

Newcomers and Elmers Net: Operating Tips - Parts 1 & 2 **5-10-15/5-17-15 Compiled by Robert AK3Q**

Local VHF/UHF

One of the most important things for new hams to learn is to "K-H-T." That is "key, hesitate, talk."

You must consciously learn to push the microphone button, pause slightly, and then begin speaking.

-- If you push the button and speak simultaneously, the first word or the first part of a word may be cut off. This does not facilitate effective communications.

-- Hopefully, if you learn to do it correctly from the first day, it will become subconscious and you will do it automatically. If this is the case, you will earn the respect and admiration of your peers!

When you are using the repeater leave a couple of seconds between exchanges to allow other stations to join in or make a quick call. Most repeaters have a "Courtesy Tone" (a short...beep or series of beeps) that will help in determining how long to pause.

--The courtesy tone serves two purposes. Repeaters have a time out function that will shut down the transmitter if the repeater is held on for a preset length of time (normally three or four minutes).

-- This ensures that if someone's transmitter is stuck on for any reason, it won't hold the repeater's transmitter on indefinitely. (Don't laugh, many microphones get lodged in the fold of car seats and keep a repeater busy until it times out.

-- Of course if it is not noticed soon by the mobile operator.....the control operator of the repeater may have to shut down the repeater until the problem is corrected.)

-- When a ham is talking and releases the push-to-talk switch on their radio, the controller in the repeater detects the loss of carrier and resets the time-out timer. When the timer is reset, the repeater sends out the courtesy tone.

-- If you wait until you hear this beep (normally a couple of seconds), before you respond, you can be sure that you are pausing a suitable length of time.

-- After you hear the beep, the repeater's transmitter will stay on for a few more seconds before turning off. This is referred to as the "tail". The length of the tail will vary from repeater to repeater but the average is about 2 or 3 seconds.

-- You don't HAVE to wait for the "tail to drop" before keying up again, but make sure that you hear the courtesy tone (if used) before going ahead. Note: If you don't wait for the beep, the time-out timer may not reset. If you time-out the repeater, YOUR conversation AFTER the time-out will not be heard.

-- The repeater time-out function does not care if you are still talking or not; and the station on the other end may rib you about hogging the machine and you will have wasted all those words!

-- What is Doubling? When two stations try to talk at the same time on the same repeater, the signals mix in the repeater's receiver and results in a buzzing sound, squeal, distorted sound or severely jumbled and broken words.

-- When you are involved in a roundtable discussion with several other stations it is always best to pass off the repeater to a specific person (station) rather than leave it up in the air. e.g. "AB3CDE to take it, this is XY3Z" and then un-key

The reverse button on your radio allows you to listen in on the input frequency to see if the person is coming in well enough to have simplex discussion, but also may allow you to relay someone into the repeater

Signal Reports on a Repeater

Lots of new hams don't understand that the S meter on their radio is only reporting the relative strength of the repeater system and NOT the signal strength of the station they are talking to unless they are in the simplex mode.

-- When the repeater is transmitting, it may have an output greatly exceeding that of the station it is listening to. Remember the station it hears on the input frequency of its receiver may be on a hand held radio and only a few blocks from the "machine" or it could be a mobile radio in a vehicle out on the fringes of the repeater coverage area or a base station running a high gain antenna and 100 watts from the next county or in some cases, the next state.

-- To a third party, (another ham), listening to the machine on the repeater output, all of these stations would have the same S meter reading on his S meter!

-- As long as the repeater can detect the signals and is working properly as it is setup, then all stations, (to the third ham), will "appear" to have the same signal strength on the S meter.

-- Remember, the S meter is only reporting the relative strength of the repeater when it is transmitting and not the individual stations!

-- So all that being said, how do you give an accurate signal report to the station you are talking to?

JUST USE PLAIN ENGLISH!

-- Listen to the background sounds of his AUDIO coming from your speaker in between words and sentences. Don't even look at your S meter.

(Assuming the repeater has a good strong signal into your location).

-- If there is no noise other than room background, road, passenger or other

sounds that could be picked up by his microphone, then he would be said to have a FULL QUIETING signal into the repeater.....receiver.

-- The term "Quieting" refers to the carrier level of the transmitter being strong enough to "quiet" the background hiss on the frequency.

-- If some background noise such as the hiss that is commonly heard in an FM receiver is heard on the transmitter signal, then it would not be considered "FULL QUIETING".

-- There are times when either station using a repeater may be getting into the repeater receiver with very little signal and the repeated signal will have lots of noise on it.

-- Although the repeater signal may be full quieting when the weak station stops transmitting, the weak station cannot be considered to be full quieting into the repeater so you would give the other station a report on his signal and not the repeater. Don't get confused with this. If his audio is perfectly understandable with 100 % copy and there is NO "noise" in the background other than the above, then an accurate report for him would be, "You're full quieting and 100 % copy into the repeater.

-- Anything less than the above is usually given in various ways using an exact as possible description of his signal.

-- "Audio" reports are a matter of interpretation by individual ears. We as hams are in the "business" of communications , not HI FI broadcast FM! We can only *sound* as good as the FCC will allow our transmitters to sound!

-- If you are having extreme difficulty copying the other station, he may also be having the same problem with you, but remember he is hearing the repeater signal, not yours direct and so are you.

-- Try to get him to go "simplex" if he is coming closer to you in a few minutes. See hint below. If the transmissions get so rough that neither can copy the other, then just give your call sign and clear off the repeater for others to use while he gets closer or higher or changes his transmitting setup.

-- Not all conversations are completed to the end under adverse conditions or operating situations....be patient.

Set Up Memory Banks in your HT or Mobile

I would recommend setting up a few different memory banks in your radio for different occasions

-- One bank could be strong local repeaters (or more distant ones also)

-- another bank could be public service like police, fire, etc.

And of course if your radio has dual band receive and/or priority modes, you could set one side for one bank and the other for another, or keep a primary local repeater in the priority watch

- just remember how to turn priority watch on and off because sometimes it will get in the way of conversations you are having on non-priority repeaters

You don't have to say CQ on a repeater. We do this on simplex modes because we are giving time for folks who might be scanning the frequency to hear us as they scan; on simplex we often repeat our calls several times, again to give time for someone to hear us

- on a repeater if you are making it into the repeater and someone else has that repeater tuned in, they will hear you.
- Enunciate clearly and slow down! Most folks, once they are comfortable operating, race through their call (e.g. "Kk4jlb")
- Another reason to slow down is because some letters are stronger than others (e.g. Kj4iam) – the "a" can easily get lost between the I and the M so that what someone hears is "kj4im"
- This is why many net control stations will ask for call signs to be repeated phonetically -
- Make your goal to speak in such a way that you cannot be misunderstood
- This doesn't just go for call signs!
- Use appropriate language-this means no cussing or abusive language of any kind; assume children are listening!
- Also, go above and beyond the requirements of typical conversation; as hams we intentionally hold ourselves to higher standards!
- Over-the-air is not the place to argue or have fights or call people names
- Our licenses are a privilege, not a right; "do unto others" applies!
- If you want to join in a conversation, the appropriate way is to wait for a pause in the conversation and just say your call
- Because you have listened for a while before trying to talk, you will likely pick up the flow of the operators and know when to say your call
- For example, when there is a pause, I might say "AK3Q" quickly, but still clearly, and then wait to be acknowledged
- Someone may finish their thoughts or respond to the other person first, and then say something like "I heard another station out there, come on back with your call sign"
- If no one acknowledges you after a few minutes, you can try again
- Most folks will acknowledge you pretty quickly; occasionally you might get some grumpy Gus who thinks they own the frequency, but not very often
- If you can't get a response after several tries, move on-don't get aggravated
- If you have scheduled a time to meet someone on the air, sometimes letting the folks know what's going on helps.
- E.g. You break into a conversation by using your call like before: AK3Q and waiting for a response; one of the folks already on the repeater might say, "AK3Q, go ahead" Explain you have a scheduled contact and would like to put a call out to that person to let them know you

are there; assuming good manners all around, the person will then say "go ahead and make your call"; only then would you call "KK4JLB, this is AK3Q;" assuming KK4JLB is there, he would come back "AK3Q this is KK4JLB"; you might then suggest another repeater to meet on, or simply let the person know you will be standing by until the repeater is free

- It is likely the folks already on the repeater will invite you both to join in, or they may wrap up their conversation and give you the frequency
- If they have no intention of leaving and they don't invite you in, suggest a different repeater to your friend and move there – don't get into an argument about your right to use the repeater!
- If this becomes a persistent problem try letting someone from the club who owns the repeater know what is going on, but privately, not over the air.
- Always, always take the high road – you will be much better for it

HF

Check out the whole band – we often get stuck in a few areas where we expect to find activity, but don't neglect the rest of the band

-e.g. above 14.300 on 20 meters; above 28.400 on 10 meters; 12, 15, 17 meters; 30 meters digital modes; 60 meters channels

1. LISTEN, LISTEN, LISTEN!

Hey...wait a minute...I thought ham radio was about "talking"!

It is....but you will be surprised at how much you can learn about operating and ham radio by just listening around the ham bands! You always listen first to make certain the frequency is not busy before you transmit.

If you're bored with that video game, the internet or whatever, get on any active ham band and tune around until you hear an interesting conversation. Listen to the conversation and try to pick out ham terms, topics or phrases you don't know the meaning of.....then, if your privileges, (and your station equipment), allow you to transmit on that band and frequency....wait for a pause between their transmissions and throw in your call sign.....most operators will acknowledge you and welcome you into the conversation....ask them to help you understand what they were talking about or point you in the right direction to learn more. Don't be bashful, tell them you are new to HF and would certainly appreciate their help!

Most will welcome you!

RFI TIPS

1. To keep RFI out of your shack (does nothing for your neighbors) at termination point of antenna use 6-8 wraps of 6" coil diameter coax. Don't let 1st wrap touch last wrap is all you need to look out for.
 2. Do not set external tuner directly on top of rig. The older manual tuners would distort the audio on some bands. I keep my Z-100 auto tuners about 1 inch above my rig (use anything non-conductive for the spacer). This may not be a problem with the newer tuners but I keep the separation anyway.
 3. I like to keep a small fan blowing on the back of the rig or power supply to help things out. If your rig or ps fans keep coming on this will do the trick.
 4. I keep my laptop at least 2-3 feet away from my rig and have never had RFI problems. It helps to ground the rig too.
 5. I always keep my signal and audio cables as far away from the power cords as possible. If you have them all bunched together, you will have problems one day.
- Have A Nice Day! John F. Reisenauer, Jr. KL7JR

DX Code of Conduct

(With simple explanations for a better understanding by some)

1. I will listen, and listen, and then listen some more.

Try to refrain from transmitting when you hear another station. Your voice may be among thousands heard at the same time by the DX station. Wait for a pause when you believe the frequency is clear and then try.

2. I will only call if I can copy the DX station properly.

Did you copy his call as, XE5JU or was is XE5KU? If you did not hear him clearly, then saying the wrong call sign may not get you the contact without taking up lots of time from others who did copy his call correctly! Listen!

3. I will not trust the cluster and will be sure of the DX station's call sign before calling.

Many DX clusters have wrong or outdated information.... depend only on what you hear from the DX station on the air!

4. I will not interfere with the DX station nor anyone calling him and will never tune up on the DX frequency or in the QSX slot.

This could be considered as intentional and malicious interference. If you must tune-up on the air, find a quiet frequency nearby....remember, listen, listen, listen before you transmit! Make sure you ID!

QSX: Commonly used on the DX Packet Clusters to indicate where the DX station was listening or contacted during a split operation.

5. I will wait for the DX station to end a contact before I call him.

Again, listen, listen and wait for him to receive more calls. He will let everyone know he is "ready" for contacts. Most DX stations simply say..... "QRZ" when they are ready.

6. I will always send my full call sign.

Does this need an explanation? The DX operator may call for stations by their prefix or suffix, but make sure you identify legally with your full call when it comes time.

7. I will call and then listen for a reasonable interval. I will not call continuously.

The DX operator may be very busy recording log entries and attempting to pull out single calls from hundreds of stations calling him, so give him plenty of time to respond to your call sent only once. Of course you can keep trying, but give others a chance also. Use good common sense!

8. I will not transmit when the DX operator calls another call sign, not mine.

You may be interfering with the transmissions which is illegal! Don't take that chance! Don't intentionally "double" with any station.

9. I will not transmit when the DX operator queries a call sign not like mine.

He, the DX station, was unsure of the exact call he heard but only part of it. So if your call or part of it is not like what he is looking for, don't transmit!

10. I will not transmit when the DX station calls other geographic areas other than mine.

The DX station is looking only for other countries, not yours. Don't add to the confusion by transmitting! If he wants your country contacts he will say so!

11. When the DX operator calls me, I will not repeat my call sign unless I think he has copied it incorrectly.

This is a time saving measure for both him, you and the other stations that want to contact him.

12. I will be thankful if and when I do make a contact.

You should be not only thankful, but proud of your DX techniques and your station performance when making contacts outside your countries boundaries!

13. I will respect my fellow hams and conduct myself so as to earn their respect.

Follow all of the above in the DX Code of Conduct, use good common courtesy and you will have made the experience much better for all concerned.

Antennas

General antenna situation

One of the most important aspects of setting up any radio antenna is its location. The location of the antenna will govern many aspects of its operation, and therefore the location of the antenna must be determined along with the type of antenna to be used. A number of points associated with the antenna should be considered:

1. **Choose a location where the radio antenna can "see" all around:** In order for to operate at its best it must be able to "see" all around it. To be able to achieve this it should be kept away from nearby objects that might act as a screen. In this way the maximum amount of signal can be reach or leave the antenna without being absorbed in nearby objects.

2. **Remember that nearby objects can "detune" an antenna:** When considering the location of a radio antenna it is worth remembering that nearby objects can detune an antenna even if they do not affect the all-around visibility. Nearby objects can cause an antenna to operate away from its resonant point and become less efficient. This is very important for antennas that are cut to a particular length and do not have a means of being tuned in situ. Many items can cause this to happen - metal items as well as electrical wiring are particularly bad but even trees can degrade the performance of antennas in this way. Generally the effects are noticeable within distances of a wavelength or two, the closer the object and the greater the conductivity the greater the effect.

3. **Consider suitable points for anchoring antennas:** Horizontal antennas need anchor points at either end. It is worth considering whether there are any suitable anchor points already in existence. Chimneys or other points on the house can provide one suitable point. Trees may also be located conveniently, although pulley schemes are required to enable any movement in the tree due to wind to be taken up without snapping the antenna wire. Also it may be possible to erect a pole or antenna mast and consideration can be given to this possibility and its location. Whatever option is decided upon, this must be considered at the outset.

4. **Inside or out:** In many instances the use of an internal radio antenna may have to be considered. External antennas operate better because they can be further away from objects that will introduce loss or detune the antenna. It is very difficult to estimate the amount of loss which having an antenna inside the house has. The roof or brickwork will cause the signal to be reduced, especially when it is wet. The amount of loss will also depend on the frequency. For VHF and UHF signals this will be much greater.