April 2007

KL7KC
Fairbanks, Alaska

Arctic Amateur Radio Club

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The Other 80% of Amateur Radio

***By Eric Nichols KL7AJ**, "The Decider" of the Arctic ARC*

Part 97.1 Basis and Purpose

The rules and regulations in this Part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

(c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communications and technical phases of the art.

(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.

(e) Continuation and extension of the amateur's unique ability to enhance international goodwill

If you're like most hams, it's probably been a while since you've read Part 97.1, which spells out our reason for existing as radio amateurs. It's always a good idea to remind ourselves of these things. I've made it easy, by posting the entire text of the Basis and Purpose above.

You will notice that there are five parts, a), b), c), d), and e), each of equal weight. As in the Constitution of the United States, the order in which the articles are listed in no way reflects their relative importance or priority. Since the wise forgers of this Basis and Purpose recognized that most humans are incapable of processing five ideas simultaneously, they had to list them sequentially. But be certain of this: when it comes to defending our precious amateur radio spectrum, the FCC and other entities take into consideration our fulfillment of all five obligations with equal weight.

The Arctic Amateur Radio Club has a long tradition of fulfilling part A admirably. We have emergency preparedness capability second to none...especially when you consider the size of our "market." We have no apologies to make when it comes to public service.

However, the public service aspect of amateur radio justifies precisely 20% of our hobby in the eyes of the law. What are we accomplishing, both locally, and nationally, to fulfill the other 80% of our obligations? Let's look at the remaining four segments individually, and see how we're doing. We have a lot more spectrum to defend than just the few slivers of the VHF and UHF spectrum typically used for emergency communications. We have radio allocations from essentially DC to Daylight, many of which may NEVER be of any apparent value for emergency or public service communications. This is where Part B is most crucial.

"Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art."

What contribution to the radio art or science have you made lately? Do you know more about radio today than you did yesterday? Do you even want to know? Have you helped

someone else understand more about this amazing universe because of your amateur radio activities? Have you explored any of the frontiers of the radio spectrum? (This includes both very long waves as well as very short waves, by the way). Have you built a crystal radio? Have you built a digital signal

(Continued on page 2)

(80%—Continued from page 1)

processor? Have you written a new piece of ham radio software? Have you written a technical article? Do you know how a soldering iron works? Have you ever bounced a radio signal off the Moon, off the Aurora, off a meteor, off Mt. McKinley, or off your neighbor's dog house?

Only you can answer these questions for yourself. Of course, the list is endless. Fortunately, you don't need to have a PhD to contribute to the radio art; all you need is curiosity. All you need is to care.

Let's look at Part c) "Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communications and technical phases of the art."

This is closely related to Part B, but deals more with the administrative and maintenance modes of our hobby. We need to be involved in the improvement of the rules which encourage advancing our communications skills and technical competence. This means involvement in the decision and rule-making process, either through the ARRL, your local club, and even political involvement, where necessary. Our rules must reward and encourage technical knowledge. This would seem to be a no-brainer.

How about Part D?

"(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts."

Think about this one. When someone in your neighborhood, presumably a non-ham, has a technical problem with something....anything from a cranky microwave oven to a computer issue...are you the first person they would come to for help? Are you known for your technical competence, especially when it comes to electronics? Are your amateur radio skills portable to the real world? Are you good enough at doing what you do in your ham shack to make a living at it?

Perhaps you're already settled in your career, or even retired. Have you elmered anyone recently? Has some kid been so enamored by your ham shack that he'd consider a career in electronics when he "grows up"? Have you presented amateur radio in your local school as a pathway to an exciting scientific or technical career? Are the schools seeking you out as a resource to teach the next generation a thing or two about technology? Are you indeed a reservoir of expertise? Is the Arctic Amateur Radio Club?

We need to answer these questions.

Finally, let's look at Part E.

"(e) Continuation and extension of the amateur's unique ability to enhance international goodwill."

This is a most interesting one. No matter how one might wish to massage the text to one's liking here, this MUST imply DXing...and by natural extension, HF operating. We aren't going to contact, much less enhance international goodwill through two-meter repeater activity. This is also a no-brainer. With very few exceptions, our Amateur Radio allocations are INTERNATIONAL allocations. It is the nature of radio waves to not recognize political boundaries. It is a horrendous disservice to any new radio amateur to NOT expose him to international radio communications. By not encouraging DX operating, we are intentionally ignoring 20% of our hobby...as devastating to our existence as if we never performed any public service communications.

Amateur Radio is unique in so many ways. There are a multitude of things that ONLY we can do...there is no need to duplicate, or even compete with, other services. Let's do what ONLY we can do...bring the magic of radio to anyone who will listen.

Amateur Radio is, foremost, a scientific and technical hobby; it always has been. As long as it is allowed to be so, it will always exist and thrive. ⌗

Contest Station Saga: Which Logger?

By Larry Ledlow, Jr. N1TX

In short, the C3 installed in the fall is working as designed. The Lower 48 and Caribbean are relatively easy to work, and Asia can be done off the back of the beam. I note concentrations of contacts at integral multiples of 1500-1600 miles.

The high (75 feet) and low (50 feet) loops show decidedly different characteristics at different times of day. The lower loop captures much less noise during the evenings, and overall signal reception is better than the high loop. However, the high loop performs better on 40 meters around sunrise and sunset. Working US stations on 40m is very difficult, and 80m is modestly effective under good band conditions. 40m and 80m DX in the South Pacific is pretty good with both, and these two inferences jive well with the theory.

In all, nearly 3600 QSOs with all continents, 68 countries, all 50 states and DC in five months have gone into my observations. That's more than twice the QSO count I made in the *eight years* before installing the C3.

Now, as with any operation of this magnitude — which is still modest by many measures — a significant burden is derived from record-keeping. Between printed QSLs, Logbook of the World (LoTW), and eQSL, I realized my existing logbook program, Win-EQF, simply didn't have the "power user" features I began to see I needed. Don't get me wrong. I think Win-EQF is a fine log program for the casual operator and DXer. It is not suitable for managing large numbers of database entries. It does not support automatic synchronization with eQSL and LoTW, either.

My criteria were as follows: The program had to interface to my radio (FT1000MP Mark V), be able to sync eQSL and LoTW, have bulk edit and filtering of the entries, and print decent QSL labels. An implied requirement is that the logging program will import ADIF files from other logging program. After all, I would have to migrate from Win-EQF, and Win-Test is used for all contest QSOs. Both produce ADIF exports.

I went to eham.net and considered some of the reviews. I then was determined to look more seriously at the freeware programs.

I had played a bit with DXLab Suite and decided to look into Ham Radio Deluxe and compare both in earnest. I absolutely love the logbook GUI of HRD. A lot of tasks like bulk-editing are much easier than in DXL. However, the operation is prone to errors. The rig interface window is very slick, but I didn't like the way it controlled my radio. Uploading eQSL and LoTW logs are easy, but It wasn't clear to me how to download my eQSL inbox. Award analysis is pretty much limited to DXCC, so tracking other awards like Worked All States is not immediately available. HRD's canned filters are limited for database operations, and DXCC entry while real-time logging is error-prone. Perhaps I was simply not proficient.

I gave DXLab a couple of chances with its DX Keeper and Pathfinder applications. I was a little baffled by DXL's advanced log filtering options before I realized the power in its interface. You can construct sophisticated SQL queries, but a little knowledge of SQL will go a long way. The rig interface is not as visually appealing as HRD, but it is very functional. After a third try with DX Lab, I am heavily swayed in its favor. DXL would not initially control a borrowed Yaesu FT-2000, which I am considering as a primary radio. HRD managed to auto-negotiate a connection, but I had to reset the transceiver and tweak DTS and RTS (OFF/ON) for the DXL interface to work at 4800 8N2. (Win-Test will also work with the FT-2000, but Win-EQF does not.)

Another freeware program I tried is jlog, which seemed just the right balance between features/automation and simplicity. It runs under Java and thus can be used on virtually any common operating system, from Mac to Linux. I installed it on a 400 MHz Win2K machine, and it ran well. However, it would not communicate with my rig, which is located on serial port COM8. The program certainly grabbed COM8, but no data was transferred. Perhaps with more fiddling I could make the interface work, but for now I will give it a pass. Nonetheless, I give the program high marks and think it's worthy of consideration by anyone.

I tried most of the major software packages, including some shareware and commercial demos. Commercial packages sometimes seemed too intensive for my low-end PC, or they simply didn't measure up in features and/or feel. At this point, the only other I would consider is WriteLog, which I have seen in action but not yet used. Meanwhile, DXL is it. #

First Impressions of the FT-2000

I had the good fortune to be loaned a relatively new Yaesu FT-2000, and I quickly compared it with the stock FT-1000MP Mark V, my primary radio at this time. First, the FT-2000 impresses me very much with the ergonomics. It's proof Yaesu listens to users' feedback. It is definitely more user-friendly.

The controls are extensive and well laid out. The band/entry pad has been moved up to a sensible position and the sub-receiver controls do not require first selecting the SUB button as on the Mark V. The display is highly customizable, and a busy operator can determine rig configuration at a quick glance. No need to scan unlit knobs or to recall a setting from memory. Everything from mode and frequency to IF, DSP, and audio filter settings are readily discernible. It easily interfaces to most logging programs via RS-232 and a DB9.

There is one MENU button, whereas the Mark V requires a combination of button presses to enter menu. Again, this is a major advantage to a busy operator getting through a pileup. The menu system is somewhat different than recent generation Yaesu radios. Each function is grouped sensibly and labeled well. The adjustments for CW settings are under group "A1A", for example. A menu item is selected with the main tuning knob, while the sub-receiver tuning knob selects a particular value.

The FT-2000 receiver seems quieter than the Mark V. The latter has a known issue with a high-noise 455 kHz third IF, for which modifications are available. Filter adjustments and IF shift are easy to make quickly thanks to ample knobs and the comprehensive display. The ICOM IC-756PROIII has comparable information, but there is no true "bandscope" on the FT-2000 panel.

Of particular importance in my mind are the ability to operate from a DC system and relative portability. The FT-2000 has a built-in 12 VDC power supply, and the rig can be run from any common DC source. The Mark V has a custom 30 VDC power supply due to the 200W output. I believe the FT-2000D will offer the same. That means when the power supply breaks, you likely will have to send it back to Yaesu for expensive repair. And in an emergency or at the cabin? *Fuggetaboutit!* The FT-2000 has none of these limitations. It is not exactly portable, but the rig is certainly moveable with relative ease and usable under a wide range of circumstances.

I initially made several CW contacts with good signal reports on 20 and 40m. I believe the known key-click issue with the Mark V is not repeated here. The rig was used for a few dozen QSOs in the recent WPX SSB contest, too.

Based on my limited experience, if I had to have one HF radio, this would be it. The Mark V is a fine rig and has a good track record in my shack.. Look for used units, though, because I think a lot of hams will be trading. — *N1TX*

Thoughts from the Drawing Room

By Eric Nichols KL7AJ

I picked a piece of lint from my smoking jacket, and ducked into Nigel's library. A few other members of the club were already present, and politely acknowledged my arrival.

Nigel put his hand on my shoulder and gently directed me to the bar. "Might I interest you in some Absinthe, Frederick?"

I shook my head. "I've heard that's some vile tasting stuff."

Nigel laughed. "After the first one, you won't even notice the taste, I assure you."

"I...uh...see," I said, skeptically.

Nigel, sensing my malaise, laughed again, and waved his hand. "We're all free-thinkers here; of course you're free not to partake. Let's have a seat, shall we?"

I made my way toward the semicircle of chairs arrayed about a large slate board on an easel in the midst of the den, and took my customary seat, the third one from the anti-clockwise end. I retrieved my Meerschaum pipe from the hip pocket of my smoking jacket and lit up.

On the slate board, in Nigel's immaculate hand, was printed in off-white chalk, "Necessity is the Mother of Invention."

Nigel took his customary stance to the left of the slate board. He took his rubber tipped pointer and rapped on the top of the slate board.

"Gentlemen, I would propose to you that this statement is unmitigated balderdash." He paused a moment for us to consider his words. He continued.

Can anyone present identify a modern convenience that at one time wasn't a mere curiosity? Perhaps the simple result of an experiment having gone awry? Consider the photograph, the telegraph, the gaslight, the railroad."

"Or Absinthe!" Carlton chimed in, raising his glass.

"Here, Here!" responded several club members in chorus.

"Or Absinthe," Nigel repeated, warmly. He took a sip from his own glass and continued.

"You see, bad philosophy creates bad thinking. If we are to shackle ourselves with such outdated platitudes...no, no, not merely outdated, but patently wrong...we place ourselves at the risk of stifling all creativity. It is a misuse of brainpower to merely focus on existing problems. For there will always be problems. For every problem we solve, another problem will present itself; and we have really learnt nothing.

To obtain genuine knowledge, we have to look at the principle of the thing. We have to look at it during a time of peace and stability. Emergencies result in timely solutions, but not timeless solutions. The problem with timely solutions is that they become obsolete when their time has passed."

The ensuing silence in the room seemed to indicate that Nigel's words were well received. I, myself, could find no direct fault in what he had to say. However, in order to foment further discussion, I decided to play devil's advocate. I took a deep draught of my pipe.

"Nigel. For the sake of argument, let's look particularly at the telegraph. I will agree that it was a mere laboratory curiosity not too long ago. I can also agree that in 1750, nobody needed, as it were, the telegraph. Although, I'm certain, it would have been nice, and might even have resulted in quite a different outcome with respect to the Colonies...a moot point now, I'm sure."

My colleagues got a good laugh out of the latter part of my assertion, so I continued.

"But, all of us here know fairly precisely how the telegraph works; it's not such a mystery, any more. It has achieved a good level of sophistication, and most of those improvements have come about because of blatantly commercial interests, not curiosity. And look what that has achieved. We have communications at the speed of lightning; we've achieved the ultimate in human development, much of it having come about by crass materialism, if not emergency."

Several of my fellow clubbers nodded in quiet agreement.

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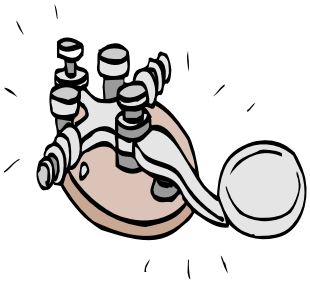
"I retrieved my Meerschaum pipe from the hip pocket of my smoking jacket and lit up."



(Drawing Room — Continued from page 5)

Nigel took another sip of his Absinthe. "The ultimate in human development, you say? I have heard that in America, they've been toying with wireless telegraphy."

"Wireless!" Carlton laughed, rising to his feet, his Absinthe sloshing onto the polished hardwood floor. "Fairy tales and alchemy, I say!" He fell to his seat in paroxysms of laughter. Soon, the entire club was engulfed with such knee-slapping and uproar, save for myself, that Nigel despaired that he should ever regain control. Eventually, the cacophony subsided as the clubbers ran out of steam, if not derision.

Nigel rapped on the slate board with his pointer, restoring a semblance of order. "Why does it seem that Frederick is the only one present who is not overcome with such a spirit of skepticism? Aren't we all free thinkers?"

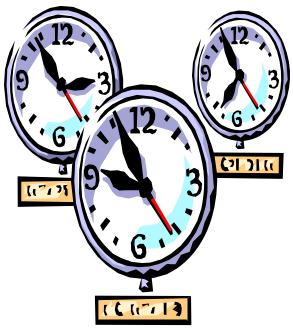
Carlton sheepishly seemed to accept Nigel's rebuke, though not entirely.

"My apologies, Nigel. But we've all heard these wireless rumors for nigh unto a decade. What has it produced? Absolutely nothing. Mark my word, this wireless nonsense will be long forgotten before any of us here breathes our last breath."

"Here, here," echoed a couple of clubbers, but with somewhat subdued enthusiasm.

We spent the rest of the evening solving the remainder of the world's problems, but when Nigel finally adjourned the meeting, I felt strangely uneasy. I knew that Nigel's opening premise was right. Invention was indeed the mother of Necessity. ⌖

CHU: WWV Canadian Style



Time standard station CHU is operated by the Institute for National Measurement Standards at the National Research Council of Canada on 3330, 7335, and 14 670 kHz.

The transmission mode, upper single sideband with carrier reinserted, provides time signal service without requiring a special SSB radio, and also provides three standard frequencies. The frequencies are derived from one of a trio of closely synchronized atomic clocks located at the transmitter site.

Normally CHU's emission times are accurate to 0.001 s, with carrier frequency accuracy of 5×10^{-12}, compared to NRC's primary clocks, which are usually within 10 microseconds and 1×10^{-13} compared to UTC.

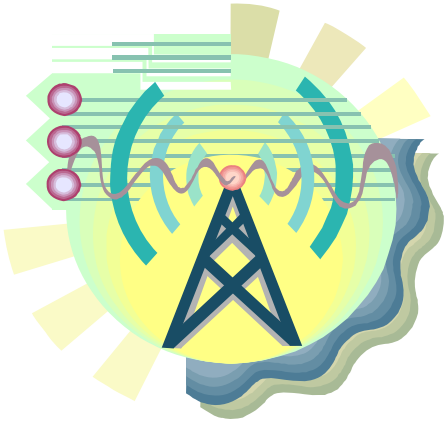
The call letters CHU were first used for Canadian time transmission in 1938, on the modern frequencies, 3330 KHz, 7335 KHz and 14670 KHz. Before that the call letters of essentially the same transmissions were VE9OB.

The CHU station is located 15 km southwest of Ottawa at 45° 17' 47" N, 75° 45' 22" W. Main transmitter powers are 3 kW at 3330 and 14 670 kHz, and 10 kW at 7335 kHz. Individual vertical antennas are used for each frequency. The electronics systems feeding the transmitters are duplicated for reliability, and have both battery and generator protection. The generator can also supply the transmitters. The announcements are made by a talking clock using digitally recorded voices.

The first minute of each hour commences with a full 1 s pulse of 1000 Hz tone, followed by 9 s of silence, and then the normal pattern of 0.3 s pulses of 1000 Hz at one-second intervals. The normal pattern for each of the next 59 minutes starts with a 0.5 s 1000 Hz pulse, followed by the DUT1 code employing split 0.3 s pulses where required, and normal 0.3 s pulses up to and including that at 28 seconds. The pulse at 29 seconds is omitted. Following the normal pulse at 30 seconds, for a 9 s period, 1000 Hz pulses of 0.01 s occur, each followed by the CHU FSK digital time code described in CHU Broadcast Codes. The pulses between 40 and 50 seconds are of normal length. In the final 10 s period of each minute a bilingual station identification and time announcement is made, with the 1000 Hz seconds pulses shortened to "ticks". Each minute's announced time refers to the beginning of the pulse which follows. Since April 1, 1990, the announced time is always UTC.

NRC has maintained time in Canada since 1970. ⌖

W1AW Spring-Summer Schedule



ARLB010 W1AW 2007 Spring/Summer Operating Schedule
Morning Schedule:

Time	Mode	Days
1300 UTC (9 AM ET)	CWs	Wed, Fri
1300 UTC (9 AM ET)	CWf	Tue, Thu

Daily Visitor Operating Hours:
1400 UTC to 1600 UTC - (10 AM to 12 PM ET)
1700 UTC to 1945 UTC - (1 PM to 3:45 PM ET)
(Station closed 1600 to 1700 UTC (12 PM to 1 PM ET))

Afternoon/Evening Schedule:

2000 UTC	(4 PM ET)	CWf	Mon, Wed, Fri
2000	" "	CWs	Tue, Thu
2100	" (5 PM ET)	CWb	Daily
2200	" (6 PM ET)	RTTY	Daily
2300	" (7 PM ET)	CWs	Mon, Wed, Fri
2300	" "	CWf	Tue, Thu
0000	" (8 PM ET)	CWb	Daily
0100	" (9 PM ET)	RTTY	Daily
0145	" (9:45 PM ET)	VOICE	Daily
0200	" (10 PM ET)	CWf	Mon, Wed, Fri
0200	" "	CWs	Tue, Thu
0300	" (11 PM ET)	CWb	Daily

Frequencies (MHz)

CW:	1.8175	3.5815	7.0475	14.0475	18.0975	21.0675	28.0675	147.555
RTTY:	-	3.5975	7.095	14.095	18.1025	21.095	28.095	147.555
VOICE:	1.855	3.990	7.290	14.290	18.160	21.390	28.590	147.555

Notes:
CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 and 15 WPM
CWf = Morse Code practice (fast) = 35, 30, 25, 20, 15, 13 and 10 WPM
CWb = Morse Code Bulletins = 18 WPM

CW frequencies include code practices, Qualifying Runs and CW bulletins.

RTTY = Teleprinter Bulletins = BAUDOT (45.45 baud) and AMTOR-FEC (100 Baud). ASCII (110 Baud) is sent only as time allows.

Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and at the beginning of alternate speeds.

On Tuesdays and Fridays at 2230 UTC (6:30 PM ET), Keplerian Elements for active amateur satellites are sent on the regular teleprinter frequencies.

A DX bulletin replaces or is added to the regular bulletins between 0000 UTC (8 PM ET) Thursdays and 0000 UTC (8 PM ET) Fridays. In a communications emergency, monitor W1AW for special bulletins as follows: Voice on the hour, Teleprinter at 15 minutes past the hour, and CW on the half hour.

FCC licensed amateurs may operate the station from 1400 UTC to 1600 UTC (10 AM to 12 PM ET), and then from 1700 UTC to 1945 UTC (1 PM to 3:45 PM ET) Monday through Friday. Be sure to bring your current FCC amateur license or a photocopy.

The complete W1AW Operating Schedule may be found on page 86 in the March 2007 issue of QST or on the web at, http://www.arrl.org/w1aw.html /EX

Arctic Amateur Radio Club

Membership $20 individual, $25 family. Send checks to
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PO Box 81804
Fairbanks, AK 99708

Phone: 907-479-5203
E-mail: bennie@gci.net

VISIT WWW.KL7KC.COM FOR THE LATEST CLUB NEWS AND EVENTS!

Service to Interior Alaska: We can, we will, we do.

April Brings Kids Roundup!

The Anne Arundel Radio Club, Jr, Inc. (AARC, Jr - KI3DS) is pleased to sponsor an amateur radio contest for kids. We hope that this contest will serve as a bridge between the kid-friendly ARRL-sponsored Kids Day event and the fun but hectic world of contesting at a slightly slower pace.

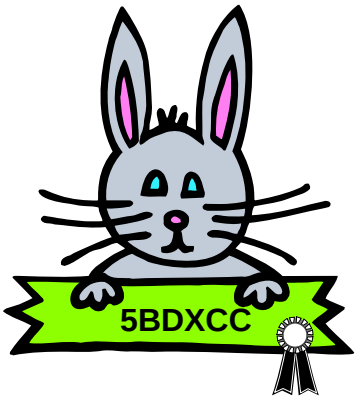
The Kids Roundup is a contest just for kids. You don't have to be licensed to participate as long as you have a Control Operator. Only participants under the age of eighteen (18) at the end of the contest are eligible for plaques in each of the six entry categories. Licensed adults are encouraged to help the younger kids make their first contacts and encourage their participation in this event.

The contest will be conducted on Saturday, 21 April and Sunday 22 April 2007. The contest rules have been updated to allow Repeater, Echolink and IRLP contacts and use of the 70 cm band. Suggested frequencies: 3.920 7.230 14.270 21.370 28.370 52.525 146.550 MHz,

See details at http://www.ki3ds.org

FROM THE BOARD:

The AARC seeks a public information officer to promote community awareness of amateur radio and, specifically, club activities. Duties include writing and distribution of press releases, liaison with local media, and ensuring club events are posted in public forums and community calendars. Contact KL7AJ.



Calendar of Events

Apr 6: General meeting, UAF IARC Room 401. 7 PM. Pre-meeting activities start 6 PM.

Apr 7: License exams. Noel Wein Library. 1 PM. Help wanted. Contact KC8MVW.

Apr 12: AARC Board Meeting. Location TBD. Contact any board member for latest info.

Apr 21-22: Motorola QSO Party CW/SSB, sponsored by the Motorola Amateur Radio Club - Illinois Section from 1700Z Apr 21 - 0300Z Apr 22. Frequencies (MHz): 160 - 2 meters; Phone: 1.880, 3.880, 7.180, 14.280, 21.380, 28.380, 50.180.

Apr 21-22: Kids Roundup -- Phone, sponsored by the Anne Arundel Radio Club, Jr, from 1400Z Apr 21-2200Z Apr 22. Frequencies: 80m to 70 cm. For more information www.ki3ds.org

May 4: General meeting, UAF IARC Room 401. 7 PM. Pre-meeting activities start 6 PM.

May 5: License exams. Noel Wein Library. 1 PM. Help wanted. Contact KC8MVW.

May 10: AARC Board Meeting. Location TBD. Contact any board member for latest info.

30 May - Special Canadian station VYØICE - NA-047 from Iqaluit, Baffin Island, by VE2TKH, Zone 2, on 6-80 m. QSL direct to VE2AWR, Serge Langlois, 1291 Du Comte, Charlesbourg, QC, G2L 1B8, Canada.

Greenland

The OX60AD special event station marks the 60th Birthday of the U.S. Air Force, 56th anniversary of Operation Blue Jay and the 1951 Defense Agreement between Denmark and the United States and Greenland Home Rule, that establishing the Thule Defense Area, for the protection of Greenland and North America.

Operations will be from 1 April until 30 April 2007.