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The WACOM HAM

MAY
 2005



President's Corner

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WACOM's Technician Licensing Class last month produced two new hams: Benjamin Kerchner, KB3MDO and Kathy Kerchner, KB3MDP. We also had other successful candidates: new Technicians Misty Plants, KB3MDQ, and George Dykeman, KB3MDN; upgrade from Tech to General Stephen Barchiesi, KB3IVK, of Rices Landing; upgrade of Tech to General Larry Day, KB3KXO; and upgrade from Tech to Extra Bill Sheehan, KB3LIX. Congratulations to them all!!!

There has been some discussion about having a General Licensing Class so if you have interest in this, please let Bob, KB3IN know. Interest also continues in having a Morse Code class, but this will involve more planning, including scheduling of a meeting place to conduct the class.

Would there be interest in a YL net? There isn't one in the vicinity (that we're aware of) so we would like to have your feelings on starting one on the 2-meter repeater. Very informal, just to chat. Mondays and Wednesdays seem to be open evenings to try. Comments?

Field Day will be here before we know it! Please come out and have some fun. Get on the air and make us truly Radio-Active!

73, Jacqué Gosselin N3ZEL
 President, WACOM

UPCOMING MEETINGS!



Next WACOM Monthly Meeting:
 Thursday, May 5, 2005, 6:30 PM

Next WACOM Board of Directors Meeting:
 Thursday, May 26, 7:30 PM

Meeting Location: County Building, Downtown Washington. Meeting room to be posted by the elevators on the Main Floor of the building.



CW Stands for "Cold Workaround"

Alexandra L. Carter NS6Y courtesy of www.eham.net

I've had an awful cold for 5 days now, and if I were a phone op only, I'd be hard put to do much operating! Fortunately, I'm more interested in CW and am working on getting some real competency. So, lack of a voice has not kept me from daily practice and if my skills were a bit better I'd like, as not be QSOing my head off. As it is, I'm getting some good copying practice done while I wish for the day my throat won't feel like someone took an orbital sander to it...

Come to think of it, it's a good thing I'm into CW, because I'm in an apartment building and talking on the radio into a mic at night is LOUD. But a key just goes clickity- clickity-click at worst, no problem there.

I tend to be a night-owl, and it's hard to find much SSB on the bands I find, at this time, but it seems there's always plenty of code late at night. That's nice too! If I were into phone primarily I'd have a hard time doing much operating in the evenings when I have some time to do things.

And another thing, my pipsqueak 5W will go a lot further on CW than on SSB, less chance of having to use more power and getting that coveted "worked all consumer appliances" award, a real concern around here. I can hear the tiniest threadiest little signals on CW where it takes a signal with a lot more power to get through on SSB.

This is why CW will never die, in fact is growing!

CW Ops: We're Here, We're Clear, Get Used to it!

The ARRL Web site now features up-to-date listings of DXCC awards earned. The new system shows every issued DXCC award known to ARRL's computerized DXCC system. Membership Services Mgr. Wayne Mills N7NG, says the Web site listing is more complete than the *DXCC Yearbook* ever was, since the printed list did not list inactive band accounts for the previous year. "This lists everything and everybody," Mills emphasized. "The new system makes available a separate listing for each DXCC award type — band or mode."

Each listing by band or mode is complete in a separate Adobe PDF file.

Many 2004 members of the Western Pennsylvania DX Association thought that the letter that they received in February was their annual dues reminder. Instead, the WPADXA announced it's decision to "fade away."

The WPADXA cited increased use of the Internet for DX spotting as one of the reasons behind this decision. Current equipment (presumably the AD8J 2 meter DX Cluster node) will not be repaired or replaced should it suffer a major hardware failure.

After 60 Years... Enigma Special Event

FISTS Reflector & OPDX Bulletin #707

In September 1939, the radio receivers of all radio amateurs were ordered to be confiscated, but many amateurs volunteered to become "Voluntary Interceptors" (V.I.'s) in their own homes. These V.I.'s intercepted encrypted Enigma messages transmitted in Morse Code which were passed to the code breakers at Bletchley Park.

Accuracy was crucial in order to assist decoding of the message, but many of the intercepted signals were weak or fading and atmospheric conditions were often poor with QRM from loud local stations. Searching through the bands was very painstaking, but it was a task that was carried out with great skill and dedication, providing a most valuable service to the Allies.

As a tribute to the work of the V.I.'s sixty years ago, the Scarborough Special Events Group (SSEG) will be on the air as GB2HQ from GCHQ Scarborough over the weekend of May 7-8th. A souvenir QSL card showing an Enigma cipher machine and an HRO receiver will be issued to commemorate the occasion. GCHQ have provided a working Enigma machine for use by the SSEG and OFCOM and have given permission for transmission of an enciphered Enigma message to be sent in Morse Code on the amateur radio bands for this event only.

The group will be active on SSB, PSK and CW. The CW station will operate around 7015 or 3515 KHz and the Enigma message will be transmitted in Morse Code at 1100z on Saturday, May 7th, at a speed of 15 wpm. The message will consist of a few five letter groups which will be repeated at 1300 and 1900z. GCHQ invites all licensed amateurs and listeners to submit a copy of this Enigma message and will award a certificate for a 100% accurate intercept.

A copy of this message should be sent via club call G0000 (Scarborough Special Events Group, 9 Green Island, Irton, Scarborough YO12 4RN) and can be enclosed with a QSL card. The cost of the certificate is \$5 USD, 5 Euro's, or 6 IRCs. All profits will be donated to GCHQ Scarborough Charities Fund. Full details will be published on their Web site at: <http://www.sseg.co.uk>

Depending on your location, conditions may not be favorable for reception on the day. However, in this respect, listeners will be experiencing the same problems faced by the V.I.'s some sixty years ago. FISTS members are invited to take part in a practical demonstration of history brought to life through amateur radio.

For more information about the Enigma machine, please visit the following Web pages:

<http://www.codesandciphers.org.uk/enigma/>
<http://www.enigmahistory.org/enigma.html>

"If an antenna falls in the forest, and
no one is there to see or hear it...
does it's SWR change?"

— Clinton Herbert AB7RG

Defining a "Good Ham"

Richard Hayman WN3R courtesy of www.eHam.net

My rabbi once asked a similar question. The range of answers was far greater than what I expected. Perhaps we can try to answer the same question for ourselves.

I'll get this started:

A good ham is one who:

1. Gets on the air
2. Is kind to animals
3. Elmers everyone
4. Has a 20 WPM Extra Class
5. Spent more than \$1,000 on his station
6. Chases DX
7. Runs the full legal limit
8. Builds his own gear
9. Understands electronics
10. Goes to hamfests
11. Participates in public service
12. Uses real radios that glow in the dark
13. Has a computer attached to his radio(s)

After you think about "good" hams, think about what makes a "bad" ham. I'll bet the list is far shorter.

Best Operators

KE5BNO courtesy of www.eHam.net

Over my years on the air in ham radio, I have had the opportunity to have QSOs or monitor many excellent operators. You can always tell when one of these "master" operators is on the air because everybody wants to work them.

These operators always stick to the letter of the FCC rules, have great sounding audio, without overdrive or splatter, broadcast extremely strong signals, are articulate and polite, interesting, and move from QSO to QSO effortlessly and efficiently when working a pileup, and seem to know the names of nearly every operator who calls them.

On CW, all of these traits apply, except the audio, and they send tight, clear, evenly-spaced code at the rate of the other station. Because I just returned to ham radio within the last year, after an 18-year absence, I don't remember any of the calls of some of these "master" operators.

I would be interested in hearing your opinions on some operators who you would consider as "master" station operators and list their call signs and modes of operations and what makes them worthy of the title "Master Operator". So, who's the best "DX", "CW", "VHF", "UHF", "HF", or "Digital" operator you ever logged or copied, or is acknowledged by many others as a "master" in a given mode?

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US House Calls on FCC to Re-Evaluate BPL

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ARRL WebExtra courtesy of the American Radio Relay League

Newington, CT, April 28, 2005 — Rep Michael Ross, WD5DVR, of Arkansas, has introduced a resolution in the US House of Representatives calling on the FCC to "conduct a full and complete analysis" of radio interference from broadband over power line (BPL). The resolution, H. Res 230, says the Commission should comprehensively evaluate BPL's interference potential incorporating "extensive public review and comment," and—in light of that analysis—to "reconsider and review" its new BPL rules. If approved by the full House, the non-binding resolution, introduced April 21, would express the requests as "the sense of the House of Representatives." The FCC adopted rules to govern so-called Access BPL last October 14 in ET Docket 04-37.

"We are grateful to Congressman Ross and his staff for taking a leadership position in recognizing that the BPL interference issue deserves more careful consideration than the FCC was willing to give it under former Chairman Powell," said ARRL CEO David Sumner, K1ZZ. The resolution has been referred to the House Committee on Energy and Commerce, on which Ross serves.

The resolution's prime focus is on BPL's potential to disrupt critical public safety radiocommunication. It cites National Telecommunications and Information Administration (NTIA) *(US House Continued on page 4)*

Upcoming Events

- May 5 — Space Day
- May 7 — Foothills ARC Hamfest
- May 14 & 15 — Armed Forces Day
- May 14 & 15 — Mid Atlantic QSO Party
- May 20, 21 & 22 — Dayton Hamvention
- June 5 — Breezeshooter's Hamfest
- June 11 & 12 — ARRL June VHF Contest
- June 25 & 26 — ARRL Field Day
- October 1 & 2 — California QSO Party
- October 8 & 9 — Pennsylvania QSO Party

JOIN WACOM ON THE AIR

2 meter net: Every Tuesday at 8:30 PM on the W3CYO repeaters 145.49 and 443.3 MHz

10 meter net: Every Tuesday at 9:00 PM on 28.340 MHz

The Satellite Beacon: Improving Satellite Reception, Part 1

Emily Clarke WØEEC courtesy of the Project OSCAR Amateur Radio Club

.When investigating people who are unintentionally “jamming” a satellite (transmitting but unable to hear someone respond) the first thing we hear is “everything works fine – I used a repeater just before the pass.” Following up we usually discover that the ham is using antennas designed for terrestrial use, or using receivers such as scanners that do not have good specifications. When we tell the ham that the repeater 40 miles away is transmitting 100w or more, and the satellite 1200 miles away is transmitting 0.5w, the ham is usually surprised. So what makes a good satellite receiving subsystem?

Receivers

Receiver specifications are important and the primary number to look at is **receiver sensitivity** as this is the number that will tell you how strong a signal must be before the receiver can detect it. Sensitivity is measured in microvolts (1 volts), and is usually rated for 10 db signal to noise for SSB/CW, or 12db SINAD (signal + noise + distortion) for FM. An excellent satellite receiver will have a sensitivity rating of 0.11 μ volts on SSB/CW but under 0.14 μ volts is adequate. FM sensitivity should be 0.22 μ volts or better (lower is better, higher is worse.) For example, the Yaesu 847, Kenwood TS-2000 and Icom 910H all meet or exceed these figures.

If you are only interested in using FM satellites there is an important caveat that you should consider, and one I was surprised to learn while researching this article. If you check the specifications for some full duplex dual band rigs (including handhelds) you will see that one band (Icom calls these left and right, others may refer to them as main and sub) may not be as sensitive as the other band. For example, my Icom 2720H mobile rig has a sensitivity of 0.2 μ volts on the left band, but 0.45 μ volts on the right band.

The important point to note here is that you should know your receiver specifications and make choices wisely when choosing a radio, and a radio's band.

Coaxial Cable and Connectors

At UHF and above frequencies, standard coax for HF and even VHF doesn't always work very well. If we were to use an example of 50 feet between your receiver and antenna, at 436 MHz (AO-51's downlink) RG-58 will have a loss of about 6db. This means that the signal will be only 25% as strong at the receiver as it is at the antenna. Replacing RG-58 with RG-8X may help, but you will still lose 4db or more than half the signal.

Replacing RG-58 or RG-8X with LMR-400 or 9913 will get the

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studies that "have determined that broadband over power line creates a "high risk" of radio wave interference, and that harmful interference to public safety mobile radio receivers can be expected at distances of 75 meters from the power line where broadband over power line is in operation, and at distances of up to 460 meters from fixed stations, such as VHF police or fire dispatch communications facilities."

The resolution notes that the same NTIA study determined that BPL interference to aeronautical and airline travel communications "could be expected at distances up to 40 kilometers from the center of the broadband over power line system, and that interference to outer marker beacons for airline instrument landing systems could be expected at great distances as well."

Many public safety agencies and support services, including

losses below 2 db, which make a huge difference. For example, LMR-400 at 436 MHz will only lose about 1.3db. So the rule of thumb is "Use the best coax you can afford."

If there were ever to be a Murphy's law about amateur radio it's that the connectors on the cable and the connectors on the thing you are attaching it to will not be the same. My rig has type-N connectors but the antenna has a UHF connector on it. The first reaction is to use an adapter, and while this will make the connection, it will introduce additional loss. So it's a good idea to build cables that match up with connections.

Antennas

There are a number of factors here to consider about antennas and it isn't just gain. Gain is good but radiation pattern (and it's inverse, the receiving envelope) is equally important. One mistake we see is that the type of antenna being by our jammer is a 5/8 wave collinear, which has very good gain (typically 8 db or better) and a narrow envelope. The problem is that the antenna is mounted vertical and the radiation pattern is horizontal, so 50% of the envelope is under ground. This is good for ground based repeaters, but really defeats the purpose for satellites as it will only receive the satellite when it is very low on the horizon.

One solution is to use an antenna that raises the envelope above ground and is rounder. Eggbeaters, quadrafillar helix and discone antennas work, but the tradeoff is gain. The rounder the pattern, the lower the gain and pattern is omni-directional. So in addition to receiving the satellite an omni will receive noise from other sources. In a suburban neighborhood this can be a problem. While an omni-directional antenna may eliminate the need for rotators, one should really consider the best solution.

A yagi antenna with an az-el rotator is always the best solution because the have to be omni-directional make sure you have antenna is pointed directly at the satellite, but may not always work depending on where you live. If you absolutely one that has a pattern that is higher.



emergency medical services, fire, and law enforcement, utilize Low-Band VHF (30-50 MHz), the resolution points out. Thirteen states — California, Connecticut, Florida, Illinois, Indiana, Mississippi, Missouri, Nebraska, North Carolina, South Carolina, Tennessee, West Virginia and Wyoming — use the band for state police operations, while it's the primary public safety radio band in nine states.

The resolution further notes that the Association of Public Safety Communications Officials Inc (APCO), and the National Public Safety Telecommunications Council (NPSTC), urged the FCC to withhold final action in the BPL proceeding for at least a year, pending a "conclusive determination" of BPL's potential to interfere with public safety and other licensed radio systems operating below 80 MHz. APCO and NPSTC jointly filed comments in the BPL

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51st Annual

Breezeshooter's Hamfest

Sunday, June 5th, 2005 8:00 AM to 3:00 PM

Sponsored by the Breezeshooters

Butler Farm Show Grounds / Roe Airport, State Route 66, Butler PA

(The Farm Show Grounds are West of Butler between Butler and Evans City)

Talk-In on W3UDX/R 147.360+ Repeater

Prize Tickets \$2.00 Each or 3/\$5.00, 7/\$10, 15/\$20

For more information & updated list of 2004 Hamfest Prizes please go to

<http://www.breezeshooters.net/hamfest/hamfest.htm>

Foothills ARC Hamfest

New Date! Free Admission! Great Hot Food!

Saturday, May 7th 8:00 AM to 2:00 PM

Central Westmoreland Career & Technology Center, New Stanton, PA

Talk-in on 147.180 MHz

For more information, contact Al Compton N3LQX (724) 523-3727

On-Line <http://www.w3lww.org> or w3lww@arrl.net

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proceeding, and the APCO Region 21 Frequency Advisory Committee filed separate comments.

The resolution also sites comments that the FCC has struggled for years to resolve widespread harmful interference to the radiocommunications of first responders on 800 MHz and "should not have proceeded with introduction of a technology which appears to have substantial potential to cause des tructive interference to police, fire, emergency medical services, and other public safety radio systems" without first conducting a comprehensive evaluation.

ARRL President Jim Haynie, W5JBP, has urged ARRL members to contact their US representatives to support the resolution when it reaches the floor of the House. A sample letter is available on the ARRL Web site, although members are encouraged to express their support in their own words. If you're not sure who represents your congressional district, visit the United States House of Representatives Web site.

According to the Radio Society of Great Britain, Guinness World Records Ltd has awarded a certificate to Finnish radio amateur Jukka Heikinheimo, OH2BR, for a record number of contacts made by an individual from one location in one year. Operating as VP6BR from Pitcairn Island, Heikinheimo made 56,239 contacts between January 25 and April 21, 2000.

To expedite delivery, send all correspondence bound for Members of Congress — preferably as an attachment — to hres230@arrl.org or fax it to 703-684-7594. The ARRL will bundle correspondence addressed to each Member of Congress for hand delivery.

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We're On the Web!
www.wacomarc.org

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The editor welcomes articles and timely information of interest to members and the general amateur community.

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PLEASE SEND YOUR 2005 DUES AND APPLICATION INFORMATION

Annual WACOM membership dues are only \$15 .
A couple pays only \$22.50.

Send your check payable to WACOM to:

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WACOM e-Mail Reflector

An e-mail reflector has been set up for WACOM members.

What's a reflector? It's a mailing list which lets you send one e-mail message to the list address — wa3com@yahoogroups.com — and have it "reflect" to all members of the list. Unlike a personal mailing list, you don't need to know all of the e-mail addresses for every single member of the list. Only group members can send e-mail to other members of the reflector — no spam allowed!

E-mail reflectors are being used by many area Amateur Radio clubs as a means to facilitate news and information at a moments notice. Yahoo! Groups (formerly eGroups) provides this service for free to anyone who wants to avail themselves of their list server. Yahoo! also provides calendar, file storage, & additional services.

To join the WACOM reflector, simply send a blank e-mail to:

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