The Mountain Weather Journal

The Official Newsletter of the National Weather Service in Jackson, Kentucky

Volume 1 **Issue 3**

WHAT'S NEW AT JKL???

By: Shawn B. Harley
Meteorologist-in-Charge

Greetings from your friends and neighbors at the Jackson National Weather Service Forecast Office. With winter fast approaching, I want to bring you up to date on some recent service upgrades that you may find helpful. On our webpage you may be interested in the expanded number of site specific forecasts now available. These localized forecasts allow someone to compare weather forecasts in nearby towns and at locations with different elevations. This can be especially important in the mountainous terrain near the Virginia border.

This service upgrade was made possible when we implemented a higher resolution forecast system earlier this year. In fact, the number of specific forecasts in the digital database we produce quadrupled this past spring. This occurred when we replaced our 5 kilometer forecast grid with a 2.5 kilometer forecast grid. What does this mean for you? It means we now have the capability to produce separate forecasts for every 2.5 kilometer square in eastern Kentucky. It also means that our forecasts can better reflect the effects of terrain on the local weather.

You can easily see the impact that terrain has on the weather by viewing our graphical forecasts at http://www.crh.noaa.gov/ifps/ifps.php?site=jkl. One thing you'll quickly notice is that daytime temperatures are almost always cooler in the far eastern end of Harlan County. Of course anyone with knowledge of Kentucky geography realizes this is the location of Black Mountain, the highest point in the state. If you've ever traveled in this part of Kentucky you also realize there is a road that crosses Black Mountain, and that the weather on the mountain, especially in the winter months, can be very different than the weather in the nearby valleys.

With our digital forecasts available at http://www.crh.noaa.gov/jkl/graphical.php you can choose to view the site specific forecast for Black Mountain, and compare it with the weather forecast for a nearby valley town such as Harlan. If you are planning on driving over Black Mountain into Virginia this winter take a look at the forecast for the mountain before you make your trip, and you'll have a better idea of what to expect as you travel into the higher terrain.

With the implementation of higher resolution forecasts we also increased the number of site specific forecasts available

WHAT'S NEW AT JKL???(Cont.)

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at http://www.crh.noaa.gov/jkl/graphical.php. By using the drop down menus available on this webpage you can choose site specific forecasts for 60 locations across eastern Kentucky. You can find specific forecasts for county seats as well as many other locations. We increased the number of locations available on this webpage after receiving suggestions for additional site specific forecasts at our 2003 Customer-Partner Workshop.

By the time you read this, our 2004 Customer-Partner Workshop will have come and gone, but we are always open to your input and suggestions. Your suggestions may result in new or enhanced services. For example, input from aviation interests in the Somerset area indicated the need for an aviation forecast for the Somerset airport. With this need identified, we began issuing a Terminal Aerodrome Forecast (TAF) for the Somerset airport this past June.

As always, we would appreciate hearing from you. If you have any comments regarding the newsletter, NOAA All Hazards Weather Radio, our webpage or any other service we provide please give us a call, send us an email, or drop us a note. We are constantly striving to improve our products and services and your feedback is important.

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CLIMATE SUMMARY

By: Jeff Carico
Hydrometeorological Technician (HMT)

...Cooler and wetter than normal during the 2004 summer season for Eastern Kentucky...

The Climate period of June through August saw a few notable monthly events occur. The Jackson Weather Office had the 7th coolest June on record as well as the 7th wettest June since climate records began in 1981. The cool and wet trend continued into the next month for Jackson with July 2004 going down as the 4th coolest and 2nd wettest on record. August 2004 saw Jackson as the 2nd coolest and the 4th driest. London recorded its coolest August high temperature with a reading of 62 degrees. The previous record was 66 degrees and occurred back in 1967. Jackson also set a new minimum high temperature in August with a reading of 65 degrees, which broke the old benchmark of 67 degrees in 1986. Also of note, Jackson did not record any highs of 90 degree or greater this year. This is the first time that Jackson hasn't seen 90 degrees since climate records began 24 years ago. London has yet to achieve a 90 degree reading as well. The London Corbin Airport has seen at least 90 degrees every year for 48 of the last 51 years. In addition to 2004, years that did not see 90 degrees included 1967 and last year.

The Jackson Weather office had an average temperature of 71.6 degrees through the 3 month period of June, July and August. This is 1.8 degrees below the normal average of 73.4 degrees for that time. Also of note, summer 2004 tied 1985 as the coolest summer ever at Jackson. The highest temperature at Jackson was 88 degrees and happened on August 28th. Jackson saw a summer low of 50 degrees which occurred on August 7th. The London Corbin Airport averaged 71.7 degrees from June 2004 through August 2004, which is 2.3 degrees below the normal average of 74.0 degrees. The coolest summer at London occurred in 1967 with a reading of 69.7 degrees. London saw a summertime high of 89 degrees on July 13th and recorded a summertime low of 49 degrees on June 5th and August 7th.

Jackson totalled 15.59 inches of precipitation for June, July and August of 2003. Jackson normally receives 13.39 inches of rainfall during that 3 month period. London accumulated 14.86 inches of rain from June through August 2003, which is 2.84 inches above normal. London normally receives 11.99 inches of precipitation during the summer season.

HYDROLOGY

By: Britt Westergard
Service Hydrologist

Turn Around, Don't Drown

With winter just around the corner, it's time to begin thinking about flooding in eastern Kentucky. The most important thing to remember when thoughts turn to flooding is flood safety. Did you know that, according to National Weather Service statistics, more deaths occur due to flooding each year than from any other thunderstorm or hurricane related hazard? In fact, over half of these flood-related fatalities occur when a vehicle is driven onto a flooded roadway, according to the Centers for Disease Control. This is why your National Weather Service urges you to "Turn around…don't drown!"

"Turn around…don't drown!" means never drive through flooded roadways. Respect all "road closed" barriers that may be posted to warn you of the danger ahead. Keep in mind that flood waters can also conceal a damaged roadway. The road may be washed out beneath the flowing water, making it an even greater hazard. Be especially cautious at night when it is harder to recognize the dangers of flooding.

Perhaps you're thinking, "My heavy vehicle will keep me safe." A 3,000 pound vehicle is not too heavy to float…after all, 97,000 ton aircraft carriers float. In fact, 18 to 24 inches of moving water is all it takes to float a 3,000 pound vehicle. Despite higher ground clearance, larger vehicles displace more water, and float nearly as easily as smaller vehicles. Moreover, in moving water, the vehicle only has to float enough for the force of moving water to push it sideways. Once the vehicle is swept downstream, it can quickly roll or flip over, leaving only a few seconds to escape.

"Turn around…don't drown!" also means never wade through floodwaters. Keep in mind that wading through floodwaters can be as dangerous as driving through them. It only takes 6 inches of flowing water to knock you off your feet.

Now that you know more about the dangers of flooding, you can confidently and safely enjoy the upcoming winter months. Remember, when it comes to flooding, "Turn around…don't drown!"

NEWS FROM THE COOP

By: David Stamper
Data Acquisition Program Manager

Edith Caudill and Jeff Lutz from the National Weather Service.

I am very sad to pass on to you that a long time Cooperative Weather Observer has passed away. Edith Caudill passed away on May 23, 2004. Edith reported precipitation data to the National Weather Service for 24 years. Edith began taking weather observations in Jeremiah, KY (Letcher County) on May 1, 1980. The station in Jeremiah dates back to August 1, 1939. Edith's dedication to her community and state has built a data base of weather records that spans 65 years.

In the picture above, Edith Caudill was presented with a length of service award from Jeff Lutz from the National Weather Service. I was with Jeff on the day that this picture was taken. Edith had fried some chicken along with all the normal fixin's. She also whipped up some apple fritters that were mighty tasty. Edith was a special gal and she always made me and other NWS employees feel right at home. I will miss Edith and wish to extend my sympathies to Edith's family. Edith's grandson Ryan has taken over the weather station at Jeremiah. Welcome aboard Ryan.

Well, as usual I am running behind and need to get out and make some visits. Those of you with Fischer-Porter Punch tape rain gauges will be seeing me soon. I would like to get them winterized before the snow starts flying.

Did You Know....

The odds of being struck by lightning are approximately 1 in 800,000.

AG1 EDWARD T. EARHART MEMORIAL SCHOLARSHIP

By: David Stamper
Data Acquistion
Program Manager

The employees of the Jackson weather office have always expressed a desire to help students in their educational endeavors. As an expression of those desires, a scholarship was established for students to attend the Lees College Campus of Hazard Community College. Beginning in 1997, "The Jackson Weather Office Employee Scholarship" awarded disbursements of $125 per semester, for a total of $250 per academic year. From 1997 through 2003, seven eastern Kentucky students benefited from the scholarship. The scholarship remains but something happened that would forever change it.

On September 11, 2001, a section of the U.S. Pentagon was destroyed by an unforgivable act of terrorism, and many Americans perished in the catastrophe. One of those Americans was Rowan County native Edward T. Earhart. Aerographers Mate 1st Class, Ed Earhart was assigned to the Pentagon METOC Component of the Naval Ice Center. AG1 Earhart graduated from Rowan County High School and attended Morehead State University prior to enlisting in the Navy. AG1 Earhart loved to teach school children about the weather and had desires to finish his college degree in the Washington D.C. area. AG1 Ed Earhart was a leader with an unflinching willingness to get the job done right.

Many fine, brave folks died on this horrible day and the tragedy changed all of our lives. When we became aware that a Navy weatherman from eastern Kentucky perished at the Pentagon, it hit us very hard. Not many people work in the weather business and if you are in it very long, you get to know most of them.

There is also a special bond that forms between soldiers, sailors, airmen and marines. This also adds to our grief because many meteorologists on our staff began their careers in the military. We did not know Ed Earhart personally, however we have became friends with his family. At our request, and with the family's permission, the scholarship was renamed in the fall of 2003. We will continue to work on getting the scholarship endowed. On October 19, 2004, the family of Ed Earhart made a substantial doantion to the scholarship fund. I really don't know how to express our gratitude to the Earhart Family for this gesture. It will go a long way in continuing our dreams to assist students in acquiring a quality education.

The scholarship will continue to provide assistance to eastern Kentucky students. Hopefully it will allow us to reflect on those men and women, both military and civilian, who lost their lives on September 11, 2001. It will also help to honor an extraordinary young man from Salt Lick, Kentucky. Ed Earhart served his community and nation with distinction; may he be a reminder to all that we too have the opportunity to serve.

TECH TIPS

By: Michael McLane
Science and Operations Officer

The Search for "Ground Truth"

National Weather Service forecasters integrate meteorological and hydrological data from numerous sources for use in the development of public weather products. The fielding of advanced technological sensors, such as weather satellites and Doppler weather radars, has provided Weather Service forecasters the ability to obtain hydrometeorological information in areas where other sources of data are limited or nonexistent.

Weather Service warnings are quite often based off information derived from radar products. How many times have you seen a National Weather Service warning include a statement similar to the following?

WEATHER SERVICE RADAR INDICATED AT 410 PM EST A SEVERE THUNDERSTORM WAS LOCATED OVER JACKSON…MOVING EAST AT 40 MPH.

HEAVY RAIN HAS FALLEN DURING THE LAST THREE HOURS ACROSS PORTIONS OF EASTERN KENTUCKY. DOPPLER WEATHER RADAR INDICATES THREE TO FOUR INCHES HAS FALLEN IN SOME AREAS.

Each of these statements is included to provide the public valuable information that will enable them to determine the potential impact of a severe weather or flood event and take appropriate actions for the protection of their property and lives. One might ask then, why does severe weather, i.e. hail greater than or equal to ¾ inches or winds greater than or equal to 58 miles per hour, not occur every time a severe thunderstorm warning is issued? Similarly, why do rainfall estimates included in flash flood warnings often exceed or fall short of rainfall totals measured by rain gauges during the same precipitation event? To answer these questions requires an understanding on how hail, wind and precipitation are detected by weather radar.

In simple terms, weather radar, like weather satellite, is a remote sensor. What this means is that these instruments collects their information from a distance. In the case of weather radar, the atmosphere is remotely sensed using pulses of electromagnetic energy. A portion of the emitted energy is reflected off "targets" located at the surface (buildings, mountains, etc.) and in the atmosphere (primarily cloud droplets) and it is this reflected energy that is directly measured by the weather radar. Neither hail, wind, or precipitation is directly measured by the radar. All three are actually calculated using arithmetic equations, called algorithms, which provide, at best, only good estimates of the fields they are attempting to measure. The degree of accuracy

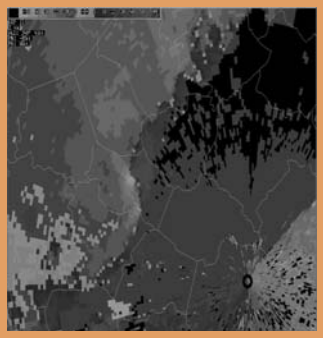
TECH TIPS (Cont.)

By: Michael McLane
Science and Operations Officer

of these estimated fields is dependent on many things (the discussion of which is beyond the scope of this article) and vary considerably from day to day and storm to storm.

How do weather forecasters overcome these inaccuracies in radar derived fields? This is done primarily through the use of "ground truth" observations. Comparison of radar estimated rainfall to observed readings from automated precipitation gauges and cooperative and spotter rainfall readings is used extensively to determine whether our radar is over or underestimating rainfall totals. Similar means are used for validating wind and hail. Both of these are derived through mathematical equations and are sensed by the radar above the surface. Strong winds and/or hail at ground level can only accurately be determined through reliable reports from human observers.

You can probably now understand why National Weather Service offices encourage the reporting of wind damage, large hail, and heavy rainfall. This search for "ground truth" is crucial if we are to improve the National Weather Service warning process.



On March 1st 1997 NWS Jackson forecasters issued a tornado warning for Powell county, based largely on strong rotational velocities derived from radar data. "Ground truth" observations of actual tornado damage, reported by state police, provided validation for the warning.

Visit us on the web at:

http://www.crh.gov/jkl/

STORM OF THE SEASON

By: Phil Hysell
Warning Coordination Meteorologist

There certainly was no shortage of severe weather events from which to choose for this edition of "Storm of the Season". During the 2004 severe weather season, there were 104 flash floods, 239 severe weather (large hail or damaging wind) events, and 8 tornadoes across our 33 county warning area.

Of all those events, Memorial Day Weekend 2004 probably affected more people in east Kentucky than any other weather event during the 2004 severe weather season. At the National Weather Service in Jackson, we issued a total of 148 flash flood, severe thunderstorm, and tornado warnings from shortly after 11 am on May 30th to 4 am on the 31st.

Thunderstorms erupted along a slow moving warm front late in the morning on May 30th and continued well into the evening. These storms brought damaging winds, large hail, including a 2.5 inch hailstone reported in Harlan county at Bledsoe, and flash flooding due to the slow movement of the storms. In Martin county, over 300 homes were damaged from flooding leaving nearly 1,000

Damage to a garage from an F1 tornado that struck Knox county early in the morning of May 31st.

STORM OF THE SEASON

By: Phil Hysell
Warning Coordination Meteorologist

residents temporarily homeless. One confirmed tornado also touched down shortly after 6 pm near Clay City in Powell county.

Just as these storms were starting to weaken, a powerful line of thunderstorms entered Pulaski, Estill, and Rockcastle counties shortly after midnight from the west. This line expanded and swept east across much of eastern Kentucky bringing widespread wind damage and five tornadoes! Three F0 tornadoes (winds under 73 mph) occurred in Owsley, Jackson and Breathitt counties around or just after 1 am, and two F1 tornadoes (winds between 73 and 112 mph) touched down in Knox county. When you add the tornado that touched down in Pulaski county on the 27th of May, the seven tornadoes that occurred in one week was the most tornadoes in a week's time in eastern Kentucky since the April 3-4, 1974 super outbreak when 18 tornadoes struck. Despite numerous homes damaged, trees downed, and flooded roads, there were no fatalities from this most unusual and destructive weather event. Our sincere thanks go to those who provided us with severe weather reports, helped disseminate our warnings, helped prepare their communities, and to those who took the appropriate actions to stay safe.

COMMUNITY INVOLVEMENT

By: Phil Hysell
Warning Coordination Meteorologist

One of the important roles of your National Weather Service Office is to be a part of the community, educating citizens about weather safety. Over the past several weeks it has been our pleasure to be a part of these activities:

* Oct. 1st: Apple Festival, Paintsville, KY
* Sept. 27th: Riverside High School, Jackson, KY
* Sept. 25th: Big Sandy Regional Airport Open House, Near Prestonsburg, KY
* Sept. 24th: Harlan Middle School, Harlan, KY
* Sept. 23rd: Johnson County Conservation Field Day, Thealka, KY
* Sept. 22nd: Environmental Fair, Buckhorn Lake State Park
* Sept. 17th: Citizens Emergency Response Training (CERT), Jackson, KY
* Sept. 15th: Environmental Fair, Jenny Wiley State Park
* Sept. 14th: Morehead State University, Morehead, KY

If your school or organization would like the NWS to visit or speak, please contact Warning Coordination Meteorologist Phil Hysell at: 606-666-2560, ext. 726, or by e-mail at phil.hysell@noaa.gov.

AVIATION NEWS

By: Dustin Harbage
Lead Forecaster

Aviation forecasting is a very important part of the National Weather Service. At the Jackson office, we have been writing Terminal Aviation Forecasts (TAF) for the London-Corbin airport (KLOZ) for a number of years. In the spring of 2003, we started writing forecasts for the Jackson Julian Carroll airport (KJKL) on top of Sugar Camp Mountain. The forecast for Jackson is very important for eastern Kentucky as it is the only forecast in the hills, east of Interstate 75. In June of 2004, the NWS once again added another airport to our aviation forecast when we started forecasting for the Somerset-Pulaski Co. airport (KSME) near beautiful Lake Cumberland.

These forecasts are written four times a day and updated, as necessary, whenever the forecast becomes unrepresentative of current or future conditions. For the latest forecast, check out the NWS Aviation Weather Center on the Internet (http://aviationweather.gov/). Besides obtaining the TAF for various airports across the country, this site is also a one stop, shopping bonanza for aviation and anyone else that has an interest in what is happening in the sky. Remember, before you go flying, obtain an official briefing on current and forecast weather conditions from the Federal Aviation Administration (FAA) at 1-800-WX-Brief.

There are many airports in Eastern Kentucky and many opportunities to experience the joy of aviation. Many airports support flight instruction and charter operations. Several offer an introductory flight around the local area. The National Weather Service at Jackson can meet with your aviation orientated group to discuss our services or any number of weather related topics.

WINTER WEATHER TERMS

By: Bonnie Terrizzi
Hydrometeorological Technician (HMT)

When you listen to a typical forecast, and you hear that there is a chance of snow, do you know what the National Weather Service (NWS) is saying? This is a guide that explains the different winter weather terms used by the NWS.

The word **snow** in a NWS forecast, without a qualifying word such as ocasional or intermittent, means that the fall of snow will be of a steady nature, and will probably continue for several hours without letup. Accumulations will be fairly uniform over a wide area, and the expected accumulations will be given in the forecast.

Snow flurries are defined as snow falling for short durations at intermittent periods. Although visibility may be reduced at times, any accumulations will be small, thus accumulations will not be mentioned in the forecast.

Snow showers and **snow squalls** are brief, intense falls of snow and are comparable to summer rain showers. Squalls are accompanied by gusty surface winds. Accumulations will vary greatly from one area to another, just as summer thunderstorms will drop significant rain in one area and bypass others. Accumulations will be an average expected for the area, with higher amounts very possible.

Blowing and **drifiting snow** generally occur together and result from stong winds and falling snow, or loose snow on the ground. Blowing snow is defined as snow lifted from the surface by the wind and blown about to a degree that horizontal visibility is greatly restricted. Drifting snow is used to indicate that strong winds will blow the snow into significant drifts.

Blizzards are the most dramatic and perilous of all winter storms, characterized by strong winds of at least 35 miles an hour, bearing blowing snow that will be reducing visibility to less than 1/4 mile for at least 3 hours. This can be new snow, or snow already on the ground being picked up by the strong winds.

Freezing rain or **freezing drizzle** is rain or drizzle occurring when surface temperatures are below freezing. The moisture falls in liquid form, but freezes upon impact, resulting in a coating of an icy glaze on all exposed objects.

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This can range from a thin glaze, to ice of several inches thick. A heavy accumulation of ice, especially when accompanied by high winds, devastates trees and transmission lines.

Sleet (ice pellets) can be easily identified as frozen rain drops which bounce when hitting the ground or other objects. Sleet does not stick to trees or power lines, but sleet, in sufficient depth, does cause hazardous driving conditions.

Any road-icing condition is extremely hazardous, as most drivers and pedestrians understand. Sometimes, precipitation does not occur, yet icing becomes a serious tragedy. Sometimes, the moisture within a heavy fog will freeze on road surfaces, or snow on roadways may become melted with traffic, which then re-freezes as ice, and is polished by the automobile tires, turning the roadway into a veritable skating rink. This condition is known as **Black Ice** and any driver during the winter season should be on alert for its development.

When the NWS feels that winter weather will threaten an area, then watches or warnings will be issued. A **Winter Storm Watch** means that severe winter weather conditions may affect your area. This will include the elements of freezing rain, sleet or heavy snow which may occur separately or in combination. A **Winter Storm Warning** means that severe winter weather conditions are imminent. A **Blizzard Warning** means that considerable falling and/or blowing snow, and sustained winds of at least 35 miles per hour are expected for several hours.

For questions or comments about our newsletter, contact our webmaster at:
w-jkl.webmaster@noaa.gov

WEATHER HISTORY

By: Karen Oudeman
General Forecaster

A Brutal Winter Remembered Twenty Years Ago

The new year looked like it was getting off to the right start. Temperatures going into New Year's Eve were well above normal. During the last week of 1984, temperatures at night were warmer than the average daytime highs. The mercury rose into the upper 60s and lower 70s with warm southwest winds during the day. The early part of the winter season had only tallied 1.9 inches of snow at the Jackson Julian Carroll Airport. Just to our northwest, though, arctic cold air was pooling across Canada, just waiting for the opportunity to invade the region.

Strong thunderstorms with wind gusts of 40-55 mph on New Year's Day marked the last of the unseasonably warm weather. A cold front with a 30 degree temperature drop behind it was just off to our west. By January 3rd, temperatures were cold enough for snow and ice. A snowstorm dumped up to nine inches across western Kentucky and up to eleven inches in northeastern Kentucky. Jackson picked up three inches, bringing the season total to 4.9 inches.

The next couple of weeks featured a little bit of snow here and there, and temperatures not too far from the ordinary. Then there was January 19th. Bitterly cold air riding on the tails of an Alberta Clipper gripped Kentucky with subzero temperatures for a record 36 hours. Temperatures on the morning of the 20th ranged from near zero in the far southeast to 26 degrees below zero in northern Kentucky. Jackson recorded -18 degrees on the 20th and 21st. This still holds as the all time record low for Jackson (tied one other time in 1994). To complicate matters, wind gusted to as much as 25 mph, plummeting wind chills, while the storm dropped three to seven inches of snow.

WEATHER HISTORY (Cont.)

By: Karen Oudeman
General Forecaster

By the end of the month, Jackson's season snow total was up to 14.0 inches, just a little over 10 inches away from a normal full season total.

A statewide heavy snow fell the first weekend in February with southeastern Kentucky receiving generally 8 - 12 inches. Eighteen inches was the highest amount recorded, which was atop Black Mountain. A second statewide heavy snow occurred on the 12th through the 13th. This was the heaviest snow of the season, when eastern Kentucky was walloped with 10 to 24 inches of snow! Breaks Interstate Park and a few other isolated areas reported snowfall of up to 24 inches. Most of the snow fell in an 18-hour period, virtually bringing life to a standstill. Longtime residents said that it was the worst snowstorm they had ever seen. Nearly a season's worth of snow fell in the month of February alone at the Jackson Julian Carroll Airport. Jackson had finished off the season with 35.0 inches of snow by the end of the month! No more than a trace of snow fell at Jackson during the rest of the winter season.

LITTLE KNOWN WEATHER FACTS

Lightning bolts can jump 10 or more miles from their parent cloud into regions with blue skies.

For each lightning bolt that hits the ground, about 200,000 pounds of rain are formed.

Three out of four of all world tornados hit the U.S.

The estimated temperature of lightning is 50,000 degrees Fahrenheit.

FIRE WEATHER

By: Jonathan Pelton
Lead Forecaster

Low relative humidities and high wind speeds are two key ingredients which act to increase the degree of fire danger. These two weather ingredients combined with drier vegetation are most prevalent during the spring and fall fire weather seasons.

The fall fire weather season runs from October 1st through December 15th. Climatologically for Kentucky, the months which lead into the fall fire season, September and October, are generally the driest months of the year. During this time of year, temperatures are cooling off. This serves to reduce the threat of afternoon and evening showers and thunderstorms which are usually driven by warmer surface temperatures. Also, the jet stream, where the better organized weather systems reside, is generally located well north of Kentucky during these months.

Typically, in the month of September, the vegetation begins to dry out. By October, the combination of drier vegetation and the end of the growing season can lead to an extended period of higher fire danger.

Climatological records for Jackson and London indicate that the driest months on record generally occurred in September and October. The normal rainfall for September is 3.77 inches…while the normal rainfall for October is 3.18 inches. Since 1981 at Jackson, five Septembers and six Octobers have had rainfall of less than two inches. In fact, the driest two month September and October period on record occurred in 2001, where only 2.50 inches of rain fell. Fall 2001 was also one of the most active fall fire weather seasons on record in eastern Kentucky.

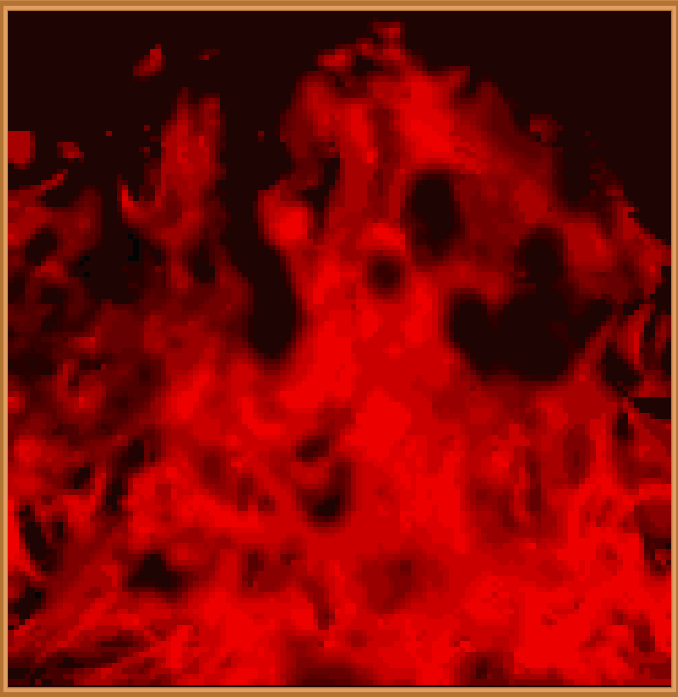
The spring fire weather season occurs in the late winter and early spring. It begins on February 15th and lasts until April 30th. In late February and

FIRE WEATHER (Cont.)

By: Jonathan Pelton
Lead Forecaster

March, most of the vegetation is still dormant and temperatures are beginning to warm. The warmer temperatures serve to increase the surface evaporation rate thereby keeping the vegetation rather dry. Furthermore, late winter and early spring is usually good kite flying weather, as it is generally windier than the rest of the year. March is generally the windiest month, with rapidly changing weather conditions. With these ingredients in place, elevated levels of fire danger can occur. However, given the fact that this time of year is not as dry as fall, the spring fire weather season is not as potentially dangerous as the fall fire weather season.

In conclusion, we have discussed the seasonal impacts of weather on fires, keep in mind that fires can occur at any time of the year, especially during prolonged periods of drought. Always strive to stay educated and aware of the weather conditions and how they affect fire. Most importantly, be careful and use good common sense.



KID'S CORNER

By: Ed Ray
General Forecaster

Egg in a Bottle

Many of you may remember our last pressure experiment in our previous issue. In that experiment, we used air pressure to crush a can by removing some of the air from inside the can. In this experiment, we will do much the same, but with a different approach.

Materials:

1. A glass bottle, one with a long and narrow neck. Some milk bottles may qualify
2. A boiled egg (peeled)
3. Matches
4. Your mom or dad

NOTE: Because this experiment involves the use of lit matches, it should only be performed with an adults supervision and help.

Light and drop several matches (three to five should do the trick), one at a time, into the glass bottle. Then place the egg over the mouth of the bottle. Watch and see what happens. Can you describe what happened?

Hint: Remember in our first experiment, we displaced air from inside the aluminum can using hot water.

Answer: The fire from the matches heats the air inside the bottle, causing some of the air to escape. Once the egg is placed over the mouth of the bottle, air can no longer get back into the bottle. After the matches go out, the air inside the bottle will cool. Because there is less air inside the bottle, a pressure difference will be created, with lower pressure in the bottle and higher pressure outside the bottle. If enough air was displaced, the pressure difference should be enough for the egg to be sucked into the bottle.