

Major Principles for Effective Radio Communication

Identity

Initiating Communication: Begin every transmission by stating who you wish to talk to and your identity.

Your identity is the team name or position, like “DA alpha” for damage assessment team A or “Command” for command post. A transmission might begin with something like “Command, this is DA alpha”. More simply you could say “Command, DA alpha” Once communication is established you don’t need to give your name every time, as long as it is clear who is speaking.

Clarity

Stop. Think through what you need to say.

Decide what you are going to say before you begin speaking. Rehearse what you will say if that helps.

Eschew obfuscation

Use short simple words. A voice over the radio can be hard to understand, using simple, common words makes your transmission easier to follow.

Stay calm.

If you are excited you can speak too quickly, or forget words.

Don’t rush.

Speak slowly enough to be easily understood. Try for a normal conversational speed . It is better to take a little longer and say things only once.

Get (or give) a “readback” only when necessary

Do not repeat back a message unless the message was unclear. Reading back a message takes time when a new message could be coming in. If you do need to hear a message again ask for only the part needed. For example, DA-alpha reporting a gas leak might say: “Net Control, DA-alpha” “DA-alpha go ahead” “Net Control, the house at 2411 Emmons has #\$\$^%\$@(*^&~!”}+_&”. Net Control would say “DA-alpha, say again all after 2411 Emmons” “Net Control, ‘I say again ...has a gas leak at the meter” Net Control should then say “copy” to indicate the message was understood. See the section on pro-words for a list of common phrases used in radio communications.

Brevity

State the essential facts only

Skip unnecessary details. Give only the information needed to get the result intended. For example, if you are reporting damage to a house, state the address of the house and the nature of the damage. Don't tell Net Control what color the house is, unless that is the only way to identify which house you are talking about. Also, avoid "filler words". The Umm's, ahhh's and like, you know, other stuff, adds nothing to clarity.

Communicate only one message at a time

If you have multiple things to report, transmit only one item at a time. Be sure that one concept was received and understood before moving on to the next.

If you must transmit long messages give it a "break"

If you transmit a long message other teams can't get through to Net Control. Potentially you could block an emergency message. The way to give the other teams a chance to get a word in edgewise is to pick a stopping point and say "break". Then release the push-to-talk button and wait a couple seconds. If another team has traffic that they feel has priority over yours that team should identify themselves and wait to be acknowledged by Net Control. An example: DA-alpha might be sending "...so I sent them all over to the school. Break" "Net Control, DA-bravo priority one traffic" "DA-alpha stand by, DA-bravo Net Control, go ahead". DA-bravo cuts in to the conversation and Net Control requests that they give their message.

Transmit Addresses (or any other numbers) by saying each digit individually.

For example, 1632 would be reported as "one six three two", and not "sixteen thirty-two."

How Does It Work in the Real World?

First, stop and listen.

Make sure the frequency is clear before you start speaking. If two radios transmit at the same time all you hear is squeal.

Start by getting acknowledged "Is this the party to whom I am speaking?"

Don't just start speaking. Team members will be searching for damage, or coordinating the response. It may take them a second to switch gears to deal with your radio message.

Start by simply stating who you wish to talk to, and who you are. Then wait for a response. For example, if you are Net Control trying to talk to First Aid team 3, you would say: "First Aid 3, Net Control" and wait. First Aid 3 should come back with "Net Control, First Aid 3, go ahead". The "go ahead" means "go ahead with your message; I'm ready to receive it". Of course, it is possible First Aid 3 is

busy. If possible they should respond with “Net Control, First Aid 3, stand by”, which means “I heard you call, we’ll get back to you as soon as possible”. It is possible that even that much of an interruption is not possible, and First Aid 3 will not answer. Net Control should simply try again after a brief pause. Remember, answering the radio is secondary. Don’t use the radio if doing so will endanger yourself or someone else.

Keep transmissions time to a minimum

Only one person can talk at a time, and there may be a lot of people who have something to say. Transmit as much as necessary, but no more. Also, pause in your conversation to allow a break in case another team needs to break in with emergency traffic.

If it is a priority, say so.

When a situation is an immediate threat to life or property your transmission should take priority over normal traffic. To report an emergency, listen to your radio. If someone else is transmitting wait till there is a break before transmitting, then identify the person you are calling, yourself and state that you have “priority one (or two) traffic”. Then wait to be acknowledged. Repeat as needed to get their attention. For example, DA-alpha comes across a medical emergency. “Net Control, DA-alpha with priority one traffic” “DA-alpha, go ahead” “Net Control we need first aid response to ...”. Note, priority one is threat to life, and priority two is threat to property.

Pro-words and Other Jargon You May Hear

“ALL STATIONS STANDBY” - Everybody stop transmitting. This is used most often when there is priority 1 traffic. Net control will say “all stations standby” (probably repeated), then call the station with the priority traffic: “SAR2 go ahead with your priority 1 traffic” All other stations should NOT transmit till net control is clearly done with SAR2 or says “resume normal traffic”.

“COPY” - I got your message.

“GO” - Usually used when receiving a long message passed in chunks. It means I got the last chunk and am ready for the next one.

“SAY AGAIN” - Repeat the portions of your last transmission as indicated by the words below:

“ALL AFTER” - The portion of the message which needs to be repeated is that portion which follows the next word..

“ALL BEFORE” - The portion of the message which needs to be repeated is that portion which precedes the next word.

“WORD AFTER” - The word which needs to be repeated is that which follows the next word.

“WORD BEFORE” - The word which needs to be repeated is that which precedes the next word.

“I SAY AGAIN” - I am repeating the transmission, or the portion you need repeated.

“STANDBY” - Wait I’m busy, I’ll let you know when I’m ready.

“BREAK” - Used when you are going to pause a moment in case some one else needs to say something. It can also be used by the person trying to get in to the conversation. Transmit the word “break” in a pause between transmissions to get the attention of the other parties. They should stop and acknowledge the “breaker”.

“OUT” - This is the end of my transmission to you and no answer or reply is required or expected.

“END OF MESSAGE” or “END OF REPORT”. Use at the end of a long report, such as a Damage Assessment form. This lets Net Control know that you are waiting for their ID number for that report.

“OVER” - This is the end of my transmission to you and an answer is required or expected. As you can see the phrase “OVER and OUT” is redundant and contradictory. Don’t ever use that phrase. Even saying “OVER” is unnecessary (and a waste of time) because our radios send a tone when the push-to-talk button is released, so you know that the other party is now listening, and the context tells you if a reply is expected. Save time, don’t say “OVER”.

In general, don’t use jargon. If you know the pro-words that is fine, but don’t memorize them unless you want to. It is better to use plain language and be clear than to use phrases that may confuse your listeners. In CERT we are not usually dealing with trained radio operators, like you would find with the ARES/RACES hams. Also, use words people expect; it aids in understanding. It is much easier to get the message when familiar words and phrases are used. As an example, in ARES/RACES a “.” is “period” when in a sentence, or “decimal” when in a number. For example 1.25 would be “figures one decimal two five”. If I am transmitting a web address, however, it is more immediately clear to say “Google dot com” than to say “Google period com”. It also fits with expectation, so would be easier to understand.

The 2-meter Radios

When and How to Use Them

Basically DON’T. You need to be licensed to use ham radio. Also, if you have not trained with the Mountain View ARES/RACES group, you will not know the procedures and expectations for operating in an emergency. It is better to wait for a ham assigned by

the city to show up. If there are not enough hams to staff every CERT, hams will be assigned to the fire stations. Messages can be passed to the city by sending a runner to the fire station. Our GMRS radios will reach the fire station, so we don't need to go back and forth. (Note that you should first check that the ham at the fire station has a GMRS/FRS radio).

How Do I Get a Ham License?

There are many ways to get your license. The good news today is that you no longer need to learn Morse code. You do have to pass an FCC test. There is plenty of help to teach the material you need for the test. For information on classes or self-teaching materials you can:

- Google "how do I get a ham license"
- Visit [SPECSNET.org](https://www.specsnet.org) for links to "Ham Cram" classes in the bay area
- Go to <https://www.baears.com/> to learn about "Ham-Cram" sessions in the Bay Area where you can get your license in a day.
- Ask one of the licensed Amateur Radio Operators in MLN Cert (Jim, Dave, Paul, Tim, Leslie, Vladimir)