

How to Use Family Radio Service (FRS) Radios for LAFD-CERT Tactical Communications

By Jonathan Zimmerman K6JGZ

The LAFD-CERT Communications Plan specifies the use of FRS (Family Radio Service) radios for CERT incident tactical communications. FRS radios work amazingly well for short range communications when the FRS users have a little training and practice and the radio batteries are fresh. There are not enough amateur radio frequencies available for every incident to use them for tactical purposes, so save the Amateur frequencies for longer range transmissions. The proper use of FRS radios also allows non-licensed CERT members to use radio communications. With proper radio setup and a little training, FRS radios can provide CERT members with very effective short range radio communications.

Efficient use of FRS radios at the tactical level will take training, good radio etiquette, practice, and drills.

Many people have absolutely no exposure to hand held two-way radios, or any type of portable radios other than their mobile phones (yes cell phones are radios...) and stereos systems in their homes and cars. With a little training, a little practice, fresh batteries and a copy of their FRS instruction manual, any CERT member can become a good FRS radio communicator.

Handheld radios have limited power

Each handheld radio is a very small radio station that has limited power and not enough power on its own to transmit to a wide area. Other radios in your local area can hear to your transmission clearly if you are in a good location. FRS radios generally work well within a radius of a few blocks, and sometimes further. If you're in a good area and not surrounded by metal or concrete, you should be able to contact the IC. If you can't reach your CERT IC from your location, you may need to place a relay operator between you and the IC to forward your transmissions to the IC.

Radios have Privacy Codes and may be 'Locked'.

FRS radios have privacy tones or codes that filter out most of the local transmissions. Only radios that are transmitting the same tone code will 'unlock' them. Many FRS radios default to the tone, or 'lock' to be on, so be check your radio and know how to set the tones and turn them on and off.

Radios may have their privacy tones set to 'on' and be 'locked'

If you want to contact a 'locked' radio, you must send the 'key' to unlock that radio so it can play your transmission. Once you set the tone control on your radio to the proper tone, that 'key' is automatically sent when you press the Transmit button, but it may take

a moment for it to actually unlock the other radio. To allow the ‘key’ to work, you need to press the Transmit button for one second or so before you start speaking.

Privacy tones are convenient, but they can interfere with signal transmission

Privacy tones allow you to set your radio to receive signals only from radios that are transmitting the same tone you have chosen. That’s great if you want your radio to be quiet most of the time and only hear other radios transmitting on the same frequency and tone, but it prevents you from monitoring all the radio communications traffic on the frequency and you won’t know when the channel clear and available or when it’s in use. The CERT Comm Plan suggests that FRS tones not be used unless absolutely necessary. If your radio is set to ‘no tone’ or ‘0 (Zero) tone’, you can hear all the traffic on the frequency and will not miss traffic intended for you or traffic that may carry information useful to you. If multiple incidents are in progress you can learn a lot just by listening – what streets are blocked? What resources are nearby?.

If your tone is set to on, you may be interfering (‘doubling’ or ‘stepping on’) other important transmissions because you can’t hear them. We recommend you do NOT use privacy tones for emergency communications.

Use descriptive tactical call signs to prevent confusion and wasted effort

Use descriptive tactical call signs such as, “Elm Street IC this is Oak Street Search Team One”. Anyone listening knows exactly who you are calling and exactly who you are. There may be other CERT ICs, but there’s probably only one Elm Street IC within the range of your radio. Only the person you are calling -- Elm Street IC, should answer and no one else will assume the information you transmit to the Elm Street IC is intended for them by mistake. This is especially important on the FRS and Amateur Radio frequencies during disasters or multiple incidents. All the frequencies are shared and there may be other responders or incidents on your frequency. Even if you can’t hear them, they may be hearing you and it’s important to make your tactical call signs unique and descriptive to prevent confusion and misinformation.

Location, location, location

Handheld radios need to ‘see’ the other radio – you may need to find higher ground and get away from heavy concrete and steel whenever possible for good communications. You may not be able to contact me if you are standing on the street, but you might be able to reach me if you stand on the porch steps. Just because you can hear me calling you, or hear another radio, does not automatically mean we can hear you. Height trumps power. Something as simple as holding your radio at arm’s length above your head or climbing a few stairs or a small hill may enable you to hear a transmission that you would otherwise miss.

No privacy in the FRS, GMRS, or the Amateur Radio Services

Handheld radios are shared communications devices. Lots of users use the same frequencies and everyone is listening to what you say. Your transmission is not private – anyone can listen. Do not transmit information you do not want everyone and anyone to hear. Never transmit personal information, no full names, phone numbers, or other personally identifying information unless it's yours to give away. It's ok for me to give you my mobile phone number or email address over the air if I choose to. It's NOT OK for me to transmit yours unless you give me your permission to do so. Never use full names – especially for victims. It's ok to say "24 year old female, conscious, difficulty breathing". It's not ok to use the victim's name.

RADIO ETIQUETTE

Handheld radios are very effective if used properly, but they consume time and resources (radio spectrum) if used improperly. Please practice BEFORE you use your radio in an emergency.

Listen before you speak. Is the channel clear? Think about what you are hearing.

Think before you talk. You are using a shared resource and when you are using it, no one else can, regardless of how important or urgent their message may be. Most important transmissions can be made in 15 words or less. *"Single family residence, 12345 Colfax at Collins, flames showing, persons trapped second floor."*

Press the push to talk button, wait for a brief moment, then speak clearly, calmly, and slowly. Hold the radio three or four inches from your mouth and talk across the radio, not directly into it. Do not shout – it makes it hard to understand your transmission.

Wait for a response to your call. Unless it is a life-threatening emergency, wait for a minute or so before you call again. The party you are calling may have heard you and may be busy.

When you press the Transmit switch, it shuts off the radio's speaker and you cannot hear the other party. You must let go of the Transmit switch to listen and to allow others to use the frequency.

Be careful where you put your radio. Don't put it in a position where the transmit switch can be pressed accidentally – like on your belt. A continuously keyed radio monopolizes the frequency and no one else can use it. And of course you can't hear the problem because it's your radio that's causing it and you're transmitting, so your speaker is off. Check your radio occasionally. If you haven't heard a transmission for a while, make sure your batteries are still alive and make sure you're not pressing your Transmit button by accident. Clip your radio up closer to your ears so you can actually

hear someone when they call you. Clip it to your shirt or jacket. If you have an earpiece for the radio, use it.

Most radio problems are caused by three simple things:

Your finger – you didn't press the Transmit button for a second before you began speaking and your listeners didn't hear the first few words you said because the other radio wasn't ready..., or you didn't hold it down firmly while speaking and all they heard were bits and pieces, or you held it down too long and couldn't receive anything when you should have been listening

Your battery – Is it fresh? Is it working? Have you heard any transmissions in the last few minutes? Do you have a spare?

Your Location – Are you in a basement, or an elevator, or next to a heavy or high wall? Can you get to higher ground, or closer to the outside? Can you get near a window? Just raising your radio above your head may enable you to make contacts you couldn't make before.

LEARNING SUGGESTIONS

Listen to radio traffic. Listening to LAFD radio traffic is a good way to learn how to use a radio. Get a scanner or a scanner app for your smart phone and listen to the LAFD radio communications. Learn how they communicate, how they size up situations, how they ask for resources, how they give continual updates, and how dispatch prompts for information. You will learn what kinds of information are important and you will learn exactly what to say and do when it's your radio and your incident.

Practice with your radios. Learn the controls, learn how to change channels and how to set the privacy tones and turn them on and off. Walk your neighborhood with your radios and a friend and see how far your FRS radios will reach. Find out where you have transmission problems and where the radios work the best. You may need this information in an emergency later.

Additional Resources Use the Radio Resource section of the LAFD CERT web site www.cert-la.com