

Contact Basics

ERC Training

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If you read Part 97, you realize that the FCC is relatively strict on many points of amateur radio: frequency use, identification, and some specific actions and content that are prohibited. But when it comes to actually making a contact, the regulations are somewhat quiet. So amateurs have developed their own rules of etiquette. These rules vary throughout the world similar to dialects of a language or accents from different regions.

To illustrate this point, consider some automobile driving practices. For example, driving slowly in the left lane. Although this is frowned upon by other drivers, as long as you are not impeding the flow of traffic, it is overlooked and nobody really cares. How about navigating a round-a-bout? They are becoming more prevalent in our area. I have seen some drivers treat it more like a four-way stop. You might not get ticketed for such actions, but it can sure irritate other drivers.

Likewise, there are some amateur radio guidelines established for communicating on the air. Some are based on FCC regulations; others are born out of politeness; still others are products of efficient operating practices. Tonight we're going to present some basic practices for making a contact. Much of the content has been adapted from the ARRL's Ham Radio Technician License Manual, chapter 6. Identification

In a normal face-to-face conversation we utilize our entire bodies and the space around us to communicate. There have been numerous studies related to non-verbal communication. Results indicate that non-verbal communication is anywhere from 55 to 93% of our message. The exact number really isn't that important, but it is beneficial to understand that the majority of what we communicate is not spoken. Hand gestures, facial expressions, and body posture all communicate more of our message than the actual words.

So what does any of this have to do with identification? One of the biggest drawbacks to radio communication is the fact that you cannot see who you are speaking with. In addition to missing out on most of the non-verbal communication, we also cannot use our eyes to recognize who we're interacting with. The FCC regulations mandate that you identify yourself every ten minutes and then at the end of your transmission. However, it is also customary to identify yourself at the beginning of the transmission.

Here is an example. Adin KG7JYK wants to talk on the radio to Mike KJ7FX. When you call someone, you send their call sign followed by your call sign. Listen.

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KG7JYK> KJ7FX KJ7FX, this is KG7JYK
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Notice that Adin sent Mike's call sign a couple of times. Mike might be in the shack with his radio on, but if he's working on another project, it might not register that someone else is calling him if his call sign is only sent once. In this case, Mike hears Adin calling and responds.

KJ7FX> This is KJ7FX, how are you this evening, Adin?

Mike recognizes Adin's call sign and responds to him by name. In a more formal situation such as an emergency net where efficiency is critical, the exchange might be far less verbose.

KG7JYK> KJ7FX, KG7JYK

KJ7FX> KJ7FX

In this case, Adin simply sends Mike's call sign, KJ7FX, and states his own call sign, KG7JYK. Mike replies only with his call sign, acknowledging that someone is calling him.

Phonetic alphabet

This is a good place to discuss the Phonetic Alphabet. I tend to climb up on my soapbox when I talk about phonetics. So please forgive me if I sound a little preachy.

The phonetic alphabet was created in the early days of international radio. It was developed so that operators of all languages would have a standard method of transmitting precise information. Each word was chosen because it is easy to understand over the radio. Phonetics should be used whenever there is a need for precise, exact spellings—such as your call sign. In the Rexburg Region, we encourage operators to check into the net by giving their call sign phonetically.

You may also be familiar with other phonetic alphabets such as the US military version where you might hear “Norway” instead of “November” or “Santiago” instead of “Sierra”. There is no FCC rule about which set is required. However, the ERC has adopted the ITU phonetic alphabet—Alpha, Bravo, Charlie, Delta, etc. You are encouraged to memorize the phonetic alphabet and practice using it regularly so that it becomes second nature when you need it.

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Signal Reports

Immediately after making a contact, it is customary to let the other station know how well their signal is being received. This is important because you cannot tell how well your signal is being propagated or what anomalies might be present, such as a hum or unusual clicking. If you know that your signal is weak, you can speak more slowly and clearly and use more phonetics. Conversely, if you know that your signal is strong and clear, repetitions can be avoided.

The “RST” format (radio sierra tango) is used during SSB voice, digital and CW contacts. The letters stand for Readability, Strength, and Tone. RST is sent as three numbers, such as 599 or 339, or 457. The first number, Readability, has a value of 1 to 5 (5 being the best) and rates how well the signal can be understood. Strength is rated on a scale of 1 to 9 (9 being the strongest) and indicates the strength of the received signal. The third letter, Tone, also uses a 1 to 9 scale and is used only on digital and CW transmissions. It refers to the quality of the signal. Clear, pure tones that have a steady frequency or with no audible hum or distortion rate a 9.

If your voice transmission is clear and readable without any difficulty and the signal is strong and loud, the receiving operator might give you a 5-9 report—readability 5, the highest rating, and a strength of 9, also the highest rating. However, if your transmission is littered with static and lots of atmospheric interference, but still somewhat strong and loud, you might receive only a 3-8, meaning “Your signal is pretty loud, but I can barely make out what you’re saying in all the noise.”

There is no justice in preserving an operator’s feelings by always sending him stellar reports. Although the scale is completely subjective and totally your own opinion, it does not help to tell an operator she is 5-9 because you’re trying to be nice and then continually ask her to repeat her message because you cannot understand what she’s saying. Try to give as realistic and accurate of a report as you can.

Signal reports on a repeater tend to be a little different. You don’t regularly hear RST reports. Instead, you’ll hear phrases like the following:

“Full quieting” – means your signal is strong enough that no receiver noise can be heard. This is the equivalent of a 5-9 on the RST scale.

“White Noise” – means you’re not as strong as full quieting and there might be some noise present.

“Scratchy” – means your signal is weaker still and the background noise might be almost as strong as your voice.

“Mobile flutter” or “picket fencing” – is a rapid fading due to moving through an area of multipath propagation or shadowing.

“Dropping out” – indicates that your signal is mostly audible, but there are frequent periods of no signal.

“Broken” or “breaking up” – means there are short periods of audio, but the transmission is mostly unreadable.

Locaters

Knowing the location of each of the operators can also be valuable. For example, a signal report of 5-9 means a lot more if you, in Idaho Falls, are communicating simplex with a station in Island Park than if you were talking with your next door neighbor.

When talking about location, you’ll often hear the Q-code QTH – Quebec Tango Hotel. QTH simply means “My location is...” or, when used as a question, “What is your location?” Sometimes on the nets you’ll hear operators report “I’m transmitting from my home QTH” which simple means “I’m operating from the ham shack in my home.” Also, someone might ask, “What’s your QTH” which means “Where are you?”

Here is a bit of gee whiz information that you can file under “Ham Radio Dialects”. In some organizations, operators are encouraged to NOT use Q-codes in voice transmissions. Remember, the goal is clear communication. A question like, “Where are you?” might be considered more clear than “What’s your QTH?” (And “Where are you?” is actually fewer syllables!) When I conduct training sessions, I personally discourage the use of Q-codes in voice, but I have not heard any official declaration from the ERC regarding the matter.

There are a few ways to report your location, anything from the very general to extremely specific. On our ERC nets we often report something like, “I’m at my home in the Rexburg East Stake” which gives most people a general idea of where I am. Or I could report using Maidenhead Gridsquare. I’m not going to go into any depth on gridsquares—maybe in a future training—suffice it to say that gridsquares divide the globe into unique rectangles measuring 1 degree latitude by 2 degrees longitude. Gridsquares are

identified by a series of two letters followed by two numbers. I am currently located at DN43, Delta November Four Three. Gridsquares can be further subdivided for more precision by adding two more letters. So to be more precise, I am currently located at DN43CT.

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Taking Turns and Breaking In

On the radio, you can either be transmitting or listening, but unless you have multiple radios, you can't do both. If you are listening to two other operators transmit back and forth and you have something to contribute to the conversation, how do you let them know you are there and want to speak?

In a face-to-face conversation, there is all sorts of body language that sends that message: raising your hand, tapping someone on the shoulder, opening your mouth like you're getting ready to say something. But, remember, on the radio, all of those cues are absent.

On the radio, you wait for a break in the conversation, when an operator releases his PTT button and before the second operator begins to transmit. At that point, you key your mic and say "Break" or just your call sign or, better yet, say the word "Break" AND your call sign. I'll give you an example of this at the end of the training.

I often hear operators breaking in by speaking their call sign very, very quickly. It is human nature to try to sneak in before someone else starts to talk. For this reason, in order to keep our communication clear, it is important to leave a moment or two between transmissions, before you key up the mic to give other operators a chance to break in, if necessary.

Signing off

When your contact or conversation is concluded, you need to formally end your transmission. If this were a telephone conversation, it would be rude to just hang up. There are customary phrases we use to say goodbye. "Roy, it's been nice talking to you. I'll see you at work tomorrow. Goodbye." Likewise, on the radio, you might hear or use some of these salutations:

I'll be clear on your final – Meaning, "I'm done. I'll listen while you sign off, and then I'll be clear."

QRU – the Q-signal for "I have nothing more for you"

73 – Best regards or "wish you well". (It is pronounced "seven three", not "seventy three", and it's also not plural)

88 – Save this one for your spouse or maybe your children. It means "hugs and kisses".

Listen to a few examples of signing off:

KG7JYK> "Good talking with you, Mike. I'll be clear on your final. KG7JYK"

KJ7FX> "7-3, Adin. This is KJ7FX. Clear"

Remember, although FCC regulations do not require you to identify at the beginning of your transmission, you must state your call sign at your last transmission.

Now let's listen to a complete contact from beginning to end. Listen for the components we talked about this evening: Identification, use of phonetics, signal report, location, a break-in, and signing off.

KJ7FX> Kilo Golf Seven Juliet Yankee Kilo, Kilo Golf Seven Juliet Yankee Kilo, this is Kilo Juliet Seven Foxtrot X-ray.

KG7JYK> This is KG7JYK. From my home, you're full quieting into the repeater tonight, Mike.

KJ7FX> Thanks for that report. Your signal is a little scratchy, but still very readable. Adin, good working with you during the recent ERC Exercise.

KG7JYK> Yes, it was a good experience for all of the operators in our stake to work with their Priesthood Leadership.

KG7IOE> Break, KG7IOE.

KJ7FX> Go ahead, Terrance.

KG7IOE > I am hearing your conversation and just wanted to say how great it was to see the local priesthood leadership and the ERC operators jointly participating in the exercise .

KJ7FX> Yes, I believe everyone learned some procedures to improve from the exercise.

KG7JYK> I am looking forward to the next ERC exercise, Mike. I'll catch you later, 73 and I'll be clear on your final. KG7JYK

KJ7FX> Thanks, Adin and Terrance. 73. KJ7FX.

Are there any questions or comments? If so, please come now with your call sign.

I appreciate the help of my assistants: KJ7FX, KG7JYK, and KG7IOE. This concludes the training this evening. 73 to the net. This N7TMS, back to net control.