

Radios for Outdoor Communication

By Charlie Chalk

If you have been around for a few years you will remember the days of the CB radios. “10-4 Good Buddy,” “Got Smokey on my Tail,” and a hundred other “code” phrases filled Channel 19. They were great for road communications and still have a role in keeping in touch for travel. In fact, logging areas in the Great North Woods still advise you as to what channels are open for communication among truckers.

The only problem has been that walkie-talkie (is that term still used?) versions were big and bulky, not the best for the persons on foot.

The other options are cell phones and some have personal communication in a direct phone-to-phone mode. Several problems here include the fact that cell towers are where the customers are, and that is not in places like Pittsburg, the Northeast Kingdom, or even the White Mountains.

The best option is the personal radios found at many retailers. However, what are the true facts about these tools? Do they really work? Can I talk 25 miles or more?

So, let me give you my research to help you make a choice.

I’ll begin by saying the most important thing you will read in this article is that these radios ARE NOT a survival tool. They can fail, may not reach someone and cannot be located exactly by rescue personnel. Some advocate that FRS Channel 1 is best for emergency communication, but don’t bet your life on it!

The radios usually communicate for less than a mile, and maybe slightly further if you have a direct line of sight between units.

Now, so you know a little about the test, the location was in Colebrook, over varying terrain with both line of sight and through the

typical deep forest. I have some background in communications from supervising the Communications Division in a full time Fire Department. The radios tested were two types: the FRS samples were from Cobra electronics (cobra.com) and the eXtreme Radio Service™ 900MHz style from TriSquare™ (trisquare.us). Both are within the price range of anyone and meet the criteria of outdoor communications. Both types can be found at retail stores in New Hampshire. There are more elaborate radios, most of which require licenses and operate with more power, therefore were not part of the test.

The basics of Family Radio Service (FRS) is a simple radio with power of not more than ½ watt. The FCC sets the band in the 460MHz, Channels 8-14. Your radio may have Channels 1-7 and 9-22 but these are designated for General Mobile Radio Service (GMRS), which require licensing. To use these channels subjects you to rules from the FCC, so you have been warned! I would stay off the GMRS, as they are full of business radios.

Your seven channels may have a small set of 38 sub numbers next to the channel, called privacy channels or “CTCSS.” To simplify this, you set them the same as other radios and you won’t hear others on the frequency. This is useful and may be the only way to talk when a lot of radios are in use, but it does not give you any secure communications. Scanners and anyone using the channel without setting the CTCSS can hear your every word. I suggest you skip the CTCSS and use only the main channel so if others know your channel they can call you and you can tell if other users are talking on that channel.

But, how far can you actually talk? If you believe the packaging hype, that is up to 25 miles. True, if you have perfect conditions like each radio is in line of sight and at least one is higher than the other, perfect weather and your body doesn't block the antenna. In my tests, I could get less than three-quarters of a mile in the woods with one radio on higher ground than the other. Go over a hill and cut that to a half-mile. Get in the open and in line of sight, communication was around two miles.

These are perfectly adequate for most anything outdoors. In vehicle-to-vehicle communication the road variations did not allow an exact number but count on less than a quarter mile if you want reliability.

The question is often asked if the antenna could be replaced. Not by FCC rules. Cobra fixes the antenna to the case and I believe most others do, also. Wrapping wire around the antenna (called inductive coupling) provides no proven difference.

The TriSquare 300 eXRS units were new to me, but look similar to FRS. But, looks deceive. Differences include frequency (900MHz rather than 460MHz), digital communications, 10 Billion! Channels, caller ID, text messaging, call waiting, private calling and contact list. All these radios are still license-free under FCC.

These radios will require you to read the manual to understand how the features work but they are easily understood and simple to operate. Compare this to getting a new cell phone. You can clone another radio from any setup radio, a good feature.

These radios provide true secure communication by using frequency hopping. The radios hop in a pseudo random sequence of 50 different frequencies as you communicate. This makes it nearly impossible to listen in. Even if a scanner caught a frequency, the radio hops to another in a few tenths of a second. The receiving radio follows the same sequence and hears

everything. To simplify communications you can call just one radio, group call, or pick a channel number to tell others where you can be found. The TSX300 also has a backlit screen, vibrating call alert (no more spooked deer) and NOAA weather radio.

I was impressed with the features, but features are nothing if you can't reach out to another radio. Covering the same ground as with the FRS radios, the distances were improved by about 25 percent. Line of sight could be better but up here it's hard to get a direct line over two miles. Interference was the best I have ever found in any non-licensed radio. Literature says that both the 900MHz and frequency hopping help in this. In addition, the 900MHz will work very well in buildings of both steel and concrete. Overall, I was impressed with the units and the weather radio came in handy with approaching storm information and can come in handy in the backcountry. While you will not be able to communicate with FRS radios, when others see the capability, they will probably upgrade.

When you get into radios, some features are worth the investment. Headsets with "Push to Talk" and Voice Operated Transmit are top of the list. Desk charges are convenient but in all tested radios alkaline batteries give more life in trade for the extra cost over time. Finally, I like belt pouches over belt clips.

I hope this information helps you get the best radio for your needs.