Ready or not? Radio Gear, SKYWARN and Murphys Law

By KI5UAJ

As many of us in this ARES group just completed our refresher SKYWARN courses about a week ago and we are in a time of severe weather, I wanted to do a training on some basic Emergency Communications setting up. Weve had lots of trainings on go kits and components, deploying during a disaster etc, but I just wanted to review some of the basics...sometimes we need the reminder to pull the extra gear from the closet and make sure its all there and ready. Sometimes things just disconnect, the power goes out, a radio fuse blows....Murphys law sometimes finds its way into our weekly nets even..its happened to me a few times. Preparing and practicing can make a difference.

Maybe this training will remind you to either replace an item or to put it back where it was supposed to go in your ready kit. I just took a few moments earlier to print out some of the ICS 309 logs in the event I might find myself in a position to be assisting during a SKYWARN activation. Its better to have it printed and ready than to try to play catch up. I put these and reporting criteria in a binder marked so.

Hams have been providing integral Emergency Communication during times of disaster. Assisting our communities and forwarding information that may be helping people is one of the reasons many Hams get their licenses. We all vary in skills and equipment that we possess, but we have common purpose in our unique set of skills and our willingness to provide assistance to those who are in need.

Tonight, we will review the basic components of an emergency radio station. They come in all shapes and sizes, from a go box, to a mobile communication trailer, to a home radio station or even a walkie talkie. Regardless of their size

they all serve to achieve the same goal. And that goal is to reach out and communicate with other stations to bring aid and life protecting services to effected areas if needed or to relay information during SKYWARN activations.

The basic components of an emergency station are:

Radio –

ARES primary task is to provide local communication within a large mile radius. This can be achieved with a rather modest rig. Regardless of the brand or model that you use, it is highly recommended that your primary radio for this task have variable power levels so that the most economical use of emergency power can be achieved.

The 2 meter band will be heavily used because of the wide area coverage repeaters that we have available. Repeaters may have emergency power capability. Solar panels and battery systems are often the norm. Most repeaters can be accessed with as little as 5 watts if you are within 10 to 15 miles.

If repeaters lose power, then often a primary back up is 2 meter simplex. 2 meter simplex can require higher power levels to achieve the same capabilities as using a repeater. In summery – the radio or radios that you use for an emergency station should have the flexibility to change power levels to suit the communication methods available. A HT and a mobile radio that has several power levels may suffice for most of the emergency situations we should experience.

If you are involved with a SKYWARN Net and your primary power to the radio you were using just went out, do you have a back up ready? I mean really ready? How quick could you get back on the air? You should give it a try. Earlier today, I also pulled by Pelican case go kits and checked the batteries to those radios and that the antennas needed for them were also with them. Some of these are mag mounts.

Antenna –

Hams describe the antenna system as the life blood of any station. A good antenna is worth it's weight in gold especially when an emergency occurs. It is recommended that antennas used for an emergency station have gain. An antenna with gain increases our effective radiated power and the distance that our stations can communicate. Gain also enhances our stations receiving ability.

There are many high gain vertical antennas on the market that are a good fit for emergency stations. Directional antennas such as Yagis are also very useful during emergencies if they can be rotated using emergency power. Mobile antennas with gain are usually much longer than zero gain antennas so a gain antenna may not fit your mobile application. Roll up or J pole style antennas can be quite useful. Even a magnet mount antennae attached to a refrigerator with some coax and an adaptor or two can suffice to get that HT on the air . It is good to know you have this available and stored away and to have it ready if needed.

Feed line –

It is highly recommended that we use high quality low loss coax for our emergency stations.

Power –

Batteries, generators and solar power systems are very popular with folks constructing an emergency station capable of operating under adverse conditions. Regardless of which system you choose to provide off grid power always check your system periodically to ensure that it will function properly when you need it. Be sure that your batteries are fully charged and have not fallen below the lowest recommended voltage. Batteries that have fallen below the lowest

recommended voltage may be permanently damaged and need to be replaced. If you are going to deploy to a shelter or other similar location then be aware that

generators may not be available immediately and plan accordingly. You may have to operate from your own emergency power until generators arrive. If you have one at the ready, even better. Test it out monthly to ensure it is functioning. Be sure to always use a power supply when taking power from a generator. Generator power is notorious for having spikes and dips that may damage your radio if it is connected directly to the generator.

Operating Tips

Power Consumption –

To ensure that we can provide communications for the longest amount of time, especially when operating on an emergency power source, we should use the least amount of power to achieve effective communications. In general, start using the lowest power level of your radio and increase power only if circumstances require additional power to make your signals more readable.

In a long term emergency situation lowering your power can double or triple the time that you can be on the air providing communications. Most manufactures list the power consumption specifications of their radios and there are many sites on the internet where individuals have published power consumption versus power level tables and charts for many of the most popular radios. If you have multiple radios then use the radio that uses the least amount of power.

As an example: An HT attached to a large capacity marine battery may operate a few days but a mobile radio powered by the same battery may only last for a few hours.

Maintenance and Upkeep –

Radios and associated equipment should be tested at least every 3 months to ensure that everything is functioning correctly. Always have readily available equipment to repair coax connections and other integral cables. Tools such as extra coax, solder, a soldering iron, extra coax connectors, barrel connectors, spare fuses and a multi-meter are recommended in every radio tool kit. But you may not be able to use these during a power outage. Be ready to Mcgyver if needed.

This completes this evenings training, this is KI5UAJ returning back to Net control.