

## **Family Radio Service; An Option for Neighborhood Emergency Communications**

Adapted By Virginia RACES, Inc. from original material by Dick Rawson, N6CMJ (SVECS Handbook) and Doug Smith, KAF9830 of the Personal Radio Steering Group.

**The general public needs to be aware that cellular or PCS portable telephones may not "work" during an emergency** when everyone tries to use them at once, because the system becomes "overloaded." CERT, Neighborhood Watch and families should consider alternative means to check on each other's kids, elderly neighbors or keep in touch to make sure everyone is OK after the storm blows over and the telephones are out.

**The Family Radio Service or FRS has utility for short range communications**, as long as you understand its very significant limitations. The FCC created FRS as an unlicensed service for use by families and groups. FRS radios are readily available at discount stores such as Wal-Mart or Radio Shack for \$25 to \$100. They are pocket-sized, use common AA or AAA batteries and have better audio quality than Citizen's Band.

**Despite advertising claims of "range up to two miles,"** FRS is a low-powered, short-range service. It IS reliable for 1/2 to 3/4 mile under typical city conditions, much farther than you can yell and is far cheaper than a cellular telephone. You will get better range under when you are up high, in the clear and away from buildings, but reliable communication of over a mile using FRS is the exception and not the rule. Think of it as a pocket-sized, half-mile wireless intercom, no more. It's another tool.

**Not everyone in your neighborhood will want or need FRS.** Canvass your neighborhood and ask who already has one. Buy them for elderly, special needs, high risk populations and "block captains" in your Neighborhood Watch group.

**Does your local emergency management agency use RACES volunteers?** If so, they should monitor FRS Channel 1 during emergencies listen for local distress calls.

**Turn off "privacy codes" and listen with "carrier squelch"** (*explained later*).

**The ability to monitor FRS1 to relay distress traffic to authorities may be vital if telephone service is interrupted for any reason.** Residents living alone or with impaired mobility should consider FRS to maintain contact with a friend or neighbor within walking distance who is able to assist them in an emergency. Some high-end FRS radios are compatible with voice-actuated headsets, which ease use by persons having limited hand dexterity.

**All FRS radios are compatible in operation.** You may choose any one of 14 "Channels" and talk to anyone within range using the same channel.

**It is recommended that FRS "Channel 1" be used as a "family calling" channel.** Not all FRS radios have all 14 channels available, but all FRS radios have at least Channel 1. The idea is that if the power or telephones go out, everyone would turn on their radio to maintain a "listening watch" on Channel 1.

**Neighbors should check to ensure that anyone living alone is OK and that in families everyone is accounted for.** Relay emergency calls down the line to someone in contact with the "outside world" through a working telephone, a phone patch via amateur radio or any other available communications.

**If your neighborhood group uses any channel other than Channel one, let local emergency management know** so that RACES or CERT teams, police and fire can program it into their scanners.

**Schedule a regular weekly test**, such as Sunday mornings at ten over coffee, to meet "on the air," check the radio, and make sure the batteries are OK.

**Become familiar with how your FRS radio works and determine your area of coverage.**

**So-called "privacy codes" touted by the radio manufacturers and mass marketers do NOT make your conversation private!**

Continuous Tone Coded Squelch or CTCSS is used in amateur, business and public safety radios to enable multiple users to share the same channel without hearing each other.

**If FRS is to be of any use in an emergency everyone should DISABLE TONE SQUELCH and use carrier squelch only!**

Anyone can turn their "privacy code" off enabling them to hear all traffic on the channel. CTCSS is used to reduce ambient noise when you monitor the radio all the time. It is not a scrambler. Don't discuss personal information you want to keep private on FRS!

**If you ever need to use a 2-way radio in a real emergency, it is vital that you be clearly understood.** Professional emergency responders use plain language, and you should do the same. Avoid "ten-codes" and jargon you hear on TV shows because these terms have different meanings in different areas and are easily misunderstood.

**To call someone, say the name of the person you want to call, followed by the words "THIS IS," then say your name and "OVER." For example:**

***"MARTHA, THIS IS GEORGE, OVER."***

When Martha hears her name, it gets her attention. She may not know George, so when she hears the words "THIS IS" it alerts her to pay attention to who is calling her. When she hears "OVER" she knows that it is her turn to speak.

**Two-way radios are not "full-duplex" like a telephone.** You cannot hear what someone else is saying when YOU are talking. Because only one person can talk at a time, it is more important to LISTEN on a 2-way radio than to talk! It's basic "radio etiquette" to establish contact and make sure that you have the other person's attention before just "blabbing away."

**If you hear someone calling you, acknowledge** his or her call by identifying yourself and saying, "GO AHEAD." This lets the caller know that you heard them, and that you are ready to listen to what they have to say. When you want them to respond say "OVER."

**The word "OVER" leaves no doubt about whose turn it is to talk** and avoids any confusion which results from two people speaking at once and nobody hearing the other. When your business is finished, the person who started the conversation should end it by saying their name and the word "OUT" which leaves no mistake that the contact has ended.

**Always release the push-to-talk (PTT) button whenever you stop talking.** If you forget and keep it pushed down when trying to think of something to say, the radio continues to transmit a carrier, making your battery run down faster and making "dead air" so that nobody else can be heard. In the least sense, doing so is impolite. In an emergency, it could prevent someone with vital information from getting through. Leave a second or two between "hand-offs" to give others a chance to break in. Speak in short, simple phrases and toss the conversation back and forth with the word "OVER."

**Don't speak immediately when you press the PTT, but wait an instant.** Most two-way radios take 100 to 300 milliseconds to change from receive to transmit, so if you speak as soon you "key up" it "clips" the first syllable, making it harder to understand. If that word doesn't make it, you will just have to say it again and run down your batteries faster.

**If you must use a radio to relay an emergency call** to someone else that will make a telephone call for you, write the information down and collect your thoughts. The 911 operator will need the exact location, street name, house number and nearest cross street to the emergency.

**This is vital if a call being relayed is made from a location different from the emergency.** Most automated 911 systems trace the call. It wastes precious response time if a unit is automatically dispatched to where the call is being made from, if it is far from the actual location of the emergency.

**Answer the call taker's questions as directly as possible, do not explain.** If asked a question, just answer. If you think that additional information is vital, be brief and let the call taker ask for more detail.

**It doesn't help to talk louder on the radio in a noisy environment,** even though it's may seem natural to speak louder when it is noisy around you. When you yell, the radio clips your voice, distorting voice audio so that it is less understandable.

**Speak ACROSS the microphone** rather than into it because breath sounds also reduce intelligibility. Use a natural speaking voice. The only way to overcome loud ambient noise is to shield the microphone from the wind, point it away from the source of noise or wait until the noise passes.

**A hand-held microphone or boom-mike with headset may be convenient** if you have limited mobility or need your hands free to use tools or equipment, and are speaking to someone nearby.

**Any portable transceiver is much less effective when worn on your belt,** because the radio signal is absorbed your body. This is very noticeable with low power FRS. Unless you are within 1/4 mile of the person you are talking to, hold the radio vertically, at face level, with its antenna in the clear.

**Range will be reduced to less than half if you use the radio inside a metal vehicle** or inside a steel reinforced building. If you have trouble communicating, pull safely off the road and step outside the vehicle away from the traffic flow to use the radio.

**In cold weather keep the radio warm** inside a coat pocket or in your purse, NOT exposed on your belt. Adapters, which enable you to power the radio from your auto cigarette lighter plug, are useful for extended operation. If the radio will work with common AA batteries, you don't need to depend on household current to recharge.

**A FRS radio is NOT a substitute for a cellular telephone!** It is always prudent to have a cellular telephone available for personal emergency communications and to use it as long as it works.

**Cellular telephones cannot be relied on under all emergency conditions.** FRS, despite its significant performance limitations, provides an inexpensive short-range alternative for people who are willing to learn and practice to supplement their community preparedness and neighborhood watch emergency communications. ■