

Anchorage Amateur Radio Club

Next Meeting January 6

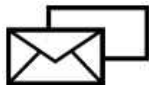
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KL7AA.org is Now under control and operational as

<http://www.kl7aa.net>

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KL7AA Mail Reflector

If you like to **stay in touch on KL7AA news** and other posts of local interest.

Step #1: First point your browser to (click the link below):

<http://mailman.qth.net/mailman/listinfo/kl7aa>

Step #2: On the web page you will see a section titled "Subscribing to KL7AA". Enter your e-mail address in the "Your email address" entry box.

Step #3: Pick a password for your account and enter it in the box marked "Pick a password" and then enter the same password in the box marked "Reenter password to confirm". This password will be used to change your settings on the list such as digest mode, etc.

Step #4: If you would like the e-mails in daily digest form click yes on the line marked "Would you like to receive list mail batched in a daily digest?"

Step #5: Click on the "Subscribe" button below the information that you just entered.

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Call for AARC Historical Documents

Heather Hasper, KL7SP, has taken on the activity of collecting and organizing our Club historical documents. She is looking for AARC documents that you no longer want to maintain in your house. These might include newsletters, membership rosters, flyers, photos, or any other item of historical interest.

Please contact Heather at KL7SP@ARRL.NET or via pager at 907-275-7474

QST QST QST

Iditarod 2006 is almost upon us and we are looking for 35 Hams to Cover the Start and another 35 for the restart. The following shifts need filling at HQ:

Sunday 5th March 1800-2400

Monday 6th March 2400-0600 & 1800-2400

Tuesday 7 March 2400-0600, 0600-1200 & 1800-2400

Wed 8 March 2400-0600, 0600-1200

Contact Gordon Hartlieb AL1W 243-8198

gordon@systems33.com

for the start

Jim Brutan KL7HJ 357-9165

hikingon@mtaonline.net

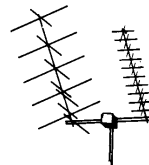
for the restart or myself

Mark Kelliher KL7TQ 695-3722

kl7tq@arrl.net

for HQ or all of the above

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Information on Low Earth Orbit Satellites at

<http://gahleos.obarr.net/>

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Alaska QRP Club meets the Third Friday of every month – 7:00 PM (Some show for dinner at 6PM): Hams with QRP (low power under 5 watts) and Homebrewing interests meet for a social meeting monthly. Meet at Dennys (in the back room) on DeBarr near Bragaw. Contact is Jim Larsen, AL7FS, [JimLarsen2002 at alaska.net](mailto:JimLarsen2002@alaska.net) or 345-3190.

A Beginner's Guide to Making CW Contacts

Part 2 of 2

by Jack Wagoner WB8FSV
Used with Jack's permission

Obscure, Rarely Used CW Characters

To be honest, I have never heard any of these CW characters in 29 years on CW, but it is still fun to know they exist. Do not use them on the air, other hams will not have any idea what you are sending.

Colon	[:]	dah dah dah dit dit dit	Underline	[_]	dit dit dah dah dit dah
Semicolon	[;]	dah dit dah dit dah dit	Paragraph	[]	dit dah dit dah dit dit
Hyphen	[-]	dah dit dit dit dit dah	Dollar sign	[\$]	dit dit dit dah dit dit dah
Double hyphen	[=]	dah dit dit dit dah	Multiplication sign	[x]	dah dit dit dah
Quotation	[""]	dit dah dit dit dah dit	Addition sign	[+]	dit dah dit dah dit
Apostrophe	[']	dit dah dah dah dah dit	Understood	[]	dit dit dit dah dit
Left-handed bracket	[(]	dah dit dah dah dit	Attention	[]	dah dit dah dit dah
Right-handed bracket	[)]	dah dit dah dah dit dah	Underline	[_]	dit dit dah dah dit dah

To transmit a fractional number in CW, send a slash[/](dah dit dit dah dit) between the numbers in the fraction. One half is transmitted as 1/2. To send a number that includes a fraction, transmit a hyphen between the whole number and the fraction itself. 5 2/3 is sent as 5-2/3. To indicate the percentage sign, transmit the figure zero followed by the slash and the figure zero again. Similar to the fraction, a hyphen is used to transmit a whole number, or a fraction, followed by a percentage sign. For example 2 % is transmitted as 2-0/0. To send the minute sign["'] or the second sign[""] used in latitude and longitude coordinates, use the apostrophe once or twice as appropriate. There are also 12 or more Morse Code characters for letters used in certain European languages which use the Latin alphabet. Thanks again to L. Peter Carron, JR., and his book, *Morse Code: The Essential Language*, The American Radio Relay League, 1991, for these obscure CW characters.

Here are a few of the auxiliary CW characters used with some European languages, thanks to Chuck, KB2E, in his letter to the FISTS Keynote newsletter. "...the German A with two dots over it, Ä, (dit dah dit dah); the Spanish-Scandinavian A with an accent mark, or a dot, over it, Å, (dit dah dah dit dah); the German-Spanish CH (dah dah dah dah); the French E with an accent over it, É, (dit dit dah dit dit); the Spanish N with that wavy line over it that we all know now because of the infamous El Nino, ñ, (dah dah dit dah dah); the German O with two dots over it, Ö, (dah dah dah dit); and the German U with two dots over it, Ü, (dit dit dah dah)." I am uncertain of the precise linguistic terms attached to each of these diacritical marks, whether they be grave, umlaut, or circumflex, but you get the idea. I have never heard them used in CW, but then again I don't work very many Europeans on 40 and 80 meters.

Taking Notes During a QSO, Logging, Using GMT/UTC Time

While I am in contact with another station CW station, I take notes. In fact I write down every word sent by the other ham. Mainly this is because I have a memory like a screen door in a submarine! But I recommend at least noting the main points made by the other station, so that you will remember what to comment on during your next transmission. I circle with my pen those items I want to remember to bring up next go around.

I am kind of strange in that I save all these notes I've taken during my QSOs, going back 30 years. Really. It is absolutely fascinating to go back through my notes and read, word for word, what I talked about when I was a novice 29 years ago. Kinda like a ham diary. By FCC regulations we are no longer required to keep a log of the radio contacts we make, but I **highly** recommend it. Not only for QSLing purposes, but so that you can look up when in the past you worked a familiar callsign. And looking through your old logbooks will bring back lots of pleasant memories of QSOs gone by. I keep copious notes in my logbook, beyond the standard date/time/frequency/callsign/RST/name/location, to help me remember what was special about each contact.

I fill out as much information as I can in my logbook at the very beginning of each QSO. This saves me time and, if I accidentally bump the VFO dial during the QSO and change frequency, I can use my logbook to look up my original frequency. Or you can use your frequency lock control if your rig is so equipped. My cat Rasta has been known to jump up on my desk while I am QSOing and rub against my VFO before I can stop him. Perhaps my cat did not like the other ham's fist. HI.

After you have been on the air a while, another ham will someday surprise you during a QSO by using your name before you give to them, or asking if your old Heath DX 60B transmitter is still running. How did they know your name or about your rig? Turns out you have worked this ham before but forgotten, and they either have a **very** good memory, or they keep their log on a computer. I would love to put all 29 years of my ham contacts in a computer database, but whew!

The data entry would take months. If you are just beginning your ham career and have a computer, then get some logging software.

Hams should always use GMT or UTC time when logging and keeping records. Try to keep a schedule set up for 8 pm with another ham who lives in a different time zone. Do you meet at 8 pm your local time or 8 pm their time? No problem if you both use UTC time. **Always** fill out QSL cards using UTC time. Do not use 24 hour military time. Confusion often arises when you make a ham contact close to 0000 hours UTC. Because in UTC the date changes at 0000 or midnight UTC. What date do you put on your QSL card? Use the UTC date. I frequently receive QSL cards from new hams with the correct UTC time but the wrong date. They have grown up accustomed to the date changing at midnight their own local time.

Keeping track of the current time in UTC takes practice. You could tune your receiver to a time standard station like WWV or CHU to determine the current UTC. Clocks are available that tell time in UTC format. Or you could, like me, just memorize your local/UTC equivalents. You can make a little chart with your local/UTC equivalents. You will need to make two such charts since local/UTC equivalents change twice a year, with the switch between daylight time and daylight savings time. This twice yearly switch pretty much takes place all over the world, not just in the United States.

For a basic explanation of what GMT/UTC time is, visit my [Radio Fundamentals Homepage](#).

<http://www.netwalk.com/%7Efsv/>

Identifying as per FCC Regulations

Speaking of FCC regulations, amateur radio operators are required to identify themselves on the air by transmitting their call signs. At least every ten minutes. I believe it is also a good idea to identify at the beginning and end of each of your transmissions as well, even if less than ten minutes has passed. You will hear some experienced CW operators taking turns transmitting during a QSO without IDing. For example:

- first station "WHATS UR WX LIKE? BK"
- second station "SUNNY ES COOL. HW ABT U? BK"
- first station "MONSOON HR, RAIN ES 70 DEGS..."

No problem as long as they ID every ten minutes. If band conditions are poor or there is lots of QRM, IDing at the beginning and end of each transmission is wise, or the other station may not realize you turned it over to them. Easy way to completely lose one another. To save time I will sometimes end my transmissions with only my own call sign, like "HW COPY? de WB8FSV K". Cool, as long as every ten minutes I start or end one of my transmissions with something like, "WHAT SAY FRED? N1XYZ de WB8FSV K"

Dealing With QRM and QRN

Characteristically, when listening to shortwave radio frequencies, which include the most popular ham radio bands, you will hear noise, static, interference, and fading. They sometimes make reception of ham radio signals difficult, sometimes downright impossible. I view them as a challenge. I call them the three dreaded Qs: QRM(interference), QRN(noise and static), and QSB(fading). With experience and practice you can learn to deal with the three dreaded Qs and enhance your enjoyment of amateur radio.

First let me discuss QRM, probably the most frequently encountered and most disturbing of the three Qs. And the only one you yourself can help reduce by your own radio operating habits. QRM is a fact of life on the ham bands, get used to it. Try to plan your operating methods so that you cause as little QRM to other hams as possible, and everybody will be happier. There are technical means to help alleviate QRM: passband filters, audio filters, DSP and RIT. For example your RIT(receiver incremental tuning) can be used to "tune out" QRM. You can move your RIT away from the interfering signal until it is nearly out of your receiver's passband tuning range, leaving just the signal you want to hear. I have found that even when there is no QRM, moving my RIT a little bit changes the tone of the signal I want, often improving reception.

With practice you will be able to eventually, with your ears alone, "tune out" many of the interfering stations and concentrate on the signal you want. Most QRM from other hams is unintentional. If you find someone intentionally QRMing you, playing games with you, the best advice is to ignore them. **Do not acknowledge their presence in any way** or you may encourage them to continue. Ask for a repeat, change frequency, sign off if you have to. I would not mention anything about "QRM" or "SOME LID".

Sometimes when I answer a CQing station and that station is unable to copy me, perhaps due to QRM near our frequency, I will then call them a second time after changing my transmit frequency a few hundred Hertz. That small change may allow the other ham to now hear me through the QRM. The same thing is true if some QRM suddenly appears during your QSO. Although don't QSY too far, or the station you are talking with may lose you.

You and the other station may both agree to QSY(change frequency) to escape some QRM. Be careful. Successful QSYing on CW is quite difficult. For me it works about fifty percent of the time. Quite often you will lose each other. QSY during a CW QSO with caution. Be careful to state exactly where you would like to QSY, say up 2 kHz, or to 3715 kHz, rather than simply stating, "let's QSY up" somewhere. Another practical use to having dual VFOs in your ham rig is that you may be able to use them to chase off QRM. Sometimes during a QSO I will put both of my transceiver's VFOs on my same operating frequency. Then tune the inactive VFO a few hundred cycles(or Hertz) up or down in frequency. Whether you tune up or tune down a few hundred cycles depends on the direction that your rig's receiver "sweeps" as you tune. My Kenwood sweeps or changes pitch from high to low as I tune higher in frequency. During my QSO if I hear another ham call "QRL?" to see if the frequency is clear, I will interrupt my own QSO for a few seconds, switch to my second inactive VFO, and transmit a quick "C", meaning, "yes this

frequency is in use." I could have remained on my original frequency and sent my "C" in answer to his "QRL?" But it is likely the QRLing ham would not have heard my answer due to the narrow passband of his receiver (in other words he is too far away from my transmit frequency) or due to the direction of the sweep of his own receiver. By leaving my second inactive VFO a bit off of my own transmit frequency, I can protect a larger area of frequency space around myself from potential QRM. Again, please do not answer a CQ if the CQer is too close (within a kHz or less) to an ongoing QSO in order to avoid QRMing the other QSO.

One very annoying, for US hams, form of QRM is the shortwave broadcast stations found most evenings throughout the 40 meter novice band. We have to share the band with them, I like to view it as a challenge. There will be times during a QSO when one of these broadcasting stations will sign/on and begin transmitting on or very close to the frequency you are talking on. First you will hear their unmodulated carrier as they tune up, followed by their interval signal. Then usually at the top or bottom of the hour, the broadcast station will begin their official broadcast with their national anthem. Then the news. Quite often you will lose all trace of the other ham you were in QSO with as soon as the broadcaster opens up with their carrier. Sometimes you can still hear each other through the unmodulated carrier, but you had better quickly say your 73s before the music starts. A few times I have been able to continue a contact as long as the broadcast station does not transmit music. If the broadcast QRM on 40 meters is just too much for you, there is always 80 meters. Or switch your ham receiver to the AM mode and delve into the fascinating world of shortwave broadcasting. QRN refers to noise heard on shortwave radio. There are basically two types of QRN, natural and man-made. Natural QRN is the static generated, for the most part, by thunderstorms. The radio static, or QRN, generated by thunderstorms travels great distances via skip, just like radio signals on shortwave. At any given moment you may be able to hear the static from dozens of storms, hundreds and thousands of miles away. At a given distance from a radio station on shortwave there is a dead zone, which the radio signal skips over. Same thing is true for thunderstorm static. I have been on 40 meters CW while I knew there was a thunderstorm nearby, and heard no static. I was in the thunderstorm's dead zone, its static was skipping over me. Other hams I then contacted were barely able to copy me through the static, although I heard them fine. Pretty weird. There are many more thunderstorms during the warm summer months, meaning that winter provides the best reception on the 40 and 80 meter ham bands. Both thunderstorms and static decrease in number and intensity with nightfall. Rarely, during a particularly intense solar disturbance, the shortwave radio frequencies will go dead. All you may hear is a continuous rushing noise or QRN caused by the solar disturbance. Man-made QRN comes from many sources, including automobile engines, electric motors, fluorescent lights, electric fences, loose wires on electric power lines, and lawnmowers. Other QRN is purposely broadcast on shortwave radio frequencies, such as over-the-horizon radar and high speed RTTY. It becomes what we call QRN when it is broadcast by nonhams on ham frequencies. A good noise blanker or a ham radio equipped with DSP may help reduce this noise. Before I

purchased my current home, I walked the property with a portable SW radio receiver tuned to 80 meters, to determine if there was any man-made QRN inherent to the site. I heard no local QRN, so I bought the house.

Oh yes, and then there is QSB, or fading. This is a natural phenomenon, one of the mysteries of radio propagation. Check out my [Radio Fundamentals Homepage](#) for an explanation of how fading works. How QSB works is not difficult to understand. Why it occurs is the mystery. There seems to be at least a little fading present on most shortwave frequencies, particularly at night. The duration and depth of the fades can vary widely. Just another challenge to make your ham radio operating and shortwave radio listening more interesting.

Repeating Info Due to QRM

It is important to ensure that the ham you are in contact with is able to copy at least the three essential items of the QSO: your name/location/RST. So normally in any CW contact these items are repeated twice, "UR RST IS 579 579 BT MY NAME IS JACK JACK" etc. If the band conditions are stinko, three repeats might be in order, of at least the name and RST. For the rest of the contact, in bad QRM, QRN, or QSB, hams have been known to employ one of two other repeating techniques. One would be, "MY MY WX WX IS IS CLOUDY CLOUDY" and the other technique is, "MY WX IS CLOUDY MY WX IS CLOUDY". I normally use the latter. You can tell that the other ham you are in contact with is experiencing QRM if they tell you, if they ask for lots of repeats, if they get your name or callsign wrong, or if they hesitate long seconds before returning to you after you complete a transmission. If the ham you are talking with sends many more repeats than normal, you can assume they are hearing QRM on your signal, and they probably would like you to use many repeats as well. If I believe my signal is being stepped on, I will send the other ham's name more frequently than I normally would, to assure them that at least I can copy **them**. For example, "TNX DAVE BT MY WX IS LOUSY BT DAVE HW IS UR WX? HW COPY DAVE? N1XYZ de WB8FSV K". Even in very heavy QRM folks are more likely to pick out their own name or callsign out of the muck. Occasionally you will work another ham on CW who refuses to copy your callsign correctly. Usually you can correct them by repeating your callsign frequently at the beginning and end of your transmission. Or if that doesn't work, try, "MY CALL IS WB8FSV WB8FSV NOT WD8FSU". Amazingly a few hams on CW will continue to use your incorrect callsign regardless of what you tell them.

Correcting Mistakes in CW

Everyone occasionally makes a mistake while sending their Morse Code. Sometimes your key or keyer seems to have a mind of its own. The most common method to correct a mistake is for the sending station to send a rapid series of dits, like the number five with a few extra dits added. Eight dits is the recommended number of dits, although no one is counting. And to then send the correct CW character or word. This is fine. Personally when I send a mistake **in the middle of a word**, I don't see the need to emphasize it with the rapid dits. I simply pause and then send the correction. The station you are talking with is copying along with you, letter by letter, and

they probably realize as soon as you that you have made a mistake. I feel it is more professional to use a pause rather than the rapid fire dits.

But, if I make a mistake **at the beginning of a word**, the other ham copying along with me has no idea I have made a mistake. So in this case a device is needed to signal that a mistake has been made. I prefer to use a question mark rather than the rapid fire dits. Another CW device you may hear less often to indicate a mistake is "dit-dit", like the CW letter I, sent once or twice after the mistake and before the correction. You will hear some hams use a question mark to signify that they are going to repeat a word, even if they have **not** made a mistake. For example, "MY NAME IS JACK? JACK". This use of a question mark is frequently employed to indicate the repetition of a difficult or unusual word in a CW radiotelegram by CW traffic handlers.

How Long Should the Contact Last?

Talk as long or as short as you like. Most CW contacts on the novice bands seem to last about half an hour or so, which mean that they rarely get beyond the standard name/location/RST/rig/WX/73 stage. That is perfectly OK. I myself like to talk a bit longer. For me, a good CW rag chew generally lasts around an hour, sending and receiving at about 13 wpm. My longest CW contact ever was a 3 1/2 hour marathon, but after the second hour we began trying to stretch it out to see how long we could go! At about 10 wpm (words per minute), a common speed on the novice bands, it can easily take half an hour just to send the name/location/RST/rig/WX/age/73 info. Normal human verbal conversation is around 120 wpm, so a SSB or phone QSO of half an hour would cover a lot more ground than a CW QSO of half an hour at 10 wpm.

How Fast/Slow Should You Send CW?

Normally, adjust your code speed to match that of the other ham you are talking to. This is especially true if you answer another ham's CQ or tailend a conversation. People commonly send a CQ at the speed they would like to be answered. If you answer a person CQing at say, 15 wpm, and you send at 10 wpm, the CQer generally will be polite and slow down to your speed. This does not always happen, so be careful about answering a CQ sent by a CW speed demon. Normally a "PLEASE QRS" (please send slower) sent to the other station will elicit the correct response from them, and they will slow down.

It is easy, especially with an electronic keyer, to send faster than you are able to comfortably receive. Try to match your send speed to that of your receive speed. With practice your speed will improve. Making CW contacts is a great and fun way to increase your code speed. Another tip is to occasionally stretch yourself, try to copy CW at a slightly higher speed than you are comfortable. Do not do this during a QSO you are having when you are under pressure to copy everything correctly. But just listening around the band. Participating in slow speed CW traffic nets is another neat way to help you increase your code speed, and perform a public service at the same time.

You'll discover a wide variety of CW speeds on the novice bands. Most folks go slow, less than 15 wpm, but you will hear hams going over 30 wpm also. They may go fast to show

off, or perhaps there are no more clear frequencies available in the general bands. Some speedy novices and techs may be experienced CW operators, perhaps they were hams years ago and were recently relicensed, or learned CW in the military or merchant marine and just now got into ham radio. Also the 80 meter novice band was moved a few years ago and now includes frequencies used by higher speed CW traffic nets. You will frequently hear them in the early evening between 3675 and 3700 kHz. Many of the hams you encounter on the novice bands will be novices and technician-pluses, but there are a number of general, advanced and extra class hams to be found also. They may feel more comfortable doing CW at slower speeds or they may, like me, simply enjoy working new hams. I have been lucky in my 33 years as a ham to have been the very first contact for over 80 hams now.

How Do You Gracefully End a QSO?

It's no big deal, many hams will just send, "TNX FOR QSO 73" or "GOTTA GO TNX 73" and sign off. That is fine. Myself, I like to leave a bit more politely, such as, "DINNER HR 73", "I GOT A PHONE CALL, CUL", "TIME HR TO QSY TO BED", "MY XYL IS YELLING, TURN OFF THAT RADIO AND DO SOMETHING USEFUL", or "SRI ED MCMAHN IS AT MY DOOR WITH 10 MILLION DOLLARS 73".

There will be times when, after several exchanges, you realize that you just don't want to talk to this person anymore. You could, as I have heard some hams do, just disappear. But I think having a few tactful excuses for leaving to choose from is a good idea.

It is not uncommon that QRM will grow to the point that it is impossible to copy the other station you are in QSO with. Some hams in this case will just give up and stop transmitting. I would recommend instead that you at least send a 73 and sign off properly. Don't leave the other ham wondering what happened to you. On your end you may not hear anything except QRM, but perhaps the other ham you were talking with still copies you fine. Maybe the QRM is one way, skipping over his location. If the QRM or QRN or QSB just destroys a QSO I am involved in, I will send something like, "SRI DAVE NO COPY NO COPY QRM QRM 73 73 N1XYZ de WB8FSV."

Occasionally during a QSO, the station I am talking to simply disappears. Maybe they have rig problems, an important phone call, or the irresistible call of nature. Try not to simply disappear. If another ham vanishes during a contact with me, first I will send a friendly, "DAVE?", and if no answer, then send, "N1XYZ de WB8FSV K" once or twice before I give up. Even then I leave my VFO on the same frequency a few minutes while I fill out my logbook and the QSL card, in case the ham reappears.

A Typical Evening for Me on 40 meters CW Choosing My Band

After turning on my rig, getting comfortable in my chair, opening my logbook, and pulling out my scratchpad, I choose my band. I personally enjoy 80 and 40 meter CW, particularly 40 meters, so I will search between 7100 and 7150 kHz. 80 and 40 meters are noted as good rag chewing bands, as are 160 and 30 meters. Starting at 7100 I slowly turn the dial of my transceiver, stopping at each CW signal I hear. I will listen a

few seconds, long enough to determine if the station is sending a CQ, or is already engaged in a conversation. I am looking for a CQ to answer, the way in which I usually begin a CW contact. Since I am not a novice or technician, I almost feel like an intruder in the novice bands, and would much rather answer than send a CQ here. Although if I am unable to locate an interesting CQ after searching for 15 or 20 minutes, I may go ahead and call my own CQ. Or perhaps search the general CW frequencies, or switch bands, or go watch TV. HI.

Scanning for CQs

A full scan from 7100 to 7150 kHz for CQs might take only a couple minutes, particularly at night when the 40 meter band will be filled with powerful SW broadcast stations, rendering big chunks of the novice band unusable. Activity on 40 meters at night is usually limited to a few small relatively clear areas in between the broadcast stations. For example, now the regions around 7108 and 7137 kHz are often clear most evenings. Several years ago 7125 kHz was always available at night, not now- this is because the SW broadcast stations periodically change their operating frequencies and schedules. A scan of the 40 meter novice band in the daytime may take longer with the absence of the broadcast stations and with more hams. Weekends on 40 meters can get quite busy. In most of the world the 40 meter ham band stretches from 7000 to 7100 kHz, and 7100 to about 7500 kHz is used as a shortwave broadcast band. Only hams in North and South America are able to use the full 7000 to 7300 kHz. And only in the United States is 40 meters divided into different phone and CW segments. Hams in Canada and in South America can use CW or phone anywhere within 7000 to 7300 kHz. This explains why you can hear Spanish speaking SSB phone stations some evenings in the 40 meter novice band. This is a good indication of band conditions, how 40 is often open deep into South America in the evenings. When the band conditions are good, you may even hear European or Asian SSB stations just below 7100 kHz.

Once I discover a CQing station, I first determine if that ham will be able to hear or copy me. If the CQer is relatively weak, chances are they will be unable to copy me. Generally the stronger the station you hear, the greater the chance they will hear you in return. Radio propagation is usually two way. Not always. Sometimes it is fun to call a weak station just to see if your rig can reach them. Perhaps the other ham's signal is weak because they have a less than optimal antenna system, such as a dipole in their attic. Or maybe they are using QRP(low power). After scanning the band for a while and perhaps making a few calls, you will be able to judge the condition of the band. Is the skip long or short? Is the band open to the West Coast, south to Florida, or not at all. Occasionally I will turn on my rig, listen a bit, try to answer a few CQs to no avail, make a few fruitless CQs myself, then give up and go play on the Internet. Particularly true during the last few years with the bottom of the sunspot cycle upon us. The current sunspot cycle, Cycle 23, peaked during Spring 2000 and radio propagation conditions are now slowly declining.

Do I Want to Answer this CQ?

But, let's say I hear a strong CQ. Next I determine if I want to answer this CQ. Since I enjoy working new hams, a ham with a new callsign gets first priority by me. After you are on the air a while, you can pretty well guess how long a ham has

been licensed by just their callsign. Usually. I am attracted by certain types of callsigns. For example a one by two call, like W8TZ, is usually an old timer. They often enjoy rag chewing and are full of fascinating ham stories and experiences. Callsigns that form words intrigue me, such as KA4TON or N3HAM, or callsigns that are similar to mine, like KB9FSW. In 33 years on the ham bands I have worked only five other FSV callsigns: W3FSV, KA1FSV, VE3FSV, WB4FSV, and WA0FSV. I treasure those QSL cards. My wife and I love New England and my ears always perk up when I hear a 1 district callsign. >From Ohio I seem to have a pipeline into New England, meaning I find it quite easy to work New England hams.

Often when I hear a CQ, I will quickly look it up in the Callbook, to discover what city the ham is calling from. Perhaps it is a city or state I have visited or vacationed in, have friends or family in, have a favorite sports team in, in other words have some connection to that we can talk about in our potential QSO. My computer is upstairs and my radio room is downstairs, so I cannot access a CD callsign database. Therefore I use a printed Callbook. Even a Callbook a couple years old helps I believe. It enhances my ham radio operation by allowing me to discover a little more information about a ham before I decide to answer their CQ. Unfortunately 1997 was the last year that printed Callbooks will be available. Too bad, it is the end of an era. Of course after I have completed the contact, and am filling out the QSL(I try to QSL **every** contact), I use a callsign server on the Internet to get the ham's current mailing address.

Not having a printed Callbook or access to a callsign server is perfectly OK. It just means you will wait a few moments longer to discover to whom you are talking. The suspense can be exciting. You can still QSL the other ham by asking them to send you their mailing address over the air, or to send you their card first.

Making a Contact

So now I've decided to answer the CQer and establish a contact. A one by two call should be sufficient on my part. Although if band conditions are lousy, something like a one by three or a two by four might be more appropriate. I have already made sure my rig is tuned up and ready to transmit. Your ham transmitter must be tuned so that there is an impedance match between the transmitter and the antenna, ensuring the best possible transmitted signal. Many modern transceivers include an automatic antenna tuner which makes tuning a breeze. When tuning up your rig do it as quickly as possible so you don't cause unnecessary QRM to others. Even if you use an automatic antenna tuner you are transmitting a weak but audible CW signal over the air. Tuning up without an automatic antenna tuner usually means you are transmitting a very strong carrier over the air. Make it short please. Actually you should be using a dummy load to tune into, so that you are not heard over the air. If you must tune up on the air, try to do so on a clear frequency, or perhaps on top of one of those 40 meter shortwave broadcasting stations. And the CQing station comes back to me. Hooray! It's a KF4 station in North Carolina, a ham I worked about a month ago. The callsigns in this story have been changed to protect the innocent. HI. He doesn't remember me, but his callsign and QTH seem familiar, so I look in my logbook and find him. On the average I make about 20 CW contacts a week, mostly on

40 and 80 meter CW, so I commonly hear and work the same stations more than once. After we exchange the standard name/location/RST, I ask him if he has received my QSL card yet and how many states he has worked so far. He remembers our previous contact. During our first QSO the KF4 had only been on the air for a couple weeks, and at about 10 wpm and with lots of mistakes, the minimal name/location/RST was enough to deal with. Now on our second contact we are able to find out more about each other. Hey neat, he is into computers also. We swap e-mail addresses and I tell him about my homepage. I will e-mail him tomorrow and send him the address of my homepage. Sending http addresses on CW is not easy. I am forever having to explain what a tilde is. My KF4 friend in North Carolina says thanks for the FB QSO but it is almost his bedtime. I send him some of my famous personalized QSO ending lines, and we both sign. Some hams on CW soon develop several of their own personal phrases or expressions to liven up and personalize their QSOs. There are the standard CW phrases that everyone uses such as, "HOPE TO CUAGN, NICE TO MEET U, BEST 73 TO U ES URS". These are perfectly OK, but I like to use some of my own unique CW expressions, "RAIN HR, GREAT STAY INSIDE ES HAM WX or ENJOYED QSOING WID U or HELP QRM ATTACK!". To hear my best ones you will have to work me on the air. QCWA magazine(Quarter Century Wireless Association) regularly prints many of the humorous CW expressions that its members have heard on the air. It is almost my bedtime also, but I would like to squeeze in one more CW contact. So after logging my KF4 contact I begin another band scan for CQs. 40 meters tonight is pretty noisy and filled with three very loud SW broadcast stations, normal. I've been looking now for fifteen minutes after my contact with the KF4 station, and found no CQs. Each time I have scanned across the novice band I noticed the area around 7145 kHz is clear. Perhaps I will call CQ here myself if I can't find any other CQs. But then I do hear a weak CQ from a new ham, a KC2. He is pretty weak, meaning I may well be weak to him as well, but I answer his CQ anyway. There isn't much else going on. Low and behold, he comes back to me. He does not have a very good fist, his CW spacing is way off, he makes a lot of mistakes, and his CW operating technique needs work. But I am still able to copy about 75 percent of what he sends, and make a good guess at the rest. I copy, "THIS S TY FERST QSO". I am his first contact. Infinitely cool. My favorite kind of contact. I live to make first contacts. My new KC2 friend only sends his QTH once, half of which I lose in the QRM, and he forgets to send his name and my RST. Still I believe it was a fairly successful first QSO. The contact took about 45 minutes, mainly since we were working at less than 5 wpm and I sent many repeats of my information. I have a great deal of patience with new hams. After all we were all new hams at one time. Most hams well remember their first contact. My own first contact was at 5:30 pm on Feb 6, 1970 on 15 meter CW with a WB8 station. It was a local ham across town. I had to telephone her to ask her to listen for me on the air. I had been calling CQ for two days with no answers. Later I discovered that a vertical antenna mounted on the roof needs to be grounded. This was news to me. After I put some radials on my vertical I began to get lots of answers to my CQs.

It is getting late and the KC2 and I both sign off. I fill out my logbook and a QSL card for the KC2, including a short letter congratulating him on his first contact. Time now to QSY to bed. I turn off my Kenwood TS 450, and **disconnect the antenna**. The end of a most successful ham radio day. In two evening hours I have renewed acquaintances with an old ham friend and made a new ham friend. What a neat hobby!

Slow Speed CW Traffic Nets

Handling traffic is a time-honored tradition in amateur radio. "Traffic" refers to messages or radio telegrams and "handling" means generating, relaying, and delivering these messages. Since CW was around a couple decades before phone, CW traffic handling dates to the very beginning of radio. Handling traffic, particularly during a disaster such as a hurricane or flood where normal communications are down, is often cited as one of the main justifications for the continued existence of amateur radio and our occupation of all of our valuable radio spectrum. The public's impression of the usefulness of ham radio is often reflected in the vital public service we perform during emergencies and public events.

Thousands of US and Canadian hams meet daily in nets to send and receive much of this traffic. A number of CW traffic nets operate in the novice bands, usually 80 meters. They purposely operate at a slow speed so as to encourage the participation of new hams. Many of these nets are primarily intended to be training nets in the proper techniques of handling CW traffic. It's really quite easy to do traffic handling. These slow speed CW traffic nets provide an excellent opportunity for you to increase your code speed. And perform a public service, give a little back to amateur radio, at the same time. Should there ever be a natural disaster, such as a tornado or major flood, in your area, knowing how to send and receive emergency messages is an important skill. An asset for you, for your community, and for amateur radio. Not every state has a slow speed CW traffic net, but you can probably find one in a nearby state that will welcome you. I learned my traffic handling on OSN, the Ohio Slow Net, that meets daily at 6:10 pm local time on 3708 kHz. I have been a net control station on this and other traffic nets, and I am now the Ohio Section Traffic Manager. Just look around 80 meters CW in the early evenings for a group of hams using the QN_ signals found on traffic nets. Or contact the [ARRL](#) (American Radio Relay League) for information on these slow speed CW and other traffic nets.

The [Central Ohio Traffic Net\(COTN\)](#) is the local 2 meter FM traffic net that I frequent. And here is the [ARRL Great Lakes Division homepage](#). You can find me in there someplace.

Straight Key, Electronic Key, Bug, or Computer Keyboard?

There are basically four types of devices used by most hams to send Morse Code. The straight key, also called the hand key, as well as the electronic keyer, the bug, and the computer keyboard. My favorite is the straight key, which I use 90 percent of the time. The straight key is more natural, more organic, and so is the resulting code. Learning to use a straight key well is not easy, it takes a great deal of practice. Pounding brass well with a straight key is an art. I am far more impressed when I hear an excellent "fist" on a straight key than I am with near perfect code sent with an electronic keyer.

I own two electronic keyers which I use mainly when I want to send faster speed CW. 15 wpm is about the top speed you can send intelligible code with a straight key. Although I have heard hams send good CW at 20 to 25 wpm with a straight key- it amazes me they can send that fast. Learning to use an electronic keyer, while it takes practice too, is easier than learning to use a straight key well. Once you have mastered the electronic keyer, using it can be a real pleasure. To effortlessly and gently squeeze those two paddles and produce near perfect code is one of the great joys of CW. I still prefer the organic/natural sound of a straight key fist to the mechanical sound of an electronic keyer. Hams using a straight key have a fist with personality. On an electronic keyer your fist sounds like everyone else's. Usually. Some new hams have difficulty sending with a keyer. I believe learning to send CW first on a straight key before switching to an electronic keyer is a wise method.

Speaking of personality, that to me is the biggest advantage to using a bug. Although a bug also produces code mechanically, the operator has complete control of the length of their dahs. This gives the ham the ability to send with their own distinctive fist, or "swing". Unfortunately, learning to send well with a bug takes years of practice, and a bug is notoriously difficult to adjust. Using a bug well is a challenge, almost like playing a musical instrument. After practicing on my own bug for five years, I developed a passable fist, until last year when my cat knocked my bug off my desk onto the floor. It hasn't sounded right since then. I hope my cat Rasta is not a no-code cat. After listening to CW stations for a few years, identifying the distinctive "swing" of a bug user is easy. When you hear someone sending good code with a bug, you are listening to a CW Master, a highly trained expert who has honed their CW skills through years of patient determined experience. In the hands of such a CW Master, a bug is capable of producing beautiful enchanting Morse Code. A quick word about sending CW with a computer keyboard. Some Morse Code challenged hams use this method to generate and send CW. But for the most part I don't like computer generated and decoded CW. For me, using a keyboard is not "real" CW. Even worse is to use a Morse Code reader that decodes and prints out the code for you. A traditional amateur radio operator sends and receives CW using their own senses and faculties. I find computer generated and decoded CW too mechanical and impersonal. But at least it is CW.

FISTS - A Cool Club for CW Operators

There is an international organization dedicated to promotion of the use of CW in the ham bands. This group or club of hams is called [FISTS](#), and is also known as the International Morse Preservation Society. I have had great fun since I recently joined FISTS. At times it is difficult to find another ham to talk with on CW. The FISTS club promotes several ham radio frequencies, those for example ending in 58: 14058, 7058, or 3558 kHz, as places to find other FISTS members to rag chew with. Another aim of FISTS is to encourage friendship within the club membership, which they do in part with these CW calling frequencies. I love to rag chew on CW and it is great knowing where to find others with the same interests. They also offer several awards for working 100 members and for working at least one member in each of the

50 United States. There are over 9000 FISTS members now, but finding one in each of the 50 US states is quite an undertaking. Very few hams have achieved this award so far. Not long ago I worked my 100th FISTS member and qualified for my Century Award. Cool. Took me seven months. As much fun as working new FISTS members and adding to your total, is running into folks you have already worked and deepening friendships. After a couple QSOs you learn each others' names without having to look them up in your log. Of course you do not need to be a FISTS member to do this, but FISTS folks seem to me to be friendlier and more likely to rag chew. FISTS also has its own excellent QSL bureau.

Neat FISTS Story - I was lucky to have been able to attend the 1998 Dayton Hamvention, May 15-17. Actually since I only live 72 miles from Hara Arena in Dayton where the Hamvention is held, I have attended every year for nearly 24 years now. I know how fortunate I am. This year I made it a point to attend the FISTS party Friday evening, hoping to put faces to some familiar calls. There I met Geo, G3ZQS, the founder of the FISTS organization, FISTS number 01. He came all the way from England to the Dayton Hamvention and to meet FISTS members. Neato. I drove home later that evening, and, still full of radio enthusiasm, I got on the 7058 FISTS frequency about 10 pm. After one FISTS QSO I heard a weak CQ FISTS and discovered it was Geo, operating as W8/G3ZQS. Using a friend's rig Geo was operating from his hotel room with a whip antenna on a truck bumper. It was quite a thrill to finally work Geo on the air, particularly since I had just had an eyeball QSO with him. A mini FISTS pileup on Geo thereby ensued.

How to Get Zillions of QSLs

My second favorite ham activity, after rag chewing, is collecting QSL cards. Guess it's because I love to collect stuff. I average one or two QSLs in my mailbox every day. One important secret to successful QSLing, at least among US hams(not DX), is to send your QSL card out first. If you wait for the other folks you work to send you their cards first, you can expect to receive at best one QSL for every ten contacts you make. One out of 20 is more likely. I try to QSL every single contact I make. I realize that can get expensive postage wise, but to me it is worth it.

Another important secret to QSLing is, I believe, to personalize your QSL card. Be sure to put a note from you on the QSL, with as much personal information as space permits, about what you discussed in your contact. My own QSL card contains all the required information just on the front of the card, leaving the back free for me to fill up with my personal notes to the other ham. My own QSL cards are homemade. [Here is my QSL card.](#) I drew the picture on the front, and I print them on the copier at my workplace(don't tell my boss). This further personalizes my cards. I always mail my QSL inside of an envelope, thus ensuring my card arrives relatively unfolded, smudged or otherwise mutilated. I think folks appreciate a QSL in undamaged condition, and I seem to get more returns that way. Again the postage costs more for an envelope, but that is the reason I go to work every day. To make money to pay the electric bill so that I can ham, and so that I can pay all that postage. HI.

Finally, if there is a ham station from which you really need or want a QSL card, such as in Vermont or Hawaii, I would

include a first class postage stamp with the QSL inside the envelope. Thus the other ham has one less reason not to return his or her QSL to you. An SASE(self-addressed stamped envelope) sent to the other ham is also a good idea, saving them the trouble of writing out your address. I myself do not usually send an SASE, because hams occasionally have oversized QSL cards that may not fit inside the SASE envelope you send them. Hams who live in rare states like Wyoming I'm sure are overwhelmed by QSL requests, and sending them return postage or an SASE increases your chances for their card. A connection to the Internet and a callsign server is an asset. An up to date address to which to send your QSL is a must.

Some hams who live in a small town regularly give the name of their QTH as that of a nearby larger city so that other hams will know where they are located. Not a good idea. Be proud of your own small town. If the QTH you give over the air does not match your mailing address(the address in the Callbook or callsign server), you may confuse hams when they later try to mail you their QSL card. They may decide not to send you their card.

Keeping accurate records of to whom you have sent, and from whom you have received QSL cards is important. Your logbook is a convenient place to do this. Sometimes I receive two QSLs from a ham for the same contact. They first mailed their card to me. But when they later received my QSL they could not remember, or had poor records, of whether they had sent me their card. So they mailed me a second card to be sure. I suggest filling out the QSL card that you intend to mail very soon after you make the contact. The QSO will still be fresh in your mind so that you are better able to write personal comments on the card, and so that you are more inclined to fill out and mail the QSL. Don't wait until you have a large stack of cards to send. QSLing then becomes more of a chore than a pleasure, and less likely to get done.

When you first begin to receive QSL cards, it is fun to display them up on your wall, in those clear plastic containers commonly available. After you have received a large number of QSLs, it becomes necessary to store them in a convenient place. Convenient because you well may wish to look up an old QSL card months later if you work the station again.

Finding an old friend's QSL while you are QSOing them can enhance the contact. I keep my QSL cards in shoeboxes. I have filled six shoeboxes now. For quick easy access I keep the cards organized by US call districts 1, 2, 3, etc., and then by callsign type, KA1s, KB1s, N1s, WA1s, WB1s, K1s, W1s, etc. This is the next best method for keeping your cards organized and findable, short of keeping a computer log.

I feel my QSLing methods are fairly successful. I get about a 75 percent return rate on the QSL cards that I send out. New hams generally QSL better than more experienced hams. CW operators generally QSL better than phone operators.



ARES Contact Information

Heather Hasper, KL7SP
KL7SP@AARL.NET
Pager: 907-275-7474

Additional information on ARES can be found at the following URL:

<http://www.qsl.net/aresalaska/>

NOTES from the ARES Alaska SEC

I am including excerpts from the ARES E-Letter which just came today. It is good reading for anyone who is interested in emergency communications and for amateurs in general. Our licensing includes the duty of emergency communications for our communities and states. It is important that we keep up our skills as communicators. Just because you have a license doesn't mean that you can be an effective operator during an emergency. All the rules have changed since 911. If we are to change the perception of the agencies we serve as amateurs being old fashioned folks using boat anchors for radios, then we need to keep up our skills and our equipment.

The equipment we use now is on par with anything available to the agencies that we serve and we need to convey that message.

+ Holiday Message from the Alabama Section Manager

During our nation's unprecedented hurricane relief efforts, Amateur Radio and the ARRL stepped up and delivered a vital public service. For 37 days, more than 200 radio amateurs from 35 states and Canada deployed to the field through the American Red Cross processing center in Montgomery, Alabama.

The storm surge damaged infrastructure, left people homeless, and knocked out power, sealing off communications. But as Katrina subsided, another massive surge took its place: the immense and sustained recovery activity of the Amateur Radio community to assist impacted people and relief agencies.

Amateurs of all kinds voluntarily deployed to Mississippi counties, communities and towns to set up stations at kitchens, shelters and operations centers. They provided critical communications, passing hundreds of messages in and around the devastated region. Amateurs selflessly served in many capacities, working long hours, living in terrible conditions, contending with heat, bugs, ants, and worse.

The Montgomery operation supplied amateurs to The Salvation Army, American Red Cross, church and religious organizations, emergency management agencies and emergency operations centers.

Echolink *QRP* conference: Every Sunday at 5PM ADT. Connect to the QRP Conference.

My experiences affirmed that radio amateurs are much more than hobbyists. They created interoperable emergency communication systems where there were none and saved lives as a result. Moreover, they brought the love of a hobby, and a variety of communications, contesting, training, and public service skills. Most of all, they applied the amateur "can do" spirit.

It was a pleasure meeting hundreds of these amateurs. My appreciation and admiration extends to all Amateur Radio operators who served in this massive effort. --73, Greg Sarratt, W4OZK, ARRL Alabama Section Manager

+ The View from Flagler County

Our little county is purchasing a new \$10 million 800 MHz trunking system for dispatching emergency personnel and maintaining communication with the state EOC in the event of a major disaster. I saw the news item, and immediately thought of the report we published in this newsletter a few months ago: "The 800 MHz and other trunked systems commonly used by local and state agencies were the first to go in the hard hit areas of Katrina. In many cases, we found police and fire units dispatching from a car or HT. Even after two weeks, we still had radio amateurs handling all of the EOC and public safety communications in a number of counties and parishes on the coast."

It occurred to me that Flagler's new system may offer county ARES operators continued job security.

I wish each of you a Blessed Christmas and challenge you to build up your training and skills as an emergency communications operator.

Linda Mullen
AD4BL SEC ALASKA
ad4bl@arrl.net



From: John Raynsford
<al7jk@yahoo.com>

We do **CW over the internet** when propagation is lousy.

<http://www.mrx.com.au/>

Yeah, it ain't radio, but we still get to pound the straight key ... you can see who's "online" at:

<http://morsecode.dyndns.org/>

73 & Seasons Greetings ...

AL7JK, John



QST QST QST
Iditarod

I am in dire need to fill a few Ham positions at HQ, START, EAGLE RIVER, AND WASILLA for this year's Iditarod.
Mar 6, 1800-2400
Mar 7, 1800-2400

I try to have 2 people on all shifts but some of these shifts I have no volunteers at this time.

START Gordon Hartlieb AL1W is needing 35 volunteers for the Start

EAGLE RIVER John Murray NL7WW needs 3 Hams for Eagle River

RESTART Jim Brutan KL7HJ needs 35 Hams for the Re-start in Wasilla.

Mark
KL7TQ
694-3722
KL7TQ@ARRL.NET

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MODIFIED VHF/UHF RIGS
by **GlenZook K9STH**
Used with **Permission**
(10/01/05)

Unfortunately too many people are using modified amateur radio equipment on commercial two-way frequencies for which type accepted equipment is required. This is blatantly illegal and can result in severe penalties including fines (up to \$11,000 per day per radio), having the equipment confiscated, being imprisoned (means go to jail), and if the person caught

using the equipment has an amateur radio operator's license they can lose their license and NOT be allowed to ever get one again. Also, in certain cases, the agency (company, person, etc.) who holds the station license under which the modified equipment has been used can lose their station license, be fined, etc.

The City of Philadelphia Fire Department decided to save a "little" money several years ago by purchasing amateur radio equipment instead of the commercial, type-accepted, equipment. Since they were a "big city" public safety department they "thought" the FCC wouldn't do anything. Wrong! The city got a VERY large fine and had to purchase type-accepted equipment at a considerably greater amount of money (as well as having to "eat" the cost of the amateur radio equipment).

Amateur radio equipment does not meet the technical specifications of type accepted equipment. Even if it did, the ability to "dial up" the frequency from the "front panel" makes the equipment not acceptable for commercial use.

The FCC has been "cracking down" on such illegal use for some time. Frankly, I value my amateur radio operator's license way too much to take a chance on losing it. However, there are definitely amateur radio operators who don't really care about obeying the rules and who do not value their licenses that much.

It is perfectly legal to modify the equipment. It is perfectly legal to use the equipment to receive commercial frequencies (except for cellular telephone frequencies). However, it is definitely ILLEGAL to transmit using this modified equipment on any frequency that requires type acceptance.

Some amateurs say that they modify their equipment "just in case" it is needed in an emergency. It is true that for a "life and death" situation that you can transmit using modified equipment provided that there is NO other means of communications possible. This includes land line telephone, cellular telephone, commercial two-way radio, Class "D" Citizen's Radio Service Radio, GMRS, MURS, FRS, and amateur radio. Frankly, the possibility of this happening is VERY remote.

Even if the person believes that the situation requires the use of modified equipment they are still liable for some very severe penalties issued by local and state governments.

Remember that not only the frequency of the public safety organization has to be known but also the CTCSS tone, digital tone, etc. Also, many public safety organizations have gone to trunking systems which amateur radio equipment is not compatible.

What constitutes a true emergency has a very narrow definition. Just because you see a drunk driver on the road does NOT give you permission to transmit using modified equipment. If you come across an accident in which someone is not badly injured this does NOT give you permission to transmit using modified equipment. And so on.

Frankly, the first line of communications these days is going to be cellular telephones. Agreed that there are certain areas that still do not have coverage. But, in general, if cellular telephones don't work neither are most other r.f. communications systems.

Now, for those people (like volunteer firefighters) who want amateur and commercial frequencies in a single radio: It is perfectly legal to take a type accepted radio (Motorola, Uniden, etc.) and program both amateur and commercial frequencies into the unit. This way a type-accepted unit is being used where type-acceptance is required. Remember that type-acceptance is not applied to amateur equipment. Certain linear amplifiers have to be "certified" but no other amateur transmitting equipment has to be "approved" by the FCC.

VHF receivers do have to be certified as meeting 47 CFR Part 15 specifications for incidental radiation. But, this has nothing to do with type-acceptance of transmitters.

Glen, K9STH

++++
Greg Milnes W7OZ SK

Jim
I just read this. Please help me forward this.
David Stevens KL7EB AK SM

Sent: Saturday, December 17, 2005 3:31 PM
Subject: Greg Milnes W7OZ SK

I just learned that ARRL Northwestern Division Director Greg Milnes passed away this morning about 11AM.

73 Jim K9JF

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ARRL's Role In Rescue Offers Lessons For Future

Electronic Design
October 13, 2005
Mark David

Investigations into the communications breakdowns in our national emergency response systems continue. Yet I'm struck by the contrast between the hue and cry for upgraded infrastructure solutions and the much quieter revelation that old-school ham radio provided the only trustworthy communication during Hurricane Katrina.

New Orleans emergency departments' radios were wiped out when broadcast towers lost backup power generators. Police and fire departments only had citizen-band radios, offering inadequate bandwidth. Emergency responders lacked coordinated frequencies.

The National Guard cited antiquated communications technology-as a contributor to its delayed response. Lt. Gen. Steven Blum told USA Today that there was a shortage of high-tech radios and satellite communications gear. "We were under equipped," Blum told USA Today. "We don't need tanks and attack helicopters... but we must have state-of-the-art radios and communications."

The Guard has historically gotten "hand-me-down" equipment from active-duty military. It now uses "Vietnam-era radios while it needs 37,000 newer radios," according to Guard budget briefings.

Meanwhile, ham radio operators proved that older technology can be the most reliable technology. Our EDA Editor (and ham) David Maliniak wrote an online column on the subject, pointing out that sometimes "old works when new doesn't." During and after Katrina, hams running on generators (sometimes with makeshift antennas) worked throughout the hurricane zone to put emergency stations on the air. They guided rescuers to stranded victims and updated weather services via the Hurricane Watch Net.

Amateur radio was the primary means of contact with the outside world for many shelters. It's estimated that some 1000 amateur radio volunteers helped serve the hurricane-ravaged communities and shelters, even providing communications for the Red Cross.

Still, the real lesson of the ham radio successes isn't that old sometimes trumps new. Upgraded, reliable hardware is vital for adequate emergency response. Amateur radio has continued to upgrade too. Hams use satellites, digital systems, cross-band repeaters, and more. As the American Radio Relay League (ARRL) puts it, the Morse code key may still be on the desk, but generally it's next to a modern system operable under extreme emergency conditions.

DISTRIBUTED NETWORKS

Katrina taught two key lessons. First, the Amateur Radio Emergency Service (ARES) organization proved effective because hams don't depend on a centralized infrastructure. When cell towers, phone switching centers, or other central communications networks are down, hams aren't. Many operators have their own generators and are ready to fire them up to get on the air when there's no power. National disaster response plans must assume that the centralized communications infrastructure likely will be crippled, so the emergency system must include a distributed or "mesh" networking scheme.

Second, ARRL succeeded because operators subscribe to a mission that comes with their licenses—to be ready to provide emergency communications whenever and wherever they're needed. ARES has a well-conceived action plan coordinated through the Radio Amateur Civil Emergency Service (RACES). ARES is part of the ARRL, and RACES is coordinated through the Federal Emergency Management Agency (FEMA). But like the broadcast system, the emergency plan is decentralized. Radio operators can work

independently to serve their community as circumstances require.

A decentralized emergency plan requires deputized people who truly understand and care about their responsibilities. The best emergency response relies on distributed manpower, with first responders empowered to make decisions at the scene of the crisis.

It doesn't take a federal investigation to realize that the government's emergency-response debacle was caused by centralizing the decision-making with politically appointed bureaucrats who didn't have a personal mission or a true sense of ownership in ensuring preparedness. The fiasco with now-deposed FEMA leader Michael Brown exemplifies the folly of appointments based on cronyism, rather than the recruitment of people who have a passion, understanding, and commitment for the responsibilities they shoulder.

In this issue's cover story, Ron Schneiderman looks at government programs and the new technologies tackling our homeland security problems. But will the right people get those technologies? Too often, homeland security appointments and dollars are doled out according to political favoritism. As we saw in the recent emergency response, technologies are only effective when managed by people—like the hams—who take their responsibilities to heart.

Hats off to all of you who care about the quality of the security and emergency communications technologies you're engineering. Let's hope they end up controlled by people who care just as much.



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Concerns about intruders Doug Dickinson, KL7IKX

Recently I had the need to purchase some 'undercover video equipment', in several of the catalogs I was browsing in I came across what I consider to be a very real problem for amateur radio operators.

A consumer can purchase video equipment in several different bands.

Band 1 is the 424-434 region of the AMATEUR BAND!
Band 2 is the 900 MHz with portions in the AMATEUR PORTION OF THE BAND!
Band 3 is the 1.2 GHz AMATEUR BAND!
Band 4 is the 2.4 GHz region, including portions of the AMATEUR BAND!
Band 5 is the 5.8 GHz region, Type 15, and Part 90 requirements.

Mode of operation is mostly AM in the 424-434 portion of the band, with some FM gear sold, the rest of the bands are all FM in modulation.

PRICES vary according to the band, and type of equipment, with the low range being unlicensed part 15 devices in the 434

MHz portion of the band starting at \$~70.00, moving up through and then up to and through systems in the 5.8 GHz portion that sell for \$~2400.00

The companies that sell this stuff point out, usually in fine print, that while it's legal to sell amateur radio equipment to anyone, YOU really 'should have' an amateur license to operate the equipment, and that 'commercial use' is not allowed under an amateur license.

Now remember that budgets for security are tight in most departments and agencies, and then have one of these catalogs show up, pushing the long range of bands 1,3,4,and 5, and in very fine print mentioning that a amateur license is needed.

It's not surprising in the least to hear of incursions into the amateur band by these devices along with many other 'part 15 devices' for measuring outdoor weather conditions, intrusion sensors and a multitude of other 'low power' devices.

The bad thing about all of this is that the part 15 devices generally can occupy the band and there's not much we as amateurs can do about them. I realize that part 15 says that the part 15 user must suffer without recourse any interference to their equipment and must not cause interference to licensed systems. But how the heck do you tell the local cop shop that their video surveillance system is locking up your 'amateur' repeater, and they are going to have to stop the use of their 'new surveillance equipment', and go out and buy something else that costs three to five times more money, and doesn't have the range of the equipment they now have. Or worse what if you turn on your ATV gear and find yourself accidentally tuning in a undercover operation. And how do you explain to the guy in the SWAT gear standing on your doorstep that your 'legal' to operate and their NOT!

Already here in Anchorage, we've had one 'near miss' with the nation-wide coordinated output of 421.250 MHz, the ATV repeater on the air several years ago, even though the lower sideband was suppressed over 100 db by cavities and filters was locking up a military communications system in the 418-420 MHz portion of the band. The Military was under the impression the interference was intentional jamming, and were all set to take military measures to make it go away...if they could just find it, the local FCC was contacted, they called, and I pointed out the legal operations of the repeater, the sideband was measured, and it was indeed better than -100 db below the carrier, well within FCC tolerance guidelines, however... line of site less than 15 miles away was the military installation, and they were absolutely locked up when the ATV transmitter came on. So being good citizens that all amateurs are expected to be, we moved the output to 424.25 MHz, which stopped the interference to the military. That was licensed service to licensed agency, what about 'unlicensed' service to licensed service, what about the creepy peepy undercover operations that have already sprung up, and more are likely to follow!

Bottom line, if your getting broadband interference between 420-440, AM or FM modulation, it's quite possible that your being interfered with by a 'surveillance system', if it's narrow band and very weak, it's more than likely a part 15 device for weather or other monitoring conditions. In all case's

remember we're the licensed users of the band, along with sharing it with the Federal Government radio location service, the Federal governments radio location devices have priority, and we're secondary users. So while we can't complain about licensed and legal Federal Government interference, we can and must guard against unlicensed users of amateur wideband video equipment, even if it's a Federal Government agency. The very last thing a Federal user is going to want to know is that his/her 'undercover' camera is 'on the air' to the average person.

Doug Dickinson - KL7IKX
kl7ikx@yahoo.com

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The AARC VHF / UHF Committee is currently responsible for maintenance and continued operation of the following systems. (de KL7IKX)

- KL7AA -146.34/94 Repeater - located at the McCaw site near Flat Top Mtn
- KL7AA/L1 -146.34/UHF remote receiver - located at CAP Hdqtrs on EAFB.
- KL7AA/L2 -146.34/UHF remote receiver - located at NL7NN'S parents QTH in West Anchorage.
- KL7AA - 223.34 /224.94 Repeater - co-located with the 146.94 repeater.
- KL7AA - 449.70 / 444.70 Repeater - co-located with the 146.94 repeater.
- KL7AA-1 - (ANC) Node- located at the Alascom Rabbit Creek site.
- KL7AA-3 - (#HFLNK) - BACKBONE NODE link to HF network. / (primary link) - located on CTF
- KL7AA-4 - (#AKLNK) - FULL DUPLEX NODE link to HF network / (secondary link) located on Birch Road.
- KL7AA-5 - (#LNK) - FULL DUPLEX NODE LINK TO HF NETWORK (secondary link) - located on Birch road
- KL7AA-7/- 8 ANCBBS (AARC) - The Club Packet Bulletin Board service. 7=BBS / 8=NODE Located at ARCO (BP) building.
- KL7AA-9 - Control receiver / digipeater for the KL7AA repeater network. (tone and selected user protected)
- KL7AA-10 - (HF80) NODE at BLM HF site (3.605 MHz) 110w PEP LSB. * note 300 baud service *
- KL7AA-12 - (#9600B) Packet NODE to BBS [CLOSED NETWORK - PACKET LINK] - located on Birch Road

In addition the following are part of the S.Central Packet network and are maintained with the above packet equipment.
KL7IKX-3 - (#EMLNK) 147.9600 Node - Birch road.
KL7IKX-4 - (DD) 445.050 Node - located on Birch Rd
KL7IKX-10 - (DPD) 145.05 Node - located Birch Road

Just a reminder a Packet Node is a full service packet switch with IP address support, and can be used in most case's as a digipeater. Nodes support the roundtable 'talk' command, allowing multiple users to join together on a net. A digipeater is only a relay system.



Data You Can Use:

Officers

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Vice Pres. Judi Ramage, WL7DX vicepresident@kl7aa.net
Secretary Vacant
secretary@kl7aa.net
Treasurer Heather Hasper, KL7SP treasurer@kl7aa.net
Trustee Keith Clark, KL7MM trustee@kl7aa.net
Activities Chairman Vacant
News Letter Editor Jim Larsen, AL7FS
Membership Chairman Fred Erickson KL7FE
membership@kl7aa.net
Past-Pres. Jim Larsen, AL7FS pastpresident@kl7aa.net

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Richard Block, KL7RLB, rblock@arctic.net
Frank Pratt, KL7RX kl7rx@arrl.net

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AARC web page & Email contact addresses:

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President: president@kl7aa.net
Vice President: vicepresident@kl7aa.net
Membership: membership@kl7aa.net
Newsletter: editor@kl7aa.net

News Letter Submissions, Information or corrections:

Submissions must be received 2 weeks before meeting
Email: editor@kl7aa.net
Mail: 3445 Spinnaker Drive, Anchorage 99516

Nets in Alaska:

The following nets are active in South-central Alaska:
Alaska Sniper's Net 3.920 MHz 6:00 PM daily
Alaska Bush Net 7.093 MHz 8:00 PM daily
Alaska Motley Net 3.933 MHz 9:00 PM daily
Alaska Pacific Net 14.292 MHz 8:00 AM M-F
ACWN (Alaska CW Net) 3534, 7042 Daily @ 0700 –
1000, and 1900 - 2400 Alaska Time - AL7N or KL5T
monitoring.

Net Purpose: Formal NTS traffic via CW.

No Name Net 146.85/.25 repeater Sundays 8:00 PM
Grandson of SSB Net 144.20 USB Mondays 8:00 PM local
Big City Simplex Net 146.520, 446.0, & 52.525 FM
With Packet 145.01 Tuesdays 8:00 PM local
ARES net 147.27/87 103.5Hz - Thursdays at 8:00 PM local
PARKA net 147.30/90 Thursdays at 7:00 PM local
ERC VHF Net 147.27/87 103.5Hz – Sunday 7:30 PM local
ERC HF Net 3.880 MHz – Sunday 8:30PM local

Any AARC sponsored repeater, with or without an auto-patch, will always be open to all licensed amateur radio operators in the area who are authorized to operate on those frequencies.

Anchorage & Mat Valley Area Repeaters-a/o Mar05

KL7AA systems at Flattop Mt., 2,200 ft
146.94/34 MHz, 80 watts, autopatch, 141.3 Hz PL (problems)
224.94/223.34, 25 watts, no patch, no PL
444.70/449.70, 25 watts, autopatch, 141.3 PL
****147.27/87 MHz, no patch, Mount Susitna 103.5 Hz**
****443.3/448.3, no patch, Mount Susitna 103.5 Hz**
KL7CC, Anchorage Hillside, SCRC & QCWA
146.97/.37 MHz, 30 watts, autopatch, 103.5 Hz PL
KL7M Anchorage Hillside
147.21/.81 MHz, on IRLP, 97.4 Hz PL
KL7ION at Mt. Gordon Lyon, PARKA 3,940 ft
147.30/90, MHz - 80 watts, no patch, 141.3 Hz PL
KL7AIR Elmendorf AFB, EARS
146.67/.07, 107.2 Hz PL
KL7JFU, KGB road, MARA club
146.85/.25, autopatch, no PL
Palmer IRLP
146.64/.04, simplex patch, no PL
Mile 58.3 Parks Highway IRLP
147.09/.69 MHz, 97.4 Hz PL
KL3K, Girdwood - IRLP
146.76/16 MHz, 25 watts, no patch, 97.4 Hz PL
South Anchorage IRLP
146.79/19 MHz, 100 Hz PL
Anchorage IRLP – KB8JXX
146.82/22 tone unknown
South Central Area Simplex Frequencies
146.52 MHz Calling and Emergency frequency
147.57 / 447.57 (crossband linked) HF spotters & chat, 103.5 HZ PL
146.49 MHz Anchorage area simplex chat
146.43 MHz Mat Valley simplex chat
147.42 MHz Peninsula simplex chat
146.58 MHz Simplex IRLP - Wasilla Lake

VE Testing in the Valley

Valley VE testing sessions will be held at the Wasilla Red Cross at 7 pm on the fourth Saturday of each month unless it is a major holiday weekend. Wasilla Red Cross is in the Westside Mall, next to Speedy Glass...it's just a click up from AIH hardware

Internet Links, the favorites from our readers:

QRP and Hombrew Links <http://www.AL7FS.us>

AARC <http://www.KL7AA.net/>

SCRC <http://www.KL7G.org>

EARS <http://www.qsl.net/kl7air>

MARA <http://www.kl7jfu.com/>

Moose Horn ARC <http://www.alaksa.net/~kl7fg>

ARES <http://www.qsl.net/aresalaska>

Practice Exams : <http://www.AA9PW.com/>

Fairbanks AARC: <http://www.kl7kc.com/>

Yukon Amateur Radio Association:

<http://www.klondike.com/yara/index.html>

Links for Homebrewers & QRPers

<http://www.amqrp.org/misc/links.html>

Solar Terrestrial Activity <http://209.130.27.95/solar/>

ARRL <http://www.arrl.org/>

Propagation Report Recording 566-1819

Please let us know if there are other clubs pages or good starting points that should appear here. Report dead links or bad info to editor@kl7aa.net.

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NEWSLETTER ARTICLES; All articles from members and interested persons are very welcome. If you wish to submit any articles, jokes, cartoons, please have it typed or neatly handwritten. It can be submitted by mail, computer disk or E-mail to the newsletter editor at the address listed above. Submissions must be in the hands of the editor **no later than the 10 days prior** to the meeting or it may not be included.

Regular HAM Gatherings:

Alaska QRP Club, Third Friday - 7:00 PM: Hams with QRP (low power under 5 watts) and Homebrewing interests meet for a social meeting monthly. Meet at Denny's on DeBarr & Bragaw in the back room. Hungry QRPers start showing up about 6PM. Info contact Jim Larsen, AL7FS, JimLarsen2002@alaska.net or 345-3190.

Thursdays Brunch, 10:00 AM: Brunch NW corner of Debarr and Bragaw. A great bunch of folks attend this one.

Saturdays Breakfast, 7:30 AM: Here is a good way to get started on the weekend. Come and meet with some of the locals and have a great breakfast at Phillips Restaurant, at the corner of Arctic and International. Great Fun.

THIS MONTH'S EVENTS

1st Friday each month - AARC general meeting - 7:00 PM in the Carr-Gottstein Building, on the APU Campus. Talk in will be on 147.30+ repeater.

1st Tuesday each month: VE License Exam 6:30 PM, at the Hope Cottage offices, 540 W International. Bring photo ID, copy of license (if any) and any certificates of completion.

1st Tuesday each month: EARS general meeting - 6:30PM in the club house/shack in the basement of Denali Hall (building 31-270) on Elmendorf AFB. Talk in on 147.67-repeater.

2nd Friday each month: SCRC general meeting at 7:00 PM at Denny's on Debarr & Bragaw. Talk in on 147.57 simplex.

2nd Saturday each month: VE License Exams at 2:00 PM. at Hope Cottage 540 W. International. Be sure to bring photo ID, copy of license (if any) and any certificates of completion.

2nd Saturday each month: PARKA Meeting at 11:00 AM. at Peggy's, across from Merrill Field.

3rd Tuesday each month: AARC Board meeting at 7:00 PM at Hope Cottage 540 W. International. All are invited and encouraged to attend.

3rd Friday each month: Alaska QRP Club. 7:00PM at Denny's on DeBarr in the back room. Info: Jim Larsen, 345-3190. Bring projects to share with the group. Some show up at 6:00PM to eat.

3rd Saturday each month: ARES General meeting 9:30AM to 12:00 PM. Call TJ Sheffield - KL7TS: kl7ts@arrl.net HM: 248-3864 for additional information. Also check for ARES Info at: <http://www.qsl.net/aresalaska/>

The last Friday each month: MARA meeting at 7PM Fire Station 61, located two blocks up Lucille Drive, from the Parks hwy. Talk-in help for the meeting can be acquired on either the 146.640 or 146.850 repeaters. Further details can be found by contacting Len Betts, KL7LB, lclbak@yahoo.com.

Who Do I Contact to Join AARC Or pay membership renewals?

Fred Erickson KL7FE

12531 Alpine Dr

Anchorage, AK 99516-3121

frederickson (at) iname.com

Phone number: 345-2181

Annual Dues are \$12 (prorated as appropriate)

Additional Member in same household is \$6.

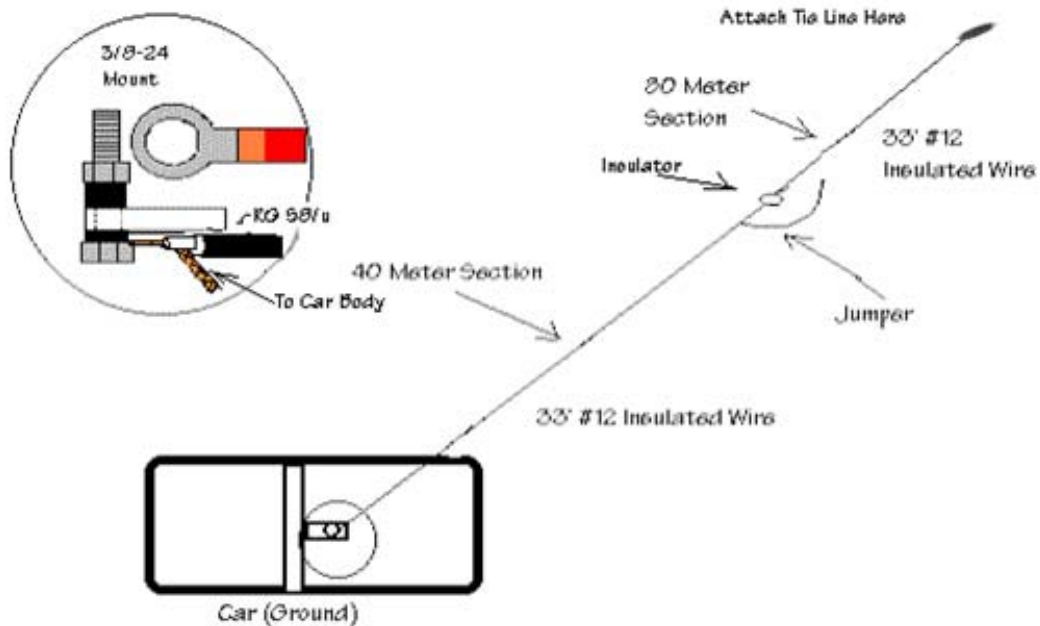
Full Time Student is no charge.

Ask about Life Memberships.

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**Please check your label. All annual dues expire in December.
Please renew as soon as possible.**



NVIS Roadside Antenna

Drawing by KC7REK