

Section [4]: Tactical Radio Communication Equipment

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Reliable communications equipment is essential to any group's activities, whether you're doing a simple trashing run, or coordinating the defense of an area. Fortunately, there exists a wide range of readily available, inexpensive equipment so even "technologically challenged" organizations can play.

All the equipment mentioned is available at your local Radio Shack, so procurement won't be a hassle. While not "state of the art" by any means, it nevertheless still works. If you need something more advanced, then either recruit a comms specialist, or learn yourself.

We'll start with CBs. CBs have 40 channels available for use, and are available anywhere. With a standard 3-5 watt handheld, you can expect a 1-5 mile range, occasionally reaching out to 20 miles or more. With a better antenna (base station), you can expect a maximum reliable range of 20-30 miles, depending on terrain and interference from other stations.

The main problem with CBs is that everyone has one. As a result, security of unencrypted communications is lacking, and interference can be severe. The interference problem can work to your benefit, however, by hiding your group's communications. If you use a good code to make your group's communications sound like all the other CB'ers in your area, your communications will be quite secure. Another advantage of CB's common availability is that possessing them raises no eyebrows.

If you start with some better quality CBs, and then acquire a comms specialist or some comms knowledge, you can modify your equipment for higher power output and more channels. This will increase your range and security.

Another good-entry comms unit, suitable for intra-group communication while on a "run", are the 49 Mhz. headset/"hands-free" units. They are inexpensive, and typically have a 1/4-1/2 mile range. These are good to give to each member of the team so you all stay in touch should you lose visual contact of each other. Their short range offers good security for tactical purposes, but you might have interference problems in suburban or

urban areas because they use the same frequencies as cordless phones and wireless "baby monitors". If you decide to purchase some of these units, make sure you get the ones with multiple channel capability, such as the Radio Shack #21-407.

Taking a step into more professional equipment, there are the VHF and UHF business band handheld radios. These radios have anywhere from one to six (or more) channels, and put out one to five watts. With a five watt radio and a decent antenna, you can easily achieve a 50 mile range under the right conditions. They also use FM transmission as opposed to CB's AM mode, resulting in a clearer signal.

They are not without their disadvantages. For starters they are expensive. Low end units start at \$100 apiece. The off-the-shelf units are also equipped with common low-power frequencies called "garbage channels" by certain individuals in the industry. In a lot of areas these frequencies are as bad as CB. One such frequency, 154.6 Mhz, (Which incidentally is also the frequency that comes with The Radio Shack VHF Handheld.) is commonly used by McDonalds for their order windows. While one can change frequencies, this does take some electronics knowledge, or the assistance of a technician. Again unless you have a cool friend in the industry, this might be a problem, as most shops won't change crystals unless you are licensed for the frequency.

If you spend more money, you can get user-programmable radios that are more versatile. You'll then be able to find a nice quiet channel somewhere for your activities. Programmable radios start at about \$300 a piece.

One thing you should definitely NOT DO is get some ham rigs and start operating on ham frequencies. Hams are a territorial lot, and if they suspect unlicensed operation on their frequencies they will track it down just for the hell of it.

One thing you should definitely do is use a verbal code system when transmitting. This will greatly improve your security no matter what type of communications you use. Avoid using things like Pig Latin, or words that realistically describe your group.

This article just barely scratches the surface of this topic.

If you're interested in further info, send us mail on the Rune Stone.

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I also suggest getting a copy of the ARRL Amateur Radio Handbook from the American Radio Relay League, Newington, CT. It contains a wealth of information; although you'll need some electronics knowledge to understand the material.