Operating in a Tactical Radio Net
Part I

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What is a Net?
Emergency radio communications nearly always use formal nets, as do NTS traffic nets. Casual everyday ham operation mostly doesn't. This session discusses how to operate as part of a formal radio net -- probably one where most operators are using handi-talkies in unfamiliar locations.. For the purposes of this discussion, a radio net consists of several stations on one frequency (more if linked), following organized procedures, and directed by a net control station. This arrangement makes for efficient use of the frequency, and helps ensure that urgent matters get handled before less urgent ones. In short, the net functions as a team to work towards the common goal of effective net operation.   Two general types of nets are a directed net and an open net.

What is a Net Control Station?
A net control station is the net's moderator, chairman, team captain, or traffic cop; take your pick. The net control station exists for the purpose of exercising control of the net as the name implies. The amount of control depends on the type of net that is being run.

What's the difference between a Directed Net and an Open Net?
During a directed net , the net control station typically exercises strict control, requiring every station to get its permission before passing traffic. A directed net is essential if the frequency is busy since net control must be able to select the stations with the most urgent traffic first.

During an open net, net control is relaxed considerably. Stations may be permitted to call one another directly, and even have casual conversations on the frequency. Net control will intervene only when there is net traffic to pass. An Open Net may be appropriate in anticipation of an impending event such as when a storm is moving into the area. It may also make sense when activity on the net dies down for extended periods of time.

Net Control is responsible for choosing the best way to run the net; when you join an ongoing net, you should observe how it is being run and fit in accordingly. Until you know otherwise, assume the net is operating as a directed net.

Tactical vs. FCC Call Sign Use

Tactical call signs are generally used on for efficiency while working public service events or emergency communication nets.   During a directed net, you will be called by

your tactical call sign, not your FCC amateur radio call sign. You should use the tactical call sign to identify your transmissions, and you should call other stations by their tactical call sign. However, you must also comply with FCC regulations and identify properly with your FCC call sign. Remember, part 97 requires that "Each amateur station . . . must transmit its assigned call sign . . . at the end of each communication, and at least every ten minutes during a communication . . . ." That means our FCC call sign. To comply, simply add your FCC call sign to your last transmission in a series.

Know The Net Procedures

Tactical nets operate effectively when everyone knows and follows the same procedures. Net procedures will probably differ for various events. If the same group of people frequently work together on nets, everyone may be familiar with these; however new people may have joined to help out. Thus, it is important for Net Control to hold a pre-event briefing and go over how the net will operate. Don't be afraid to ask questions and get clarification on how the net will operate and what is expected of you. Before you head off to your post, know why you are there, what to do and not do, how to do it, and how to communicate with your fellow operators. Don't take offense if Net Control instructs or corrects you during the day – it's probably not personal, and that is part of Net Control's job.

Listen for your Tactical Call Sign

The use of tactical call signs allows the net to be conducted without regard to what operator is at the radio at any particular location. Different individuals may operate the radio at different times. Changes will occur due to shift changes, meal breaks, errands or movement of operators to other assignments, just to name a few. For all these reasons, it is awkward and error-prone to use an operator's FCC call. However, Net Control should still try and keep track of the FCC call of each operator. Sometimes an inattentive or distracted operator will answer his FCC call when he does not catch his tactical call.

Answer Promptly When Called

Unless you make other arrangements, you are expected to listen continuously to the net, and answer immediately when called. If you have to step away from your station briefly, tell Net Control before you do so, and check in with Net Control when you return. Otherwise, net control can waste a lot of time attempting to call you when you aren't there.
Never Leave a Net without checking out .

If you have to leave your station before you are relieved, make sure that you notify net control of this fact, before you leave. You properly should ask Net Control to release you but as a practical matter, we are volunteers and Net Control cannot compel anyone to stay who wants to leave. But we owe it to the people and agencies we serve, and to our reputations as individuals and as ARES/RACES organizations, to be reliable. Once we

agree to support an agency's activity, we should do our best to deserve that agency's trust.

Brief the Operator that Relieves You

If another operator has your assignment after you, don't depart before briefing them. If your relief is late and you must leave your station, at the very least leave a written list of what that operator needs to know to do the job. If possible, write down the information they'll need during lulls in activity. If they do arrive on time, go over the list with them in person. You would want the same thing if you were coming onto a shift.

Examples of the kind of information your relief will need include:

1. The frequencies being used
2. The tactical call signs in use and where the stations are located
3. Who is at each location; their name and call sign.
4. If a telephone is available; what is its location and phone number.
5. The names of the officials or others you are serving; how you find them and recognize them.
6. Any pending activity, i.e. messages you have sent and replies you expect; also, who gets the reply?
7. What is your station's purpose?
8. What's going on in general? What changes are expected?
9. Where is the restroom, water, food, etc.
10. Any other radio, power, or antenna details.

Arrive For Your Assignment Ahead of Time

Arrive at your assigned operating point 10 to 20 minutes before your shift starts so that you can get set up and be briefed by the start of your shift. The operator you are relieving would like to leave at the end of his shift also. If the operator you are relieving doesn't have written information for you, you can use the same list we just discussed (with any additions you need) to guide your questions.

Keep A Log

Check with Net Control before departing for your post to learn what kind of written records might be required / desired. Hopefully, this was explained during the preliminary briefing, but, if not, ask. Do the best you can to record events in which you are involved during your shift. At minimum, a simple log should be kept. Pass these records on to your replacement and ask them to do the same to their replacement. Notes / logs should be turned in to Net Control at the end of the day / event.

Getting the Traffic Through

As participants in a net, there are several things we can do to ensure that urgent traffic gets through when necessary.

Keep all transmissions short
Short transmissions allow other stations to interrupt if they have more urgent traffic. Similarly, it lets Net Control exercise its control more promptly. Less time is lost if the transmission was partly or completely unreadable due to radio problems, simultaneous transmissions (doubles), local noise, etc.

Stop transmitting when you stop talking
Always release the push-to-talk button if you need to pause for any reason. You may need to think of a street name, remember something else you needed to report, or listen to an urgent message that someone is trying to pass to you. When you pause, others should stand by and wait for you to resume; they shouldn't just jump in and start transmitting. However, if something more urgent does arise, the other station should interrupt while you are not transmitting ... that's the point of allowing breaks! Just remember, don't crowd in and transmit just because it's quiet. The original station may not be finished passing its traffic; just pausing. When you have traffic and you haven't been monitoring all along, listen for at least 5-10 seconds before transmitting.

Avoid unnecessary transmissions
If you make a call to a station and they do not answer, don't transmit just to say that you are "clear". If it is apparent from the context of your message that you are finished, it is not necessary to sign "clear". Provided you have identified with your FCC call sign at the end of your transmission, no further transmissions are required.

Don't call endlessly.
If you get no answer to your first two calls, wait for a few minutes and let others use the frequency. Call again in a few minutes. If urgency warrants, however, disregard this advice.

Breaks
Wait a second before keying after the previous speaker. Give other stations a chance to break in - it might be urgent!

Contacting Net Control
When you need to contact net control, key your transmitter briefly, just long enough to ID or state something about the nature of the traffic. For example, "N6ABC, emergency traffic," or "info." If net control does not notice you in time and transmits at the same time that you do, nobody will be able to understand either one of you for the next 30 seconds or however long the two of you are

"doubling". Make sure that net control acknowledges you before proceeding with your traffic.

Use short, simple phrases.
There are lots of ways to word an idea; pick one of the shorter ways.
That helps you "keep all transmissions short". It helps the listener, too; the fewer words you say, the fewer he has to understand. Again, establish contact before saying messages longer than 2-3 words . That may mean calling the other station, and hearing it tell you to proceed. Or it may mean hearing the other station reply to Net Control's call. Net procedures vary. But don't spend air time saying a long message until you have reason to believe you have the other operator's attention.

Acknowledge transmissions to you
Acknowledge transmissions promptly, even when it's obvious from the context that you were asked to do something that you can't do immediately. Until you acknowledge, people don't know if you received the transmission, and don't know if a repeat will be needed. Once you acknowledge, the net can assume you will continue with your assignment, and the frequency can be used for other traffic.

State questions in a positive form
Ask a question directly. For example "Should we go to Checkpoint Alpha?" That question can be safely answered by "affirmative" or "negative." Avoid turning it into a negative question. For example, "Shouldn't we go to Checkpoint Alpha?" A yes/no answer to that question is ambiguous, so the answer will have to be a complete sentence.

Answer questions as directly as possible; do not explain.
That is, avoid unnecessary transmissions. If asked a question, just answer it; do not volunteer additional detail or an explanation of why something is so. As always, use good judgment. You may believe that the simple answer is misleading. Or the question may indicate that the person asking it does not understand the actual situation. If you think it's necessary, volunteer some more information, but be brief, let the questioner ask for more detail if he chooses to.

Message Handling
Most messages handled during public service events will be relatively short, simple and easily handled and answered. For example: "Has the SAG van arrived at your location yet?" This is easily answered with a "Yes" or "No". It is important that all messages are entered into your log, however.

As you copy a message, consider what you're going to do with it. If it isn't obvious, then ask the station that's sending it; this may be the most expedient way for you to learn how to handle it. The sender might even notice that the message should not be sent to your station after all, and cancel the message.

Other messages may be more complex and contain information you might not understand. These require special procedures for sending, receiving and documenting. We'll discuss more about message handling using the ISC Form 213 in a few weeks .

Let third parties speak over your radio
This is often better and faster than passing messages back and forth. It's just as legal as passing third-party messages. However, don't expect to reserve the frequency for several minutes while one of the operators gets someone to come to the microphone. Instead, agree with the other operator about who is needed at each end for the contact, then release the frequency for others to use until everyone is available.

Don't answer too many stations at once.
This is a hint for a net control station . If two or more stations call you at the same time, and you miss or garble some of the call signs, just answer the stations that you copied. When done with all of them, ask if there are any other stations ? This is faster and simpler than trying to call stations with fragments of their call signs, such as "the station ending in XZ", particularly if it was really W6XYC! (This often happens during net check-ins.)

THIS CONCLUDES PART I OF OPERATING IN A TACTICAL RADIO NET