

R3EMCOMM Fact Sheet #1 - FRS, GRMS, and Amateur Radio

Audience - Individual/Family/Community

R3EMCOMMs overall communications plan includes Family Radio Service (FRS), General Mobile Radio Service (GMRS), and the Amateur Radio Service. Used together, this plan allows R3EMCOMM to cover Culpeper County (approximately 379 square miles) and the surrounding areas in the event of a failure of normal modes of communication.

Each type of radio communication has its place. Some of the pluses and minuses of the various systems are as follows.

Family Radio Service, or FRS, is designed to be just that, a radio service for families. The units are limited to handheld, fixed antenna, and low-wattage units. There are no tests and no licenses, but transmit power is limited. Older units were limited to a half-watt of transmit power; newer regulations allow two watts. There are no base or mobile units, only handheld radios.

FRS marketing literature makes inflated claims about the distance over which you can communicate. In reality, distance is limited by terrain, and ranges from around a mile to maybe two or so. If you're on top of a hill talking to someone on top of the next hill it could be farther. The radios are inexpensive, often \$20 a pair and up. There are a total of 22 channels, all of which are shared with GMRS, but not all radios have all 22 channels. These channels are also used by everyone who has an FRS radio, so the band can get pretty crowded in an emergency. Remember, the useful distance is limited, so you will seldom need to deal with people more than a mile or two away.

FRS radios are ideal for use at a "neighborhood" level. They are especially good for keeping in contact with anyone in your neighborhood who is disabled or injured by an unexpected emergency or event. FRS is ideal for communication in the Map Your Neighborhood program and is for voice communication only. For additional information on the Map your Neighborhood program please contact Al Swann KN4AAA at allenswann@aol.com.

General Mobile Radio Service, or GMRS, is FRS' big brother. There is no test but you do have to apply for a license and pay a \$35.00 fee. There are handheld units, mobile units, and base stations. There are also GMRS repeaters. In fact, there are quite a few GMRS repeaters up and down the Shenandoah Valley and in the local area. Power can be up to 50 watts on some channels and the base and mobile units can use external antennas. GMRS is voice communication only.

A single GMRS license covers you and your immediate family (spouse, children, grandchildren, stepchildren, parents, grandparents, stepparents, brothers, sisters, aunts, uncles, nieces, nephews, and in-laws). The family members do not need to live in the same household to be covered by your GMRS License. GMRS license holders are

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allowed to communicate with FRS users on those frequencies that are shared between the two services. GMRS individual licenses do not extend to employees.

GMRS can be a useful intermediate service that will cover most neighborhoods, and could even cover part of a county. On some channels, you can communicate directly with FRS units. Additional information can be found on the R3EMCOMM website at R3EMCOMM.ORG or by using this link https://r3emcomm.org/?page_id=851.

The **Amateur Radio Service**, or Ham radio, has been around for more than 100 years and has a long history of providing emergency communications. It is a licensed service and you have to pass a technical proficiency test. Currently, there are three levels of amateur license: technician, general and extra. You gain additional privileges as you go up the licensing structure. There is a reasonably priced online study service that can easily get you through the tests, and testing is done locally every month by the Culpeper Amateur Radio Association (CARA).

There are several advantages of amateur radio over FRS and GMRS. First, your transmit power can range anywhere from a few hundredths of a watt to 1,500 watts. Second, there are many bands available from low frequency to microwave. The high-frequency bands are capable of worldwide transmission. Third, you can use any kind of antenna you can imagine and a few that you can't imagine. Fourth, it is a great brother-and-sister-hood with lots of interesting people. Fifth, there are many modes of communication, including several modes of voice, Morse code, and digital modes where data is exchanged by typing similar to texting, email over radio waves, and many others.

Amateur radio is the top tier in terms of distance and available facilities in our communications strategy and will be coordinated by R3EMCOMM, a local, four-county emergency communications group, with the assistance of one or more ARES Emergency Coordinators.

In summary, there is a place for everyone and in the event of an emergency, everyone will need to communicate. A common function of the Amateur Radio Emergency Services (ARES) is to get health and welfare messages out of devastated areas so that family members know their loved ones are "OK". Prior to that, friends and neighbors are going to be your first point of contact. "Radio for All" works, and works well when communities embrace and understand that when disaster strikes traditional means of communication may no longer be available.

Web Resources

[ARES](https://www.arrl.org/ares) - <https://www.arrl.org/ares>

[CARA](http://w4cul.org) - w4cul.org

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[Map Your Neighborhood](https://ncna.info/Images/MapYourNeighborhood_booklet.pdf) - https://ncna.info/Images/MapYourNeighborhood_booklet.pdf
[R3EMCOMM](http://r3emcomm.org) - r3emcomm.org

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