

### **Power Considerations**

During an emergency often the first thing to go is the power upon which we have all come to rely.

- Depending on the size and duration of the emergency, you may find yourself without power for an extended period of time.
- This means your method(s) of backup power need to be flexible so that you have the best chance of keeping something on the air when needed.

The most obvious backup power source is our trusted friend, the alkaline battery.

- Depending on the radio and the power requirements, alkaline batteries can last a long time. They are plentiful, easily obtainable, and easily stored.
- I have a number of radios including HTs, scanners, marine and standard AM/FM radios capable of running on AA batteries.
- most HTs offer an alkaline battery case as an option – get one for each radio you can
- not only are they useful for emergencies, if you do any public service work it is nice to have a cheaper option than having multiple rechargeable packs
- Radios like the Yaesu 817ND, the Yaesu 897D, Elecraft KX3 and others offer wide HF coverage along with VHF/UHF coverage either built in or as an option.
- These radios can be easily portable as well as requiring low power, and they make an ideal emergency radio solution.

While I have nothing against rechargeable batteries like Ni-Cad or the like, recharging them takes more power, and in an emergency I would rather conserve as much power as possible.

- An exception to this would be a solar power station for recharging batteries. These units are becoming plentiful and reasonably priced, so it is worth considering such a unit just for this purpose.

How you power your radio in an emergency really depends on your needs.

- There are numerous options, some of which may seem obvious, while others may not.
- While solar power seems like a good choice, except as noted above, I would put that farther down the list of options simply because inclement weather will likely block the sun when you need it most.
- Some traditional sources are your best first option, with other power sources as good alternatives.

## **12v Battery**

This is the most obvious choice because it is the most common.

- A car battery, a marine deep cycle battery, or an AGM battery make good short/long term options depending on how they are used. With low power TX a fully charged Marine deep cycle battery (my preferred choice) will last a long time.

Obviously your car battery will work quite well, but you may not want to use it so as to make sure the car is readily available.

- Alternatively, the car can offer a means of recharging either battery, provided you have a good amount of gas.
- For short-term options simply keep a cigarette lighter connector available to connect to your radio of choice, and power it through the car.
- Just keep in mind the load restrictions of your cigarette lighter plug—usually no more than 12-14 amps can be safely pulled through the circuit
- Keep TX below 50 watts, and FM TX below 30-40 watts since it is a continuous signal.
- For mobile radios like this it is better to be connected directly to the battery with fused power lines if possible

Back to less-common options

- 12 volts can be achieved a number of ways; the real limitation is in how long you can operate before exhausting your power source.
- I like having a number of options, mostly designed for low power consumption. Some of these include:

- lantern batteries in series
- automobile jump-start batteries
- DVD/Laptop extended operation batteries (commercial product like Eveready and others) which output 12v
- 12v rechargeable power tool batteries
- UPS units which have been modified to output 12-14 volts
- Anything designed to provide power at 12 volts; as long as you can reach the terminals in some way, it can be used!

I have several sizes of alligator clips in my odds and ends case to connect wires to posts/terminals as needed, along with ring terminals, Anderson power poles, and power splitters.

- Obviously you can't carry everything with you in a to-go kit, but around the house I try to have as many connection options as possible.

## **Odds and Ends**

Keep in mind things like lights and cell phone chargers/batteries etc..

- An inverter is a good investment for taking DC current to AC for recharging cell phones, tablets, laptops etc.
- LEDS use much less power and can be used to light your radio area when needed.
- And don't forget to have an emergency weather radio that can be operated on AC/DC or cranking a small generator to recharge itself and small devices.
- A number of companies make them, and they are good options in an emergency.

I do not want to get too far afield here since my main purpose is to discuss power and radios, but planning ahead to cover as many options as you can for various needs is always a good thing.

- Never forget that your cell phone is actually a radio in disguise, and even when voice modes are down or overcrowded, texts can and do often get through.

I have a device by Anker to recharge my phone – it is designed to work with phones, tablets, and Apple equipment (separate connectors for Android or Apple devices).

- These and similar devices are intended to extend use when away from a power source, but make great emergency backups as well.
- I use them occasionally even when not needed, just to work the batteries a bit.
- (this is an issue with all rechargeable batteries – even if not needed they need to be worked and then recharged periodically or they will go bad)

Just keep in mind while most radios work on 12 volts, most modern small electronic devices do not.

- Watch output voltages and match them carefully to the electronic device in question
- look for DC converters to reduce the 12v output of a car battery to the device you need, such as one for usb (often 5v or 3.3v) or for your cell phone

The main thing is to have battery backup options that work for you – and be creative

- I always keep my eyes out for things which may be re-purposed for my amateur radio/emergency needs
- and most importantly, have a really big supply of alkaline batteries on hand since they will last for years and years these days!
- Radio shack and other places sell project battery cases where you can make up your own power sources
- using "C" or "D" batteries in a case like this can last a whole lot longer than "AA" batteries, and lantern batteries even longer; you get the idea!

