

Anchorage Amateur Radio Club

Next Meeting November 2nd 2007, 7:00 PM



NOVEMBER PROGRAM:

John Lynn, KL7CY

With winter setting in and the fires in southern California it is a great time to re-assess **ARE YOU READY** for an emergency that would cause you to evacuate your home? What if you were not at home and you were at work? Do you have the resources needed to survive as well as be prepared to assist if needed?

Do you know where the evacuation point is for your neighborhood?

John will be discussing 'Go Kit's' and what you should consider having in your go buckets for your home, work and vehicle.

Before you say 'well, I already know this lesson' ask yourself and your family: Are you really Ready? Do you have a family emergency plan and a response plan in place if you were at home, work or school?

ARRL Faces FCC in Federal Court over BPL Issues

On Tuesday, October 23, the ARRL faced the Federal Communications Commission in the US Court of Appeals over the continuing debate concerning harmful interference to licensed radio services from unlicensed Broadband over Powerline (BPL) systems. BPL is the delivery of broadband Internet communications using unshielded electrical wiring to conduct high-speed digital signals to homes and businesses. BPL systems are designed to conduct RF energy through unshielded, medium voltage power lines, using some or all of the HF spectrum between 1.7-80 MHz. At those frequencies on unshielded overhead power lines, the electrical wiring not only conducts the signals, it radiates them very efficiently for very substantial distances from the power lines.



Background

In October 2006, the League petitioned the United

States Court of Appeals for the DC Circuit to review the FCC's October 2004 *Report and Order* ([R&O](#)) in ET Docket 04-37 and 2006 *Memorandum Opinion and Order* which generally denied all of the 17 petitions for reconsideration. In its brief initially filed May 17, the ARRL contends, among other things, that the FCC's adoption of rules to govern unlicensed BPL systems fundamentally alter the longstanding rights of radio licensees, including Amateur Radio operators. Specifically, the FCC order, while adopting rules that it claimed would minimize instances of harmful interference to licensed services, eliminated a fundamental requirement for unlicensed devices, and held for the first time that BPL systems need not shut down in the case of unresolved instances of harmful interference to "mobile" stations.

The ARRL argues that the FCC's BPL rules violate Section 301 of the Communications Act, which requires that operators of devices that emit radio frequency energy which have a substantial interference potential cannot operate without an FCC license. "For years, the FCC has consistently read Section 301 to apply to unintentional radiators, such as BPL devices, and has expressly embodied that interpretation in its rules," the League's brief recounts. The brief notes that extensive studies done by the National Telecommunications and Information Administration conclude persuasively that interference from BPL to mobile stations can be expected at distances up to almost a football field, and to fixed stations at distances up to five football fields.

The Commission then compounded its error by asserting that BPL devices do not fall within Section 301 at all, the League said. "This hail-Mary attempt at justification is another unexplained departure from prior policy that independently requires invalidation of the orders," the ARRL remarked in its brief.

The ARRL contends that the FCC orders under review "jeopardize the license rights of ARRL's members and other license holders by authorizing providers of a new device -- Access Broadband over Power Lines, or 'BPL' -- to send radio signals across the electric grid in the frequencies the license holders occupy, but without having to obtain an FCC license."

The ARRL States Its Case

Each side had 20 minutes to present their case, with the League going first. Attorney Jonathan Frankel, of the WilmerHale Law Firm, argued the case for ARRL before the three judge panel; Attorney C. Grey Pash, of the FCC General Counsel's office, argued for the FCC. According to ARRL President Joel Harrison, W5ZN, who attended the Court session, Frankel's argument centered on the removal of interference protection for licensed mobile stations, and the Commission's rules for measuring interference. "Frankel received multiple, direct questions from each of the judges concerning the topics in the briefs, and responded to each very well," Harrison said.

"Judges Tatel, Rogers and Kavanaugh interrupted both sides repeatedly with intelligent, challenging questions," ARRL Chief Executive Officer David Sumner, K1ZZ, said. "For example," Sumner continued, "while quizzing Frankel, the judges sounded skeptical that interference to mobile stations couldn't simply be regarded as 'not harmful' because it was temporary; but then, when quizzing the FCC's attorney, Judge Tatel said in response to the statement that 'mobile stations could simply move,' that in the case of BPL in Manassas, Virginia for example, you can only get away from the interference by leaving Manassas.' It wasn't, he went on to say, like a garage door opener."

For the first time in decades, the FCC decided against requiring that operations found to cause "harmful interference" be shut down immediately -- a stance that ignores the "right of the license holder to be free from interference," Frankel said in court. The FCC has also withheld portions of studies that would "potentially" show BPL does cause harmful interference to other devices -- and ignored reports of tests the ARRL argues offer "substantial" evidence of interference problems, he continued. "We're talking about devices that radiate for football fields in length and all along power lines," Frankel said of the BPL gadgets. "When you drive down the street, [an Amateur Radio operator's] service is interrupted constantly."

"All three judges were clearly very familiar with the written record. They spent a lot of time on the issue of what information the FCC had withheld from public view (redacted)," Sumner said. "In the course of the argument, the FCC's attorney had to acknowledge that the Commission's explanations in the BPL proceeding were deficient in a number of respects, although it wasn't clear that administrative agencies are held to a very high standard in that regard."

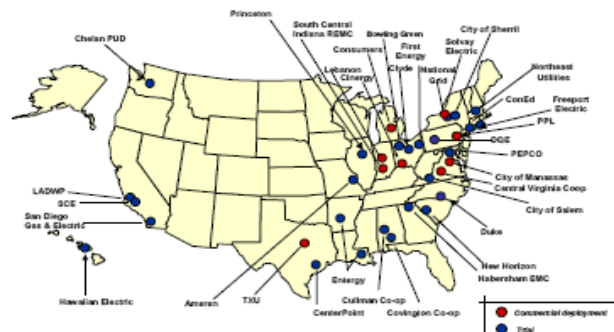
The FCC Fights Back

Harrison said that Pash, the FCC's attorney, began his defense of the FCC orders and was almost "immediately interrogated" by the judges on the Commission's premise that "a mobile station in a licensed service should not be afforded complete protection from harmful interference just because it can just move away from the interference."

Pash also came under what Harrison called "considerable direct questioning" concerning the redacted material from the FCC's response to the ARRL's Freedom of Information request. ARRL had asked the FCC to produce all of what FCC described as "extensive" studies allegedly justifying its BPL order, on which the FCC relied in adopting the BPL rules. The FCC had deleted what appeared to be any material in that one single study that indicated that interference from BPL systems was likely. One page that was completely redacted was a Powerpoint slide titled "New Information Arguing for Caution on HF BPL." The FCC claimed that was not factual information, but just staff advice. Pash "attempted to present a position that the material pertained to 'staff opinion' that was determined to not be a basis for the FCC's decision," Harrison said. According to Pash, the redacted sections referenced earlier sections of the report, and were not "a bunch of new information," Harrison said.

Pash defended the Commission's approach. He said the FCC didn't require the so-called "cease-operations" rule because it didn't find ample evidence that BPL posed any real potential for "harmful" interference. He said the studies the FCC relied upon, including one by the US National Telecommunications and Information Administration, found that so long as the FCC restricts the strength of the signals emitted by BPL devices -- as it did through its rules -- others sharing that spectrum "won't notice a difference" in the quality of their services.

BPL Deployment Map



Waiting for the Decision

Attorney Frankel reserved seven of his allotted 20 minutes for rebuttal of the FCC's arguments. He reiterated the League's position concerning mobile operations and also emphasized that "unless we have an opportunity to review the redacted material, no determination can be made as to its role in the FCC's rulemaking decision," Harrison said.

Both Sumner and Harrison said they were "quite impressed" with the knowledge that the judges had concerning the case and with the questions that they asked. Harrison said it could be "three months or more" before the Court announces its decision. □

Q: What is Broadband over Powerline or BPL?

A: BPL is a system that is being tested and deployed to provide broadband Internet service via powerlines. Radio energy is coupled onto power lines and is distributed into homes. A device in the home plugs into a normal wall outlet and typically provides an Ethernet connection to a computer or home network.

BPL is also known in some countries as PLT. It can also be referred to as Broadband Powerline Carrier, or just PLC, although the acronym PLC is more applicable to an older technology that is used for telemetry and control in power systems and is not the same thing. At the time of this writing, BPL is mainly in testing in the United States and a few foreign countries. A few carriers are actually selling the service to customers. BPL is intended as another residential broadband technology similar to DSL and Cable.

BPL uses existing electric distribution lines to provide last mile broadband connectivity and home networking for both commercial services and a variety of utility and energy management applications. Currently, there are approximately 35 BPL deployments around the country, which vary in size from small pilots to large scale commercial deployments. These deployments are both rural and suburban, and employ varying network topologies designed according to the areas that are served and the services/applications that are supported.

As such, BPL is very much an enabling technology that may be used in combination with other technologies. Because BPL is an unlicensed operation under the FCC Part 15 rules, it operates at extremely low levels of power to avoid causing interference to licensed radio services. The FCC has concluded that there is a low probability of harmful interference from BPL that operates at these general power limits; and in addition there are tough new equipment certification requirements that

are designed to further protect against harmful interference to licensed radio services. As such, BPL is technically capable of operating in various environments to support a variety of services without causing harmful interference to licensed radio services.

Technology

There are various proprietary technologies, but they all work basically the same way by sending a digital signal over the power lines. This is accomplished by transferring signals onto and off the power lines via couplers. The couplers connect to boxes that house chipsets that process and/or repeat the BPL signals between the endpoints of the BPL network (i.e. the customer premises and the backhaul connection point). Modems are typically used to transfer the BPL signal from the wall socket to the computer or other peripheral device receiving the BPL signal at the customer premises.

The heart of the BPL system is the chipsets, which vary in speeds. Currently, maximum (i.e. raw) throughput speeds from BPL chipsets is 200 mbps. Due to attenuation and other factors on the BPL network, actual speeds to the customer are typically less than the raw throughput of the chipset. Still, most BPL systems provide upwards of 2 mbps symmetrical (i.e. same upload and download) speeds to the customer.

As the signal travels over the power lines it attenuates (i.e. weakens). Usually a BPL signal will travel less than a mile before it must be repeated or regenerated again. In theory, the signal can be repeated any number of times; but in practice, every time the signal is repeated, it increases latency (i.e. delay in reprocessing the signal). As such, BPL networks can extend very far, but there are trade offs, particularly for real-time applications like voice and interactive gaming.

Unlike DSL or cable modem, BPL is not anchored to head-ends or central offices. It also enjoys certain advantages over wireless when it comes to underground environments and penetrating through walls and buildings. As a result, BPL can be deployed into areas where other technologies can't reach, either for economic or technical reasons. □

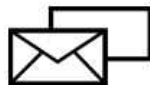


FCC Update

Riley Hollingsworth, Special Counsel in the FCC's Enforcement Bureau, announced his retirement this week, effective Friday, January 3, 2008. While his successor has not been named, Hollingsworth was quick to point out that the FCC's Amateur Radio enforcement program will continue.

Hollingsworth told the ARRL: "After about a year of thinking about the 'if not now, when?' question, I decided to retire January 3. I love working for the FCC and I've always had great jobs, but this one involving the Amateur Radio Service has been the most fun and I have enjoyed every day of it. For nine years I've worked with the best group of licensees on earth, enjoyed your support and tremendous FCC support and looked forward every day to coming to work. The Amateur Radio enforcement program will continue without missing a beat, and after retirement I look forward to being involved with Amateur Radio every way I can. I thank all of you for being so dedicated and conscientious, and for the encouragement you give us every day."

Speaking at the New England Division Convention in August 2000, Hollingsworth offered his [10 personal suggestions to secure a sound future for Amateur Radio](#), encouraging amateurs to "seize the moment" to ensure a bright future for Amateur Radio. "Look *beyond* enforcement," he urged, "because if I do my job right, in five years you won't even remember my name." Hollingsworth said that while no one can predict the future, amateurs must invent theirs in an era of converging digital and RF technology. "There is no reason why our Amateur Radio Service can't be the envy of the rest of the world," he said. Getting there, he suggested, comes with each amateur's taking responsibility for his or her behavior on the air. Amateurs should encourage arrogant, negative operators to "take their anger and hate to the Internet," he said. "Every minute they are on the Internet is a minute they aren't on Amateur Radio." ARRL Chief Operating Officer Harold Kramer, WJ1B, said, "Riley Hollingsworth has been a tremendous supporter of and asset to the Amateur Radio Service. He will be remembered as being the force behind the re-introduction of Amateur Radio enforcement in 1998 and continuing those efforts through today. His contribution in cleaning up the amateur bands has been substantial and effective. While we are very sorry to see him go, and we wish him every continued success."



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:

<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.



CLUB COATS

With a removable liner, lots of pockets, and waterproof, the coat gives the radio club great publicity with a full back, club logo and a Name and Call-Sign Personalization on the left chest. For those of you interested in purchasing a coat, the costs are **\$50 per club member**. This is a great price for a coat than can be used during summer amateur activities or as a winter coat during Sled Dog races or November Sweepstakes. Must have a current club membership.

If you are interested in ordering a coat, a sign up sheet will be available at the club meeting or feel free to contact:

KL7SP@arrl.net.



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KL7AA General Membership Meeting

AARC MEMBERSHIP MEETING

October 5th, 2007

APU Carr Gottstein Building

The meeting was called to order by Kathleen O'Keefe (KL7KO) at 7:00pm with 43 members and guests in attendance.

Presentations

Alaska Volcano Observatory volcanologist Tom Murray gave a PowerPoint presentation on Volcanoes in Alaska. Mr. Murray gave a very interesting presentation with information regarding the Pacific Plate movement, historical volcanoes, volcano hazards, air routes affected by volcanoes, volcano monitoring methods and forecasting. Jennifer Alterman from the Alaska Volcano Observatory was introduced by Richard Kotsch.

Heather Hasper (KL7SP) presented the Treasurers report. Jim Larsen (AL7FS) and Keith Clark (KL7MM) are presenting a \$10,000 check to the APU Scholarship Endowment Fund at the APU recognition dinner this evening. Heather reported that the AAARC has contributed to this fund for fifteen years. Heather reported that the October AARC Board meeting includes budget discussions as well as the opportunity for membership discussion and approval at the November membership meeting and reminded all members to attend and explained that Grants are also up for approval for the Challenger Learning Center, Hope Resources, and local radio clubs. The reimbursement policy approved by the Board at the September Board meeting was read to the membership.

Heather also explained the upcoming weekend's Simulated Emergency Test (SET). Each ARES section will participate. The exercise will run for 10am to 4pm and will operate on the 147.27 and 440.3 repeaters as well as the KL7AIR station operating HF. Communications are planned to utilize VHF, UHF, APRS, Packet, CW and HF. Heather explained the Alaska ARES Plan which was last updated in 2003 and noted its availability online.

Motions

Motion made John Lynn (KI7CY) Seconded Fielder Downing (KL7FHX) to approve the AARC Board's August authorization to increase the dollar amount available to the Real Estate Committee to \$10,000.00 (from \$5000.00) to secure property when found with ALL officers' approval. Motion passed with no opposition.

Motion made Fielder Downing (KL7FHX), seconded John Orella (KL7LL) to approve the AARC Board's August authorization to approve \$16,800.00 to the Anchorage Sheraton, bringing the total 2008 Hamfest venue cost to date to \$26,800.00. Motion passed with no opposition.

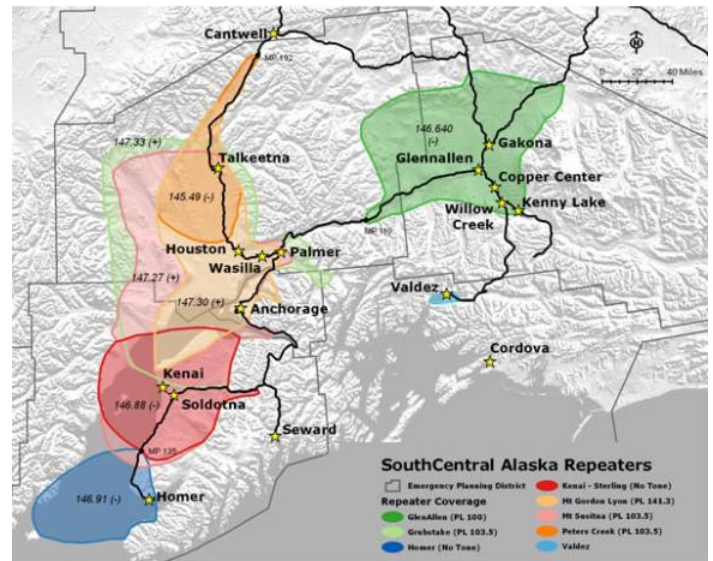
Door Prizes

KL3KD, R2D2, KL7YK, KL7CY, KL1JJ, KL2HL

Motion made Diane Olson (KL1MY), seconded Sean Jensen (KL2CO) that the meeting be adjourned. Motion approved with a resounding roar. The meeting adjourned at 8:36pm

Respectfully submitted as recorded on October 5th,
2007

Richard Tweet KL2AZ

Secretary ☐

KL7AA Club Business

ANCHORAGE AMATEUR RADIO CLUB
BOARD MEETING
October 16, 2007
540 WEST INTERNATIONAL ROAD
Anchorage, AK
(UNAPPROVED at Printing)

The meeting was called to order at 7:00 PM by President Kathleen O'Keefe. A quorum was established: (2 Officers, 7 Board members needed)

BOARD MEMBERS PRESENT:

President Kathleen O'Keefe KL7KO, Vice President Jim Larsen AL7FS, Treasurer Heather Hasper KL7SP, Secretary Richard Tweet KL2AZ, Activities Director Richard Kotsch WL7CPX, Paul Spatzek WL7BF, Frank Pratt KL7RX, Diane Olson KL1MY, John Orella KL7LL, Edward Moses KL1KL, Piet Van Weel KL2CR, T.J. Sheffield KL7TS, Susan Woods NL7NN.

NON-VOTING MEMBERS PRESENT

Keith Clark KL7MM

EXCUSED

Jim Wiley KL7CC, Michael O'Keefe KL7MD, Fred Erickson KL7FE,

UNEXCUSED

Richard Block KL7RLB

REQUEST FOR AGENDA ITEMS

T.J. Sheffield requested the addition of Title 21

GUESTS

Tom Rutigliano NL7TZ, Bruce McCormick KL7BM, Dan O'Barr KL7DR, Gretchen O'Barr KL7GO, Han-nelore Kelliher NL7EA, Mark Kelliher KL7TQ, T.J. Tomblison KB8JXX, Eric McIntosh KL2FM

SECRETARY REPORT

Previous Board meeting minutes for the September Board Meeting and General Membership meeting minutes for October were presented. Motion made Diane Olson KL1MY, seconded Richard Kotsch WL7CPX to accept the Board meeting minutes as written. The motion carried unanimously. Motion made Diane Olson KL1MY, seconded Jim Larsen AL7FS to accept the membership meeting minutes as written. The motion carried unanimously.

TREASURER'S REPORT

Heather Hasper presented the Treasurers report for month ending September 2007. Heather reported on Gaming Income, Endowment, Grants, Major Purchases, Hamfest 2007 summary, expense reimbursement policy, outstanding projects, change in current telephone contract, and annual review by CPA. Motion made Diane Olson KL1MY, seconded John Orella KL7LL to accept the Treasurers report as given. The motion carried unanimously.

VE REPORT

No report as Jim Wiley is unavailable.

TRUSTEE REPORT

Keith Clark reported that the Logbook of the World now has 6000 entries with 819 confirmed at this time. KL7AA will be utilized during November Sweepstakes.

MEMBERSHIP REPORT

There is no membership report as Fred Erickson is unavailable at this time.

OLD BUSINESS

ARRL 2008 Statewide HAMFEST

Richard Tweet reported that the planning committee is meeting twice a month, 1st Tuesday in Anchorage (Denny's on Denali) and 3rd Sunday in Wasilla (Windbreak Café). Invitations have been mailed out to several possible guest speakers, QST December ad is complete and vendors are being contacted.



Alarm System Installation Project

Bruce McCormick reported that he would be working on the project Wednesday and Thursday night and asked that any interested parties let him know if they would be willing to help.

File cabinets

Kathleen will pursue canceling the sale and a refund of monies.

AMATEUR RADIO

Sale of Assets Procedure

General discussion was held on the Draft Policy Statement that was available for review. Discussion was held on primary person responsible for the sale of assets and AARC accounting involved with the sale of assets. Jim Larsen noted that the club inventory is complete with the exception of a couple of antennas. Motion made Diane Olson KL1MY, seconded John Orella KL7LL to incorporate voiced changes, proceed with an electronic vote when complete, and provide finished product at the November Board meeting.

Capital Projects

T. J. Sheffield is the only remaining member of this committee. T.J. will be reviewing outstanding capital projects, AARC project management program policy and project status reporting. T. J. will report back to the Board at the November Board meeting.

Silent Key Plaque

Diane Olson reported that \$517.00 has been spent on a 100 place holder plaque. A general discussion was held on to how far back to take this project. The cost per name will be \$6.00 for each engraved placeholder which will require an additional \$600.00 to complete this project in time. Additional suggestions were made that Charter members be on the plaque and that George Schrock be remembered (Mayor during the 1964 earthquake)

Teleconference Bridge

This was discussed in the Treasurers report. The Centrex teleconference bridge will allow for 10 users. Costs for the improved phone service which includes this option will be approximately \$80.00 per month and will include DSL and Centrex service to the AARC CCV garage.

Real Estate

No buildings have been presented that meet the AARC's requirements yet per Keith. The latest building reviewed on Spenard Rd. wouldn't fit the bill due to door sizing and physical property restrictions.

Inventory club property – Design of hand receipt

Jim Larsen reported that this is complete and the receipt is available, but needs work.

Credit Card

Heather Hasper presented a detailed report addressing concerns of the Board during prior discussions. A general discussion was held regarding advantages and dis-

advantages of an AARC credit card, elimination of the potential of financial gain by any AARC officers and fidelity bonds. Motion made John Orella KL7LL, seconded Piet Van Weel KL2CR that the AARC proceed in the acquisition of a club credit card. A friendly amendment was added by Paul Spatzek WL7BF that a rider be obtained to protect AARC Board members and officers. The friendly amendment was accepted by the original maker and second of the original motion. Additional discussion as held regarding the possibility of a secured credit card being obtained, a business credit card account, Seabury & Smith insurance, and the question was posed as to the intent of the motion. The motion was explained by the maker to authorize the application and obtaining of an AARC credit card unless a major impediment arises during the process. The motion as amended carried by majority with 1 nay and 1 abstention.

Grants

Jim Larsen explained the AARC policy grants and reported on four grant requests to the AARC. The four are briefly explained as follows;

Matanuska Amateur Radio Association (MARA) – This request is for an educational grant of \$1500.00 to provide manuals, kits study guides etc. This amount is within the AARC Board's ability to approve without requiring membership approval. Motion made Diane Olson KL1MY, seconded John Orella KL7LL to approve the grant request. Motion passed unanimously.

Challenger Learning Center in Kenai – This request is for \$3,144.60 (65% of the total cost of \$4837.00) to establish the Learning Center's own ability to communicate with the Space Shuttle and Orbiting Space Laboratory astronauts by purchasing its own equipment and software. Motion made Diane Olson KL1MY, seconded Richard Kotsch WL7CPX to approve the grant request. Motion passed unanimously.

Hope Community Resources - This request is for \$4,728.00 (65% of total project cost of \$7,275.00) to provide a needed ceiling lift for a Hope Community Resources client. Discussion noted that Hope Community Resources allows the regular use of their facility for AARC Board meetings as well as monthly VE testing. Motion made Diane Olson KL1MY, seconded Paul Spatzek WL7BF to approve the grant request. Motion passed unanimously.

Matanuska Amateur Radio Association (MARA) – This request is for \$20,580.23 to provide for improvements to the MARA trailer. Improvements include additional insulation, generator installation, heat improvements, headsets, separate trailer with a crank up tower. Motion made Diane Olson KL1MY, seconded Paul Spatzek WL7BF to approve the grant request. Motion passed unanimously.

November Sweeps & needs for next years field day

T.J. Sheffield reported briefly on the purpose and the issues related to a winter exercise such as the upcoming November Sweeps which will be held at Kincaid Park on November 17th and 18th. T.J. noted that departure from the CCV garage would occur at approximately 0630 on the 17th to be setup and operational by noon. The event runs until 1800 on the 18th and includes a 6 hour stand down beginning at Midnight. In the interest of brevity, T.J. noted the estimate of approximately \$14,000.00 in recommended enhancements to the AARC equipment, which due to the late hour of this meeting, he would propose at an upcoming meeting.

IRLP

Jim Larsen reported on the progress and provided a rough draft of an improved/expanded Memorandum of Understanding (MOU) between the AARC and KL7M regarding the utilization of EchoLink and IRLP. Jim recommended the discussion of the concepts involved such as EchoLink technology, verbiage to firm up AARC approval, preambles and periodic announcements to maintain the intent of an Alaskan net, correction to the name of the Sunday net, and additional time on Monday mornings to incorporate Newline. A brief discussion was held on these concepts, net guests and visitors. Motion made Diane Olson KL1MY, seconded Paul Spatzek WL7BF to authorize Jim Larsen to complete the MOU, provide for an electronic review and vote on the revised MOU, and report the results at the November Board meeting. The motion passed unanimously.

Budget 2008

Heather Hasper provided a detailed presentation and spreadsheet for Board review regarding the 2008 budget. Heather explained revenue and expense forecasting methods used and opened the presentation for discussion. Minor adjustments were made to expenses as discussion dictated. Motion made John Orella KL7LL, seconded Diane Olson KL1MY to accept the 2008 Budget as presented and modified with the Board's review. The motion passed unanimously.

Title 21

T.J. Sheffield noted that he and Richard Block are monitoring changes to the Municipality of Anchorage Title 21 during the rewrite which could affect the installation of towers and antennas. T.J. asked the Board and membership to be vigilant on this issue. Heather Hasper volunteered to be a part of this oversight.

Other Old Business

Heather Hasper reported on the Simulated Emergency Test (SET) held recently. Heather reported that stations in Fairbanks, Kenai, Juneau, McGrath and Lower 48 stations participated. KL7AIR relayed HF traffic, KL7JFU provided Mat-Su valley reports, and Heather reported that the WL7CVG Trustee provided a mostly favorable assessment with the noted critique that every transmission needed to be preceded with notification that this was a test exercise.

NEW BUSINESS

Programs for Membership Meetings

Richard Kotsch reported that John Lynn KL7CY will be presenting in November on the topic of Go Buckets. An Arctic Ocean Submarine Biology presentation will be at the January meeting and T.J. Sheffield will present at the February membership meeting.

November – Elections Budget Introduction

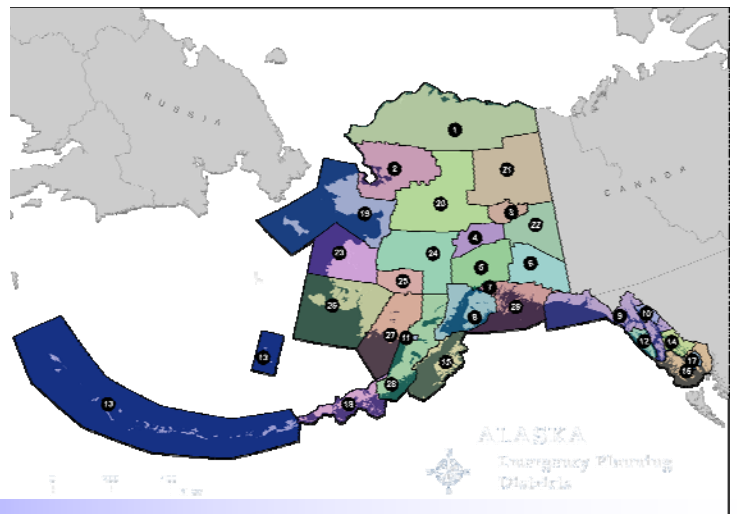
It was noted that the November membership meeting will also include the 2008 budget presentation to the membership, election results and grants.

Approvals, KL7AA in the next month

November sweepstakes as mentioned earlier.

Motion made Diane Olson KL1MY seconded Paul Spatzek WL7BF that the meeting be adjourned. Motion passed unanimously. Meeting adjourned at 10:36pm

Respectfully submitted as recorded on 10/16/07 by
Richard Tweet, Secretary ☐



2008 ALASKA HAMFEST & ARRL Convention

CQ, CQ, CQ

ARRL ALASKA State Convention



The radio clubs of Alaska will be hosting a joint Hamfest and ARRL State Convention in Anchorage, Alaska in 2008. This is a great opportunity to combine an Alaska dream vacation with a business venture and great hobby. For travel information, venue, and exhibitor opportunities please go to www.akhamfest.com for more information.

When: August 1st thru August 4th, 2008

HAMFEST 2008 Update

Our efforts to promote our event continue. This month we sent advertisements and Alaska promotional material to the large Pacificom Hamfest in San Ramon California. This was very well received and with the help of Gordon West, WB6AO promoting our event several national vendors are interested in activity.

Over the next several months with the onset of winter and before the rush for sled dog races we will be having bi-monthly planning meetings. The first Tuesday of the month at 530PM in Anchorage at the Denny's restaurant on Denali between Benson and Northern Lights Blvd. Then on the 3rd Sunday in Wasilla, at the Windbreak Café just off the Parks Highway at 12 Noon. We have a great team of volunteers energized and helping out. We are always hoping for more volunteers and have plenty of opportunities for everyone.

Our advertising efforts are about to increase with emails and mail-out materials being sent to our potential list of exhibitors. If you are able to assist with packaging this material for delivery, please feel free to contact us.

You do not need to be in Anchorage to help with this planning effort. This is an all amateur radio operators effort and all radio clubs in Alaska and the Yukon hope to participate.

Are you going to any national amateur radio events in the next 6 months? If so your help in distributing information and promoting our event would be greatly appreciated.

We have committees being formed to coordinate all the responsibilities needing to be completed. Several opportunities are available and include:

- ♦ Registration: materials, onsite services
- ♦ Printing / publications:
- ♦ Decorations:
- ♦ Awards & Prizes:
- ♦ Marketing & Advertising:
- ♦ Sponsors
- ♦ Vendors / Exhibitor coordination

If you are interested in volunteering in any of these areas, please feel free to contact us and we can put you in touch with the right person working on those tasks.

We are looking for sponsors for our event so if you have any donations for door prizes, raffle prizes or Alaska tours and gifts that you would like to donate that you feel would attract national attendance, your donations are greatly appreciated.

We hope to have other special events and activities including tours to a glacier, an Alaska Railroad train adventure, a tour of the High Frequency Active Auroral Research Program (HAARP) just north of Glenallen and many other fun events.

We are working with a sponsor to cover the costs of shipping exhibitor displays and equipment from the lower 48 to Alaska so please remember to provide that information when marketing to national vendors.

Until sled dog races begin in January, this will be our primary focus to coordinate and get ready for next summer.

Email is the best way, but a good snail mail letter is also great to receive. You can email me at KL7SP@arrl.net or Richard Tweet, KL2AZ@arrl.net

Or by phone: 907-275-7474 or 907-244-4335

KL7SP
Heather

ARES - Section 7, District 7 (Anchorage, ALASKA)



Mission statement:

Dedicated to amateur radio as it pertains to disaster services. The history of amateur radio operators' involvement in sending life-saving information in and out of disaster areas [and] providing help during and after earthquakes, floods, hurricanes and tornadoes. "HAM's have been there to assist local, state, and federal agencies and relief organizations such as the American Red Cross and Salvation Army." When All Else Fails, Amateur Radio.

Simulate Emergency Test

UPDATE: October 6th, 2007

The Alaska Section coordinated a successful joint simulated emergency test. We had 38 stations participating from Juneau to Bethel and Barrow to Kenai. Several modes of communication were used including Phone, APRS, Packet, Satellite, and CW. While we had planned to use the Alaska Pacific net frequency, there was a contest on that frequency so we had to go to another frequency. In a normal case, priority or emergency traffic would have had priority.

Lessons learned:

We as a section need to practice sending NTS messages. People are unaware of how to receive and how to transmit these messages. We will try to incorporate these into our monthly ARES nets to allow operators to practice and ask questions about the NTS format.

Thanks to all who came out and participated including the club stations: KL7JFU, KL7AIR, KL7AA.

ARES TRAINING:

NOVEMBER SWEEPSTAKES

We will be participating in November Sweepstakes for our ARES training on November 17, 2007. The location is same as last year: Kincaid Park at the parking area south of the FAA radar. They call it the 'Nike Staging Area' now.

ARES District 7 Contact Information

Michael O'Keefe, KL7MD

[DEC7 at alaskaares.org](http://DEC7.alaskaares.org)



The event will begin at 1200 Saturday so we hope to have everything installed, tested and operational before then. The event runs from noon Saturday until 1800 Sunday with a 'mandatory' (contest rules) six hour stand-down, probably from 0000 to 0600 Saturday night / Sunday morning.

This is a national contest similar to Field Day where clubs and groups across the country participate in this fun contest.

So if you are interested in learning about HF operations, learning how to use a complex radio system and understanding the benefits and challenges that may be encountered when operating HF in Alaska feel free to come out and play. We hope to see you there.

We will talk-in on 147.27 for people coming in from the Valley who are planning on helping and participating.



SWEEPSTAKES EXCHANGE

Other station:(use phonetics: say their call sign)

Number: xxx

Precedence: Multi (or Mike)

Our call sign:Kilo Lima Seven Alpha Alpha (KL7AA)

Check: Four-Seven (or Forty-Seven)

Section: Alpha Kilo (the abbreviation for Alaska)

Examples of "precedence" (power) you may receive:

"Uniform" for Unlimited;

"Mike" for Multi-Operator;

"Bravo" for High Power (greater than 150 W output);

"Alpha" for Low Power (up to 150 W output);

"Quebec" for QRP (5 Watts output or less);

"Sierra" for School



November 2007



Anchorage Amateur Radio Club

PO BOX 101987

Anchorage, AK 99510-1987

www.KL7AA.net

**ANCHORAGE ARES
DISTRICT 7 & 5
KL7AA & KL7JFU**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
QRP club meetings held at the Denny's at Bragaw and DeBarr. Parka, meets at Peggy's restaurant, 11AM Contact: Kathy O'Keefe, KL7KO, 243-4675 EARS: R1 North, Contact: Ron Keesch: KL7YK@arrl.net				1 	2  AARC meeting 7PM	3
4	5	6 2008 HAMFEST Planning MTG 5:30 PM ANCHORAGE	7	8 	9	10 PARKA meeting 11 AM EARS: 3PM 
11	12	13	14	15 	16  QRP meeting 7PM	17  November Sweepstakes
18 2008 HAMFEST Planning MTG 12 PM	19	20 AARC Board Meeting 7PM	21 MARA Board Meeting 7PM	22 	23	24
25	26	27	28	29 	30  MARA meeting 7PM	

ARES NET: Thursday Nights 8:00 PM 147.27+ PL: 103.5 or 443.30+ PL 103.5

Schedule of Events:



To add to the Calendar please contact: John Lynn at Johnlynn@gci.net

11/17 November Sweepstakes Contact: TJ Sheffield, KL7TS@hotmail.com

The Anchorage Amateur Radio Club will be participating in November Sweepstakes on November 17th at Kincaid Park. This will be our ARES training for November. Our activity will be a timed event to test our abilities to set up and become operational during winter conditions. **Object:** For stations in the United States and Canada (including territories and possessions) to exchange QSO information with as many other US and Canadian stations as possible on 160, 80, 40, 20, 15 and 10 meter bands.

The Value of a Volunteer

Based on a national survey of more than 4,000 adults, a series of reports explores the why, how, and who behind the extraordinary everyday generosity—both in time and money—of American households.

As a volunteer for many organizations including hundreds of hours of time dedicated to Amateur radio service, how do you quantify the value of a volunteer?

Volunteers provide many intangibles that can not be easily quantified. For example, volunteers demonstrate the amount of support an organization has within a community, provide work for short periods of time, and provide support on a wide range of projects.

The estimate helps acknowledge the millions of individuals who dedicate their time, talents, and energy to making a difference. Charitable organizations can use this estimate to quantify the enormous value volunteers provide. The dollar value of volunteer time for 2006 is estimated at \$18.77.

Dollar Value of a Volunteer Hour: 1980 - 2006					
1980	\$7.46	1990	\$11.41	2000	\$15.68
1981	\$8.12	1991	\$11.76	2001	\$16.27
1982	\$8.60	1992	\$12.05	2002	\$16.74
1983	\$8.98	1993	\$12.35	2003	\$17.19
1984	\$9.32	1994	\$12.68	2004	\$17.55
1985	\$9.60	1995	\$13.05	2005	\$18.04
1986	\$9.81	1996	\$13.47	2006	\$18.77
1987	\$10.06	1997	\$13.99	2007	
1988	\$10.39	1998	\$14.56	to be released	
1989	\$10.82	1999	\$15.09	in spring 2008	

This is broken down further to account for the costs in each state. In Alaska, the estimated costs of volunteer time is: \$17.28.

Value of Volunteer Time

The value of volunteer time presented here is the average wage of non-management, non-agricultural workers. This is only a tool and only one way to show the immense value volunteers provide to an organization

It is important to remember that when a doctor, lawyer, craftsman, or anyone with a specialized skill volunteers, the value of his or her work is based on his or her volunteer work, not his or her earning power. In other words, volunteers must be performing their special skill as volunteer work. If a doctor is painting a fence or a lawyer is sorting groceries, he or she is not performing his or her

specialized skill for the nonprofit, and their volunteer hour value would not be higher.

It is very difficult to put a dollar value on volunteer time. Charitable organizations most frequently use the value of volunteer time for recognition events or communications to show the amount of community support an organization receives from its volunteers.

People volunteer for many reasons, sometimes altruism, sometimes personal, but always for a purpose. We need to understand that purpose in order to attract and retain the volunteer. For many it's a way of giving back.

Many volunteers will tell you that they want to meet people. Other people are looking to learn new skills. They are looking for skills that they can use in the workplace or to enhance their job possibilities.

Some people are looking for relationships. They want to meet the kind of people that they can share time enjoying the same kinds of interests. Many people today are alone and lonely. Where do you make these kinds of close, meaningful relationships with people like you? For some, it's at a gym, for others it's in the workplace, but for many it's the volunteer setting.

Volunteers, just like paid employees desire a feeling of belonging to the culture of the organization.

All of us have a need to feel important at times, or at least to think that what we are doing has importance. How do we help to give this feeling to our volunteers? Maybe we could start conversations with more "you" than "I". It is a natural tendency to talk about what we are up to in our lives and to not spend much time asking about their lives. When we are asked for our opinion, it gives a feeling that the other person cares about our thoughts. Alice Potter in her book, *Putting the Positive Thinker to Work*, says it well, "...if you give others what they want, they will give you what you want."

Somehow people think of volunteers are people who care but really can't get the job done. The whole concept that we hear so often that they are "only volunteers" says it all. Even volunteers have been heard saying that they are only volunteers, therefore don't expect too much of them. Or the attitude that the volunteer is not getting paid, so don't expect a professional attitude or performance. This is absolutely silly.



What you see on the volunteer scale is generally the same performance you would encounter in the professional setting. People bring their values, skills, opinions, positive and negative traits with them when they volunteer.

People volunteer for many reasons, sometimes altruism, sometimes personal, but always for a purpose. We need to understand that purpose in order to attract and retain the volunteer. For many it's a way of giving back.

The leader finds the dream and then the people. The people find the leader and then the dream.

John Maxwell

When you work with volunteers doing the right things is critical. This involves selecting the right people, continually motivating them and assigning them to the right tasks.

"Managers do things right, but leaders do the right things."

Warren Bennis.

Volunteers want a leader who they can trust. A leader who quite literally "walks their talk." A leader cannot be a person who says one thing but does another. Volunteers look up to their volunteer leader; they expect to see commitment and honesty in them. Leaders must challenge and inspire. Many times it is the lack of leadership on the part of the manager and their staff that deflates that excitement. These high standards start with us. We must know and understand what we are there to do. We have a job to perform that makes a difference in people's lives. We use our volunteer to accomplish this task. We could not get it done without them.



"SURE I... WE'RE NEVER TOO BUSY TO VOLUNTEER!"


So the next time you are seeking volunteers for your activities, public service events or emergency services ask yourself what type of leader am I? What type of volunteer can I be? For all our volunteers out there who dedicate hundreds of hours to service for Amateur Radio, that hopefully means everybody reading this, **Thank You for all your hard work and all you do!**

AMATEUR RADIO Silent Key



Note: Last month we were unable to locate Augie's ham call signs in time for the newsletter publication. His call sign was not current at the time of his passing and therefore hard to locate. After the silent key notice went out, several operators emailed the editor and were able to provide this information.

Augie had several amateur radio call signs over his communication career.



Augie Heibert
(1916 – 2007)
Ex: W7CBF, K7CBF & KL7PQ

On September 13, 2007, long time amateur radio operator Augie Heibert became a silent key. Augie was a great advocate of Amateur Radio and a Communications Pioneer in Alaska. He will be missed as one of the Grand Amateur Radio Sourdough operators who created a foundation for communications throughout Alaska. The members of the Amateur Radio community of Alaska send our condolences to his family and friends. He will be greatly missed.



Data You Can Use:



2007 Board of Directors

President: Kathleen O'Keefe, KL7KO [president at kl7aa.net](mailto:president@kl7aa.net)

Vice Pres: Jim Larsen, AL7FS [vicepresident at kl7aa.net](mailto:vicepresident@kl7aa.net)

Secretary: Richard Tweet, KL2AZ [secretary at kl7aa.net](mailto:secretary@kl7aa.net)

Treasurer: Heather Hasper, KL7SP [treasurer at kl7aa.net](mailto:treasurer@kl7aa.net)

Activities Chairman:

Richard Kotsch, WL7CPX [activities at kl7aa.net](mailto:activities@kl7aa.net)

Trustee: Keith Clark, KL7MM [trustee at kl7aa.net](mailto:trustee@kl7aa.net)

Membership Chairman:

Fred Erickson, KL7FE [membership at kl7aa.net](mailto:membership@kl7aa.net)

News Letter Editor:

Heather Hasper, KL7SP [editor at kl7aa.net](mailto:editor@kl7aa.net)

Three Year Board Members

Frank Pratt, KL7RX kl7rx at arrl.net (3rd year)

Paul Spatzek, WL7BF Paul.Spatzek at acs.alaska.net (2nd Year)

Michael O'Keefe, KL7MD mok at gci.net (1st Year)

One Year Board Members

Diane Olson, KL1MY, oldwoman_69 at hotmail.com

TJ Sheffield - KL7TS, kl7ts at arrl.net

Edward Moses - KL1KL, kl1kl at ak.net

Jim Wiley - KL7CC jwiley at alaska.net

Piet van Weel - KL2CR pmvw at outwardfocus.net

John Orella: KL7LL, kl7ll at arrl.net

Susan Woods: NL7NN, NL7NN4606 at yahoo.com

Richard Block: KL7RLB, kl7rlb at clearwire.net

AARC web page & Email contact addresses:

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

Webmaster: [webmaster at kl7aa.net](mailto:webmaster@kl7aa.net)

Membership: [membership at kl7aa.net](mailto:membership@kl7aa.net)

Newsletter: [editor at kl7aa.net](mailto:editor@kl7aa.net)

News Letter Submissions, Information or corrections:

Submissions must be received 2 weeks before meeting

Email: [editor at kl7aa.net](mailto:editor@kl7aa.net)

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 Feb 28, 2007

KL7AA: Flattop Mountain 2,200 ft

146.94/34 MHz, 80 watts, auto-patch, 141.3 Hz PL

224.94/223.34, 25 watts, no patch, no PL

444.70/449.70, 25 watts, auto-patch, 103.5 PL

WL7CVG: Mount Susitna 4,396 ft

VHF: WL7CVG/R1 147.270/147.870 PL 103.5, no auto-patch

UHF: WL7CVG/R3 443.300/448.300 PL 103.5, no auto-patch

WL7CVF: Grubstake: Hatcher Pass 4,536 ft

VHF: WL7CVF/R1 147.330 / 147.930 PL 103.5 Hz (no patch)

UHF: WL7CVF/R3 443.900 / 448.900 PL 103.5 Hz (no patch)

KL7ION at Mt. Gordon Lyon: PARKA 3,940 ft

147.30 / 147.90, MHz - 80 watts, no patch, 141.3 Hz PL

KL7AIR Elmendorf AFB: EARS: 146.67/146.07, 107.2 Hz PL

WL7CWE: Cliffside Amateur Radio Association

KL7CC, Anchorage Hillside, SCRC & QCWA

146.97/37 MHz, 30 watts, auto-patch, 103.5 Hz PL

KL7M Anchorage Hillside

147.21 / 147.81 MHz, on IRLP, 97.4 Hz PL

KL5E Chugiak: 147.15/147.75, 123.0 Hz PL, auto-patch

KL7JFU, KGB road, MARA: 146.85/146.25, auto-patch, 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 / 146.16 MHz, 25 watts, no patch, 97.4 Hz PL

KL7AX: South Anchorage IRLP - 146.79/ 146.19 MHz, 100 Hz PL

WL7CWE Anchorage IRLP

2 Meter: 146.82/146.22MHz PL 103.5

6 Meter: 51.65 output / 51.15 input, PL 103.5Hz

70 cm: 444.85/449.850 MHz PL: 103.5 Hz (Node 3400)

South Central Area Simplex Frequencies

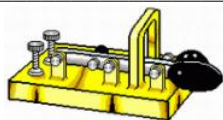
146.52 MHz Calling and Emergency frequency

147.57 MHz National DX Calling / Coordinating frequency

146.49 MHz Anchorage area simplex chat

146.43 MHz Mat-Su Valley simplex chat

147.42 MHz Peninsula simplex chat



Nets in Alaska:

The following nets are active in South-Central Alaska:

HF

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

ACWN (Alaska CW Net) 3534, 7042 Daily @ 0700 -1000,

Net Purpose: Formal NTS traffic via CW.

Alaska Pacific Net: 14.292 MHz 8:00 AM M-F

ERC HF Net: 3.880 MHz - Sunday 8:30PM local

VHF

ARES Net: 147.27/87 103.5Hz - Thursdays at 8:00 PM local

PARKA Net 147.30/90, 141.3 HZ Thursdays at 7:00 PM local

No Name Net: 146.85/.25 repeater Sundays 8:00 PM
and 1900 - 2400 Alaska Time - AL7N or KL5T monitoring.

Big City Simplex Net: 146.520, 446.0, & 52.525 FM

Grandson of SSB Net: 144.20 USB Mondays 8:00 PM local

Statewide LINK ARES Net:

147.27/87 103.5Hz Sunday 8:00 PM local



Internet Links, the favorites from our readers:

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

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

EARS <http://www.kl7air.us>

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/>

ALASKA MARS: <http://www.akmars.org>

Yukon Amateur Radio Association:

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

Links for Propagation

<http://www.haarp.alaska.edu/>

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

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

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**

Regular HAM Gatherings:

Tuesday Lunch, 11:30 AM: Denny's on Denali behind Sears. Several old timers show for this and have lots of stories to share.

Thursdays Brunch, 9:30 AM: Brunch NW corner of Debarr and Bragaw at Birch Tree Dining. 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 American Diner, at the SE corner of Arctic and International. Great Fun.

Who Do I Contact to Join AARC

Fred Erickson KL7FE

12531 Alpine Dr

Anchorage, AK 99516-3121

E-mail: [membership \(at\) kl7aa.net](mailto:membership(at)kl7aa.net)

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



MONTHLY 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 147.27+ repeater.

1st Tuesday each month (except for holidays):

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. Contact: Jim Wiley, KL7CC 338-0662.

SCRC general meeting has been suspended until further notice. No meetings are scheduled at this time.

2nd Saturday each month: PARKA Meeting at 11:00 AM. Polar Amateur Radio Klub is the only YL club in Alaska. All amateurs welcome. Peggy's, across from Merrill Field. Talk in on 147.30+.

2nd Saturday each month (except for holidays):

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. Contact: Jim Wiley, KL7CC 338-0662.

2nd Saturday of each month: EARS general meeting at 3:00 PM. Meetings are held at R1 North. Contact info - PO Box 6079, Elmendorf AFB 99506 or email Ron Keech, KL7YK for information. EARS: 552-2664 (recording); Talk in on 146.67-. Email: kl7air@qth.net or kl7yk@arrl.net

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

3rd Friday each month: Alaska QRP Club meeting 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. Bring projects to share with the group. Hungry QRPers start showing up about 6PM. Info contact Jim Larsen, AL7FS, [JimLarsen2002 at alaska.net](mailto:JimLarsen2002@alaska.net) or 345-3190.

3rd Saturday each month: ARES General meeting 9:30AM to 12:00 PM. Call Michael O'Keefe, ANC DEC: dec@kl7aa.net HM: 243-4675 for additional information. Also check for ARES Info at: <http://www.qsl.net/aresalaska/>

4th Saturday of each month: Valley VE Testing at 7PM. 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.

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 Tim Comfort, NL7SK, [NL7SK at arrl.net](mailto:NL7SK@arrl.net).

THE MODULATION TIMES

Anchorage Amateur Radio Club, Inc
Post Office Box 101987
Anchorage, Alaska 99510-1987
www.kl7aa.net

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AMATEUR RADIO

