KVARC
BASIC REPEATER OPERATIONS, PROCEEDURES, GENERAL COURTESY and
OPERATING TIPS IN GENERAL

Purpose:

The purpose of this document is to provide repeater users and new Amateur Radio operators with a brief synopsis of repeater operation procedures. This summary can be used as a quick guide for regular users, and to acquaint visitors and potential new Hams with our repeater use responsibilities and etiquette.

Repeater Priorities:

- Priority 1 – Emergencies or priority traffic
- Priority 2 – Priority Traffic
- Priority 3 – Public or community support. (May be in conjunction with Priority 1)
- Priority 4 – Routine call, exchanges, general use etc.

Basic Procedures, General Courtesy and Operating Tips for Repeater Operation:

Repeater Operation:

Using a repeater for the first time, especially for newly licensed amateurs, can be an anxious moment. Relax. If you follow the simple basic procedures you will enjoy the full benefits of the repeater.

To begin with, all repeaters have a timer that deactivates the repeater following 3 minutes of continuous input signal. To reset the timer for another 3 minutes, it is only necessary to un-key your microphone, wait for the reset tone and continue you transmission.

Most amateurs limit their transmissions to under the 3 minute time limit. It's a courtesy to make each transmission as short as possible in the event someone needs the frequency for emergency traffic. However from time to time, the limit is exceeded and you will hear an announcement that the repeater has "timed out." When the amateur finishes his/her transmission, and releases the microphone, another announcement will state that the time out timer is canceled. (Note: During the time out periods, the repeater is off the air).

Make it a standard practice to key your mic for a second or two before speaking. To many times new amateurs key their mic and start talking at the same time and the first few words are lost. This is especially important in an emergency operation. It is also good practice to count to 5 between transmissions. This gives others a chance to join in or announce their presence. Additionally, do not yell or scream into the microphone. The volume of your voice will not increase the wattage output of your transceiver and will only make your transmission garbled and unreadable. Speak in a normal conversational voice especially when you have background noise.

Our Repeaters are licensed by the **Federal Communication Commission** and the users of our repeaters **MUST** comply with **ALL FCC Part 97 Mandated Rules and Regulations**. Repeaters are part of Amateur Radio, and ham radio is a hobby and should be FUN, however, common sense requires that some basic guidelines be followed.

Remember, repeaters are not a direct line. They are a "Party line" over which your words are heard by hundreds of listeners covering several counties. Other hams, governmental and local agencies, as well as TV and radio stations monitor our frequencies. Your words and comments are a reflection of you as a person and of Amateur Radio in general.

Repeater Offset:

In order to listen and transmit at the same time, repeaters use two different frequencies. One for it's transmit frequency and another for it's receive frequency.

On the 2 meter ham band these frequencies are 600 khz (or 600 kilohertz) apart. On other bands, the offsets are different. As a general rule, if the output frequency (transmit) of the repeater is below 147 Mhz, then the input frequency (listening) is 600 kilohertz lower. This is referred to as a negative offset. If the output is 147 Mhz or above, then the input is 600 kilohertz above. This is referred to as a positive offset.

Virtually all ham radios sold today set the offset once you have chosen the operating frequency automatically. Example: If the repeater output is 146.840 Mhz. The input, or the frequency it listens on is 146.240 Mhz (600 kilohertz below). If you have your radio tuned to 146.840 Mhz, (the repeater's output frequency), when you push the mic button, your radio automatically transmits on 146.240 Mhz, 600kc's down from 146.840. When you release the mic button to listen, your radio switches back to 146.840 Mhz to listen on the repeater's output frequency. Note: There are exceptions to the rule so check local repeater listings.

PL or CTCSS Tone:

PL, an acronym for Private Line, is Motorola's proprietary name for a communications industry signaling scheme called the Continuous Tone Coded Squelch System, or CTCSS. It is used to prevent a repeater from responding to unwanted signals or interference. Tone Squelch is an electronic means of allowing a repeater to respond only to stations that encode or send the proper tone. In other words, if a repeater is set up to operate only when a PL tone of say, 136.5hz is heard by it's receiver, then it will allow the transmitting station access. If your station, (your mobile, base or handheld) does not transmit the tone when you key up, then the receiver of the repeater does not hear you and will not be usable by your station until you set the tone in your radio. Any station may be set up to transmit this unique low frequency tone that allows the repeater to operate. If a repeater is "In PL mode" that means it requires a CTCSS tone(PL tone)to activate the repeater. Due to severe congestion of ham repeaters in some areas, most repeaters are PL'ed. **We use 88.5 tone**

These repeaters were once called closed repeaters.

TABLE OF COMMON PL TONES (in hz)

67.0	94.8	131.8	171.3	203.5
69.3	97.4	136.5	173.8	206.5
71.9	100.0	141.3	177.3	210.7
74.4	103.5	146.2	179.9	218.1
77.0	107.2	151.4	183.5	225.7
79.7	110.9	156.7	186.2	229.1
82.5	114.8	159.8	189.9	233.6
85.4	118.8	162.2	192.8	241.8
88.5	123.0	165.5	196.6	250.3
91.5	127.3	167.9	199.5	254.1

Daily Repeater Operation:

1. KVARC promotes family oriented repeaters and all users should be courteous at all times. Follow good amateur practices and at all times follow current FCC Part 97 Rules and regulations.

2. Lead by your example.

3. Use your **Call Sign** to initiate contact, simply indicate that you are on frequency. For example, "This is (CALL SIGN) monitoring." Or, (CALL SIGN) listening.

4. In calling another station, it is standard practice to state the station to be called first, then your call, e.g., "A1BCD, this is A2EFG."

5. Identify yourself legally. You must identify with your CALL SIGN at the beginning of your transmission, at least once each ten minutes and upon ending your conversation. This also includes "Kerchunking", or simply keying the microphone and not saying anything which is irritating.

6. During your conversation identification on a ten minute interval. Do not say, "This is A1BCD for ID or for Identification." It wastes time and everyone knows why you're giving your call sign.

7. To enter an ongoing QSO , wait for the pause between exchanges and say your CALL SIGN. Then wait for one of the other stations to acknowledge you. Respond to calls for assistance or just conversation. Our system is friendly. Let's keep it that way.

8. DO NOT USE the word "BREAK" to enter an on going conversation. The term **"BREAK"** indicates **Emergency or Priority Traffic. If the party has Emergency or Priority Traffic, relinquish the repeater immediately.**

9.   If someone uses "BREAK" to enter a QSO, don't chastise them; in some areas it is acceptable to use "BREAK" to enter a QSO. Politely ask them what is their Emergency and then explain the correct procedure.

10. If your conversation is going to be long and the other station is within direct contact range, go to a Simples frequency. It is "more" like a private conversation than what the repeater produces. This also permits other stations who require the repeater to make a contact.

11. Allow the repeater carrier to drop before transmitting. This will allow the timer to reset itself or the controller will time its self-out. It will also allow other stations to break in. This is especially important in the case of an EMERGENCY.

12. **Keep QSO's short. Generally, QSO's should not last longer than 10-15 minutes** and should be shorter during **lunch time** and **commute hours.** A good policy is, once you make contact with another party, if you can go simplex to free up the repeater.

13. Use plain language on a repeater. If you want to know someone's location, say "Where are you.... or what's your location?" If you want to know whether someone you're talking with is using a mobile rig or a hand-held radio, just ask: "What kind of radio are you using?" You get the idea. Most repeater use is of a "local" nature so signals will be usually of very high quality. The use of the phonetic alphabet is very helpful at times.

14. FCC Part 97.313 states: **An amateur station must use the minimum transmitter power necessary to carry out the desired communications.**

15. If possible, don't subject your contact to a noisy transmission if you can clear it up with a little more power. Some communications are marginal only because one operator likes to use the absolute minimum power. Listening to somebody that is unnecessarily noisy is irritating to everybody who listens. If you hear white noise on the repeater output, you should be running high power if possible. There is absolutely no penalty for using full power at all times when using a repeater.

Repeater Interference:

1. **DO NOT** acknowledge transmissions from unlicensed stations or stations causing the interference.

2. **DO NOT** discuss the Repeater interference on the radio

3. Let the control operators handle interference problems. There may be a control o0perator taking action that you are not aware of.

Common and some Unacceptable Operation Jargon:

Stop, Look and Listen! Do you ever think about how you sound to others on the air? Have you really thought about the example you are setting?

Certain types of jargon are easily recognizable as being "CB" terms. "What is your personal?" when you mean "what is your name?" "I'm on the side," when you mean you are "listening" or "monitoring." Although there is nothing "wrong" with CB, these terms are neither generally used nor appreciated on Amateur Radio frequencies.

Recommendation: avoid CB-style jargon and terms. Generally speaking, plain English is better: "my name is xxxx, what is yours?"A few other examples;

1.   As stated above in #6, "K1***for ID" Of course "for ID' is redundant. If you give your call, you have identified.

2.   I have "distinated". There is no such word.

3.   "Anywho!" Cute, but it falls in the same category as "Whatever."

4.   "73's" 73 is a phrase. Adding "s" means you say "goodbye or best wishes" twice or more . Same goes for others such as 88. The term "88," meaning "love and kisses." Typically used between husbands and wives.)

5.   Likewise, CB phrases such as "Good Buddy", "10-40 and other 10 codes" etc. should be avoided.

6. Using Q-signals **too often** is bad form. Although Q-signals have a very valuable place in Amateur Radio, they are not universally accepted on F.M. voice channels and Repeaters. Using them during EVERY TRANSMISSION is really annoying.

  - Recommendation: use Q-signals sparingly. Once in a while. Not very often.

7.   Using the phrase "clear and monitoring" is not really necessary. Neither term is required by the F.C.C. or anybody else. If you call another amateur, using his/her callsign and yours, and that person does not answer, it is **not** necessary to advise "clear." You have already identified your station and any other identification is superfluous. Use "clear" **only** to mean that you are shutting down operation and will not be there to answer any subsequent calls.

8.   Admit to your Mistakes! Accidents are bound to happen – you may inadvertently transmit into an ongoing conversation because you forgot one of the points above. The best way to handle this is to apologize for your error! Be a responsible adult – you will gain more respect through your regret, in spite of your mistake.

CHECK-IN TO NETS:

If the net is a directed net, and most are, give your call when requested by net control and in the manner specified, i.e.: "with full phonetics" or "by area". If you feel that the net control is not hearing you, and you have called several times, you might say "relay" quickly in between transmissions. Usually if someone hears that, they will advise net control, who will then authorize that station to "pick you up" and check you in. If something is being discussed and you have pertinent information, you might state "info" between transmissions so you can be recognized to pass along this information. On emergency nets, such as those activated by ARES for a hurricane or other major disaster, don't check-in "just for the count" unless requested to do so. For these nets, just listen unless you have proper traffic. If they need you, they will put out a call. If you occupy the net unnecessarily, you might cover up a very weak station that may be trying to get in with priority traffic. Never use "Break-Break-Break" unless it is a real emergency or a life and death situation. You can just state "Emergency Traffic" in between transmissions. Advise the Net Control if you are leaving the net.

Speak slowly, distinctly and clearly. A common fault of traffic handling is talking too fast. Talk across the face of your mike. This makes communications more understandable. In other words, hold the face at almost a right angle to your face. Listen before transmitting. Know what you are going to say ahead of time. Engage the brain before the mouth. Hold down the PTT about a second before talking so as not to cut off the first part of your message. It is a good idea to keep a pencil and pad handy while you are in a net, and write down pertinent information, phone numbers, call signs, etc. as you hear them. This would help in the event you had to assist the net control, as you would already have a lot of pertinent information you might need.

On spelling words in a message, if the name/word is easily understood you can just state, "common spelling" instead of spelling it out. For example "Smith" would not need to be spelled, but "Smyth" would need to be spelled out with phonetics. However be sure that the word is real common as it might be common to you but not to others.