Arctic Amateur Radio Club

October 2006

KL7KC
Fairbanks, Alaska

Inside this issue:

A Word from the Prez

By Eric Nichols KL7AJ

I wish to extend my greetings and gratitude to all the members of AARC who saw fit to place me in the exalted position of club president. (And even to those who didn't!) This is my second term in something like twenty years, and the venerable, war-torn Arctic Amateur Radio Club gavel has a familiar feel to it.

I want to thank Larry for the wonderful work he has done during his tenure; we are of like minds.

Most of you that have known me for any length of time, know that I am passionate about the science of Amateur Radio. The same pioneering spirit that attracted me to Fairbanks thirty years ago is the same thing that drives my amateur radio pursuits. I need to explore the less-traveled road, seeking out the unseen nooks and crannies this wonderful hobby has to offer.

Since the beginning of amateur radio, the hobby has been in a constant battle against rigor mortis, both symbolic and actual! Even though I am well-entrenched in middle age, I realize that I am still a few years younger than the average ham. Something is wrong with this picture. Of course, there have always been Old Men in the hobby. Hiram P. Maxim was the original grand Old Man of amateur radio, and wore the distinction proudly. But even the old curmudgeon himself managed to produce a generation of young blood.

I first want to say that, when it comes to public service, the AARC has a spectacular record. We don't have to make any apologies in that department. Of course, there is always more one can do, but we are certainly on track. Our repeater system, likewise, is the envy of many, and we have been doing an admirable job when it comes to public relations. The unsung efforts of all who are involved in these crucial tasks are most appreciated.

Since these factors are already well "under control," I would like to concentrate on bringing the magic and the science of radio back to the AARC. H.F. propagation is coming back, slowly but inescapably. In the months to come, I will be calling for presentations on DXing, contesting, antennas, homebrewing, propagation, and other technical topics.

I would also like to see AARC as a viable launching pad for young people interested in a career in science or engineering. There's no reason we couldn't set up a local scholarship fund for promising young hams, similar to the ARRL scholarship fund. We are in a science-rich environment in Interior Alaska, and we should be taking advantage of that.

One small step we will be taking toward encouraging technical competence and interest, at the suggestion of Benny and others, is to have a basic electronics instruction session at the monthly pre-meeting. We will demonstrate basic test equipment usage, construction techniques, digestible chunks of electronics theory, such as Ohms Law, resonance, transistors, amplification, oscillation, etc. We are currently gathering parts for a group linear amplifier construction project. I would also like to build, as a group, the *QEX* High Performance Modular Receiver. This is a major project, but a doable one! It is a great way to learn some REAL electronics design theory and practice.

Finally, I would like to close with a Presidential Edict. Before my term is out, the Arctic Amateur Radio Club SHALL HAVE a genuine, permanent club station. ⌗

Interior Net Reminder

The Interior Net meets weekly on Thursday nights at 7 PM on the KL7KC repeater system. In Fairbanks, that's 146.88/- PL 103.5 Hz.

Since changing the gathering from Sundays to Thursdays, participation has increased notably. Thanks to all. You should also think about volunteering to help run the weekly nets. Learning to manage a net can be a crucial skill in an emergency or during a public service event.

Contact AD4BL.

LDG Electronics Z100 Auto-Tuner

By Rod Mitchell KL1Y

A few weeks ago I was awake in the wee hours of the night configuring my MARS HF Airmail terminal with James Banks, KK7RV (and MARS Western Area Coordinator). James gave me several frequencies for MARS PMBOs. After James asking several times if I'd tuned up yet, he finally asked what I used for a tuner. I explained that I used a manual tuner and that it took a few seconds and possibly minutes to match the impedance for new frequencies.

James recommended that I consider purchasing the LDG Z100. He explained that it would tune many antennas and that it is very quick. I decided to read LDG's published information on the Z100. I was convinced that this tuner might allow me to tune up faster for a very low price. My only skepticisms were Denise's (KL1OP) agreement to the purchase and the tuner's ability to tune my $20.00 wire antenna.

I crawled into bed and asked Denise if she had a problem with me purchasing the tuner. She woke up long enough to say yeah, OK. I immediately went to the Universal Radio web site and ordered the tuner. The next morning Denise asked me what I was buying. I was surprised, I thought she knew.

A few days later the tuner came in through the postal system. I was anxious to get home and setup the tuner. I read though all of the instructions. The quick start guide for the impatient was helpful too. The tuner matched the impedance for just about every band. It even tuned bands that had an SWR far greater than the advertisement suggested it would tune. It is very fast too. Denise was relieved to know that I could tune-up a lot faster. She even got on the air one night during the Motley Group to check-out the tuner.

The tuning process requires a long tuning process for new frequencies. Initiation of the long tuning process takes place at the Z100. After the initial tune is set the Z100 stores the parameters in memory. Once parameters are stored in memory they can be recalled using the tune button on the IC-706 and other compatible radios with the tune button. #

Band	SWR
80 meters	1.5
40 meters	1.1
30 meters	1.1
20 meters	1.2 to 1.5
17 meters	1.1 to 1.5
15 meters	1.5
12 meters	1.2
10 meters	1.1 to 1.2
6 meters	1.1 to 2.0

Note: The values are based on my specific antenna. Antennas that are designed for better performance across the entire Amateur Radio band will yield better results with this tuner.

The Z100 Low Cost ($139.00) . Visit www.ldgelectronics.com

Hilberling "Big Rig" for HF-6m

The new PT-8000 from Hilberling GmbH is a transceiver that has been developed and will be manufactured in Germany. Array Solutions in the USA has agreed to carry the line in the USA.

One transmitter and two identical and autonomous receivers can be hooked up to 3 antenna jacks. Therefore the PT-8000 incorporates newly developed hybrid preamplifiers (GaAsFET) for each antenna.

Never seen before with ham radio transmitters is the 600 watts PA of the PT-8000B. Only Two MOSFET SD3933 deliver the power working push-pull @ 100 Volts drain.

The preselector is automatically tuned thus providing the decisive first selectivity between 1.8 and 30 MHz. Basic studies at Hilberling GmbH revealed the correlation between the achievable large signal tolerance (IM) and the sheer mass of the toroids used in the LC-circuit.

Crystal filters are used to the maximum extent possible in the PT-8000: Four 8-pole roofing-filters and fourteen (!) 16-pole crystal ladder filters are applied. The shape factor @ 2.7 KHz is 1.3. The transmitter exploits three 16-pole crystal ladder filters (LSB/USB and RF-processor).

The combination of crystal filters, analogue audio filters and sophisticated DSP which operates at audio frequencies guarantees the outstanding selectivity. The DSP is tasked to improve the passband of the crystal filter especially at its flanks and to ensure narrow bandwidths down to 50 Hz. What is more the DSP provides in addition to the IF-notch at 10.7 MHz a multitone audio notch and an excellent feature to enhance readability known as noise reduction.

RF technology is manufactured to industrial standard: RF-PCB cards carrying completely shielded modules with 50 ohm coax connectors.

The PT-8000 is equipped with two banks (LSB/USB) of 16-pole crystal filters (MAIN- and SUB-RX) which can be used independently to ensure ISB-mode.

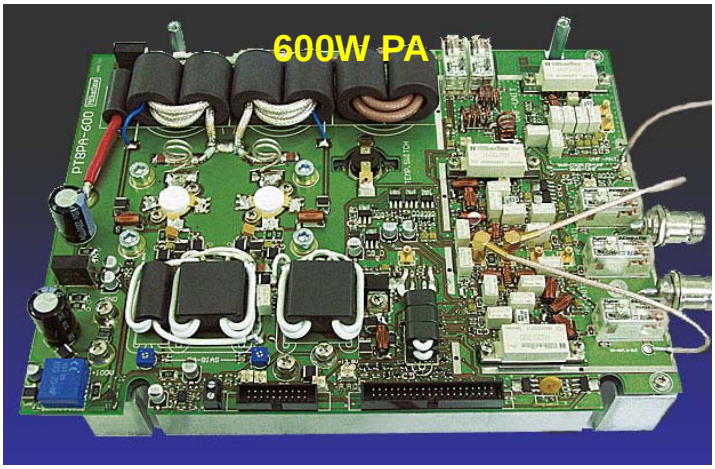
Outstanding modulation and spectral purity of the RF-signal are of utmost importance for the ambitious ham radio operator. For the first time in ham radio equipment the PT-8000 incorporates 8 DIPLEXER/ Low Pass Filters at the output of the PA. They prevent reflection of harmonics by low pass filters and antennas. The automatic tuner guarantees optimum working conditions and power transfer for the finals.

The 100-watt PT8000A lists for Euros 7586 (approximately $9596), and the PT8000B 600-watt version is Euros 9353 ($11,787). Model PT8000C is rated at 10 watts.

Visit www.arraysolutions.com for current availability and pricing.

1 kW Solid-State Amp

Array Solutions also plans to add SPE amplifiers to their catalog, pending FCC equipment certification. SPE 1K-FA covers 1.8-50 MHz bands and is completely solid-state, features an integral tuner, interfaces with ICOM Yaesu, and Kenwood radios, and requires only 20 watts drive. The amp is rated for 1 kW PEP SSB, 900W CW on HF and 700W PEP on 6m. Estimated price is about $3600.



K7JA Moves From Yaesu to Heil

Chip Margelli, K7JA has joined Heil Sound, Ltd. as the Vice President of Sales and Marketing. In his new capacity, Chip will be responsible for all national and international amateur radio sales and marketing plans. Chip brings his great passion and knowledge of amateur radio to this new post.

For over forty-two years, Chip has been active in DXing and international radio sport competition. Chip is currently active on all amateur bands from 1.8 through 1300 MHz, including HF DX/contesting, VHF weak-signal terrestrial/ moon bounce work, and satellite operation. Chip has been licensed since 1963, and has had his Extra Class license since 1968 and is a life member of ARRL, AMSAT, and Quarter Century Wireless Association. Articles by Chip have been published in QST, QCWA Journal, CQ, and CQ VHF magazines.

Chip graduated from Tacoma Stadium High School in 1970, earned a B.A. in Political Science from the University of Washington, 1974. In 1976 Chip also earned his M.B.A. from University of Washington with emphasis on Eurasian political systems, Japanese study, Engineering-level Calculus, Chemistry and Physics. He is fluent in Japanese, German and Spanish.

In May of 2005 Chip (and partner Ken Miller, K6CTW) wowed audiences at The Tonight Show with Jay Leno (NBC). Their morse code skills swiftly defeated the U.S. champion cell-phone text messenger in a message-completion speed contest.

Chip and his wife Janet, KL7MF and manager of HRO Anaheim, live in Garden Grove, California. Outside of Amateur Radio, Chip enjoys photography, astronomy, and he is a marathon runner. He can be reached at chip@heilsound.com

Bird's Eye View of Eagle Repeater

Ladder Line to Eternity — Part V

By Eric Nichols KL7AJ

Jeeves leaned back in his easy chair, watching the smoke rings rise lazily to the high ceiling, savoring the fragrance of the fine Danish tobacco in his Meerschaum pipe. It had been a good life. And better yet, since he was a clone, it would never have to end! He swiveled around in his leather chair, scanning the shelves of books in his oak-paneled library.

It had been years since he had ascended the rolling ladder to the very top shelves; certainly there were some choice tomes to be perused that he had long forgotten about. The last time he had been up there, he hadn't been quite so "well-girthed." Now he wondered if the elegant, but somewhat under-engineered, wooden ladder would support him safely. Then he reminded himself that he was, after all, immortal, and quite unlikely to suffer any long-lasting damage, even if the ladder did fail.

He opened the bottom left drawer of his desk and retrieved a feather duster, knowing that the upper expanses of his library were long overdue for some housekeeping, he figured he'd might as well do some dusting while he was up there. He pondered the feather duster for a moment then mused, "I should probably have the butler do this." Then a second later, "Oh wait, I am the butler!" He laughed uproariously to himself, in the silence of the library. He stuck the handle of the feather duster in his breast pocket, approached the frail-looking ladder, rolled it over to the north corner, and ascended toward the heavens.

As suspected, the ancient books were covered with a quarter inch of dust, something the dainty feather duster was ill-equipped to handle. Jeeves removed a venerable tome from the far-right end of the shelf, turned it upside down, and let a wad of dust fall to the floor far below. He blew off the remainder of the dust, gasping and gagging in the resulting cloud. "Well, well, what have he here?" he pondered, opening to the frontispiece. "The Art of Dog Grooming…" Jeeves peered out the arched window to his right, thought for a moment, then returned the book to the shelf. "I believe I will have to pursue that some time in the future." He turned his glance to the left, where the row of books seemed to converge to a point on the distant horizon. A strange thought occurred to him. He actually had time to pursue all this diverse knowledge! The last time he had been atop the ladder was in his pre-clone days. The concept of anyone actually reading all those books had been unfathomable back then. Now, not only could he read about any subject in the universe, but he could actually pursue and get good at dog grooming, should he so desire. He began to chuckle quietly, and within seconds, he found himself laughing so hard, it took every ounce of strength to maintain his grip on the ladder.

His reverie was interrupted by a knock on the library door.

"Hello? It's open," he called toward the knock. A second later, the young lad Pip Rasals, K1PIP, entered, glanced around the room, scratching his head.

"Up here, my good man," Jeeves called out.

Pip looked up. "Oh! There you are!"

"You might as well make yourself comfortable; I may be up here a while. Unless you care to join me."

Pip glanced at the groaning ladder with a shudder. "I think I'll pass, Mr. Jeeves."

Jeeves laughed uproariously again. "A wise decision, my good man. What can I do for you?"

"Just came by to say hi. What are you up to?"

Jeeves glanced down the ladder. "Oh, I'd say about eighteen feet!"

Pip glanced around the room. "Uh. You know, if you're looking for something, maybe I could find it for you. I'm a lot, uh, well...not quite...er..."

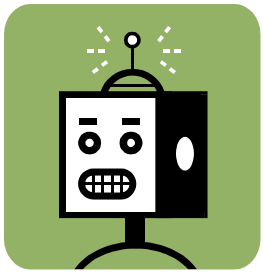
"Not so old and fat?" Jeeves laughed, completing Pip's thoughts.

"Well, I was going to be a little more diplo..."

Jeeves laughed again. "There's a place for diplomacy, and a place for truth, lad. My library

(Continued on page 6)

"Then he reminded himself that he was, after all, immortal, and quite unlikely to suffer any long-lasting damage…"



He rubbed his chin thoughtfully for a moment, then burst out in a resonant peal of laughter.

(Ladder Line — Continued from page 5)

is a place for truth. I appreciate your offer, son, but I wouldn't deprive myself of this pleasure to save my own neck."

"You like dust, Mr. Jeeves?"

Jeeves laughed. "Dust is a great preservative, son. All the greatest treasures have a great deal of it. The problem is, these days, nobody keeps anything around long enough to get dusty. It is a terrible shame, you know."

"I never thought of it that way," Pip confessed. "Yeah, I guess you're right. I don't think the Internet will ever get dusty."

Jeeves closed his left eye, and aimed his right one down the long row of books. "I wonder if you might scoot me down that away a few cubits..."

Pip approached the ladder. "Oh...uh, sure. Hang on tight." He pushed on the ladder and rolled Jeeves toward the location in question.

"Whoa, Nellie!" Jeeves cried. "Thank you, son."

"What do you see, Mr. Jeeves?"

"Looks like 1948 QST binder."

"What's it doing way up there? I thought you kept all your ham radio stuff down where you can get to it."

"I do. I guess I missed this one, somehow." Jeeves removed the dusty binder from the shelf, and held it out over Pip. "Look out below!"

Pip held out his arms to receive the ancient binder. It landed in his arms with a puff of dust. "Put that on my desk, if you will, son." Jeeves proceeded to descend the ladder. "I suppose I should come down for some tea after all." He alit on terra firma, dusted off his smoking jacket, and glanced up toward the summit of the ladder. "Was I really way up there?" he pondered aloud. He removed the feather duster from his breast pocket and playfully dusted the top of his guest's head. "Let's see what's in there."

"My head, or the binder?" Pip queried. He opened the binder, revealing the still glossy cover of the January issue of QST. "Hey, that's you on the cover!"

Jeeves nodded. "Yeah, that seemed to happen a lot back then."

Pip thumbed through the pages of the January issue, gasping in shock. "Mr. Jeeves! All the pages are blank! What gives?!"

Jeeves thumbed through the issue himself, furrowing his brow. He rubbed his chin thoughtfully for a moment, then burst out in a resonant peal of laughter.

Pip stared at his host in bewilderment. "Mr. Jeeves? What is it?"

Jeeves gradually composed himself, gazing with fatherly fondness at his young protégé. "You'll understand, soon enough." ⌗

FCC Changes HF Frequencies

Under new FCC rules indicated in their Oct 12, 2006, Report and Order, on 75 meters, Generals will be able to operate on phone from 3800-4000 kHz, an increase of 50 kHz. Advanced class licensees will be able to use voice from 3700-4000, an increase of 75 kHz, and Amateur Extras will be able to use voice from 3600 to 4000 kHz -- a generous increase of 150 kHz and substantially more spectrum than the League had requested for phone operation on 75. The ARRL had sought an additional 25 kHz. The FCC provided 150 kHz.

On 40 meters, Advanced and Extra Class licensees will be able to use voice from 7125-7300 kHz, an increase of 25 kHz. General class licensees will be able to use voice on 7175-7300 kHz, an increase of 50 kHz.

On 15 meters, General class operators will have phone privileges on 21275-21450 kHz, an increase of 25 kHz.

To accommodate the remaining Novice and Tech Plus licensees on HF CW, the FCC affirmed its intention to permit these licensees to operate CW in the current General exclusive-CW allocations on 80, 40, 15 and 10 meters.

Rules become effective 30 days after being published in the *Federal Register*. ⌗

Hams Officially Recognized

NEWINGTON, CT, Oct 4, 2006 -- A section of the Department of Homeland Security (DHS) 2007 Appropriations Act, HR 5441, formally includes Amateur Radio operators as a part of the emergency communications community. Congress approved the measure before adjourning for its pre-election break. President George W. Bush signed the bill into law today.

Amateur Radio is included within the legislation's Subtitle D, Section 671, known as the "21st Century Emergency Communications Act." Radio amateurs are among the entities with which a Regional Emergency Communications Coordination Working Group (RECC Working Group) must coordinate its activities. Included within the DHS's Office of Emergency Communications -- which the measure also creates -- RECC Working Groups attached to each regional DHS office will advise federal and state homeland security officials. House Subcommittee on Homeland Security Chairman Rep Harold Rogers (R-KY) sponsored HR 5441. The final version of the legislation incorporates language from both House and Senate bills and was hammered out in a conference committee.

An earlier version of the 21st Century Emergency Communications Act, HR 5852, sponsored by Rep David G. Reichert (R-WA), included Amateur Radio operators among the members of the RECC Working Groups.

In addition to Amateur Radio operators, RECC Working Groups also will coordinate with communications equipment manufacturers and vendors -- including broadband data service providers, local exchange carriers, local broadcast media, wireless carriers, satellite communications services, cable operators, hospitals, public utility services, emergency evacuation transit services, ambulance services, and representatives from other private sector entities and nongovernmental organizations.

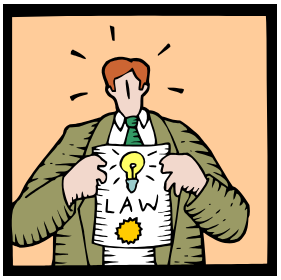
According to the bill, the RECC Working Groups will assess the survivability, sustainability and interoperability of local emergency communication systems to meet the goals of the National Emergency Communications Report. That report would recommend how the US could "accelerate the deployment of interoperable emergency communications nationwide."

RECC Working Groups also will be tasked with ensuring a process to coordinate the establishment of "effective multi-jurisdictional, multi-agency emergency communications networks" that could be brought into play following acts of terrorism, natural disasters and other emergencies.

At the state and local level, RECC Working Groups will include state officials; local government officials; law enforcement; local fire departments; 911 centers; state emergency managers, homeland security directors or representatives of state administrative agencies; local emergency managers or homeland security directors, and other emergency response providers.

At the federal level, RECC Working Group members will include representatives of the DHS, the FCC and other federal departments and agencies responsible for coordinating interoperable emergency communication with or providing emergency support services to state, local and tribal governments.

In the wake of the bill's passage, the ARRL plans to follow up to determine how it can interact with the DHS and its Office of Emergency Communications. #



On-Line Training from FEMA

The Federal Emergency Management Agency offers on-line training at no cost for the general public as well as emergency personnel. ARES volunteers will find especially relevant training on subjects such as the Incident Command System and disaster preparedness. You can get a complete list and register at

http://training.fema.gov

Select Independent Study from the menu. Certificates are available.

[T]he RECC Working Group also will coordinate with communications equipment manufacturers and vendors...

Arctic Amateur Radio Club

Membership $20 individual, $25 family. Send checks to
AARC
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.

60 Meters, Anyone?

"Based on the record before us, we believe allowing an amateur station in, or within 92.6 kilometers of, Alaska to transmit communications during drills and tests on 5.1675 MHz is warranted. We note that ARRL supports the proposed changes, stating that "the use of the frequency in Alaska is less valuable unless radio amateurs are prepared for its use in emergencies." In this regard ARRL argues that amateur stations conduct "serious, and extremely professional emergency drills and tests," and this new authority would be of great value to the citizens of Alaska. Accordingly, we will revise our Rules to authorize amateur stations in or near Alaska to transmit communications for training drills and testing purposes on 5.1675 MHz, in addition to communications during emergencies, because we believe this change will enhance emergency communication capabilities, thus serving the public interest."

— FCC Report and Order, 10 October 2006

FROM THE BOARD:

The monthly board meetings are now held at a new venue:

Trio Hawaiian Grill, 1235 Airport Way, near Gottschalks

First Thursday after general membership meetings, 7 PM

Calendar of Events

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

Oct 7: License exams. NO EXAMS THIS MONTH.

Oct 12: Board meeting. Trio's Hawaiian Grill, 1235 Airport Way. 7 PM.

Oct 28-29: CQ World Wide DX Contest -- SSB, sponsored by *CQ Magazine*, 0000Z Oct 28-2400Z Oct 29. See www.cqww.com for details.

Nov 3: General meeting, UAF IARC Room 401. 7 PM. Pre-meeting activities start 6 PM.

Nov 4-6: ARRL November Sweepstakes -- CW. See Oct *QST*, p 103, or www.arrl.org/contests.)

Nov 4: License exams. Noel Wein Library. 1 PM. Contact NL7XH.

Nov 9: Board meeting. Trio's Hawaiian Grill, 1235 Airport Way. 7 PM.

Nov 18-20: ARRL November Sweepstakes -- SSB. See Oct *QST*, p 103, or www.arrl.org/contests.)

Nov 25-26: CQ World Wide DX Contest -- CW. Sponsored by *CQ Magazine*. See www.cqww.com for details.

Dec 1: General meeting, UAF IARC Room 401. 7 PM. Pre-meeting activities start 6 PM.

Dec 2: License exams. License exams. Noel Wein Library. 1 PM. Contact NL7XH.

DUES ARE DUE!

Remember, your membership expired at the hamfest. Please renew as soon as possible. $20 individual, $25 family. Contact Benny NL7XH.

49th Jamboree on the Air

JOTA is an annual event in which about 500,000 Scouts and Guides all over the world make contact with each other by means of amateur radio. It is a real Jamboree during which Scouting experiences are exchanged and ideas are shared, thus contributing to the world brotherhood of Scouting The JOTA is a world-wide event.

JOTA is held the third weekend in October of each year. JOTA takes place starting Saturday at 0001 hours local time to Sunday, 2359 hours local time, though some activity continues over from Friday to Monday to take advantage of long distance (DX) time differences. (Oct 21-22, 2006.)

Stations should call "CQ Jamboree," or answer stations doing so. JOTA is not a contest. The idea is not to contact as many stations as possible.