

# Sterling Reporter

Newsletter of NOAA's National Weather Service Baltimore/Washington Forecast Office

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Winter 2003/2004

## Hampshire County, West Virginia Becomes StormReady by David Manning, Meteorologist

StormReady is a national program, developed by the National Weather Service to better prepare local jurisdictions and citizens for severe weather. The program encourages communities to develop a proactive approach to its hazardous weather operations plans. It accomplishes this by providing clear guidelines on how to improve emergency management operations during times of hazardous weather. Historically, there has been a lack of guidance for emergency managers in responding to hazardous weather threats, as the focus was shifted more toward hazardous materials, search and rescue, and the like. StormReady was developed to fill that gap, integrating hazardous weather into other more traditional emergency management areas of expertise.

Almost 90% of all presidentially declared disasters are weather-related, costing the economy billions of dollars each year in damage. The StormReady program provides communities across the nation the communications and safety skills necessary to help protect life and property from the ravages of nature.

Hampshire County Office of Emergency Services has been working recently to improve the county's response to hazardous weather. Naturally, the StormReady program was the perfect fit. By preparing its emergency responders, 911 center dispatchers, and its citizens, the county has joined the ranks of those counties being designated as StormReady. On December 15<sup>th</sup>, Warning Coordination Meteorologist Barbara Watson and Science and Operations Officer Steve Zubrick

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## Farewell and Good Luck Michelle and John Margraf!!

After more than five years of service to the Baltimore - Washington area, John and Michelle will be moving to Minneapolis this January.

Michelle is a graduate of St Cloud State University. She worked at the Minneapolis office as a student before being promoted to a full time intern at Jackson, Kentucky. Michelle transferred to the Northern Indiana office in 1997. In 1998, she joined the staff at Sterling as an intern before being quickly promoted to a forecaster.

John graduated from Purdue University. He started his Weather Service career as a volunteer at the South Bend office then served as an intern at Indianapolis. He was promoted to forecaster when he transferred to the Minneapolis office, then transferred to the Northern Indiana office in 1997. John joined the Sterling staff in 1998 as a forecaster. John was also quickly promoted in Sterling, first to a lead forecaster, then to the Information Technology Officer.



Both Michelle and John have consistently contributed at a high level. In addition to her regular forecasting duties, Michelle has expanded the outreach program, which now encompasses tours, speaking engagements, school talks, and visits to our local emergency management. Michelle has been the editor of the Sterling Reporter, along with taking on the important role of compiling data and reports

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presented the StormReady certification to Hampshire County officials in Romney, formally designating the county as being StormReady.

There has been a recent flurry of activity in the Eastern West Virginia Panhandle of communities interested in the StormReady program. In the very near future, we hope to add Jefferson and Mineral counties to the list of StormReady communities. This program is very important given the frequent occurrences of flooding and severe weather in the area.

The StormReady program is yet another example of how your National Weather Service is fulfilling our commitment to protect life and property. We feel that the StormReady program is an excellent example of a productive partnership between the National Weather Service and those we serve. We encourage all of our communities to become StormReady and look forward to helping them to achieve that goal.

### **Congratulations to Hampshire County!**

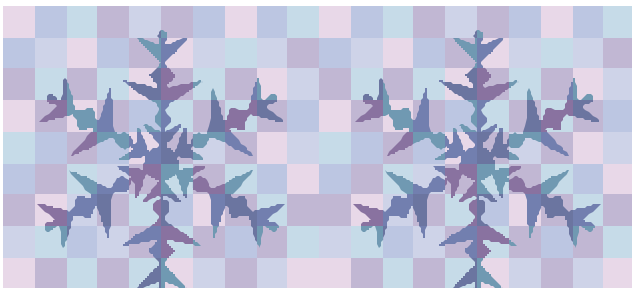


*Farewell Michelle and John continued from page 1...*

every month for the national publication *Storm Data and Unusual Weather Phenomenon*.

As Information Technology Officer, John's job has been to maintain the software and computer systems at the office. John has also performed at a tremendous level, keeping ahead of software bugs and promptly fixing any problems which do arise. John also researches the ever-changing NWS policy and keeps our software programs within policy. John's extensive background as a forecaster has allowed him to work closely with the forecast staff, empathizing with our needs and deadlines.

The staff at the Sterling forecast office will miss Michelle and John's hard work and dedication. We wish our friends the best of luck.



## **What's the Chance of a White Christmas?**

by Steve Rogowski – Meteorologist

Lead forecaster Chris Strong recently reviewed climatic records at both Baltimore's BWI Airport and Washington's Reagan National Airport. Christmases which feature snowfall or have measurable snow on the ground are in the minority in this part of the country.

During the 132 years of record at Washington, only nine had measurable snow (1 every 15 years...or about 7 percent) on Christmas. When we incorporate snowfall which fell from previous days that remained on the ground, the odds of a white Christmas increases to 14 percent...or once every seven years.

At Baltimore, the numbers prove a little more favorable for a white Christmas. During the 120 years of record at Baltimore, twelve had measurable snow (1 every 10 years...or about 10 percent) on Christmas. When we incorporate snowfall which fell from previous days that remained on the ground, the odds of a white Christmas increases to 24 percent...or once every four years.

So if it's usually not snowing, what are Christmases like? Chris found that Christmas day in Washington averages out to a high of 43 after a morning low of 29 under partly cloudy skies. Similarly, the average Christmas in Baltimore is a high of 43 after a morning low of 28 under partly cloudy skies.

Of course, weather rarely follows the law of averages. In Washington, the highest temperature on Christmas day was 72 degrees in 1964, while the coldest Christmas temperature was a low of 3 degrees in 1983. Further north in Baltimore, the highest temperature on Christmas day was 72 degrees in 1964, while the coldest Christmas temperature was a low of 0 degrees in 1983.



*While touring Emergency Operations Centers of the eastern West Virginia counties that WFO Sterling supports, senior forecaster Andy Woodcock included visits to five schools from grades 1 through 12. The 2<sup>nd</sup> graders of Mrs. Hinkle's class at the Maysville Elementary show off their NWS pamphlets and a hurricane preparedness CD.*

## Winter Weather Reporting Procedures

by Melody Paschetag - Service Hydrologist

### Where and How to measure Snow

1. Ideally, you want to measure snow on a snow board. If you don't have one, you can make your own. It is just a clean, white board (about 2 X 3 feet). Place the board on the ground away from trees, buildings, fences, etc., as much in the open as possible. Allow the snow to accumulate on top of it and measure the depth with a ruler or yardstick. **Read the ruler/yardstick to the nearest tenth of an inch, if possible.** In other words, if you measure 5.75 inches, you would report 5.8 inches.

2. A less accurate alternative would be measuring snow on a deck or patio. These surfaces are more likely to be warmer and melt some snow or be sheltered by the house, etc.

3. Measuring on the ground with no snow board works if there is no grass or the grass is extremely short and compact to the ground. If not, be sure not to jam the ruler down too far, to avoid measuring the dirt or grass.

4. Measuring on a driveway might work if the temperatures before the snow are well below freezing so that all the snow that falls accumulates and does not melt. If your driveway is paved, just use the ruler/yardstick. If gravel, do not jam the ruler into the gravel, just penetrate the snow until it hits stone.

5. Another option would be sampling. If you are not using a snow board, you might want to sample several locations and take an average. If windy conditions are causing drifting of snow, do not average in the drifts. Measure drifts separately and to the nearest foot.

### Report Snow...

1. If snow is falling and accumulating, but not in the forecast, or the snowfall depth has exceeded what is currently forecasted.
2. When 4 inches of snow has fallen. (However, reports are never turned down).
3. If possible, after the initial 4 inches report every additional 2 inches.
4. **Most Important! Report final snowfall total.** This data is critical for proper documentation of the event.

### Reporting Ice...

1. When a glaze of ice begins to accumulate on trees and wires, or on roadways and walkways. Ice is extremely hazardous and sensitive to your local temperature.
2. When ice accumulates a quarter inch or more on trees and wires. At this point, the weight of ice may be enough to bring down tree limbs and utility lines.
3. Ice total which is the final thickness of ice on trees/lines.

### Also report...

1. If it is snowing and you see lightning or hear thunder.
2. If it is snowing and the wind is gusting to 35 MPH, causing white out conditions.

### COOP/Precipitation Observers and others who can report...

**Take precipitation observations everyday between 630 am and 830 am (totals since yesterday morning)**

1. If 1.0 inch or more new snowfall fell within the previous 24 hours - measure to the nearest tenth of an inch.
2. If snow depth on the ground is 1 inch or more - measure to the nearest whole inch.
3. Core samples on Tuesdays and Fridays if there is 5 or more inches of snow on the ground.

To take a core sample, you are determining the water equivalent of the snow pack on the ground. To do this, take a sample of a "good" representation of the snow pack. Using the larger outer cylinder of the rain gage, place it upside-down and press it to the ground. Try to scoop the circular column of snow into the container. Melt it with a measured amount of warm water. Pour the entire contents into the inner tube of the gage and read/measure to the nearest tenth of an inch. Remember to subtract the amounts of measured warm water you added to melt the snow and ice, before calling in your report.

The most important thing is to tell us what you have at your location. We know it is precipitating and sometimes the exact type of precipitation may be a little hard to determine when local temperatures are around freezing. The combination of Weather Service equipment, forecaster expertise and experience, and your reports will develop a full picture of the event. **Thank you to our spotters, observers and volunteers.**

## **5<sup>th</sup> Annual Skywarn Appreciation Day Takes Place Despite Snowstorm**

by Steve Rogowski - Meteorologist

Although flakes were still flying across the metro area, dedicated HAM radio operators carefully converged toward the Sterling National Weather Service Office December 6<sup>th</sup> to take part in the 5<sup>th</sup> annual Skywarn Appreciation Day. As a part of the national program, which simultaneously took place across 114 NWS offices, Skywarn HAM radio operators were invited to make as many contacts across the world as possible during the 24-hour marathon event.

According to the original event organizer, Scott Mentzer Meteorologist-In-Charge of the Goodland Kansas office, preliminary numbers indicate over 2,000 amateur radio operators participated across the country. Mentzer also reported radio contacts were made abroad to countries such as Canada, Brazil, the Cayman Islands, Austria, Guyana, and Sweden.

Skywarn radio operators are a vital part of the severe warning process. As trained spotters, they convey timely ground truth which can confirm a meteorologist's interpretations of Doppler Radar signatures. The information they provide often times adds to the confidence of the forecasters, allowing for longer lead times, while adding credibility to the warnings.

## Weather Review – July & August 2003

by Michelle Margraf, Storm Data Focal Point

For the detailed report see Storm Data on our website at:  
<http://www.erh.noaa.gov/lwx/Storms/Strmdata/index.htm>

July 4<sup>th</sup>: Thunderstorms downed trees in Frederick (MD), Jefferson, and Howard counties.

July 6<sup>th</sup>: Severe thunderstorms downed trees in North Central Maryland in addition to Loudoun and Warren counties. Quarter sized hail fell in Montgomery County.

July 7<sup>th</sup>: Thunderstorms downed trees in Southern Maryland and Spotsylvania County.

July 8<sup>th</sup>: Thunderstorms downed trees in Allegany and Mineral counties. Roads were flooded in Hardy, Grant, and Pendleton counties.

July 9<sup>th</sup>: Thunderstorms downed trees and power lines across Northern Virginia and Allegany, Montgomery, Prince George's, and Anne Arundel counties. Three weak tornadoes touched down in Jefferson and Loudoun counties. Quarter sized hail fell in Loudoun County.

July 10<sup>th</sup>: Severe thunderstorms produced damage in several locations. Weak tornadoes touched down in Culpeper, Stafford, and King George counties. High winds downed trees in D.C., Southern Maryland, and across much of Northern Virginia. Road were flooded in D.C. in addition to Northern Virginia. Large hail fell in Augusta County, Charlottesville, Fauquier County, and Manassas.

July 11<sup>th</sup>: A thunderstorm downed trees in Anne Arundel County.

July 12<sup>th</sup>: Thunderstorms downed trees and power lines in Frederick (MD), Carroll, Baltimore, Harford, Shenandoah, Frederick (VA), Clarke, Mineral, and Hampshire counties.

July 14<sup>th</sup>: Thunderstorms with high winds, and hail moved through the Potomac Highlands and Augusta County. Several trees were downed and up to quarter sized hail fell. Roads were flooded in Augusta County.

July 18<sup>th</sup>: Thunderstorms downed trees and wires in Prince George's and Calvert counties.

July 21<sup>st</sup>: Thunderstorms downed trees in Greene and Washington counties.

July 22<sup>nd</sup>: Thunderstorms downed trees in St. Mary's, Carroll, Frederick (MD), and Montgomery counties and Alexandria. Roads and creeks were flooded in Montgomery, Fairfax, and Arlington counties and Falls Church. A man was killed and another was injured after being swept away by flood waters in Arlington.

July 28<sup>th</sup>: A thunderstorm downed numerous trees in

Orange and Spotsylvania counties.

August 3<sup>rd</sup>: A thunderstorm downed trees in Allegany and Mineral counties. A man was injured when lightning struck nearby in Anne Arundel County.

August 4<sup>th</sup>: A thunderstorm caused road and stream flooding in Fauquier County.

August 5<sup>th</sup>: Thunderstorms downed trees in D.C. in addition to Charles, Prince George's, Calvert, Greene, Orange, Madison, Culpeper, and Fauquier counties. Large hail fell in Rockingham and Stafford counties.

August 7<sup>th</sup>-12<sup>th</sup>: Thunderstorms caused flooding in Anne Arundel, Howard, Harford, Frederick (MD), Augusta, Nelson, Shenandoah, Rockingham, Albemarle, Greene, Hardy, Pendleton, and Grant counties.

August 12<sup>th</sup>: A thunderstorm downed trees in Frederick County (MD).

August 16<sup>th</sup>: Numerous locations in Maryland, Northern Virginia, D.C., and Berkeley County reported downed trees and power lines, lightning fires, flooding, and hail after thunderstorms moved through.

August 17<sup>th</sup>: A thunderstorm downed trees and dropped large hail in Albemarle, Augusta, and Nelson counties.

August 22<sup>nd</sup>: Thunderstorms downed trees across North Central Maryland, Northern Virginia, and Jefferson County. Golf ball sized hail fell in Baltimore County. Roads were flooded in Morgan County.

August 26<sup>th</sup>: Widespread wind damage was reported after a line of thunderstorms with winds up to 80 MPH moved through the region. A woman was injured in D.C. when a tree fell onto her car. Large hail fell in Southern Maryland and Jefferson County.

August 27<sup>th</sup>: Thunderstorms brought high winds, frequent lightning, and large hail. Trees and power lines were downed in numerous locations. Several buildings caught fire after being struck by lightning. A man was injured when lightning struck nearby in Frederick County (MD).

August 28<sup>th</sup>: Scattered thunderstorms downed trees in Rockingham, Augusta, Nelson, and Albemarle counties. A woman was injured when a large tent collapsed at the Albemarle County Fair. Two men were injured at the fair after lightning struck nearby.

August 29<sup>th</sup>: Thunderstorms downed trees in Culpeper, Shenandoah, and Madison counties. Heavy downpours flooded Fauquier and Madison counties. Large hail fell in Stafford County.

August 30<sup>th</sup>: Thunderstorms downed trees in Charles, Montgomery, and Fauquier counties.

## Local NWS Weather Observer Receives Maryland Governor's Award

by Michelle Margraf - Meteorologist

Since the late 1960s, Robert "Bob" Leffler has been recording local weather data and managing the Cooperative Weather Observer program, which dates back to 1890. At the beginning of December, Bob, a scientist with NOAA's National Weather Service and a volunteer weather observer for the National Weather Service office in Sterling, Virginia received the Maryland Governor's Award for his "outstanding services" to the citizens of the state.

Bob, a Damascus, MD resident began his science career as a volunteer assistant to the Maryland state climatologist. He did this while earning a Bachelor of Science degree in Physical Geography and Climatology from the University of Maryland at College Park. "I have always had an interest in the climate sciences, even at a young age," Bob said. "To have a career doing something you truly love, and to be recognized by [Governor Robert Erhlich], is very special."

The award praised Bob's "demonstrated excellence" in taking weather and climate observations, his close relationship with the local NWS forecast office, his strong involvement in volunteer work and his availability during critical weather events. "This [award] reflects Bob's importance to the agency's climate and weather data collection program, which is invaluable to the nation. It also reflects his importance to the community as a whole," said Greg Mandt, director of the NWS Office of Weather, Water and Climate Services.

Bob, who has been a volunteer observer since 1970, drafted the first Cooperative Weather Observer modernization plan, which included upgrading the weather instruments the volunteers use. Today, Bob is busy developing policies that ensure the integrity of climate records, and speaking to NOAA's climate partners about the agency's record keeping activities.

Congratulations Bob! Thanks again for everything you've done to improve the accuracy of weather records nationwide, and for being a stellar member of the local SKYWARN and Co-op observing network.

### Upcoming SKYWARN Classes

Classes are always being added! Visit our SKYWARN website for the latest info at:

<http://www.erh.noaa.gov/lwx/skywarn/classes.html>

or call our phone recording at 703-260-0107 ext. 520

### BASICS I SKYWARN CLASS

This class is essential for becoming a SKYWARN Spotter. It is a 3-hour class that covers the basics of how SKYWARN and the National Weather Service operate, what you need to report and how, and how to spot severe thunderstorms and tornadoes.

[This class is a pre-requisite for all other classes.](#)

**When: Thursday, Feb 12<sup>th</sup> from 7:00-10:00 PM**  
**Where: National Weather Service in Sterling, VA**  
**Register by calling 703-260-0107 extension 420**

## National Weather Service Assisted in First Flight

by Steve Rogowski - Meteorologist

December 17<sup>th</sup> 2003 marked the 100<sup>th</sup> anniversary of the first flight by the Wright Brothers at Kitty Hawk, North Carolina. The U.S. Weather Bureau (as it was referred to in the day), operated a field office at the Kitty Hawk Life Saving Station from January 2, 1875 to 1904. The Wright Brothers contacted the Kitty Hawk Weather Bureau office for meteorological information prior to settling on a location for the historic flight.

Joseph J. Doshier of the Weather Bureau office responded to the Wright Brothers inquiry, giving the aviators wind information that they requested in order to select the Kitty Hawk location.

The world first learned of the historic flight via a telegraph sent by Orville Wright to his father from the U.S. Weather Bureau office.



**Kitty Hawk Weather Station in 1900**

The National Weather Service continues its relationship with the aviation community by issuing forecasts for airports across the country. Each National Weather Service office supports decisions regarding airport runway configurations and fuel load made by the aviation community every day by issuing twenty-four hour forecasts of detailed meteorological variables such as wind speed and direction, visibility, precipitation and cloud ceiling heights.

For further information about the relationship between the Weather Bureau and the first flight, visit the National Weather Service Morehead City, NC office website at:

<http://www.erh.noaa.gov/mhx/NWSCentennialFlight.html>

## Our HMTs - The Unsung Members of the Staff

by John Newkirk, Data Acquisition Program Manager

Hydrometeorological Technicians, better known as HMTs, are an essential part of the operational staff. HMTs assure quality weather data is received and transmitted through the computer systems at our office. The data is comprised of automated and manual observations received through the cooperative observer network, automated surface observing systems, and weather balloon readings. This data is ingested into computer models that use the data to produce forecasts of future weather conditions. The data is also used for climatology and calibration of forecast models, Doppler radar, and satellites. The climatology consists of daily climate reports and historical records used by industry and virtually every citizen and news media outlet in the nation.

Twice daily the unit launches a weather balloon with an attached box of weather instruments that travels up into the atmosphere at a speed of 1000 feet per minute. The instruments attached to the balloon transmit temperature, humidity, pressure, wind direction, and wind speed every two seconds during the 100 minute long flight. The balloon bursts around 100,000 feet and falls to the ground with an attached parachute. Weather balloon launching stations are strategically positioned across the globe and every site launches at the same time. This way a snapshot of the weather around the globe can be made twice a day. The weather balloon data is then ingested into worldwide forecast models which are used operationally by the forecasters and for meteorological studies.

During severe weather the HMT on duty monitors severe weather reports and obtains ground truth information through interaction with the 911 centers and spotter networks. The HMT is the first line of communication on station handling media interviews and general public questions. He/she monitors NOAA Weather Radio and assures warnings and forecasts are broadcast within specific time frames.

A big part of the unit's responsibility is the cooperative observer program. Sterling has around 140 coop stations which require yearly visits. The visits comprise of maintaining equipment, training, providing adequate supplies and ensuring proper recognition of deserving candidates. He/she coordinates news media releases, the award program, and serves as a liaison with state and local officials. A subset of this program is visitations yearly at limited aviation sites and air traffic control towers.

Since we have so many volunteer observers it is only fitting that the HMT staff also take cooperative observations every day at our office. The HMTs also complete supplementary observations every 6 hours. These include information on precipitation and cloud types, snowpack, water equivalent and depth measurements, in addition the routine observation.

This data, along with all of the data that we quality control, adds up to a climate database that we maintain locally and issue to our users for climate studies, hazard mitigation planning, summaries of weather events, and computation of

weather statistics. The duties our HMTs complete on a daily basis play a vital role in the ongoing mission of the National Weather Service.

## Thank You Bayard Observer Ray Fulk, Sr.

by Michelle Margraf - Meteorologist

Bayard, West Virginia Cooperative Observer Ray Franklin Fulk, Sr. retired from full time weather observing after serving the National Weather Service for over 12 years. His weather records were well known at our office for their high quality and consistency. His dedication to service included taking observations every 12 hours during periods of snowfall and heavy rain in addition to his routine detailed morning observation. He also volunteered to be on call 24 hours a day if a weather observation was needed.

The Fulk family has served as the official Bayard observer since 1960 when Ray's father Howard R. Fulk took over the station. Weather records originally began in Bayard in 1944 and have been taken continuously since. Howard Fulk died in 1973 and his son William J. Fulk took over as observer. In 1990, William's brother Ray became the official weather observer for the site.

The National Weather Service would like to extend its deep appreciation to Ray and his family for their dedication to service through the years. Alvin Richard "Dick" Laymon volunteered to take over as official observer when Ray retired on October 1, 2003 so the fine tradition of quality observations from Bayard will continue. We wish Ray the best in his retirement!



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