

# Effective Handheld Radio Communication in Emergencies

## A Guide for CERT and GMRS Operators

Woody Phillips KJ7YYI / WRMK486  
GEMCOM / PS-CERT / PSNRW



### Background

Full time Strawberry resident since 2013, Retired Technology Industry Executive, USAF Veteran – 304x1 Ground Communications / Flight Facilities, Training Manager for Gila County Emergency Communications (GEMCOM) 2023-2024, Licensed Amateur Radio Operator (KJ7YYI), licensed GMRS Operator (WRMK486), Founder of PSNRW, PS-CERT volunteer – Radio Communications.

# ***Effective Handheld Radio Communications in Emergencies***

## **A Practical Guide to Using YOUR Radio**

### Introduction

This is a short course on how to communicate using hand held, and sometimes mobile, 2-way radios during an emergency in Pine and Strawberry. It is specific to radios used by CERT, and FRS and GMRS radios used by the general public, with an emphasis on PSNRW volunteers.

**CERT** – Community Emergency Response Team. A FEMA organized group of local volunteers sponsored by the Gila County Sheriff and working closely with the Pine Strawberry Fire District.

[PS-CERT.ORG](http://PS-CERT.ORG)

**PSNRW** – Local residents volunteering to use their own FRS and GMRS radios as part of the Pine Strawberry Neighborhood Radio Watch which conducts training, helps with programming radios, and operates a weekly net for practice, education, and fun. (Will soon have a GMRS repeater in PINE that “should” be able to be heard in Strawberry). [PSNRW.ORG](http://PSNRW.ORG)

### The Mission

***Provide clear, concise, messages during an emergency to the proper personnel in a timely manner.***

CERT & PSNRW volunteers **may** be part of a communications network when participating in an emergency response, whether you are serving as a runner, or coordinating multiple teams as a Net Control Operator. Having some basic familiarity with communications modes and techniques and an overview of how CERTs fit into the communications plan will go a long way towards ensuring that CERTs remain a part of the solution, rather than complicating the problem.

### The Plan

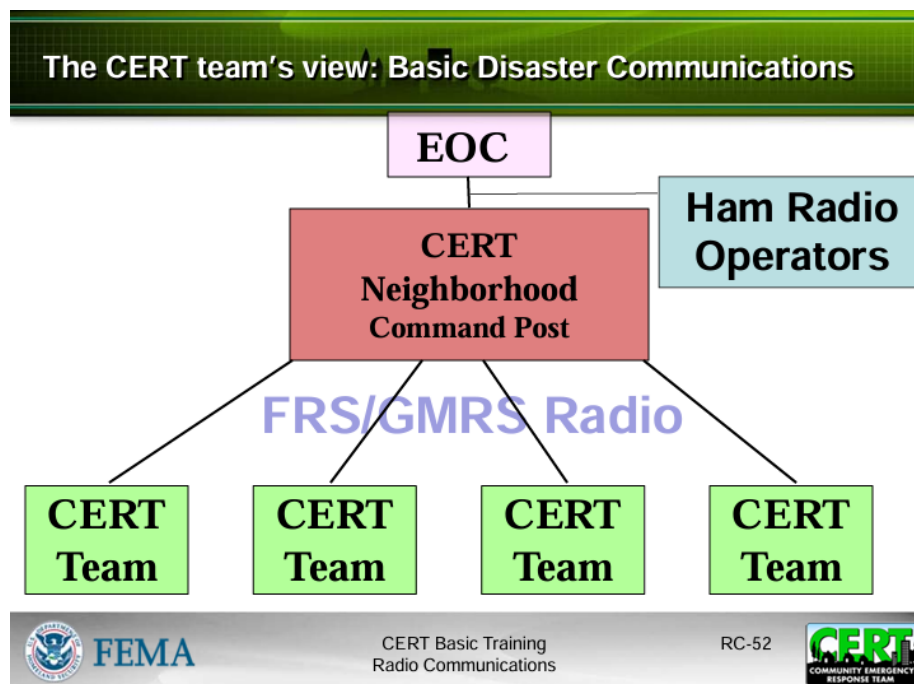
A ***Pine Strawberry Community Radio Response Plan*** is currently being developed for use by Pine Strawberry CERT and Pine Strawberry Neighborhood Radio Watch. This plan will be able to expand or contract as necessary to allow community volunteers to communicate effectively with each responding component whether that is just a single CERT team, the Local Fire or Sheriff’s Department personnel, or the County or State EOCs. The plan will be executed by trained operators and managers, but will rely heavily on **YOU!**

**Importance of Communication:** During an emergency, effective communications is one of the greatest logistical problems. Without effective communications, first responders, including CERTs, will not know where to respond or what to expect. Without well-coordinated communications, an emergency response organization will be unable to effectively coordinate its resources. Without clear communications, responders may misunderstand a situation, responding to the wrong location or responding unprepared for the actual situation.

Worse, if communications fail, first responders may find themselves in danger for which they are unprepared.

**Handheld Radios as a Vital Tool:** The proliferation of small handheld radios operating in the Family Radio Service (FRS) and the General Mobile Radio Service (GMRS) make them a popular choice for back-up neighborhood communications. Such radios have relatively low cost and are widely available. Plus, they operate in a similar way and over the same distances as the commercial radios used by CERT and this interoperability can save time when speed is a critical element. CERT and FRS/GMRS operators may be invaluable during emergencies when the normal methods of communications are not working. Even without leaving home, these operators can provide vital information in emergency situations.

**Expect to Communicate on a NET:** Anytime there are more than 2 operators on a frequency, you are probably going to find yourself talking on a network. This means one station is Net Control and literally “controls” the communications between the participating operators. An EXCELLENT way to get familiar with operating on a network is to practice. *Locally, every Saturday evening at 8 PM on GMRS Channel 15, the PSNRW holds a Net for just this purpose.*



**IT IS THE MESSAGE THAT IS IMPORTANT!** If cell towers or phone lines are working, and you need to call 911, DO SO! If, it is more expedient or effective to use a runner, do that (Kids on bicycles can be excellent runners). Don't just reach for the radio because you have one. Use the BEST method for the situation.

### Basic Radio Operation

**Anatomy of a Handheld Radio:** Show a diagram or real radio, pointing out key components: antenna, PTT button, volume knob, channel selector, speaker, microphone.

**Know Your Radio(s):** READ THE MANUAL! Be sure you know how to turn your radio on and off, how to change the frequency or channel, and even how to add a frequency when in the field.



**Push-to-Talk (PTT):** Press and hold while speaking, release to listen. *Be sure to pause for a breath before speaking so you do not cut off the first syllable.*

**Microphone Positioning:**

- Hold the microphone away from your face about 2 to 4 inches to the side of your mouth
- Talk across the microphone, not into it
- Speak in a normal voice
- Don't raise your voice
- Use clear pronunciation
- If adjacent noises obscure your speech shift your location. Don't talk louder.



## Standard Operating Procedures (SOPs)

**Pre-Incident Checks:** When responding to an incident, whether at home or in the field, be sure to check your equipment first. What is the battery status? Do you know what channel / frequency to use and are you on it? Does the radio work? Do a radio check if unsure.

**Establishing Contact:** “Hey you, this is me!” For example: “Incident Command, CERT 301”. This indicates that the individual assigned CERT badge number 301 is calling Incident Command.  
NOTE: Police do this in the reverse order for some reason but WE ARE NOT POLICE!

**Pro Words:** There are special phrases called “Pro Words” which are used to make communication more concise but also more accurate. For example, use “Over” when you are done speaking and expect a response from the other party. See Appendix A for a list of other useful Pro Words.

**ITU Phonetics:** When radio conditions are not optimal, it may be necessary to spell out certain words or specific pieces of information such as addresses. This is done using ITU Phonetics (see Appendix B). For example: “Command this is CERT 301. We are at the corner of Sith and Jedi. OVER.” Command replies: “CERT 301 is at the corner of Sixth and Jedi.” CERT 301 replies: “Command, CERT 301. Negative. We are at the corner of SITH and Jedi. I say again Sith. I SPELL. Sierra India Tango Hotel. OVER.” Command replies: “Roger, SITH and Jedi.” CERT 301 Replies: “Affirmative Command. CERT 301.”

**Be Brief:** The most important thing, even if you forget everything else is to be clear and brief. ALWAYS use plain language and avoid jargon or codes unless absolutely necessary and understood by all.

### Message Format:

1. Compose your message before you speak.
2. Start by listening - Is the channel clear?
3. If clear, press the transmit button.
4. Then speak, giving call sign of who you are calling, then your call sign.
5. Then let go of the transmit button.
6. Wait for an acknowledgement.
7. Once acknowledged, wait a second then press the PTT button.
8. Speak, give your call sign, then your message. Slowly.
9. Then let go of the transmit button.
10. Wait for a confirmation.
11. If confirmed. Acknowledge. You are done.
12. If not confirmed. Resend message.

### Example of how to make a message brief:

**Today: 7:50 PM.** Your team discovers **a fire in an apartment building.** There are **people screaming inside.** One woman is begging you to help save her baby and her mother in apartment 8. The apartment is at **7452 Iberville.** The unmistakable **smell of gas is in the air.** Your team has discovered **seven people with first degree burns.**

**Summary:** When “sending traffic” (passing a message over the radio) remember 3 things.

1. “Hey you, this is Me”.
2. Use Pro Words and ITU phonetics when necessary but no jargon or Codes.
3. Sign-off with your Tactical Call.

*NOTE:* If you are on a GMRS Frequency, at the end of your communication, and after you sign-off with your Tactical Call, immediately follow with your GMRS FCC Call.

## Pine Strawberry Specific Information

### FRS/GMRS:

The local FRS/GMRS Channel currently in use is Channel 15 SIMPLEX. 462.5500 MHz with NO tones.

Non-Licensed FRS/GMRS users use First name on FRS radios.

Soon we will also have a repeater available in Pine that should be able to be heard in Strawberry on Channel 19R. The specifics are: 462.6500 MHz with a +5 MHz offset and a tone of 156.7 on BOTH transmit and receive.

The Pine Strawberry Neighborhood Watch weekly net is on Saturday at 8 pm on GMRS channel 15.

### CERT:

During all CERT deployments, all INTER-Team communications will go through a Net Control Station. This may be Incident Command (GCSO, TRSAR or CERT), or some other entity. INTRA-Team communications are normally on a separate simplex frequency. Make sure you understand the communication frequencies and structures in use BEFORE deploying. These are normally distributed during the incident briefing.

Pine Strawberry CERT typically uses Channel 1 on their CERT radios which is labeled CERT-D. It is on 458.1625 MHz with no tones or offset (Simplex) and is **ONLY to be used by BADGED CERT members using their Tactical call.**

**CERT Net Control will log ALL notable calls on ICS Form 214 Activity Log or ICS Form 309 Message Log as appropriate to the situation.**

**Amateur Radio:**

Interactions with Amateur Radio stations will ONLY be accomplished by FCC licensed amateur operators and only by way of a Net Control Station. This may be a SUB-Net rather than the Incident Commander's Net Control as defined by the ***Pine Strawberry Community Radio Response Plan***.

## EXERCISE

One operator will act as net control and handle the following scenario using a previously provided roster of CERT and PSNRW members:

*You are monitoring FRS/GMRS channel 15 during a bad storm. CERT is activated to man a makeshift EOC at PSFD station 41. A Communications Net is set-up and you hear a call for all CERT and PSNRW stations monitoring the frequency to "check-in" and provide a status report of the situation at your location.*

Respond to the following call:

NET CONTROL: "All Stations. All Stations. This is the Pine Strawberry CERT Command Center. We are responding to a local weather event. The Command Center is activating the communications roster. Please respond when you hear your FCC or Tactical Call."

"CERT333"

CERT333 Responds: "CERT333"

NET CONTROL: "CERT333, Command. What is your situation. Over."

CERT333 Responds: "Command, CERT333. Roads are unplowed. A tree is down blocking Jan Drive at Bradshaw. Power is out. The creek is approaching flood level. Over."

NET CONTROL: "CERT333 Command. Roads are unplowed. A tree is down blocking Jan Drive at Bradshaw. Power is out. The creek is approaching flood level. Over."

CERT333 Responds: "Command, CERT333. Readback correct. CERT333 standing by".

Now, repeat the exercise and assume you are on a GMRS frequency. You may either use your FCC Call or use the fictional "WXYZ001".



## Appendix A – Pro Words

**Affirmative** – “Yes” (in answer to a specific question)

**Break** – “I have priority traffic.”

**Break-Break** – “I have emergency traffic.”

**Clear** – “I am finished with this communication.”

**Copy** – “I acknowledge receipt of message.”

**Negative** – “No”

**Out** – see Clear

**Over** – end of transmission, waiting for response

**Roger** - "I have received and understand your transmission." It does not mean yes, affirmative, I agree, or I will comply.

**Wilco** – “I will comply”

**Say Again** – asking person to repeat what was said

**I Say Again** – “I will repeat”

**OPS Normal** – “All operations are routine”

**I spell** – “I will spell out a word using phonetic alphabet”

## Appendix B – ITU Phonetic Alphabet

A	ALPHA	J	JULIETT	S	SIERRA
B	BRAVO	K	KILO	T	TANGO
C	CHARLIE	L	LIMA	U	UNIFORM
D	DELTA	M	MIKE	V	VICTOR
E	ECHO	N	NOVEMBER	W	WHISKEY
F	FOXTROT	O	OSCAR	X	X-RAY
G	GOLF	P	PAPA	Y	YANKEE
H	HOTEL	Q	QUEBEC	Z	ZULU
I	INDIA	R	ROMEO		

Appendix C – See attachment: “Introduction to GMRS”.

Appendix D– See attachment: “ICS 214 Activity Log”.

Appendix E– See attachment: “ICS 309 Communications Log”.