

## **Operating in a Tactical Radio Net Part II**

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The original of this version was obtained from the Santa Clara County, California ARES/RACES Website [http://www.scc-ares-races.org/operating\\_in\\_a\\_tactical\\_net.htm](http://www.scc-ares-races.org/operating_in_a_tactical_net.htm) and edited for this training. Other versions are also on the Internet. For more information, Google "*Tactical Net*" + "*Amateur Radio*"

### **Summary of Part I**

In Part 1 of this subject, we defined the meaning of a net, and a net control station. We also defined the difference between an Open Net and a Directed Net . We discussed tactical versus FCC call sign usage as well as the need to notify net control when leaving your assigned station. We also discussed briefing your relief and arriving for assignments early. We talked about keeping transmissions short and avoiding unnecessary transmissions as well as the best way to contact net control. We also briefly discussed third party traffic and message handling.

### **Minimize Misunderstandings – Use Plain English**

A basic principle of the ICS is to avoid speaking in codes. Do not use the "10 Code", even if you think you are familiar with it. It varies from place to place. I've noticed that Harris County Fire and Police sometimes use the word "Clear" to indicate that they have received and understood a transmission. We Hams use "Clear" to mean we're signing off. Confusing – yes!

Be sure you understand what the other party means if you hear one of these terms. Avoid saying "QSL" and "Roger" because they can be ambiguous. Some Hams use these terms all the time, but they have various meanings. You could hear each one used with any of several meanings, and not know for certain which meaning was intended.

The definition of QSL as far as Morse Code "Q signals" is concerned is "I acknowledge receipt of your message or transmission." Roger is defined as "copy," "check," "understand", etc., to mean "I understood all of your last transmission."

Instead:

1. Use "affirmative" or "yes", OR "negative" or "no" in response to a question that clearly needs a yes/no answer.
2. Use "affirmative," "okay," "will do," etc. in response to a request that you take some action.

### **Preparing a message - Getting and organizing the information**

For formal message traffic, we will use the IC-213 Form. For less formal net messages, say during a public service event, you might simply use a log to record traffic, unless directed otherwise by Net Control.

There are generally 7 main parts to every message:

1. Message Number (For tracking purposes)
2. To or Destination
3. From or Originator
4. Subject
5. Date and Time
6. Message Text Section
7. Reply Section

The ICS-213 form also contains blocks for Position Titles and Signatures. We'll talk more about some specific procedures for handling messages using IC-213 in a future session.

### **Practice Message Handling**

A good time to practice copying messages is during our Sunday night ARES/TEAC Net, when members make announcements. Pretend you are working a Tactical net and are required to relay these announcements at the end of the net. Use the ICS-213 to gain experience. I also log in the check-ins, even if I'm not Net Control, just for the practice. I've attached a copy of the blank spreadsheet I use, for your information.

### **Do's & Don'ts of message handling**

DO be accurate and DON'T change the message

DO Copy the message as received; legible handwriting is important.

DO be timely; remember, lives may be at risk.

DO get the person's name, but DON'T pass it over the air.

When you are asked to send a message about some person, immediately try to get a specific name if it seems appropriate. However, avoid saying the name over the radio unless you are told it is permitted. For example, someone may need first aid, or may be lost. It may not seem important while someone is standing next to you, asking you to send the message ... but they may wander off and be unavailable when that information is needed. Knowing names helps match up lost and found persons, and helps eliminate duplicate reports of the same injury (or lunch request, or transportation request).

DON'T pass victim or patient names over the radio.

Generally the only personal names that belong in traffic are the names of agency officials, if they choose to put them into messages. Remember, anyone can monitor ham radio channels. There may be exceptions to this policy at certain events, such as for matching up lost children, but make sure that Net Control approves any exceptions.

DO get fully worded and signed messages, not paraphrases.

When someone asks you to send a message of any substantial length, agree with that person on the exact wording that constitutes the message. If someone asks you to "tell Captain Smith so and so . . . .", then you are going to have to paraphrase the meaning. If you reword the message, you can introduce errors, omit details, or change the emphasis or urgency.

A practical way to handle a message that you get verbally in the "tell them that" format is to write down what you think is the entire intended message, then read it back verbatim to the author for approval. Substantial messages should be signed with the title (and possibly the name) of the author. When sending the message over the radio, you can say, "Signed, Westwood Shelter Manager."

Use your judgment whether this much care is needed with tactical traffic. If the officer you are shadowing says to you, "Tell Wilson that his driver came back," you might reasonably not worry about transmitting his exact words. As an operator, what do you do if you are asked to get help for a problem? If possible, work with the person who asked, and try to understand who should handle the problem, then notify net control of this need. Many times the ultimate recipient of the traffic will be obvious, but not always.

If you instead tell your problem to Net Control without first finding out whom the message is intended for, and Net Control isn't the one who can handle it, you may have to tell your problem at least one more time. The person who brought you the request may know better than Net Control who should get the message. However, when you are asked to report information to Net Control, this advice doesn't apply.

**DO** say your message straight through, in phrases, without any repetitions.

Say the message in logical phrases of about four to twelve words. Pause and release the key while you wait for the other operator to write each phrase. Remember to always release the microphone button when you stop speaking. Speak clearly, and slowly as clarity requires, and use the phonetic alphabet to spell items that cannot be understood reliably by pronouncing them.

The receiver should ask for any necessary repeats, until they have copied the whole message. If they ask you to repeat something, repeat it exactly the same way as you did the first time; do not paraphrase. The receiver is trying to copy your words; if you use different words, you are moving the target. If the receiver heard your words but did not understand what you said, then explain what was said.

The receiver should then read it back to you, while you compare what you hear with the message you have sent. Once any disagreements are resolved, the other person acknowledges receipt of the message saying "Okay -- got it," or "copied" and that ends the matter. The receiver may omit the read-back step, if confident he has the message correctly, and simply acknowledges receipt. Some groups prefer this procedure.

Very short, simple messages may go a bit differently. You send the entire text, and the receiver may simply say "copied." Or he may say the text back to you, and you say "affirmative. " However, don't say "affirmative" and also say parts of the message again. Doing that gives the other station mixed signals. Are you agreeing or aren't you?

**From the sender's viewpoint:**

1. Say the message in short phrases; release the button between phrases.
2. Do not repeat without being asked (in most cases).
3. If asked for repeats, repeat verbatim what you said before; do not paraphrase.
4. If the receiver's read-back is correct, say so without repeating any of the message.
5. Be sure that the receiver says that he has copied the message.

**From the receiver's viewpoint:**

1. Ask for any repeats or explanations you need.
2. When you've copied the whole message, read it back to the sender.
3. When the sender agrees with your-read-back, say you copied the message.
4. When copying a message, if the sender continues before you are ready, mark where you left off and continue copying the message being sent. Later, ask for the missing text; for example, "say again the words after SHELTER and before EQUIPMENT." This gets the message through faster than most other techniques.

## GENERAL OPERATING PRACTICES

**Wait after keying, before speaking**

Wait a fraction of a second after pressing the mic button before speaking. This ensures that you don't clip off the first syllable of your transmission. Your radio may take a moment to change over to transmit, and the repeater may introduce its own delay. Once you are used to your own radios and usual repeaters, you might still find yourself using unfamiliar equipment some day. This is particularly important for a one-syllable message such as: yes, four, or Bob. If that syllable doesn't make it, the transmission is useless. If the station you are calling has their HT in battery-saver mode, and the channel has been quiet, the first second or two of your transmission might go unheard. If you suspect that, give the entire call sequence twice, as in "NA6ABC, this is KF6XYZ; NA6ABC, this is KF6XYZ."

**Don't talk louder in a noisy environment.**

It's natural to talk louder if it gets noisy around you, but don't do that on the radio; it generally makes your signal less understandable, not more. You should always speak loudly enough into your microphone to achieve full modulation. If you speak any louder, the radio clips your voice to avoid over modulating the transmitter, distorting your voice and reducing intelligibility. The only way to overcome loud noise is to reduce it somehow, or wait until it passes. More complicated and expensive are noise-canceling microphones, which work by favoring sound from nearby, over the more distant noise.

**Shield your microphone from the wind.**

Wind blowing across the microphone can make it impossible to understand you. Try to keep the wind from hitting the microphone. Simple measures to shield the mic from the wind often work well enough, provided you remember to use them.

**Don't use VOX or a locking PTT switch on a tactical net.**

VOX operation may be appropriate for informal intercom-style coordination, when no hands are available to push a button. But in a noisy location, a VOX control may key your transmitter and jam the frequency, without you even noticing. Even in a quiet area, you may transmit unintentionally from time to time, due to stray noises or fumbles, disrupting the frequency. Push-to-talk operation is better than VOX on a tactical net because you can explicitly control when to transmit. Avoid locking PTT switches also.

**Keep your HT off of your belt.**

You may have to hold your HT in your hand to transmit reliably, or to even hear well. In marginal circumstances, you may be perfect copy while holding your HT in your hand, and barely detectable with it on your belt. Your body can weaken your signal and your kidneys don't need the radiation! With marginal reception, you may miss calls directed to you. In such situations you unfortunately can't take full advantage of equipment like a speaker mic or a headset with a boom mic.

**Don't misuse battery-saver mode**

Don't configure your HT to sleep for several seconds in its battery-saving mode. You may miss calls. A nap time of 0.25 to 0.75 seconds may not cause you trouble, but don't set it much higher.

**Bring backup equipment**

Murphy lurks everywhere. Batteries WILL fail at the worst possible time – have a spare or, better yet, bring two. Consider how you will staff your post if any of your equipment fails. Consider how you will report your problem to Net Control if you have a fatal failure. You may be the key link in the net, so come prepared with backup equipment and a backup plan.

**Be Professional and Have Fun**

We work Tactical Nets because we enjoy serving our communities and love Amateur Radio. The responsibility for maintaining the excellent reputation of Hams all over the world rests on our shoulders every time we participate in public events.

Be proud and have fun!

**THIS CONCLUDES THE SECOND AND FINAL PART OF "OPERATING IN A TACTICAL RADIO NET".**