NATIONAL WEATHER SERVICE, LAS VEGAS NEVADA

The Desert Sun

SKYWARN Spotter Newsletter

Spring 2009

In This Issue

This newsletter serves the following counties:

Nevada: Clark, Lincoln, Nye, Esmeralda

Arizona: Mohave

California: Inyo, San Bernardino

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Welcome to the Spring 2009 edition of the Desert Sun!

Hello, I'm Mike Staudenmaier, the new Meteorologist in Charge (MIC) at your National Weather Service Forecast Office in Las Vegas, NV, and I want to take a few minutes to tell you a bit about myself. I arrived in Las Vegas in mid-February 2009. Prior to my move to the desert, I was the Science and Operations Officer at Weather Forecast Office (WFO) Flagstaff, AZ, where I was stationed for almost 12 years. I also had previous NWS assignments at the Western Region Headquarters in the Scientific Services Division, and as an operational forecaster at both WFO Salt Lake City, UT, and WFO Sacramento, CA. I originally grew up on a farm in Wisconsin – so if there are any Green Bay Packers fans out there – ***Go Packers!***

I'm really excited about the challenges I face ahead and the opportunities offered as the MIC of WFO Las Vegas. You can be assured that you have an amazing team working hard to provide you the latest weather, water, and climate forecasts and data. We are here 24/7/365, constantly monitoring and assessing data to stay on top of those weather situations that have a direct impact on your daily life and activities.

I have a strong desire to enhance our public service and outreach activities, ensure that we provide support vital to decision makers, issue the best weather, water, and climate forecasts available for the area we serve. I will also continue to promote the agency's values and image to the community, key stakeholders, and partners. I'm looking forward to working with you, the spotter community, over the coming years. We owe a special thanks to our many spotters who call in with real time ground truth reports. Your observations are a key element to our effectiveness when severe weather threatens life and property. Keep those calls coming!

We appreciate your civic commitment and dedication, and I look forward to continuing an active collaboration with you to protect the public's safety. Thanks again for your support, and have a great spring!

Mike Staudenmaier, Jr., Meteorologist in Charge

NOAA Weather Radio Frequencies & Coverage

KXI-83 Kingman, AZ and vicinity 162.425 MHz

KXI-84 Lake Havasu City, AZ/Needles, CA and vicinity 162.400 MHz

KQC-45 Laughlin, NV/Bullhead City and Lake Mohave, AZ 162.500 MHz

WNG-634 Pahrump, Jean, & Primm, NV/Mountain Pass, CA 162.400 MHz

WXL-36 Las Vegas Valley and Lake Mead National Recreation Area 162.550 MHz

Outreach Activities at WFO Las Vegas

Faith Borden, Warning Coordination Meteorologist

Spring continues to be a busy time for outreach. Staff from our office will be visiting several schools from now until June participating in career fairs and safety events. It'll be a good opportunity to remind students the importance of paying attention to the upcoming weather. As the cold temperatures become a distant memory and the winds of spring blow past, students will be thinking of the warm summer days. With warm temperatures comes the threat of flash flooding. Living in the desert where the soil is very hard, less than one inch of rainfall could cause flash flooding. Please remember to not play in or around flood waters. You have no way of knowing how deep the water really is, or, if a hazard such as a downed power line is in the water. It is also never a good idea to try and cross a flooded roadway, by foot or vehicle. It takes less than six inches of flowing water to sweep a person off their feet, and less than 24 inches of water to sweep a vehicle downstream. You also have no way in knowing if the roadway beneath has been washed out.

"TURN AROUND DON'T DROWN"

Outside of school visits, our office will be conducting Storm Spotter Talks in several locations across our forecast area in May and June. If a spotter talk is in your area I would love for you to attend and to introduce yourself. In my opinion that is one of the best parts of my job. I love going out and seeing the sites of our forecast area, and meeting the wonderful people that we serve.

Wear It!

2009 National Boating Safety Week Promotes Life Jacket Safety

Chris Stachelski, Forecaster

The waters of Lake Mead can be inviting any time of the year as the perfect place to pass the day. While sunny skies and light winds often make for an ideal day on the lake much of the year, it is important to remember to boat smart and boat safe no matter what the weather is like when you venture out. Each year the National Safe Boating Council sponsors National Safe Boating Week. This year May 16 - 22 has been selected as the dates for this event.

The theme of this year's National Boating Safety Week is on the importance of wearing life jackets. Many people do not realize how just taking a short amount of extra time to put on a life jacket can significantly reduce the risk a person faces while on the open water. Life jackets can protect you from drowning if you fall off a boat, or if the boat you are on were to capsize. It is important to not only have a life jacket on board while you boat but also to make sure you're wearing it. Purchase a life jacket that is comfortable and lightweight. Remember…an uncomfortable jacket will discourage you from even wanting to wear it.

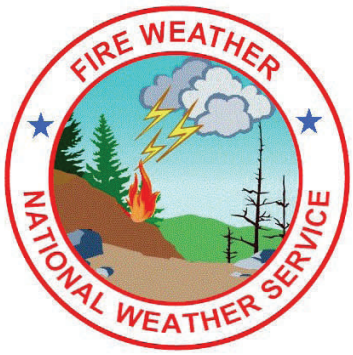
Additionally…always remember to check the weather before you go out and while you are on the water. Watch and listen for signs of any rapidly changing weather conditions. The latest weather information for the lake can be found on our website at weather.gov/lasvegas, or on NOAA All Hazards Weather Radio at 162.55 MHz. If a thunderstorm approaches, head for shore. Get out of the boat and away from water and seek shelter immediately. If you are unable to get to shore go below deck if possible. Keep away from metal objects that are not grounded to the boat's protection system. Do not touch more than one grounded object at the same time.

Fire Weather 101

Katie LaBelle, Intern Forecaster

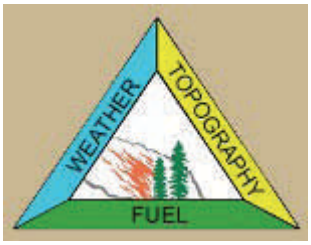
As a weather enthusiast in the desert southwest, I'm sure you are familiar with various facets of meteorology such as flash floods, damaging winds, blowing dust and severe thunderstorms. However, there is one aspect of meteorology that you may not have heard of, one that is sometimes overlooked and misunderstood: **Fire Weather**.

The National Weather Service, known then as The US Weather Bureau, issued its first fire weather forecast for Paducah, Kentucky in 1914, following several years of damaging wildfire seasons. By the 1920s all Weather Bureau offices in the western U.S. were issuing fire weather forecasts and still continue to do so today. The Fire Weather Program exists to support land management agencies in the suppression and prevention of wildfires, and in prescribed burning efforts. With advances in observation technology, and weather and fire behavior modeling, forecasting weather parameters critical to the fire fighting community has steadily improved over the years.



There are three elements that determine a fire's behavior: weather, the different fuels and topography. Weather is the most variable of the three elements, fuels refer to the type and amount of combustible vegetation and topography is the location, such as mountain, valley or plains. All of these things are taken into consideration when writing a fire weather forecast.

The main meteorological parameters for fire weather forecasting are wind, temperatures, relative humidity and thunderstorm potential. Winds can cause a fire to suddenly change direction and explosively grow in size in a very short amount of time. Temperatures and relative humidity are important elements that affect fuel dryness and atmospheric instability. Weather disturbances such as thunderstorms and microbursts can bring about sporadic gusty winds and lightning strikes that can cause fire growth or ignition.



The National Weather Service issues fire weather forecasts twice daily during fire weather season, which is typically from mid-April until early November. In addition, spot weather forecasts are issued upon request from a fire management agency or fire fighting team. Spot forecasts are detailed fire weather forecast information tailored to a specific fire event site, whether it is a controlled burn or a newly started wild fire. Red Flag Watches and Warnings are issued to highlight areas where critical fire weather conditions (i.e. strong winds and low relative humidity) are possible. These products set in motion various land management agencies that prepare response efforts should a wildfire ignite. Some users of the fire weather forecast products include the U.S. Forest Service, National Park Service, Bureau of Land Management, U.S. Fish and Wildlife, and State Land Management Divisions.

If a wildfire becomes large enough that a dedicated response team needs assistance on scene, an Incident Meteorologist, or IMET, is dispatched to the fire camp. These forecasters are focused completely on the incident and provide complete weather services to the incident management team.

Fire weather forecasting is an important service that the National Weather Service provides to its various users and to the public. To learn more about fire weather forecasts and Red Flag criteria in your area, check out the NWS Fire Weather website at: http://www.wrh.noaa.gov/firewx/.

Did You Know that…

Satellites are a meteorologist's "eye in the sky" and provide a wealth of information for forecasts, climate and other facets of weather. The first weather satellite under NOAA became operational in 1960 and has grown over the years in coverage and ability. Today, two types of satellites hover among the stars: Geostationary Operational Environmental Satellites (GOES), and Polar Orbiting Environmental Monitoring (POES). Each type serves a specific purpose and both are necessary for providing a complete global weather monitoring system.

….Stay tuned for the next Spotter Newsletter for the full scoop! **Katie LaBelle, Intern Forecaster**

Watching the Weather:
How To Measure Wind Speed

Chris Stachelski, Forecaster

Although strong winds can be an issue in any month of the year in the Mojave Desert and southern Great Basin, it's the primary weather hazard during the spring. Frequently during this time of year, winds will increase just ahead of, or behind the passage of a cold front, or on days when a tight surface pressure gradient exists across the area. While one way to report winds to the National Weather Service is to use an estimate such as the Beaufort Wind Scale, you may be wondering about what sort of instruments are used to record winds and how to locate such a device.

Winds are recorded by an instrument known as an "anemometer." The most common type of anemometer is the cup anemometer. This device features three small "bowls" attached at the same height and facing in the same direction that rotate around a pole in the middle. A wind vane is mounted at the top of the pole to indicate the wind direction. As the wind blows the cups move and the speed is calculated. This value is displayed on a unit connected (cable or wireless) to the cups. The value displayed is the current wind speed, however most digital models have features that can calculate the highest wind gust or average wind speed over a fixed period of time (2 or 5 minutes). Another type of anemometer is the propeller anemometer. This device is mounted on a pole and features a wind vane on one end of a bar with a propeller at the other. Again, this device is attached to a display unit that shows the current wind speed, and may also feature buttons to retrieve the maximum wind speed and/or average wind speed.

Although anemometers are often sold as part of a "weather station," you can purchase them separately. Most anemometers sold will require you to mount the unit somewhere, which can be a difficult task. Anemometers used by the National Weather Service are mounted at a height of 30 feet above ground level and located in an area well removed from any obstructions such as buildings, trees, fences or walls. However, for most people at their homes or businesses this can be a challenge. Tall buildings nearby will block the wind that originates in that direction, or could cause the wind to be funneled. The best advice is to try and mount your anemometer in an area that is as free from obstructions as possible. In residential neighborhoods, ideal locations would be on the roof of a house or above the height of any fences, walls, or shrubs that could block the wind. Note that even placing an instrument in one of these areas is no guarantee that your sensor will be in a wide open area. For example, if you have a one story house but your neighbor to the left has a two story house, their house will block wind blowing from that direction even if you mount your anemometer on the roof. You also may need to check with your homeowner's association (if applicable) to see if they have any rules on mounting such devices. Be sure to ground your anemometer after mounting to help prevent it from becoming a target of lightning.

Another alternative is to purchase a "hand-held" anemometer. This is a portable anemometer that you hold in your hand and you can take it with you anywhere. These devices often lack a wind vane but will give you wind speed values. However, since you have to be outside holding this device while it is windy, remember to not place yourself in any danger just to get a reading.

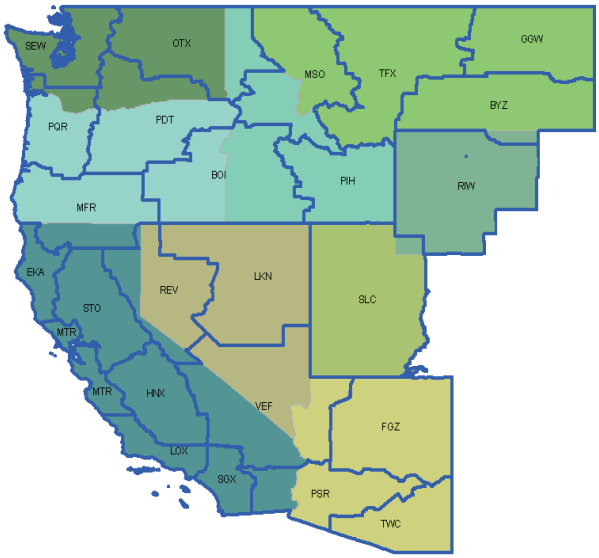
To find out where to buy an anemometer, do a simple search on the internet for "anemometer" or "weather instruments" and you should find a list of retailers. If you would prefer to shop at a store or lack internet access, check out the discount retail stores, hardware stores, garden shops or boating supply stores. Many of these sell weather instruments.

New 1" Hail Criteria

Faith Borden, Warning Coordination Meteorologist

After many years of research in the State of Kansas, National Weather Service Offices in the Central and Western Regions of the United States will be using a new 1" hail (quarter size) criteria starting June 1 for issuing severe thunderstorm warnings. The decision to raise the hail size diameter from 3/4 inch to 1 inch was based on feedback from local partners, as well as scientific research conducted by Texas Tech University which demonstrated that significant property damage does not occur until hailstone sizes reach 1' diameter. The wind criteria of 58 MPH will remain unchanged. Here are some statistics in relationship to hail and wind reports received by our office for our forecast area since the summer of 2005:

- We have received 59 reports of high wind/wind damage
- We have received 22 reports of dime/penny size hail (which is less than 1 inch)
- We have received 18 reports of greater than penny size hail (several of these were nickel size which is less than 1 inch)



NWS Western Region Offices

There is some overlap as some storms produced both severe hail and severe wind.
Based on the above information this would mean a reduction in about 30-35% events that would have met severe thunderstorm criteria.

This change is being considered in hopes of better serving our customers. Research conducted across the United States has shown that there are very few reports of 3/4 inch hail by itself. The National Weather Service has also been told that 3/4 inch hail really does not cause that many problems, or do that much damage by itself. Going with the larger 1" criteria would also mean that we would issue less severe thunderstorm warnings for just hail, but the ones that we do issue would be significant. When it comes to verification, we still want reports, no matter how small or large the size of hail you are experiencing. Also please remember to include in your report the largest hail stone you've measured. It is always easier if you estimate hail size based on coins; one inch would be quarter size, 3/4 inch would be penny size. The information you report is very useful in our warning decision process. To help refresh your memories a pocket spotter guide will be available on our website by the first of June.

Instructions to Construct the NGDC Origami Balloon on page 7

1. Start with a square piece of paper face down
2. Crease it diagonally
3. Crease it along the diagonal and the midline
4. Squash it into a flat triangle
5. Fold one point up
6. Fold all four points this way
7. Fold one of the free corners to meet the center
8. Fold all four free corners this way
9. Fold down one of the free points
10. Open up the pocket on the left; curl the point into the pocket
11. Fold and tuck all four points this way
12. Open up the shape and find the open end
13. Finally -- Hold it down by the edges and blow sharply into the hole. The balloon will inflate

SKYWARN REPORTING CRITERIA

Tornado: circulation in contact with the ground

Funnel Cloud: circulation not in contact with the ground

Rotating Wall Cloud

Downburst (visually identified)

Wind: causing damage (such as broken tree limbs or downed power lines) or estimated speeds greater than 40 mph

Hail: greater than pea-size or covering the ground, specify size of largest stone

1/4 inch.....pea size

1/2 inch.....marble size

3/4 inch.....dime, penny size

1 inch.....quarter size

Rainfall: 1/4 of an inch or more per 1/2 hour, or any cumulative total over 1/2 inch

Flooding: of ANY kind! Are waters rising or falling?

Visibility: under 1/2 mile, caused by anything

Snowfall: accumulating one inch or more per hour, or any depth on desert floors

Icing: of road surfaces caused by anything

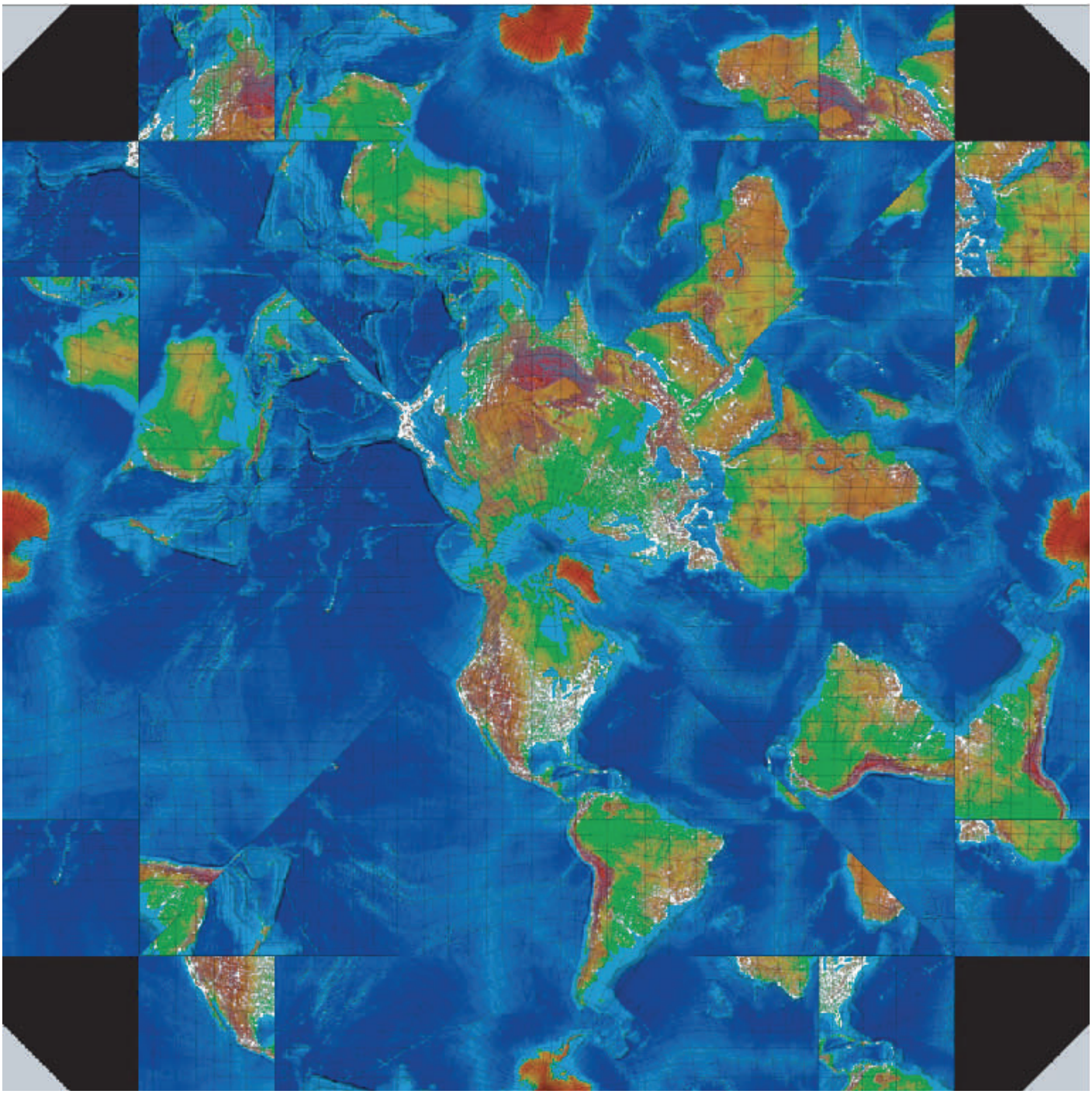
Important Note:

When you observe weather conditions that meet or exceed the criteria listed on this page, call in your report to our office *Immediately !!*

Reports received in a timely fashion are very helpful to us when it comes to protecting life and property!

Also when in doubt, Call.

NGDC Origami Balloon



Go to: www.ngdc.noaa.gov/education/education.html to view pictures showing step-by-step construction.