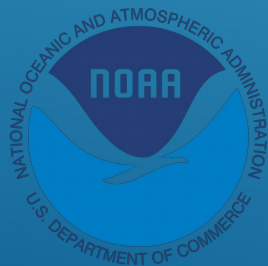




UCAR



COMET
MetEd

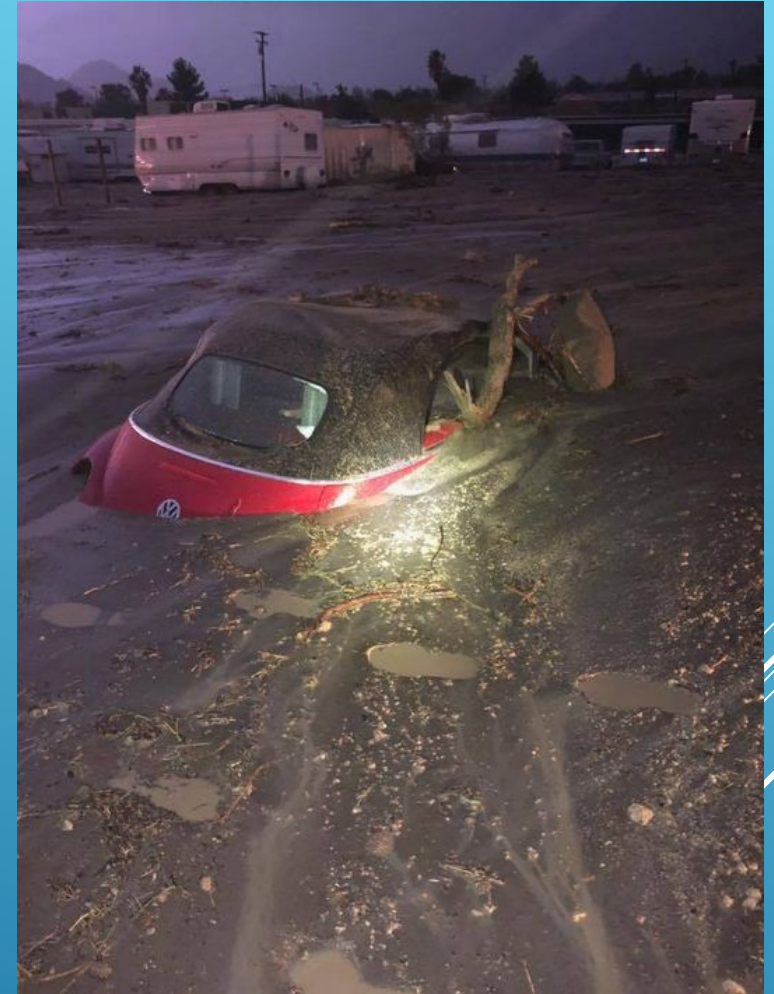
- The United States is the most severe weather prone country in the world.
- Each year, people in this country cope with an average of 10,000 thunderstorms, 5,000 floods, 1,200 tornadoes and two landfalling hurricanes.
- 90% of all presidentially declared disasters are weather-related, causing 500 deaths each year and nearly \$14 billion in damage.



THE IMPACT OF WEATHER

- Even in the Morongo Basin, severe weather affects our lives too.
- On October 13th, 2018, a thunderstorm rendered highway 62 impassable due to mud flows.
- On February 2nd, an extraordinarily rainy day created a flash flooding situation, which ended with one person dead.
- On February 14th, another wet day caused significant disruption and debris to fill roadways.
- On February 21st, a snowstorm effectively shut down the city, even delaying the W6BA club meeting.

THE IMPACT OF WEATHER



- We don't just get flooding and snow here...
- On September 7th, 1982, an EF2 tornado touched down in Landers, causing two injuries.
- On July 27th, 1987, an EF0 tornado tracked through downtown Twentynine Palms.
- On October 13th, 2018, a severe thunderstorm brought 1" hail to Joshua Tree.
- Over 2018, there have been 45 individual severe weather reports from the Morongo Basin alone.

THE IMPACT OF WEATHER



- SKYWARN is a National Weather Service (NWS) program developed in the 1960s.
- It consists of trained weather spotters who provide reports of severe and hazardous weather to help meteorologists make life-saving warning decisions.
- Spotters are concerned citizens, amateur radio operators, truck drivers, mariners, airplane pilots, emergency management personnel and public safety officials who volunteer their time to report on hazardous weather affecting their community.

WHAT IS SKYWARN?

- Although the NWS has access to doppler radar, satellite and surface weather stations, technology cannot detect every instance of hazardous weather.
- Spotters help fill the gaps by reporting hail, wind damage, flooding, heavy snow, tornadoes, waterspouts and more.
- SKYWARN spotter reports provide vital “ground truth” to the NWS.

WHAT IS SKYWARN?

- Amateur radio forms an integral part of the SKYWARN program.
- Cell phone service is often spotty during severe weather events.
- During larger events, phone and internet may be entirely unavailable.
- Amateur Radio NCOs form the bridge between the individual spotter and the NWS Weather Forecast Office (WFO).
- SKYWARN NCOs typically operate on VHF and relay messages to the NWS via HF or a reliable internet connection.

HOW DOES RADIO TIE INTO SKYWARN?

- The Morongo Basin has a SKYWARN net under NCO Patrick N4LKZ on the W6BA Repeater System that reports to Las Vegas, San Diego and Phoenix.
- San Bernardino County has a SKYWARN net under Skywarn coordinator Phill Dupree that reports to San Diego, Los Angeles and Hanford.
- Both nets collect and disseminate public safety information during severe weather events, including road closures, hazardous conditions and bulletins issued by the NWS.

HOW DOES RADIO TIE INTO SKYWARN?

- ▢ Morongo Basin SKYWARN Net
 - ▢ W6BA Paxton Hill: 146.790- (PL 136.5)
 - ▢ W6BA Twentynine Palms: 147.060+ (PL 136.5)
 - ▢ WB6CDF Landers: 447.580- (PL 173.8)
- ▢ San Bernardino SKYWARN Net
 - ▢ Heaps Peak Repeater: 145.120- (PL 131.8)
 - ▢ Crestline Repeater: 146.850- (PL 146.2)
 - ▢ Table Mountain: 145.280- (PL 131.8)

HOW DOES RADIO TIE INTO SKYWARN?

- When severe weather threatens the Morongo Basin, one of the SKYWARN Net Control Operators will start the net.
- The net preamble states what is going on, what status the net is currently in (standby, active, emergency), and any information of relevance to the current situation.
- For the duration of the net, the repeater will occasionally call out “SKYWARN Net Active”
- Every 15 minutes, the NCO will give information on the current weather situation.
- Every 30 minutes, the NCO will give the half hourly synopsis of the condition in the Morongo Basin, including road closures, damage, and other points of general interest to the safety of net members.


HOW DOES A SKYWARN NET WORK?

- If the SKYWARN net is in STANDBY mode, normal use of the repeater is permitted, but it should be expected that the net should go into “active” mode at any time.
- Once a warning has been issued, or a hazardous condition exists, the net transitions into ACTIVE status, and becomes a directed net.
- If an emergency situation exists, such as an imminent tornado or other life-threatening emergency, the net transitions into EMERGENCY status.
- During EMERGENCY status, the **ONLY** traffic permitted is emergency traffic, stations authorized by Net Control, or messages of life or death urgency.

HOW DOES A SKYWARN NET WORK?

- ▮ A SKYWARN net will start if one of the following conditions exists:
 - ▮ A severe weather watch has been issued for the Morongo Basin
 - ▮ A severe weather warning has been issued for the Morongo Basin
 - ▮ Severe weather is present in the Morongo Basin, even if no watch or warning has been issued
 - ▮ WFO Las Vegas asks us to activate
 - ▮ The Storm Prediction Center (SPC) asks us to activate

WHEN DOES A SKYWARN NET HAPPEN?

- 
- A large, semi-transparent watermark of the NOAA logo is centered in the background. It features a circular seal with the text "NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION" and "U.S. DEPARTMENT OF COMMERCE" around the perimeter. In the center of the seal is a stylized bird (likely an eagle) with its wings spread, perched on a globe. The word "NOAA" is written in large, bold, blue letters across the middle of the seal.
- ▮ ANY radio amateur may participate in the SKYWARN nets.
 - ▮ If you see severe weather, damage, or anything the NCO is looking for, call it in!
 - ▮ SKYWARN spotters should include their SKYWARN ID with their reports.
 - ▮ You do not need to check in to the net.

HOW DO I PARTICIPATE?

Three parallel white lines of varying lengths are positioned in the bottom right corner of the slide, angled diagonally upwards from left to right.

The NOAA logo is a circular seal. The outer ring contains the text "NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION" at the top and "U.S. DEPARTMENT OF COMMERCE" at the bottom. The inner circle features a stylized blue wave. Overlaid on the wave is a dark blue semi-circle containing the word "NOAA" in white, bold, sans-serif capital letters.

NOAA

BUT WHAT SHOULD I REPORT?

Three parallel white lines of varying lengths are positioned in the bottom right corner of the slide, slanted upwards from left to right.

SPOTTERS SHOULD REPORT...

▮ Flooding



SPOTTERS SHOULD REPORT...

▮ Tornadoes



SPOTTERS SHOULD REPORT...

▮ Wall Clouds



SPOTTERS SHOULD REPORT...

▮ Funnel Clouds



SPOTTERS SHOULD REPORT...

▣ Lightning*



SPOTTERS SHOULD REPORT...

▮ Snow



SPOTTERS SHOULD REPORT...

▮ Wind



SPOTTERS SHOULD REPORT...

▮ Hail



SPOTTERS SHOULD REPORT...

▮ Marine Hazards



SPOTTERS SHOULD REPORT...

- ▮ Any injuries or fatalities as a direct result of weather



- Follow the specific reporting guidelines for the net.
- Remain calm, speak clearly, and do not exaggerate the facts.
- If you are unsure of what you are seeing, make your report, but also express your uncertainty.
- Call Net Control, identify yourself and make your report.
- You may also send your report to Net Control via Winlink!

HOW DO I MAKE A REPORT?

- ▢ Your report should contain the following information:
 - ▢ WHO you are: trained spotter, amateur radio
 - ▢ WHAT you have witnessed
 - ▢ WHEN the event occurred (NOT when you make your report)
 - ▢ WHERE the event occurred (use well known roads/landmarks)
- ▢ Immediate, real-time reports are most helpful for warning operations, but delayed reports are also important, even days after an event.

HOW DO I MAKE A REPORT?

- Here in the Morongo Basin, our biggest danger is Flash Flooding.
- Even a typical rain storm here in the Basin can cause flooding in area washes.
- Do not attempt to drive or walk across a flooded road or low water crossing.
- Two feet of moving water will carry most vehicles off of the road.
- Six inches of fast-moving water can knock you off your feet.
- Be especially vigilant at night when flooded roads are harder to recognize.
- Report any flooded roads or flowing washes to local authorities.

FLASH FLOOD SAFETY

- Lightning is an underrated killer. Nearly as many people die from lightning annually as they do to tornadoes.
- If you are outside and hear thunder, lightning can hit you.
- Lightning does not always hit the tallest thing around.
- Lightning also has an affinity for HAM antennas, so avoid using radios unless they have adequate lightning protection equipment.

LIGHTNING SAFETY



- The University Corporation for Atmospheric Research (UCAR) provides detailed SKYWARN spotter training.
- If you are interested in learning more about severe weather, identifying it, and providing an invaluable service to your community during weather events, take the course at:
- https://www.meted.ucar.edu/training_course.php?id=23

HOW DO I LEARN MORE?

