring they call their report in to the NWS. We in turn use that information in our severe weather warning procedures.

This year we gave our **spotter training presentation** a complete overhaul. We now have more information pertinent to this particular area of the country. Also, we have included more video, which can often illustrate a point much more easily than a still photograph can.

We give our **spotter training shows** throughout central Kentucky and southern Indiana, primarily in February and March. If you would like to schedule a talk, contact our Warning Coordination Meteorologist, Joe Sullivan.

Senior Meteorologist Don Kirkpatrick created files of **safety rules** for tornadoes, severe thunderstorms, and flooding. The files are stored in our computer system. Then when severe weather is imminent, with a few keystrokes we can easily send these pre-written files out to the public and media quickly to increase response to hazardous weather.

Retired Warning Coordination Meteorologist, Norm Reitmeyer, covered many miles visiting county **road departments** to recruit their help in passing severe weather information and road condition information on to the NWS.

There Can Never Be Too Many Weather Observers

The Community Collaborative Rain, Hail, and Snow Network, or CoCoRaHS, is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail, and snow). By using low-cost measurement tools, stressing training and education, and utilizing an interactive website, the aim is to provide the highest quality data for natural resource, education, and research applications.

CoCoRaHS is currently running in 14 states from the Rockies to the Atlantic Coast. In 2006, NWS Louisville joined the efforts of this grass-roots weather observing organization and began actively recruiting weather watchers in southern Indiana. The Indiana CoCoRaHS program currently has the highest participation rate of any state in the country. In southern Indiana there were, at the end of 2006, 13 observers who regularly reported precipitation amounts nearly every day. We hope to add many

more to that number in 2007. Considering the fact that there are only four NWS weather stations in southern Indiana, the CoCoRaHS volunteers are invaluable at “filling in the holes” in the data sparse region.

Rainfall and snow reports from the CoCoRaHS observers are sent to the Internet and are also fed directly into the NWS computer system for immediate use. Their data are helpful in ascertaining which areas might be prone to flooding after heavy rain, and also which locations are suffering from drought conditions.

While the program was not available in Kentucky in 2006, we hope to include the Commonwealth in this important data-gathering system soon.

If you would like to volunteer for CoCoRaHS in southern Indiana, or if you wish to set up a training session (which is required for all new volunteers), contact NWS Louisville’s Climate Program Leader, Tom Reaugh, at w-lmk.webmaster@noaa.gov.



The rain gauge used by CoCoRaHS observers is a simple plastic tube that is easily mounted

Fire Weather

In addition to the forecasts we produce for the public and the aviation community, we also create forecasts for Federal agencies who deal with controlled burns and wildfires.

Our Fire Weather Planning Forecast for central Kentucky and south central Indiana is issued every day of the year early in the morning. During the spring and fall seasons, a forecast is issued in the afternoon as well.

We also fill requests for “spot forecasts,” which are forecasts tailored to an exact location where a burn is scheduled to take place. We fulfilled 47 spot forecast requests in 2006.

For further information contact Senior Meteorologist Joe Ammerman at joe.ammerman@noaa.gov, or see weather.gov/louisville/?n=fireweather.



Cooperative Observers Show The Depth of Their Dedication

The Co-Operative Observer network is one of this nation's richest sources of daily weather information. Each day thousands of volunteers across the country send their temperature and precipitation information to offices throughout the NWS. In NWS Louisville's area of responsibility, several cooperative observers reached milestones in 2006.

10 Years of Service

**Sadieville, KY
Tompkinsville, KY
Smithfield, KY
Lewisport, KY**

15 Years of Service

**Fordsville, KY
Crab Orchard, KY
Franklin, KY**

20 Years of Service

Rochester Ferry, KY

25 Years of Service

**Columbia, KY
Richmond, KY
Bowling Green, KY
Mount Eden, KY**



Data Acquisition Program Manager Larry Dattilo presents the 40-Year Length-of-Service Award to our observer in Boston, Kentucky

Bradfordsville, KY celebrated 30 years of service, and Boston, KY achieved 40 years of service.

NWS Louisville Is Proud of its Award-Winning Staff

- Electronics Systems Analyst Bill Whitlock received the prestigious Regional Excellence Award for the development of an automated answering system which permits Central Region NWS offices to easily contact senior management after normal business hours in the event of an emergency.
- Mr. Whitlock also received a local Isaac M. Cline Award for running one of the top electronics shops in the NWS. Bill practices service before self, provides excellent customer service, and is a great team player. No job is too big or too small. Some examples of this include preparing our Fort Knox radar for major work months in advance, helping take down modular furniture for office painting, and working in operations during severe weather.
- Science and Operations Officer Ted Funk was given a local and regional Isaac M. Cline Award for his leadership training instruction. Mr. Funk researched and developed high quality leadership training (titled "Leadership Unleashed"). This training is designed to increase personal leadership qualities in *all* staff members, thereby influencing attitudes, perceptions, and motivations to enhance all aspects of office operations. Ted conducted 8 full-day workshops at several NWS offices. Ted is now competing for the national NWS-wide Isaac M. Cline Award.
- Administrative Assistant Pam Lozier won a local Isaac M. Cline Award for support services due to her upbeat professional attitude and her vibrant leadership. Pam's administrative program is in excellent shape and is involved in almost every facet of the office. Pam does not wait for work to be assigned, rather she takes a proactive approach to all aspects of the office and makes everyone's job easier. Pam is also very involved with the Combined Federal Campaign (CFC, see page 12 of this report) and the Louisville Federal Executive Association (FEA).
- Forecaster Ben Schott received a local Isaac M. Cline Award for science and outreach. Ben aggressively worked on promoting the NWS and specifically lightning awareness. From Lightning Awareness Night at the Lexington Legends baseball game, to a booth at the Louisville Zoo, to interactively promoting lightning in our new spotter presentation, Ben is getting the word out about one of the worst weather killers. If you are interested in a lightning awareness event, e-mail Ben at ben.schott@noaa.gov.

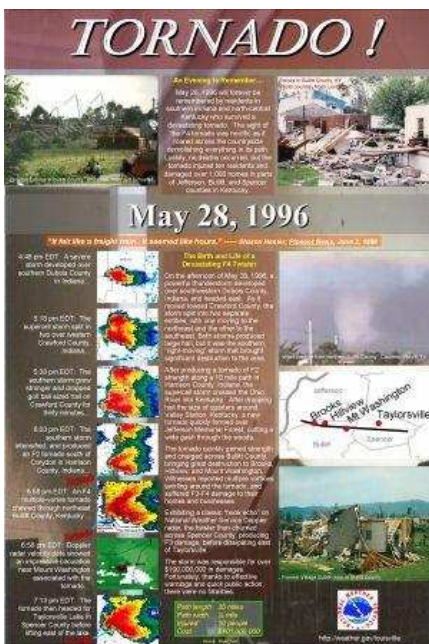
Full-Color Weather Posters Developed

Each year NWS Louisville (with help from NWS offices in Paducah, Jackson, and Charleston, WV) operates a booth at the Kentucky State Fair in August. Thanks to other NWS offices that also cover parts of Kentucky, the booth is staffed for the entire run of the festivities.

In 2006, we used this opportunity to showcase some of the fascinating new weather posters we have developed at NWS Louisville. The posters are designed to convey helpful information in a colorful and easy-to-understand way.



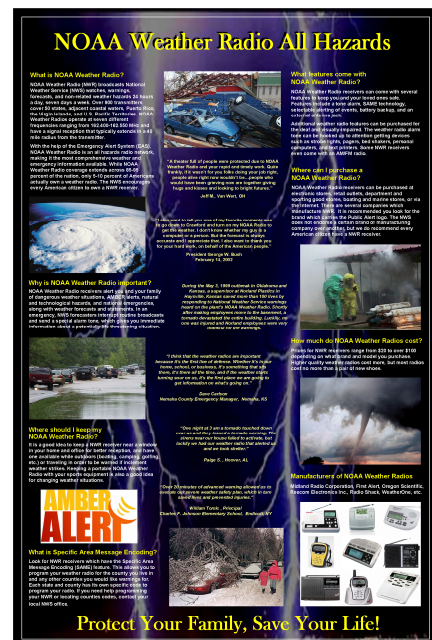
A fairgoer admires our posters



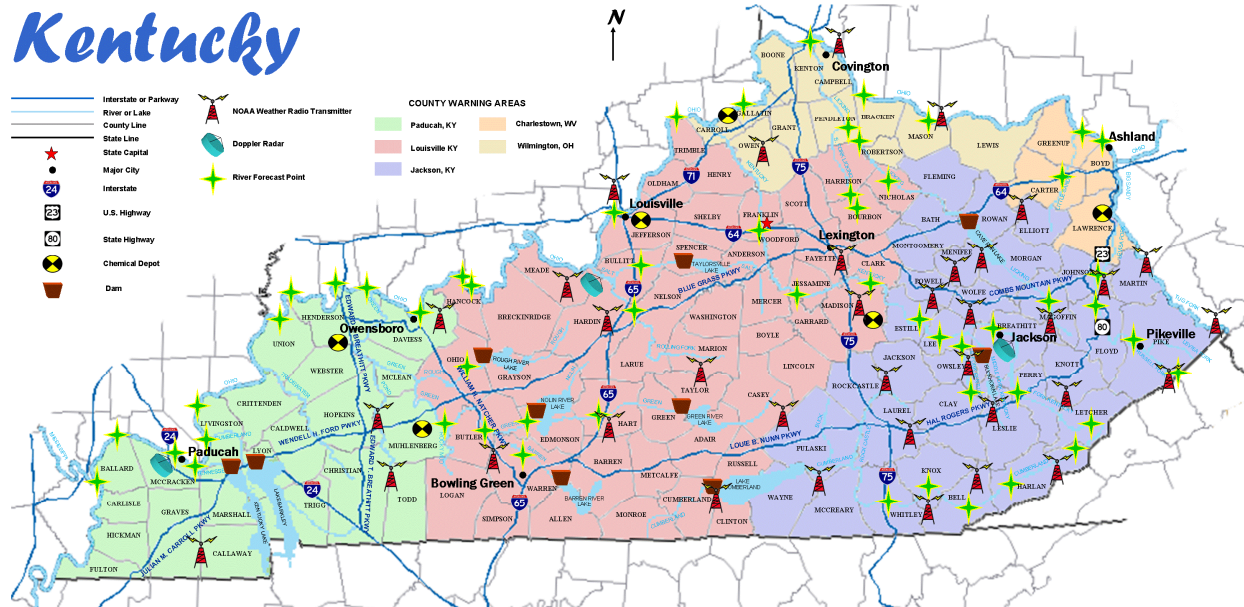
Left: Commemoration of the devastating tornado that brought up to F4 magnitude destruction to northern Bullitt County in 1996. Authored by Senior Meteorologist Tom Reaugh and Meteorologist Intern Andrea Lammers.

Right: NOAA Weather Radio is as important to have in your home, school, and workplace as a smoke detector. Protect your family, save your life! Authored by student Sarah Ede.

Below: To aid emergency managers across the state in their decision-making, this map includes river forecast points, dams, NOAA Weather Radio transmitter locations, Doppler radar locations, and chemical depots. County names, major roads, rivers, and lakes also are present. Authored by Andrea Lammers.



Kentucky



See www.crh.noaa.gov/lmk/?n=outreach for access to these and several other posters

NWS Gives Vital Support During Hazardous Material Spills

Staff training was completed for all forecasters on hazardous material (HAZMAT) dispersion models (Hysplit and Cameo/Aloha) and our response to such events. The training contained information on where and how to run the dispersion models for the chemical and/or weapons of mass destruction (WMD) release, as well as what information to give to local responders for a HAZMAT event. A quick reference worksheet was created to ensure proper information is being communicated to the Emergency Manag-

ers, first responders, and Emergency Operations Centers (EOC). We also assure model data accuracy, and use the worksheet to brief forecasters on later shifts.

On September 19, Forecaster Ben Schott spoke at the Kentucky State WMD/HAZMAT Team Council Meeting in Elizabethtown, KY at the Lincoln Trail Area Development District office. Ben discussed how the NWS HAZMAT program can help during HAZMAT events for both the first re-

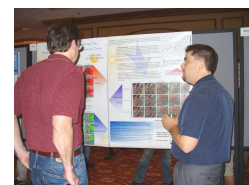
sponders and the public by providing accurate environmental support.

Ben then spoke at the Kentucky State WMD/HAZMAT Area 6 Team Council Meeting in Shelbyville, KY on September 26. NWS Louisville joined the Kentucky State WMD/HAZMAT Area 6 Team, as a consultant for weather modeling support. We will be involved in local area drills assisting with weather model support.

The Indiana Department of Homeland
...continued on page 13

NWS Is Active in the Research Community

Weather forecasters are scientists, first and foremost. As such, we at NWS Louisville have been pursuing several important research topics. Our results are shared at conferences and seminars both locally and, in some cases, nationally. The fruits of our labor are then used in day-to-day meteorological challenges, leading to improvements in forecasting and hazardous weather operations.



Chris Smallcomb
shows his poster in
St. Louis

Recent Research

Hail Spike Impacts on Doppler Radial Velocity Data During Several Lower Ohio Valley Convective Events, by Senior Meteorologist Chris Smallcomb

Effects of ENSO Since 1950 on the Lower Ohio Valley, by Forecaster Ben Schott

Where is Tornado Alley? A Comparison of the Great Plains Tornado Alley and Dixie Alley, by MIC John Gordon

Tornado Climatology of Central Kentucky and Southern Indiana, 1830—Present, by Senior Meteorologist Tom Reaugh

Effects of Cell Mergers into the Inflow Flank of Supercells on Tornadogenesis, by Meteorologist Mark Jarvis and Science and Operations Officer Ted Funk

Flash Flood Hot-Spots, by Senior Meteorologist Don Kirkpatrick

Observations and Quantification of Low-Level Mesovortex Evolution within the 4 July 2004 Southwest Missouri High Wind Event, by Meteorologist Angie Lese

Partners in Communication: National Weather Service and the Local Media Working Together to Save Lives During the Michiana Tornado Outbreak of 24 October 2001, by Senior Meteorologist Tom Reaugh

We Are Constantly Learning

Continuing education is crucial in meteorology as our understanding of the Earth's atmosphere continues to develop. Meteorologists at NWS Louisville attended and presented talks at a plethora of seminars and conferences in 2006 to keep their talents honed (see list below).

Forecaster Angie Lese is planning our very own weather conference right here in Louisville. On February 28 and March 1, 2007, we will host the Midwest Bow Echo Workshop for NWS offices, universities, and the research community. A bow echo is a linear thunderstorm system that produces powerful, damaging wind gusts, and occasion-

ally tornadoes. The purpose of the workshop is to enhance our understanding of how bow echoes behave.

In addition to conferences, forecasters are also required to participate in the "Advanced Weather Operations Course" (AWOC), which is a set of lessons about the latest meteorological techniques and research. There is one AWOC geared towards warm weather events such as thunderstorms, and another AWOC for winter weather. It is through these teaching tools that we are able to stay on top of our game in both daily forecasting and during hazardous weather events.

Conferences Attended

American Meteorological Society Annual Meeting, Atlanta, GA: In January 2006, Meteorologist-in-Charge John Gordon gave a talk to 600 college students entitled "Nowcasting — Separating Yourself from the Rest in the Job Market."

31st Annual Meeting of the National Weather Association, Cleveland, OH

23rd Conference on Severe Local Storms, St. Louis, MO

Central Indiana Severe Weather Symposium, Indianapolis, IN

10th Annual Severe Storms and Doppler Radar Conference, Des Moines, IA

10th Annual Ohio Severe Weather Symposium, Columbus, OH

Tornadogenesis seminar at NWS Indianapolis, Indiana

Regional Climate Conference at Purdue University

Local Office Seminars

Media Severe Weather and Winter Weather Seminars led by Science and Operations Officer Ted Funk

Storm Damage Survey Seminar conducted by tornado damage expert Tim Marshall from Haag Engineering in Carrollton, Texas

Hazardous Materials Seminar given by Forecaster Ben Schott

Dam Break and Flash Flood Seminar given by Forecaster Ben Schott

Forecast Verification Seminar given by Forecaster John Denman

NWS Internet Presence Seminar given by Information Technology Officer Tony Freeman

Photography and Image Editing Workshop given by Senior Meteorologist Chris Smallcomb



Andrea Lammers and Sarah Ede show their posters in St. Louis

Office Activities

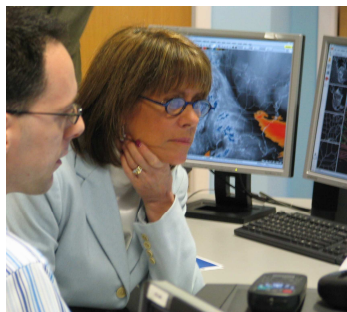
Every office in the NWS has two designated back-up offices. That way, if an office should ever lose its ability to disseminate information, such as during a power outage or from damage to the NWS office, a neighboring office is able to assume the affected office's duties. Our customers then will continue to receive all of their weather information as usual. In 2006, Forecaster Marilyn Scholz simplified the back-up procedures, making the process simple enough that we can implement back-up quickly and easily whenever necessary. In this way, we will minimize any interruption of weather data to the public.

MIC John Gordon gave many talks in 2006, including a speech to 300 members of the Louisville Rotary Club. Other groups that heard Mr. Gordon speak included the Optimist Club, Lions Club, Chamber of Commerce, Kiwanis Clubs, the Central Kentucky Firefighters Association, Louisville Gas and Electric, Allen County Historical Society, the Kentucky Department of Transportation's annual meeting, and the Lexington Homeland Security Council.

We'd be happy to speak at *your* organization's next meeting! Simply contact John Gordon or Joe Sullivan here at the NWS office to schedule.

In 1995, the official point used for Louisville's daily temperature and precipitation data was moved from Standiford Field to the new NWS office. This was done in an effort to use the most accurate data possible. By 2005, the weather observing equipment at Louisville International Airport had proved itself reliable enough that we were able, on January 1, 2006, to move the official observing point back to its traditional home at Standiford Field.

Rep. Anne Northup, pictured here with Senior Meteorologist Tom Reaugh, visited us in January. She was given a tour of the office and was shown how we issue severe weather warnings.



NWS Louisville employees take responsibility for keeping the office environment appealing. In June, we held our Second Annual Office Beautification Day, during which we planted flowers, shrubs, and a new tree, organized our library, and straightened the storeroom. During our clean-up, we found a 35mm film from the 1974 Super Tornado Outbreak!

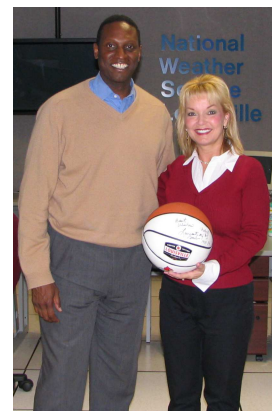


Ted Funk and Mike Callahan do some pruning



Forecaster Angie Lese demonstrates our computer system to visitors from the Australia Bureau of Meteorology in October. The meteorologists from the Southern Hemisphere were also given a tour of the office.

The Combined Federal Campaign (CFC) is an opportunity through the efforts of federal employees to give to thousands of worthy causes, and has been supporting charities for the past 35 years. In 2006, for the 15th consecutive year, 100% of the NWS Louisville staff donated money through CFC. We pledged \$13,176 to support national agencies and local organizations such as the United Way and American Red Cross.



Lancaster Gordon and Pam Lozier kick off the 2006 CFC Campaign

Hurricane Hunter

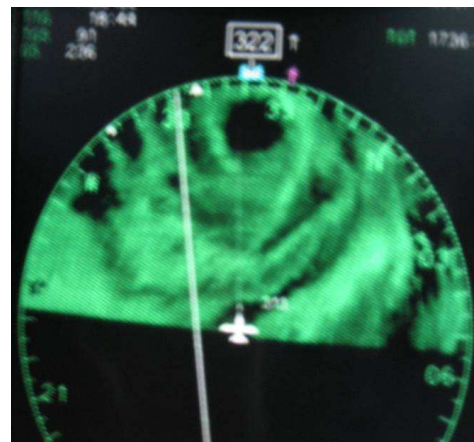


MIC John Gordon has a second job: flying as a weather officer with the Air Force Reserves out of Keesler Air Force Base in Biloxi, Mississippi. During 2006, John flew missions into Tropical Storm Ernesto in August and Hurricane Florence in September. John also flew a ten-hour mission through Hurricane Lane in the

eastern Pacific Ocean on September 15.

John leaves for Biloxi once a month to fly through tropical cyclones, winter storms, or on training missions. In February 2007, John will investigate winter storms while using Elmendorf Air Force Base in Anchorage, Alaska as his base.

John will retire from the Air Force in April 2007 after 21 years of service.



Major Gordon's radar view of Hurricane Lane off the Mexican coast in September

Departures

NWS Louisville had to say good-bye to some of our fellow employees in 2006.

On March 31, Hydrometeorological Technician Pat Waidley retired. Pat spent two decades in the United States Navy before beginning his NWS career at Jackson, Kentucky. Pat came to the Louisville office in 1994.

On December 2, long-time Warning Coordination Meteorologist (WCM) Norm Reitmeyer retired from the NWS after 36 years of Federal service, including time spent in the U.S. Navy. He began working at NWS Louisville in 1982, and was promoted to the position of WCM in 1994.

Andrea Lammers was one of our excellent student employees at NWS

Louisville over the summer. In August, she left Louisville to start her career as a Meteorologist Intern with the NWS, accepting a position at the Northern Indiana office.

NWS Louisville greatly benefited from Pat's, Norm's, and Andrea's many valuable contributions and we wish them all well in their future endeavors.

HAZMAT, continued from page 10

Security has been notified of our ability and willingness to support any HAZMAT events across south central Indiana.

"HazCollect" is the rapid distribution of local emergency messages throughout the NWS and over all of the various distribution channels to the people who need and ultimately act on

the information. Once the message enters the system, it travels electronically, unimpeded, directly to end users in the local community. This includes all NWS communication distribution methods such as NOAA Weather Radio as well as private and commercial vendors who distribute messages received from the NWS. It is estimated that using today's man-

ual procedures, processing emergency messages averages about seven minutes. Using HazCollect, we estimate this process can be reduced to two minutes. Imagine the impact those five minutes can have on lives in your community in a major catastrophe. HazCollect is expected to be in use by Spring 2007.

Worst Weather of 2006: Tornadoes and Flooding

JANUARY 2

The most destructive widespread weather event of 2006 took place on the second day of the year. Powerful thunderstorms rolled across central Kentucky and south central Indiana on the afternoon of Monday, January 2. Six tornadoes occurred, making it the largest wintertime tornado outbreak we have ever recorded in this region.

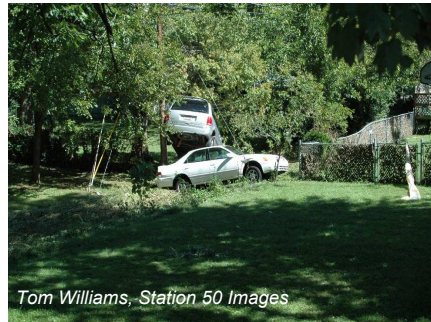
It was the area's largest tornado outbreak since we saw seven twisters on November 9, 2000.

In addition, there were many reports of wind damage, large hail, and heavy rain. Elizabethtown was the hardest hit community, with F2 damage from a tornado a few miles north of downtown along US 31W. F2 tornadoes also occurred in Lincoln and Adair counties.



Steve Blake

**Above: Versailles, Kentucky
Below: Elizabethtown, Kentucky**



Tom Williams, Station 50 Images

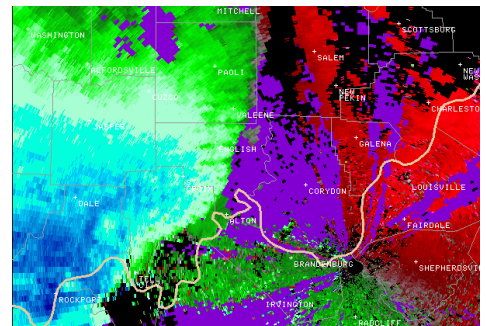
SEPTEMBER 22—23

A slow-moving storm system brought torrential rains to the region on September 22 and 23, resulting in widespread flooding. Six people were killed in NWS Louisville's area of responsibility. It was the worst general flood since the March 1997 flood. It was the deadliest weather event in this area since seven people were killed in the flood of March 1-2, 1997, and the Super Outbreak of tornadoes on April 3, 1974 when 72 lives were lost. Record daily rainfall amounts were recorded at Bowling Green on the 23rd (2.83"), Lexington on the 23rd (4.76"), and Louisville on the 22nd (4.28," which was just two hundredths of an inch away from the all-time September record for daily rainfall).

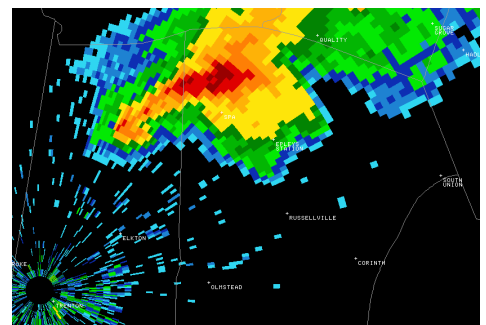
OTHER EVENTS

Severe weather struck the area on several days throughout the year, with the worst events occurring during the spring months. Hail and wind damage were particularly widespread on April 2, April 7, and May 25.

The outbreak on April 2 was especially prolific, with four different waves of storms plowing through southern Indiana and central Kentucky. NWS Louisville received dozens of wind damage reports, plus two short-lived tornadoes as well. The graphics below were all taken from April 2.



NWS Doppler Radar on April 2 showing extremely strong winds, evidenced by the bright blue colors, bearing down on Louisville. The yellow line is the Ohio River.



This supercell storm, exhibiting a classic "hook echo," spun a tornado across a small part of northwestern Logan County on April 2. Earlier this storm produced a strong tornado in Todd County near Hopkinsville.



Photo by Code 3 Images Photography

Elizabethtown, Kentucky



NWS

Our Plans for 2007

*We are a dynamic office, dedicated to the protection of lives, property, and your tax dollars.
In 2007, some of our planned activities include:*

- **Fire Weather Forecaster Joe Ammerman will travel to drought-stricken parts of Australia to help with fire-fighting forecasting**
- **Comprehensive review of our severe weather program and services**
- **Decrease the number of false Tornado Warnings (warnings with no tornado)**
- **Expand StormReady**
- **Partner with the Civil Air Patrol for more aerial damage surveys**
- **Bow echo workshop February 28 and March 1 (see page 11)**
- **Partner with the Louisville Science Center and the Muhammad Ali Center to install weather observation equipment in downtown Louisville**
- **Leadership enrichment within our office**
- **Open House this summer for Congressmen and Emergency Managers**
- **Teach schools how to program their new weather radios (see page 4)**
- **Develop a new presentation to display our many public services**
- **Continue ongoing tornado database research (see page 5)**
- **Improve low cloud forecasting for aviation**
- **Research and improve forecasting of minimum temperatures**
- **Build a new and improved tornado simulator**
- **Increase the office's storage facility**

Radar, continued from page 2

the radar site to the office was "turned up." A few weeks later the second half of the ring was operational and after many successful tests, the project was complete. The communications failures immediately vanished when the fiber was initialized. In the following ten months, there were no reports of communications errors. The new circuit not only repaired the link between the radar and the office, it also repaired the confidence of the operational staff in the equipment so they could concentrate on the task at hand: the protection of life and property.

**National Weather Service,
Louisville, Kentucky**

6201 Theiler Lane
Louisville, Kentucky 40229

Phone: 502-969-8842
Fax: 502-968-5663
E-mail: w-lmk.webmaster@noaa.gov



The National Weather Service is a dedicated team of professional meteorologists, hydrologists, and technicians providing critical weather information to the public. Our primary goal is the protection of life and property from the effects of all types of weather. The number one priority of the NWS is to provide timely and accurate warnings of tornadoes, severe thunderstorms, and floods. In addition, we also issue routine forecasts for the general public, aviators, and fire weather specialists via NOAA Weather Radio, the Internet, and AP Weather Wire for the enhancement of the national economy. The NWS is the sole official source of weather-related warnings in the United States. Because the NWS is a Federal organization supported by tax dollars, all NWS data are available to the public at no additional charge.



The Louisville NWS office is responsible for 49 counties across central Kentucky and 10 counties in southern Indiana. On the map below, the yellow counties are in Eastern Time and the blue counties are in Central Time.

