RAINBOW CANYONS AMATEUR RADIO CLUB
CEDAR CITY, UTAH 84720

Issue #1 2008

President's Message

A few random thoughts before my message. ELT beacons transmit on 121.5 MHz. The emergency communications training nets are restarting. The club related nets are as follows:

146.760	RCARC Friendship Net	9:00 PM Daily (PL 123.0)
28.400	RCARC 10 meter Breakfast Net	7:00 AM Monday - Saturday
146.760	RCARC Training Net	9:00 PM Every First Wednesday
28.400	RCARC 10 meter Training Net	8:00 PM Every Third Wednesday

Currently, the calendar for the club looks like the following:

Jan. Meeting	General Operations
Feb. Meeting	Safety/Station setup
Mar. Meeting	Antenna types and uses
April Meeting	Problem Solving
May Meeting	Mini-contest
May Activity	Demo at Scout Expo (?)
June Meeting	CW Demo
June Activity	Field Day: 4th Full weekend
July Meeting	Fox Hunt Demo
July Activity	Fox Hunt
Aug. Meeting	Emergency Preparedness
Sept. Meeting	Utah Races
Oct. Meeting	Undecided
Oct. Activity	Jamboree On-The-Air (BSA related)
Nov. Meeting	EMP hardening/Club Nominations
Nov. Activity	Special Event Station with Pioneer Days
Dec. Meeting	Elections/Christmas Party

If you have any suggestions or changes for these items, or for who you would like to see teach this classes, please contact Richard, K7ZI with your suggestions.

And now, a brief excerpt from The Lord of The Rings, HAM style:

“Sam, you can't help me anymore more. 73,” said Frodo.

“But Mr. Frodo... 73,” said Sam.

“Yes, 73s for now my preciousss. For now, because we lied, we hates them. We hates the nasty hobbitses forever. Yes, my preciousss,” said Gollum.

(My apologies to J.R.R. Tolkien and his estate.)

I apologize for being slightly negative about one or two things mentioned. I will refrain from doing so in the future.

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Trever, AE6HR

At The Last Meeting

The following series of questions and answers were submitted by club President, Trever Adams, AE6HR, as a topic of discussion for the January 2008 club meeting. It was decided by the presidency to provide them as a newsletter and web page item. It is hoped you will review them and gain more knowledge about ham radio you may have forgotten, overlooked or never knew.

The answers were researched and compiled from the obsolete book, “Now You're Talking.” The answers are accurate as far as material is provided–with the understanding everything is in a state of change and new procedures, direction and operating skills may change the answer given. Within the time frame given for the preparation of the discussion, this presentation is given with that understanding.

Q: How does one initiate a contact? Is it the same for all bands, in all areas of the country/world?

A: On VHF/UHF voice mode, transmit your call sign followed by the word “listening” or “monitoring”.

On HF voice mode, a person originating the contact, would transmit; “CQ, CQ, CQ” followed by the words “this is” then his call sign two or three times and the word “over”. Listen for a response for a few seconds then repeat the above if no one responds.

CQ is a universal ham code which means “I am inviting anyone who hears my signal to respond”. Do not feel offended if no one responds after several requests. Keep trying or try later. Switch to a different band and try again. HF frequencies sometimes do not lend themselves to good propagation. It is possible no one hears you!

CW mode is similar except after CQ use the procedural word “DE” (French for “this is”) followed by call sign 2 or 3 times then the letter “K”. K is ham radio language for “over”.

I presume the various digital modes are similar to VHF/UHF voice procedure. Sorry, I have never tried digital communication.

Q: How does one properly respond to someone attempting to initiate a contact?

A: On all bands it is appropriate to repeat the calling person’s call sign followed by ”this is” and your call sign, then the word “over”. CW is exactly the same, except use “DE” and “K”.

Q: How does one properly conclude a contact? Is it necessary to give the other person’s call sign followed by your call sign?

A: FCC rules state it is not necessary to repeat the other persons call sign, only yours at the end of the conversation. Some words of salutation are appropriate to indicate to the other person you are planning on ending the conversation. This is only courtesy and goes a long way in promoting “international good will”. If the conversation involves 3 or more persons, it is customary to say “and the group” when ending a contact. That way all know you are leaving.

Q: What are the rules of etiquette for repeater use?

A: Repeater rules are common sense rules. Remember, your signal goes to anyone who has a radio or scanner that can hear your signals. Keep conversations short. Don’t “rag chew” on linked repeaters–your conversation will go statewide and tie up numerous “machines” that could otherwise be used by others. If longer than 10 minutes, identify with your call sign. Most conversations can be completed within that time. Who knows? A true emergency may have to wait until you and your friend are finished talking!

If you need to use a linked repeater for local traffic, turn off the link using the codes provided by the repeater administrator. A better procedure would be to use a local repeater or even simplex channels. Consult the repeater guide(s) for local repeaters and simplex frequencies.

Q: What is the role of a Net Control (operator)? Is it different for a “friendship” net vs. a net responding to an emergency?

A: A Net Control Operator governs the group of hams using the frequency or repeater. Usually a “preamble” will be read at the beginning of a net stating the “rules of engagement”. Listen carefully to the rules so you understand how the NCO will run the net, and respond appropriately. All nets are similar, some more “formal” than others. All follow the same basic outline so everyone is familiar with the process, regardless of which net you join.

Friendship nets are “relaxed” emergency nets. If you are active in the friendship net you will do well when the emergency arises. There should be little change in procedure.

As for etiquette the best advice is to listen. Listening is a quality developed over time and learned by participating in activities of interest. Mistakes will be made by new hams and they should not worry too much about them.. If you don’t make mistakes, how do you learn the right way? Old timers still remember when they were new hams (or should) . The careful tutelage by experienced operators is called Elmering. It’s similar to a mother nurturing a inquisitive child.

Q: One of the requirements of good operating procedures, as found in the FCC tests (element 2), is to “use no more power than is necessary”. How does one determine that? Does one attempt to make contact at lower power and gradually increase the power until a contact is made?

A: This rule and listening before transmitting, are the two most violated rules in the hobby. The rules state that a “contact should use no more power than necessary to carry on the conversation”.

With repeater contacts it is understood that the repeated signal is being sent at a predetermined value set by the site administrator. There isn’t much you need to do or worry about repeater output power. You should use the “minimum adequate power”necessary to make connect with a repeater. If a half watt is sufficient, use a half watt. If your signal is fuzzy, broken or intermittent, use more! It makes little sense to run a 50 watt mobile rig at high power when your friend next to you is using a few milliwatts with no problems.

With HF work the game it totally different. This is where the rule was originally intended to apply. The signals go “direct” from transmitter to distant receiver. It is quite common to hear ham “A” in New York talking to ham “B” in Illinois and being heard by everyone beyond and out into the Pacific! Ham “A” should have taken the time to reduce his power until his signal disappeared at ham “B’s” location, then increase it just enough to carry on the conversation. A considerate Ham will make a consistent effort to do this.

Propagation “conditions”can suddenly change and the signal lost or suddenly appear out of nowhere, interfering with a QSO in progress. This is “unintentional” interference and not much can be done about it but live with it. However, turning on a 1500 watt amplifier to talk to your friend a couple states away, on a long distance frequency, simply because you can, is not good practice or even acceptable!

Manufactures understand this problem and limit their HF rigs to 100 watts. High end contest and DX machines can go as high as 400 watts. You are still under the same obligation to use as little power as necessary to conduct your conversation. There is a time and place for everything. Unless you live on a forgotten, deserted, island or are commanding a massive “pile up” at a rare DX location, high power is not for you.

Q: What do the following symptoms likely mean about one’s rig/antenna, etc.? Picket fencing, Warbling, Chirping, Hissing, Scratching .

A: “Picket fencing” is a condition affecting the signal entering your receiver. Warbling is similar to picket fencing just at a slower rate. It is ham language used to describe the rapid or slow “flutter” you hear on your speaker. It is caused by

several different things. A weak signal that enters the amplifier stage of your radio just above the “threshold” of your radio’s sensitivity, then drops below the threshold, repeating itself over and over again, can cause the condition. A weak signal that is usually stable but reflected of an object can be said to warble. I have noticed aircraft landing at Cedar City airport have caused this condition on 10 meters.

Chirping is a condition usually reported to folks using CW mode of operation. It sounds much like a bird “chirping”. It is caused by the in-rush current loading down a non-stable power supply which changes the transmit frequency slightly. It is usually associated with old tube-type rigs and poor quality QRP rigs. I found out by accident my modern, solid state, state-of-the-art radio will do this if the DC voltage to the power supply drops below a certain value. Other circuitry problems may cause a similar condition.

“Hissing” is when the receiver is amplifying “white noise” or other forms of natural noise carrying no intelligence. When you turn the “squelch” control too low on a VHF receiver you hear hiss, static or other noise floor.

Scratching or a “scratchy” signals are usually associated with a loose connection somewhere in the circuitry. A loose antenna connection, connector, Mic. switch, broken wire, caballing or other hardware problem. Checking all connections will usually reveal the problem.

Q: How much power is needed to access the local repeaters? What happens if I run at higher power than required?

A: The ‘94 and ‘76 machines are very sensitive. Only a few milliwatts will open the receiver. Other local machines are as sensitive as well. This is line-or-sight propagation with no obstructions in the way. A watt or more may be required if you are inside a building, behind a hill, etc.

Excess power has little affect on repeaters–unless you are right next to the machine or under the antenna. All you are doing is over-heating your radio which wastes power and could damage your radio. On hand-held, the radio case is a heat sink. That is why it gets hot when using it a lot! Mobile and base station radios have heat sinks on the rear apron of the radio to dissipate heat from the final amplifier. Common sense says to keep power settings as low as possible–transistors and other solid state devices will love you for it!

Q: What is the difference between an “open” and a “closed” repeater?

A: An open repeater is a machine available to anyone who wishes to use it . A closed repeater requires codes to “open” the receiver other than the standard PL tones. The codes are closely guarded secret among those few who can afford to pay the dues or desire to be a member of that group. The Cactus group is a good example.

Most repeaters require a PL tone to “open” the receiver. In metropolitan areas there is so much RF energy affecting the machine, a PL tone is required to open the transmitter as well. These PL tones are the standard tones listed in your radio operating book and are freely available elsewhere.

Q: What nets are active in this area? What are the requirements for joining each of them? What are the frequencies and times of the different nets?

A: On HF, the sky is the limit! There are countless nets going on constantly, day and night. They can be found on all frequencies and modes. Nets are gathering places for like-minded hams to meet, discuss things, provide services, buy and sale stuff, hunt for counties, states, etc. Usually, listening to net control will inform you how to join. Sometimes it's “assumed” you already know. At the very least, break in and ask. NCO’s are anxious to have new people join and will gladly explain the type and purpose of their net.

On VHF, in the Southern Utah area, there are a few. St. George used to have a net on the ‘91 machine on Sunday evening at 8:pm.

Utah State RACES meets once a month. On odd numbered months they meet on HF and on even numbered months on VHF. The VHF net meets on

the 3rd Thursday at 8:pm on the ‘94 machine. The HF net meets on the 3rd Saturday at 8:am., on 3.920 MHZ.

Locally, the Rainbow Canyons ARC holds a “friendship” net, nightly, at 9:pm, on the “76 machine. They also host a “breakfast” net on HF daily, except Sunday and Holidays, at 7:am., on 28.400. There is the “Utah” net, daily, at 12:30pm, on 7.272 MHZ.

I’m sure there are more but these are the ones I am aware of. Consult the Internet for a much larger listing.

Q: What are the most commonly used acronyms in amateur radio and what do they mean? (QRP, QSO, etc).

A: The “Q” codes are a carry over form the early days of ham radio when Morse code was the only mode available. They actually were “stolen” form even earlier, telegraph days! There are also “R” codes, “S” codes and number codes that were/are used by telegraphers and others communicators.

Because of the length of time required to send a message, operators shortened their transmission time per message by including codes commonly known to themselves. Not to obscure or change meaning of a word or in crypt a message, which is a violation of FCC rules, but to save time. The 10 code is used by law enforcement personnel, unfortunately, there is no “uniform” meaning of every 10 code. We only use a select few of the “Q” codes and actually use them incorrectly. The most common “Q” codes used by both voice and CW operators are listed on a separate sheet.

Q: My reading tells me that most of the people in the world who are involved in amateur radio speak English. However, my experience tells me that for most of them English is a second language (maybe even 3rd in many cases). Without a perfect “connection” it is often difficult to understand them. What is the best way to proceed, have a good contact and do it without being offensive? What hardware or software tools are available to hep me with this problem?

A: English is the “universal” language of ham radio. Most other cultures teach English as a required course of study in school. Granted, some foreign hams’ English is very hard to understand over the airwaves. Factor in static, weak signal, interference, local QRM (kids, dog, wife, TV, etc.) it is really hard to understand them clearly. Don’t worry about “offending” the ham speaking broken English, he knows he has a problem and won’t take offense to you asking him to slow down or repeat. Just speak the best English you can in a normal voice and cadence, he is practicing his speaking skill on you!

High end transceivers have better quality audio processing” circuitry which may help. There are stand alone audio filters available, which plug into the speaker jack on a radio. They may enhance the reception by narrowing the width of the audio band but do little to improve fidelity. Visit someone who have these devices in their radio or shack and see if they help. I have found a pare of headphones and concentration helps.

As for software to assist in this problem I know of none.

Q: Clipping at the beginning of a transmission seems to be common. How do I ensure I don’t clip?

A: Clipping is a universal problem which most radio operators experience at one time or another in their usage of radio gear. It is caused by speaking into a microphone before the radio has a chance to switch from “receive” mode to “transmit” mode. All radios require a short time to make the change once the Mic. button is pressed.

To solve the problem, simply press the button a full second before speaking into the microphone. If everyone would remember to do this the problem would disappear.

Q: What does “73" mean?

A: 73 is a number code which carried over into voice mode from CW. It is a salutation at the end of a contact meaning “best regards” or “best wishes”. It is commonly stated, “73's”. Either the

singular or plural form is acceptable though grammatically it is incorrect.

Another number code you hear occasionally is “88's”. That is usually spoken between couples meaning hugs and kisses.

Q: Where is the crossover from low power (QRP) to high power (QRO)?

A: QRP is anything 5 watts or less if using Morse code and 10 watts or less if using voice modes. QRP and QRO are examples of “Q code” carryover to voice operation.

Q: What considerations do I need to make when transmitting “mobile” vs. “base station”? Is it necessary to state whether one is “mobile” when one is traveling in a vehicle when giving call sign?

A: There is nothing in FCC regulation which states you must mention what form of transmitting you are practicing. There are several “modes” of operation; base, mobile, portable, pedestrian, air, marine, remote, etc. Identifying you are one of the above is just courtesy and gives the receiving station more information as to how your are transmitting. It also encourages listeners to make contact with someone other than a base station or home station set up.

Q: I hear people using different words in their call sign other than the phonetic alphabet. Where can I find the “official” version? Is it proper to use words other than in the official version when giving call sign?

A: People incorrectly use letters other than the “official” phonetic alphabet to identify their call sign. The official international phonetic alphabet can be found on the Internet by visiting any ham radio related site. There should be a link to the alphabet there.

The ARRL constantly publishes letters from people world-wide requesting everyone use only the official phonetic alphabet. When contesting on HF, the problem is amplified by foreign and state side contesters using unusual acronyms in their call sign. It is an attempt to clarify a call sign heard wrong on the far end. Many foreign hams don’t understand our “cute” acronyms and are easily confused. My call sign, K7ZI, is constantly miss heard, especially the “I”. For some reason that letter does not “carry” on voice mode.

Everyone involved in emergency communication or contesting needs to tighten up their habits and use only the phonetic alphabet. With the direction all government agencies are going it become imperative we use correct form so we don’t embarrass ourselves on the air.

Richard Parker , K7ZI

Preparing For an Emergency

Non-Radio

Nothing this month. If you have any suggestions, please email Trever Adams, AE6HR.

Radio

Nothing this month.

Getting to Know the Club

Necia (KE7OCI) and Harl Adams (KE7OCJ) both grew up in Cedar City. They were high school sweethearts and best friends. Necia was studying at SUU when Harl returned from an LDS mission to Southern California. She was considering a degree in either nursing or child development. They married in July 1974, six months after Harl returned home.

Harl completed course work in December 1977 and received a B.S. degree from SUU in 1978. Necia traded her student I.D. for mother's credentials. They raised 5 children and are fiercely proud of each of them. They have 11 grandchildren who they delight in spoiling - a lot.

Necia has spent the past 33 years totally devoted to her family. Her kids will all tell you that she is the epitome of a wise, caring friend. Wherever the family has made its home, she has been a caring neighbor and is known for her unconditional acceptance of other people. She loves to read, garden, decorate, cook and take care of Harl.

Harl worked for National Semiconductor for 26 years. He held positions in product engineering, test engineering, software engineering / information technology, factory and office automation. One of the highlights of his career was his role as the project manager for National's Y2K effort for all of the manufacturing sites worldwide. (For some reason he thinks it significant that with over 400,000 different elements which required testing and where necessary modifications, they rolled over with zero failures across the world.) He loved his work and expected he would be working for National until retirement. Serious health problems forced him to leave the workforce 13 years earlier than planned. He held the position of director of information technology when he left the company.

During Harl's career they lived in Salt Lake, Maine, Texas and Maine again. They returned home to Cedar City in June 2004.

Necia and Harl became interested in amateur radio in early 2007. They tested and received their call signs in July 2007. Both are looking to test up this year. They have enjoyed the association with other Hams; the club has facilitated them meeting new friends and being able to associate with both new and old friends.

Their primary interest in getting involved in amateur radio is a desire to be in a position to serve the community in a time of need.

They are hoping to get antennas up for HF when the weather permits them to do so. Meanwhile, they are becoming comfortable talking on the radio and sometimes participate in the friendship net. They often listen even when they are not comfortable speaking. Necia also finds the thought of learning Morse Code intriguing... she is not ready to start just yet.

Harl's health problems leave their future somewhat uncertain, but they are determined to do their best and to enjoy life in whatever circumstance they find themselves. With 33 years of marriage behind them, they are still sweethearts and best friends.

(Jim McIntyre, Russ Chaffee, and Merlin Mackay could you all please provide Trever, AE6HR, with a profile to be featured here over the next few months? Thank you.)

Getting Ready (Training)

Please, contribute.

In The Shack

Please, if you have tips each month, or interesting and/or rare QSOs please, provide Trever Adams, AE6HR with your suggestions each month.

New HAMs

None known to Newsletter.

Recent Upgrades

None known to newsletter.

Sought/For Sale

Sought:

None known to newsletter

For Sale:

1. Power transformer 110 V. primary with taps at 550 V. and 1800 V. (400 ma. CT).
2. 110 V. Isolation transformer
3. 4-400A tube (condition unknown)
4. 4-125A tube (condition unknown)

5. 35 watt mono audio amp/mixer (condition unknown)
6. Misc. voltage and current panel meters (mostly 5 inch range)
7. Very old General Radio 650-A impedance bridge (battery operated, condition unknown, has manuals)
8. Eico 380 color bar generator (condition unknown)
9. Etc. . .

These were items donated to me by a retired TV engineering friend. I have no current use for them and no space to store them.

I also have several 12 V., 1 amp solid state power supplies suitable for project building, etc. They will need some wiring and a case to be used as stand alone supplies - All working.

All items are free to a good home.

Lance Jackson, KA7J