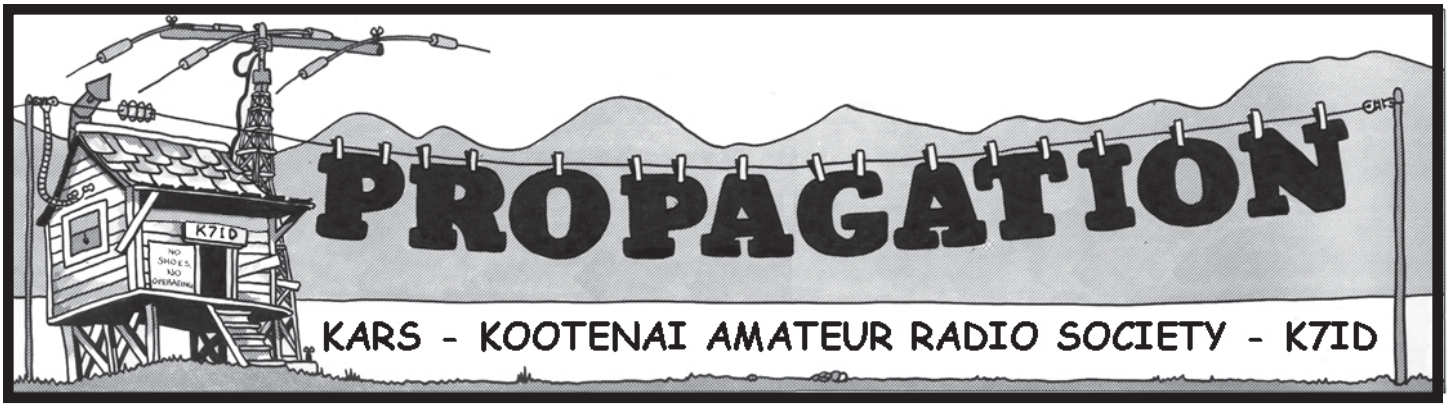


May 2013 (www.k7id.org) P.O. Box 1765 Hayden, ID 83835-1765

## REGULAR CLUB MEETINGS:

**Monday, May 13, 7:00 p.m.**
**Kootenai Search & Rescue Bldg., Hayden, Idaho**
**Topic:** DXpedition South Orkney (Antarctica)
**Presenter:** Video supplied by Bob Rosie, W7GSV
**Refreshments:** Dale DuRee, KE7VMN

**ARRL VE Testing Session 5/13/13** 5:30 PM Walk-ins welcome
All exams administered.

**Friday, June 7, 6:30 p.m.**
**American Legion Hall**
**Post Falls, Idaho**
**Topic: Potluck Dinner and Hamfest Setup**
**Presenter:** None
**Refreshments:** Everyone

**Upcoming Events**

**KARS Highway Clean-Up**
**TBD**

**SEA-PAC**
**May 31-June 2, 2013**
**Seaside, Oregon**

**June 8 - KARS Hamfest**
**7:00 a.m.-1:00 p.m.**
**American Legion Hall**
**Post Falls, Idaho**

**President's Column**

Isn't it nice that we have day time temperatures in the 60s now. I have to admit I was getting awfully fed up with the cold temperatures and grey skies. I do enjoy the clear blue sky we have in summer.

Also with spring came the effort of filing our tax returns for another year. Hopefully some of you received a refund and are going to use it to enhance/upgrade your ham shacks.

With perhaps some extra money and the better weather we should be looking for things to do outside. For those of you interested in solar power and renewable energy, the Kootenai Technical Education Campus (KTEC), will be having an open house on May 3, 2013 from 1:00 - 2:30 pm. The open house is sponsored by Kootenai Electric and KTEC. KTEC is located at 6838 W. Lancaster Road in Rathdrum.

Now is also a good time to be looking at antenna upgrades and/or installations. Ed Stuckey, AI7H, gave us some good information during his presentation at the April meeting. Hope you were able to attend and had the opportunity to view both the commercial and home-brew antennas on display.

KARS is currently sponsoring a technician class. The class started on April 4 and will continue thru May 23. The class is quite large and full of really enthusiastic students. Hopefully, as a club, we will be able to foster their enthusiasm. It is really a delight to interface with people who are truly excited about ham radio. Many of these students should be obtaining their licenses just prior to our hamfest. They are all invited to join us at the American Legion, so if you have an opportunity, talk to them about your ham radio experiences.

We will also be looking for someone to teach a general license class this fall. The club has many techs that could upgrade and perhaps some of the current students would be ready for an upgrade come fall. If you are interested in teaching this class please let me know.

If you want to do some traveling, after being cooped up all winter (speaking from personal experience) the ARRL NW Division Convention, SeaPac, will be held in Seaside, Oregon the weekend of May 31 - June 2, 2013. A trip to the seashore and the opportunity to buy some gently used equipment and attend some interesting programs. Don't spend all your money in Seaside, save some for the KARS Hamfest.

As most of you are aware, our annual Hamfest will be held Saturday, June 8, at the American Legion Post in Post Falls. As has been our custom, a potluck will be held at the facility on Friday June 7. The potluck will commence at 6:30 PM. Bring your family and your favorite dish to share. KARS will furnish coffee and water, paper products and silverware for the potluck. Friday evening we will also be setting up the swap tables and getting ready for the big event. Club members have the option of setting up their swap tables Friday evening. Prior to putting the

equipment on display we will need to prepare the tables. If you have the time and the willingness, we could use some help getting the tables ready. The doors will be open at 4:30 PM for those of you that might want to help.

The doors open at 7:00 AM on Saturday, June 8. There are lots of opportunities for you to participate in the event. We need people to sell tickets, cook food, help with cleanup, etc. Be prepared to sign up for your task of choice at the May meeting. Putting on our hamfest requires participation by all of our members.

This year we will be conducting a silent auction of vintage ham equipment. For those unfamiliar with silent auctions, each unit on the auction table will have a bidding sheet. A minimum bid will be listed as well as the minimum incremental bid. A closing time for bids on each unit will also be listed. You are free to up any existing bid, if you so desire, until the bidding closes. May the highest bidder win.

Field Day will be held the 4th weekend in June as is customary. This year our effort will be taking place at Rick Van Landingham's Qth in Spirit Lake. Rick and his XYL, Carla, will be hosting a potluck on Saturday night June 22. Make plans to attend. More information will be coming in our June newsletter. Point of interest, Carla, is a student in our current tech class. Way to go Carla.

There is a lot to do, so we hope to see many of you attending our upcoming events. See you at the May meeting.

73, Bonnie, KG6QQM

## KARS 2013 HAMFEST

GRAND PRIZES - You do not have to be present to win.

Yaesu FT-8800R Dual Band Mobile
ICOM IC-T79A Handheld
Yaesu FT-60R Handheld

HOURLY DOOR PRIZES - **Must be present to win**.

Baofeng UV-5R HTs
ARRL Gift Certificates
and more

**Handheld Radios Available for Member Usage**

Attention new technicians: Now that you have your ham license in hand, have you had a chance to get on the air? Can't decide what kind of radio to buy? KARS now has handheld radios available for loan to new technicians who are members of KARS. Hams under 21 are given priority. Hams under 21 may use the radios for 90 days. Hams under 18 will have to have a responsible adult sign as Guarantor. Hams 21 and over may use the radios for 60 days. The radios must be returned in good working order at the end of the usage period or the borrower will pay KARS the cost of replacing the radio.

All the radios have been programmed for our local repeaters. Interested in borrowing one? Please contact a board member for further information.

KOOTENAI AMATEUR RADIO SOCIETY
MINUTES OF THE APRIL 8, 2013 MEMBERSHIP MEETING

The meeting was called to order by President Bonnie Patterson, KG6QQM.

New and Upgraded Hams : KF7TJT, Aaron Morrill - Extra; Techs - Rick Lynskey, KG7CUF; Laurie Whitney, KG7CUH; Thomas Beaton; KG7CUG; and Frank Ten Thy, KG7CUI. Congratulations to all of you.

New KARS Members : Frank Ten Thy and Edward Aycock. Welcome to KARS!

Visitors: Renee Stuckey; Bill Boyles, N7BRB; Bob Bluhm, W6CRA; George Schwimmer; Grant Johnson; and Megan Metcalf, KK4KGN.

**PROGRAM**

Our program for the evening was on antenna basics and presented by our very own Ed Stuckey, AI7H. Ed is a Past President of KARS and currently in his 3d term as Idaho Section Manager for the ARRL. Ed brought along examples of several different types of antennas, both commercial and homemade that are in use by hams. If any of the members have a question for Ed, you can reach him by e-mail at ai7h@arrl.net. Ed is always willing to help both new hams and old timers.

**BUSINESS MEETING**

After the program the meeting was recessed for a chance for everyone to have some refreshments and visit with Ed about his presentation. Refreshments were provided by Joel Brown, KE6FHS, and Bonnie Patterson, KG6QQM.

After the break, the business part of the meeting resumed. The 50/50 drawing was won by Ed, AI7H. The membership drawing for $351 was won by Jean Carlson, KD7RVY. Unfortunately, Jean decided to stay home. OM Randy was heard mumbling something about a new radio not happening!

The minutes of the last meeting were accepted, as presented, by the membership. If any member wants to see the Board Meeting Minutes contact Club Secretary Tom, NI7W at ni7w@arrl.net and they will be e-mailed to you.

The KARS Treasurer Pat, W7SGS reported $6135 on hand with all outstanding bills paid.

**OLD BUSINESS**

The ***KARS Tech Class*** is underway with a larger than expected turnout thanks in part to some great publicity

featuring our own Larry (Dave) Telles, K6SPP and Jim Miller, N8BNI. Approximately 32 students attended the first session.

The ***Handheld Loan Agreement*** is available and the radios can be checked out for 90 days if you are a member under 21 and 60 days if you are a member 21 or older.

***Hamfest 2013*** is scheduled for June 8 at the Post Falls Legion. More details on the K7ID website. (K7ID.org). Final prize list available shortly. No consignment table this year but KARS will have a table with some great old gear, i.e.: Johnson Viking II, Heath SB100 and Collins 75S3/32S3 station. The Collins gear will be sold as a station by silent auction (will not be split up).

***Highway Cleanup:*** Doesn't look like anything is scheduled for April. Chairman, Jerry Blythe, KE6RVZ was not at the meeting.

***Field Day:*** Scheduled for KI7I's QTH in Spirit Lake, June 22-23. Station will be operated as Class 2-D. Sign up for worker or operator (or both) with Rick KI7I or Ed, AI7H. You can also just show up. Objective is to have fun and get on the air. Potluck Saturday night. Burgers and hot dogs provided. Contact Carla Van Landingham at 972-345-6321 for potluck info.

**NEW BUSINESS**

**New Life Members:** Steve Mendez, KE7TCK; Charles Ford, KF7WPA; Bob Kesson, K7CGA; and Bonnie Kesson, KE7FPA. Thank you for your support.

***k7id.com:*** KARS website was down for a few days while we dealt with some folks in Hong Kong at Pow Web but is back up and running. K7id.org is and was ok to use too.

***Ice Cream Social:*** is on for August. More details shortly.

**ANNOUNCEMENTS**

***Wednesday Nite Roundtable Net*** : has been cancelled due to lack of participation.

***NW Traffic Net*** : nightly at 18:30 hrs. on KARS repeater. Use Mica repeater (127.3 Hz tone) if you can (Canfield, 100 Hz). Everyone is welcome regardless whether you are a KARS member or not.

***Idaho State Convention*** : scheduled for Boise, April 26-28. For info: http://www.idahostateconvention.com/. Larry Telles, K6SPP, of KARS fame, is scheduled as a presenter for 3 seminars. Check that website.

***May Program*** Bob Rosie, W7GSV, Video on South Orkney Islands DXpedition

***ARRL NW Division Convention*** at Seaside, OR. Scheduled for May 31 thru June 2. For info: http://seapac.org/

No further business was brought forward so meeting was adjourned.

Minutes prepared and submitted by:
Tom Richmond, NI7W, KARS Secretary

K.A.R.S. Member Biography

My name is Allan Campbell,KE7DFT.

My interest in electronics began when I was very young, and I practically lived at Radio Shack and its ilk. But my interest in radio and communications really started after building a shortwave radio featured in "Radio Electronics" magazine, concurrent with attending ITT Institute in Southern California.

I half-heartedly looked into amateur radio around that time, but was discouraged by the "exclusive" attitude of some hams I encountered- at HRO, no less!

I moved to North Idaho over 18 years ago, and have worked as a service technician in consumer electronics ever since.

Early in 2005,I found out some friends were going to get their Tech. licenses. Well, I just couldn't let that go unchallenged! I got my Tech. license in March of 2005 and passed my Extra exam in July of 2007.

I always remember my experience with less-than-welcoming hams, so I try to be as helpful and encouraging as possible. I'm happy to be part of a club that does likewise.

73, All

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A New Ham's Guide
How to Use Amateur (Ham Radio) Repeaters

Simple enough for even me to understand!

This article will help the new Ham to be more at home on repeaters and understand the operation and procedures on Ham Radio Repeaters.
It contains a basic description of a ham radio repeater, how to use it properly and is written with the new HAM in mind for the most popular ham band....2 meters.

What is a Repeater and Why is it Needed, and How Does It Work?

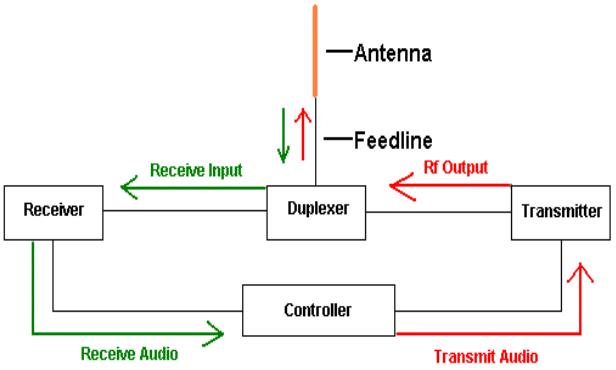
What: It's a two-way radio system that receives on one frequency, then re-transmits what it hears on another frequency; at exactly the same time. It's nothing more than a "dumb machine" with some smart people behind it.

Why it's needed: Your mobile or handheld transceiver, has a limited range due to its antenna height with respect to the radio horizon and RF attenuating surroundings. Repeater systems are used to "transfer" your transmitted and received signals to much higher elevations electronically using large, very efficient antennas, low loss feedlines and a transmitter and receiver that is rated for heavy or continuous duty. A repeater "gets out" your signal and receives the station you are talking to with a far greater range and coverage area! You take advantage of

the repeater's higher elevation to increase your effective transmitting and receiving coverage versus your mobile or hand held transceiver!

How does a Repeater work?

Here's a simple block diagram of a repeater below:




BASIC REPEATER BLOCK DIAGRAM N4UJW

The Basic Repeater Components:

Antenna

Most repeaters use only one antenna. The antenna is used on transmit and receive signals that are going into and out of the repeater. It usually is a high performance, heavy duty, and very efficient antenna located as high on a tower or structure as we can get it above the surrounding terrain.

Lots of repeater system antennas are located on a high hill or mountain.

Antenna systems for repeater use are usually very costly and have high gain.

Feed line

The feed line used on most repeaters is not just a piece of standard coax cable. A type of specialized feed line called Hard line is used. It is very similar to cable TV line that you see strung between power poles around town. The signal loss with hard line versus regular coax is much lower than in standard coax, so more power gets to the antenna and weaker signals can be received.

Duplexer

This device serves a major role in a repeater. The duplexer separates and isolates the incoming signal from the outgoing and vice versa. It prevents the receiver and transmitter from hearing one another by the isolation it provides. A duplexer has the shape of tall cans and is designed to pass a very narrow range of frequencies and to reject all others. It helps to reject very strong nearby frequencies from other repeaters or RF producers from getting into the repeater system.

Receiver

Receives the incoming signal. This receiver is generally a very sensitive and selective one which helps weaker stations to be heard better by the repeater. It is set to receive the input frequency. It's also where CTCSS (Continuous Tone Coded Squelch System) or "PL" decoding takes place.

Transmitter

Most machines as repeaters are sometimes called, have a transmitter composed of an exciter and a power amplifier. The exciter modulates the audio coming from the receiver which is tuned to the transmitting station's frequency at the proper transmit frequency, and the power amplifier simply boosts its level so the signal will travel further. Lots of repeaters use 100 watts or more. It simply takes the weaker received frequency from say a mobile and re-transmits it (repeats) at a higher power level on a different frequency.

Controller

This is the brain of the repeater. It handles repeater station ID using either CW or voice, activates the transmitter at the appropriate times, and sometimes performs many other functions depending on the sophistication of the repeater. Some also have a DVR (Digital Voice Recorder) for announcements and messages. The controller is a small computer that's programmed to control a repeater.


Deadline for submitting articles, stories, reports, etc., is the 25th of each month for the following month's newsletter.

What is Offset?

In order to listen and transmit at the same time, repeaters use two different frequencies. On the 2 meter ham band these frequencies are 600 kc's (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.

Standard Repeater Input/Output Offsets

| Band | Offset +/- |
|---|---|
| 6 meters | 1 MHz |
| 2 meters | 600 kHz |
| 1.25 meters | 1.6 MHz |
| 70 cm | 5 MHz |
| 33 cm | 12 MHz |
| 23 cm | 20 MHz |

Why do Repeaters use an Offset?

Without having an offset between the transmit signal and the receive signal frequency, the repeater would simply hear itself when it was transmitting on the same frequency it was listening on!

Therefore, to use a repeater a user must use a different transmit frequency than receive frequency. Your actual transmit frequency is the exact same one that the repeater receiver is listening on. This is a form of duplex, or two frequency operation. It is known as half-duplex as you do not receive and transmit at the same time but normally use the push-to-talk button on your microphone to switch between the two. Cell phones use full duplex so each party can hear the other while the other is talking.

Even with the offset, the two frequencies are close enough that some isolation is required. Again, this isolation is done by the Duplexer. So you can see why some repeater components interact with each other and without the basic system components....nothing would work.

What's all those tones about?

What is a 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 its 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.

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 |

What Happens When You Key Your mic?

Let's "key up" a repeater and see what sequence of events are created within the repeater equipment when someone makes a transmission:

You set your transceiver controls for the 146.84 "machine" and listen to see if it is in use...nothing heard.

You key your mic and throw out your callsign...."This is KE5??? listening on the 146.84 machine". Then you release the mic button.

Assuming your station is within range of the repeater....The repeater antenna picked up your signal with its antenna on 146.24 (your transmit frequency set to the standard offset and the repeater's receive frequency) and sent it down the feedline to the duplexer.

From there it was sent to the repeater receiver and converted to an audio signal (just like the sounds coming from your speaker)....sent to the controller (the brains of the repeater), then sent to the repeater transmitter and

turned back into a much greater amplified radio signal on 146.84mhz (the output of the repeater)....sent to the duplexer....then through the feedline to the antenna and out over the air.

A mobile or base station that happened to be within range and monitoring the .84 machine heard your transmission on 146.84mhz (the repeater output frequency).

Since radio waves travel at about the speed of light....at the split second that you first keyed your mic, the above events took place and the repeater was receiving your signal on one frequency and re-transmitting your signal on a different frequency at the same time!

The mobile station that was listening on the output frequency of the repeater heard your callsign.... keyed his mic and came back to you starting the process all over again!

A simple way of demonstrating what is going on with a repeater is to set a scanner or a second receiver tuned to the input frequency of a LOCAL active repeater...in the case above...146.24mhz and you can monitor its input (and the stations using it if they are local). Then with your transceiver, monitor the output on 146.84mhz! You should be able to hear both the input signals and the output of the repeater as all this takes place on the air.

How do you make a call on an Amateur Repeater?

First, LISTEN AND LISTEN SOME MORE..... to make sure that the repeater is not already in use. When you are satisfied that the repeater is not in use, set your transmitter power to the minimum and increase only as needed to make contact with the repeater, begin with the callsign of the station you are trying to contact followed by your callsign. e.g. " N4??? this is N3???". (The N3??? is your callsign). If you don't establish contact with the station you are looking for, wait a minute or two and repeat your call.

If you are just announcing your presence on the repeater it is helpful to others that may be listening if you identify the repeater you are using AND your callsign. e.g. " This is N3??? listening on the 84 machine or you could also say This is N3??? listening on 146.84 Dallas or the location of the repeater if known. This allows people that are listening on radios that scan several repeaters to identify which repeater you are using.

If the repeater you are using is a busy repeater you may consider moving to a simplex frequency (transmit and receive on the same frequency..... see more below), once you have made contact with the station you were calling. Repeaters are designed to enhance communications between stations that normally wouldn't be able to communicate because of terrain or power limitations.

If you can maintain your conversation without using the repeater, going "simplex" (both stations on same frequency in a different part of the band) will leave the repeater free for other stations to use that can't establish simplex communications!

Repeater Etiquette

The first and most important rule before using a repeater is to LISTEN FIRST. Nothing is more annoying than someone that "keys up" or DOUBLES in the middle of another conversation without first checking to make sure the repeater is free. If the repeater is in use, wait for a pause in the conversation (watch your S meter and wait for it to drop indicating the repeater is listening) and simply announce your callsign and wait for one of the other stations to acknowledge your call. This is not CB, Don't use CB lingo such as 10-4,.....don't say BREAKER! The word BREAKER or BREAK, BREAK on Ham radio is commonly used only in EMERGENCIES!

Remember....you're an Amateur Radio Operator....NOT A CB'ER!

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.

Don't call CQ to initiate a conversation on a repeater. Just simply listen to make certain the repeater is not in use and then key your mic and say your call sign.

If someone happens to be listening and they want to talk to you they will respond.

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 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 it the air. e.g. "W3??? to take it, this is N3???", then unkey; or … "Do you have any comments Fred?, this is N3???"; unkey.

You could also say "OK...that's all I have.....back to you Fred"... (un key)....

Failing to use this or other techniques is an invitation to total confusion.

As a point of interest, a repeater will usually lock into the strongest of two FM signals. This is the nature of FM. The strongest signal wins.

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 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. NOT 50 OVER S9, S9, OR ANY COMBINATION on your S meter. 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 can not 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 ruff 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.

HINT....If the station is in and out of range of the repeater you and he were using and is coming in your direction...try him on a simplex frequency! He may be loud and clear direct on simplex and only a few miles away and getting stronger all the time but he is getting farther from the repeater! Another situation that can happen during a new contact is that you and he did not exchange locations at the first of the contact. Both you and he are using a repeater 50 miles away. Then after several minutes you discover in your conversation with the other station that he is in the same town as you and only a couple of miles away! Time for simplex! Don't hog the repeater.

Simplex operation generally means station to station or direct communication on the same frequency between two

stations and not using a repeater. Use the least amount of output power needed to carry on the contact. Simplex should be used when the two stations are close enough to carry on a conversation without the use of a repeater and will help in congested metro areas with a limited number of repeaters.
Simplex should always be used if possible rather than a repeater.
See chart below for suggested simplex frequencies. (Highlighted in gray)
Repeater input and output frequencies highlighted in yellow.
2 Meter Band Plan as suggested by the ARRL (144-148 MHz):

| | |
|---|---|
| 144.00-144.05 | EME (CW) |
| 144.05-144.10 | General CW and weak signals |
| 144.10-144.20 | EME and weak-signal SSB |
| 144.200 | SSB National calling frequency |
| 144.200-144.275 | General SSB operation |
| 144.275-144.300 | Propagation beacons |
| 144.30-144.50 | New OSCAR subband |
| 144.50-144.60 | Linear translator inputs |
| 144.60-144.90 | FM repeater inputs |
| 144.90-145.10 | Weak signal and FM simplex |

(145.01,03,05,07,09 are widely used for packet)

| | |
|---|---|
| 145.10-145.20 | Linear translator outputs |
| 145.20-145.50 | FM repeater outputs |
| 145.50-145.80 | Miscellaneous and experimental modes |
| 145.80-146.00 | OSCAR subband |
| 146.01-146.37 | Repeater inputs |
| 146.40-146.58 | Simplex |
| 146.52 | National FM Simplex Calling Frequency |
| 146.61-146.97 | Repeater outputs |
| 147.00-147.39 | Repeater outputs |
| 147.42-147.57 | Simplex |
| 147.60-147.99 | Repeater inputs |

YOUR FIRST CONVERSATION AND CONTACT ON A REPEATER!

That most exciting day just arrived! You now have passed your Technician Class exam and have been issued your first call sign by the FCC.

You have your station all set up and you are ready for your first contact on a repeater! You chose a local repeater frequency and dial it up on your rig. You just keyed your mic, gave out your call sign and now you hear.....your call sign and someone coming back to you with his call sign.....he un keys and the repeater is waiting for YOU! BRAIN LOCK SETS IN! “What do I do? What do I talk about? Will I remember all those rules, regulations, theory and all that other stuff I had to study? The simple answer is.....probably not.....but don’t worry!

First thing....try to write his call sign down and if he gives his name, that too. Lots of good operators recognize a new ham instantly on the air and they will guide you with patience, understanding, maybe some fun prodding and picking at you to get you to relax and have fun with your new license.

He will WELCOME you!

A good operator will never make you feel unwanted on the air. He may ask you to repeat your call sign just to make certain he understood who he is talking to and if you forget to give your name, he will ask for it. Most hams don’t like to talk to a “call sign”, so getting names and also locations helps to start the conversation.
If you make mistakes....he will most likely let you know what you did wrong and inform you as to the correct way in a friendly manner.

Don’t be surprised if he asks you all the questions instead of the other way around. He is just trying to get you to feel relaxed on the air. As your experience grows in ham radio, always try to remember your first contact and how excited and nervous you were. Now it’s your turn and you are the one responding to a new ham and his first contact! Make him feel at home and.....be a good operator.....like your first contact was! Repeater ID.....you and it! You must transmit your call sign at the end of a contact and at least every 10 minutes during the course of any communication. You do not have to transmit the call sign of the station to whom you are transmitting. Never transmit without identifying. For example, keying your microphone to turn on the repeater without saying your station call sign is illegal. If you do not want to engage in conversation, but simply want to check if you are able to access a particular repeater, simply say “(your call sign..... testing.”

CONTROL OPERATORS

All ham radio stations, including repeaters AND YOUR STATION are required by the FCC to have a control operator monitoring the station while it is on the air. You are the control operator of your station.

Control operators are usually the owners, trustees or other designated licensed operators of a repeater system. They sometimes stay quietly in the background just listening to the every day operation of the “machine” for technical problems, proper use, FCC infractions, etc on a particular repeater.

They have complete control of whether a repeater is on the air or off and have the ability to stop its operation at any time! Use the repeater to the best of your ability.
Report any unauthorized use of a repeater to the repeater owner or person responsible for the operation of the repeater.

One last thought....SUPPORT YOUR LOCAL REPEATER/S.

It takes LOTS of money to maintain a repeater and the money has to come from somewhere. If you can’t donate

funds, then donate your time, assistance, equipment, knowledge, labor or anything of value to the repeater owner to help keep it on the air. It will be appreciated!

WARNING TO NON-LICENSED STATIONS!

Only licensed Amateur Radio Operators are authorized use of ANY Amateur Radio transceiver including repeaters in the transmit function.

SEVERE PENALTIES ARE INFORCED BY THE FEDERAL COMMUNICATIONS COMMISSION!
LICENSED HAMS HAVE WAYS TO DETECT BOGUS CALL SIGNS!
DON'T TRY IT!
DON'T FORGET .....ID YOUR STATION
THE REPEATER WILL NOT ID FOR YOU....IT ONLY ID'S ITSELF!
After all.....it's only a dumb "machine"!

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Annual Armed Forces Day Crossband Test Scheduled for May 11

In celebration of the 63rd anniversary of Armed Forces Day (AFD), the Army, Air Force, Navy, Marine Corps and Coast Guard are co-sponsoring the annual Military/ Amateur Radio Crossband Communications Test. Although Armed Forces Day is traditionally celebrated on the third Saturday in May — May 18 in 2013 — the AFD Military/ Amateur Crossband Communications Test will be conducted on May 11 to prevent conflict with the Dayton Hamvention, scheduled for May 17-19.

The annual celebration features traditional military-to-amateur crossband communications SSB voice and Morse code tests. These tests give Amateur Radio operators and short wave listeners an opportunity to demonstrate their individual technical skills and to receive recognition from the appropriate military radio station for their proven expertise. QSL cards will be provided to stations making contact with the military stations.

Military-to-amateur crossband operations will take place on the dates and time in UTC on the frequencies listed for the Army, Air Force and Navy/Marine Corps and Coast Guard MARS stations. Voice contacts will include operations in single sideband voice (SSB); some stations will use CW to provide the opportunity to check in by Morse code. Depending on propagation and staffing, some stations may not operate the entire period. Participating military stations will transmit on selected military MARS frequencies and listen for Amateur Radio stations in the amateur bands. The military station operator will announce the specific amateur band frequency being monitored. Duration of each voice contact should be limited to 1-2 minutes. The annual Secretary of Defense message will be transmitted via digital modes, including RTTY, PACTOR, AMTOR, PSK-31, MFSK and MT63 from certain stations.

Check the MARS Armed Forces Crossband Test website at http://www.usarmymars.org/home/announcements for schedules and frequencies of participating military stations, including a list of stations that will be transmitting the annual Secretary of Defense message. Instructions on how to copy and submit the message are also included.

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Guyed Tower Legislation in Idaho to Exclude Amateur Radio Towers

On April 1, Idaho Governor C. L. "Butch" Otter (R) signed Senate Bill 1065 into law. This new law is amendment to a current Idaho law regarding guyed towers, which states that guyed towers "shall be lighted, marked and painted or otherwise constructed to be visible in clear air during daylight hours from a distance of not less than 2000 feet." With the passage of SB 1065, both guyed Amateur Radio and CB antenna support structures are exempt from these regulations.

According to ARRL Idaho Section Manager Ed Stuckey, AI7H, Governor Otter signed the original legislation into law in 2012, but there was an exemption for telecommunications towers. "This year, we went back [to the legislature] to specifically define Amateur Radio towers as one of the types of telecommunications towers," he said, "ARRL Idaho Section Government Liaison Rex Green, K7DMV, put a huge amount of effort into firming up the groundwork behind the legislation. We also had the good fortune to have Senator Lee Heider, KE7GAG, take an interest in the legislation, and he acted as the Senate sponsor for the bill."

Green told the ARRL that quite a few hams in Senator Heider's district contacted the senator about the amendment. "These hams asked Senator Heider to carry the amendment that would clarify that Amateur Radio towers would be included in the telecommunications exemption," he told the ARRL. "As the ARRL Idaho State Government Liaison, I contacted the Idaho Division of Aeronautics and others to explain our position and gain their support. The letter of support from the Administrator of the Idaho Division of Aeronautics opened a lot of doors for us and was critical to the amendment's passage."

Idaho Section leadership supported Senator Heider at the meetings of Idaho's House and Senate Transportation Committees, providing with examples of why the exemption for Amateur Radio towers was needed. "I feel without Senator Heider's support, we would have had a difficult time in getting traction for our proposal," Green said. "The sponsors of last year's legislation were not exactly supportive of any exemptions, but once we explained to the committees that we had the support of the low altitude aviation operators, such as crop dusters, then we were able to move ahead."

# Kootenai Amateur Radio Society

PO Box 17□5, Hayden, Idaho 83835-17□5

Please complete the entire form and return with your payment.

**Single Year Membership**

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ARRL Member _____ May we publish limited Information _____

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| Cash | | Check | | Money order | |
| Roster | | Membership Card | | | |

For Family Membership, Please complete an application and staple togeather.

Signature _____

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## K7ID.org Request Form

First and Last Name _____ Callsign _____

Would you like your (callsign)@k7id.org email to be forwarded to an existing email account or would you like to access it through a web or post office protocol (POP) system?

☐ Please Forward to My existing Email (Please Complete the Bottom and Sign.) ☐ Webmail Access ☐ POP Access ☐ I wish to opt-out of K7ID.org

Please Select a username _____ @K7ID.ORG

Please Select a Password _____

For Forward Request Only

Email Address _____

Signature _____

**KOOTENAI AMATEUR RADIO SOCIETY**
**P.O. Box 1765**
**Hayden, ID 83835-1765**

## DIRECTIONS TO KARS MEETING:

Take U.S. Highway 95 to Miles Avenue (Miles is about 1 mile North of Hayden Avenue). Instead of proceeding west from the corner of Miles and Ramsey, go north about ¼ mile, to the first building on the left (West) side of the road.

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## Notice

Propagation is published monthly by the Kootenai Amateur Radio Society (KARS). The club is located in Coeur d'Alene, Idaho and serves the North Idaho and the Spokane, Washington areas.

All opinions expressed in this newsletter are those of the individual contributers and not the radio club as a whole.

KARS operates a voice repeater on 146.98 and a packet repeater on 145.510 Mhz.

Anyone interested in Amateur Radio is welcome to join. Dues are $12.00 (individual) and $18.00 for a family membership. Contact the Treasurer if you wish to join.

If you know of anyone interested in joining KARS, you can notify the newsletter editor as to that parties email address. A copy of this newsletter will be sent with no obligation to join.

Material can be submitted for publication in Propagation. The deadline for articles, etc., is the 25th of each month for the following month's issue.