



The Illuminator



The monthly newsletter of the Carbon Amateur Radio Club

August 2004

August Meeting

The next regular meeting of the Carbon Amateur Radio Club will be on Thursday, August 19, at 7:30 p.m. at the EMA Center in Nesquehoning. Election of officers will take place at this meeting, so it is very important that you attend!

Those currently nominated include:

President – Anthony “Goody” Good, K3NG
Vice-President – Rob Roomberg, KB3BYT
Secretary – Darryl Gibson, N2DIY
Treasurer – John Schreibmaier, W3MF
At-large Board Member – John Bednar, K3CT

Of course, additional nominations may be made at the meeting.

After elections, we will be showing a video on the VP8GEO DXpedition to South Georgia. For those of you who saw the VP8THU South Sandwich video, this is a continuation of that DXpedition. Although the intrepid VP8GEO operators don't have 100,000 screaming and smelly penguins to deal with this time, other perils await! You don't want to miss this one!

See you at the meeting!

Treasurer's Report

By John, W3MF

As of the July Meeting:

Previous Balance (From May Meeting)	747.81
Receipts*	69.00
Subtotal	816.81
Disbursements (newsletter)	5.18
Final Total	811.63

* Receipts include \$30.00 in dues and \$39.00 in refunds from Field Day expenses.

Broadband Provider to Drop BPL in New York Trial Community

(From the ARRL Letter)

The broadband provider that's been testing BPL in the Village of Penn Yan, New York, reportedly plans to "move away" from that technology. The Western New York community of some 5000 residents has been considering various proposals with Data Ventures (DVI) to offer broadband service. A BPL trial has been underway in Penn Yan for several months. The village reportedly would get 10 percent of the generated revenue. According to an article in the July 28 edition of the Finger Lakes Times Online, DVI now is proposing to employ wireless mesh "WiFi" technology instead of BPL. ARRL CEO David Sumner, K1ZZ, congratulated Penn Yan Mayor Douglas G. Marchionda Jr and DVI for going with wireless broadband instead of BPL.

"Not only will your citizens receive better service, but a serious radio spectrum pollution problem has been averted as well," Sumner said in a fax to Marchionda and to DVI CEO Marc Burling. "We hope that other communities will be able to profit from your experience." Sumner raised the issue of interference complaints from the Penn Yan BPL trial with Marchionda last April.

The Finger Lakes Times report quotes Burling as saying that his company didn't feel BPL was "commercially deployable." He also cited issues with the BPL trial including security concerns and interference — which will not be an issue with the wireless system.

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Burling told ARRL that the Penn Yan BPL system remains on line but would be shut down once DVI starts deploying its wireless system. As for BPL, "We are going to sit back and wait for an official ruling from the FCC and go from there," Burling added.

Penn Yan already has rejected two DVI proposals to bring high-speed Internet service to the community, the newspaper said. Village officials reportedly met again with DVI representatives this week. DVI is partnering with Nortel to offer the wireless service.

In a March 23 article "In This Power Play, High-Wire Act Riles Ham-Radio Fans," Wall Street Journal reporter Ken Brown described a "firestorm" of protest from amateurs when Penn Yan approved the BPL test plan.

ARRL also has learned that Energy East — a cooperative of New York State Electric & Gas and Rochester Gas & Electric — decided against deploying BPL in their Western New York service area. Energy East based its decision in large part on the high levels of radio frequency interference an engineer and company officials observed during a visit to the Penn Yan field trial.

On July 29, Grand Haven, Michigan, announced that it had become the first community in the US to deploy a WiFi network <http://www.ottawawireless.net/about-us/press-room.html> that blankets the city and up to 15 miles off shore in Lake Michigan with broadband Internet access.

For more information on BPL, visit the "Broadband Over Power Line (BPL) and Amateur Radio" <http://www.arrl.org/bpl/> page on the ARRL Web site.



AMSAT "Echo" Satellite Opens for FM Voice Trial Run (From ARRL Letter)

AMSAT-NA's new "Echo" satellite (AO-51) has been turned on for general use in FM repeat mode for a trial period of about three weeks. During that time, command stations on Earth will monitor AO-

51's power budget and adjust the UHF Transmitter B (TX B) power as needed for good battery management. They'll also be watching the AMSAT Bulletin Board e-mail reflector, amsat-bb@amsat.org, for reports of how Echo is working.

"We are most interested in hearing about how well Echo hears you and how well you hear it," said the Echo Command Team — Jim White, WD0E, and Mike Kingery, KE4AZN — in an AMSAT bulletin. White and Kingery note that this is a trial period of the FM voice repeater. The digital portion of Echo is not yet open for use.

AMSAT Vice President for User Services Bruce Paige, KK5DO, says reports of successful QSOs on Echo's first day of operation came from all over the world, including the US, Brazil, New Zealand and Germany.

A Russian Dnepr LV rocket carried AO-51 and several other payloads into orbit June 29 from Baikonur Cosmodrome in Kazakhstan. The 10-inch-square microsat, circling some 800 km above Earth in a sun-synchronous orbit, will permit voice communication using handheld transceivers.

The digital transponder and the store-and-forward BBS, are not yet open for general use.

Initially, the AO-51 downlink transmitter was running at about 0.5 W. At that power level, AMSAT says, Earth stations will need a small directional antenna to hear it. If onboard power permits, ground controllers will slowly increase the transmitter's output during the trial period.

The Echo FM voice uplink frequency is 145.920 MHz, and the downlink is 435.300 MHz. The downlink transmitter will come on when it hears an uplink signal with a 67 Hz CTCSS (PL) tone for about 1 second, and it will stay on for 10 seconds after that signal goes away. "This operation is just like a terrestrial FM repeater with a 1 second 'kerchunk' filter and a 10 second hang time," AMSAT noted. Transmitter A (TX A), now sending telemetry, generally will continue to operate on 435.150 MHz.

AMSAT points out that Echo, which launched June 29, is still "wobbling a great deal," so the downlink polarization sense will vary.

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The Echo Command Team says it expects Echo will be heavily used during the first few days of the trial period. "It is good amateur practice and common courtesy to let everyone have a chance," they said. "Echo will hear you as well as or better than any previous amateur FM repeater satellite."

With hundreds of stations trying out AO-51, ground controllers say they expect the transmitter will be on continuously when the spacecraft is over populated areas.

The Echo satellite project is still some \$8000 short of the \$110,000 that was needed to launch the spacecraft. AMSAT guaranteed the full fare by borrowing from its dedicated funds, which now must be repaid. AMSAT — a 501(c)(3) organization — welcomes additional donations to bridge the funding gap. Visit the AMSAT AO-Echo Web page for additional details. — AMSAT News Service



ISS Crew Schedule Tight for Casual Hamming

(From the ARRL Letter)

Amateur Radio on the International Space Station (ARISS) says the ISS Expedition 9 crew of Mike Fincke, KE5AIT, and Gennady Padalka, RN3DT, has very limited time to pursue casual hamming from space.

"The ARISS program is fortunate to have another all-ham crew that is very enthusiastic about talking to ground-based Amateur Radio operators," said ARISS spokesperson Scott Stevens, N3ASA. "The ARISS team wants to remind everyone that the crew is on a strict schedule, so the best time frame to try contacting them is between 0800 and 1900 UTC." Chances are even better during weekends, he added.

Fincke and Padalka both got on the air — from NA1ISS and RS0ISS, respectively — during ARRL Field Day in June, making some 60 contacts. Fincke has also made some casual QSOs.

The ISS worldwide downlink frequency is 145.80 MHz. The FM voice uplink is 144.49 MHz in ITU Region 2 (which includes the Americas) and Region 3 (South Asia, Australia, New Zealand and

Oceania), and it's 145.200 MHz for Region 1 (Europe, the Middle East, Africa and North Asia.).

July 19 marked the midpoint of the Expedition 9 crew's six-month stay aboard the ISS. Fincke and Padalka are set to return to Earth October 19. Now preparing for an August 3 space walk, the crew this week packed unneeded equipment and trash into the Progress supply vehicle, which was scheduled to undock July 30. Undocking the Progress will clear the way for the space walk.

The ARISS gear will be shut down during the space walk, starting at 0850 UTC on Monday, August 2. The radios should return to service approximately 0850 UTC on Wednesday, August 4.

ARISS is an international educational outreach program with US participation from NASA, AMSAT and ARRL.



North Carolina Utility Ending BPL Field Trial; System Shutdown Pending

(From the ARRL Web Site)

Progress Energy Corporation (PEC) says it's completed Phase II of its broadband over power line (BPL) field trial in the Raleigh, North Carolina, area. In an August 4 PEC internal memorandum made available to ARRL, the company said its program to "test the viability of providing broadband service to communities it serves" will wrap up by the end of August, although PEC still plans to explore "several key strategic issues" regarding BPL through the end of this year. The company reportedly will shut down the system once it's able to move its BPL customers to other broadband providers.

"Currently, the company does not have plans for a large-scale commercial rollout of BPL in the company's service territories," the memorandum states. Progress Energy's decision comes on the heels of announced shutdowns of BPL field trials in Penn Yan, New York, and Cedar Rapids, Iowa.

PEC Vice President of Energy Delivery Solutions Lisa Myers said the utility obtained significant information about the design, construction and operation of a BPL system. "Overall, this has been

a successful test for us," the memorandum quotes her as saying. "We have gathered valuable information about broadband over power lines and its potential." During its six-month Phase I and Phase II tests, the utility says it offered broadband service to more than 400 homes in southern Wake County. Earlier this year, FCC Chairman Michael Powell visited the BPL field trial to promote the technology, and local radio amateurs spoke briefly with him about their interference concerns (see ["North Carolina Hams Experience Close BPL Encounter with FCC Chairman"](#)).

The PEC memorandum acknowledged Amateur Radio interference complaints. "BPL has met with vocal opposition from amateur or 'ham' radio operators who are concerned that the service will interfere with the radio frequencies they use," it said. "Some complaints were filed with the Federal Communications Commission (FCC) during Phase II by ham radio operators using mobile equipment in search of BPL signals."

Responding to one complaint, the FCC earlier this summer took measurements in the field trial area, and FCC Office of Engineering and Technology (OET) Deputy Chief Bruce A. Franca said the FCC had concluded that PEC's BPL trial "is in compliance" with FCC rules and that the company's ham band notching efforts "are effective" to avoid the potential for harmful interference. The ARRL has requested clarification of certain claims made in Franca's July 22 letter, however (see ["ARRL Seeks Clarification of FCC Response to BPL Interference Complaint"](#)). The memorandum cites PEC Director of Emerging Technologies Matt Oja as saying the utility conducted its BPL trial "strictly in accordance with existing FCC limits and measurement procedures." Oja said the technology PEC selected — by Amperion — "allowed us to address all complaints by changing the settings to mitigate interference."

One of the amateurs who's been closely monitoring Progress Energy's foray into BPL — Gary Pearce, KN4AQ — says he's pleased with the utility's decision. "It's a positive thing for ham radio that Progress Energy is not going to be pursuing BPL for whatever reason they decided not to do it," Pearce told ARRL. "It's going to make a lot of hams in Eastern North Carolina happy."

Despite the apparent "clean bill of health" from the FCC, Pearce says he believes the specter of

interference loomed large in PEC's decision to not deploy a full-blown BPL system at this point. "We kept pointing out to them that things probably would be much worse if they deployed in a large area," he said. "Maybe that's what they saw. It's hard to tell — they're really not saying."

Pearce acknowledged that Progress Energy and Amperion personnel worked closely with local amateurs to notch out interference on HF amateur frequencies. Effective notching turned out to be more difficult than anticipated, however. Even following the FCC's visit to take measurements, amateurs continued to report strong BPL interference on the high end of 20 meters as well as in the HF international broadcast bands.

FCC measurements indicated notch depths averaging 24 dB below Part 15 emission limits, which Franca characterized as "sufficient to eliminate any signals that would be deemed capable of causing harmful interference, including interference to amateur operations." ARRL CEO David Sumner, K1ZZ, asserted in response that Part 15 device operators "must eliminate all harmful interference, and therefore in some cases must achieve more — in certain cases, considerably more — than a 24 dB reduction in order to be in compliance."

A news report on Progress Energy's BPL decision appeared in the August 6 editions of the [Raleigh News & Observer](#).

There's [more information](#) about BPL and Amateur Radio on the ARRL Web site.



ARRL Propagation Forecast Bulletin

Propagation Forecast Bulletin 32 ARLP032
From Tad Cook, K7RA
Seattle, WA August 6, 2004
To all radio amateurs

Average daily sunspot and solar flux numbers dropped dramatically this week from last. Average daily sunspot numbers were nearly 56 points lower at 42.4, and average solar flux was down over 53 points at 88. Now that we are in the month of

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August, we can look at July numbers compared to previous months.

Over the past year, October 2003 had the highest monthly average of sunspot and solar flux numbers. Relative to the decline in the solar cycle, the July 2004 numbers were really quite high, no doubt due to the large number of sunspots over a two week period ending around July 26. The numbers for July were higher than for any period since October and November of last year.

The monthly average of daily sunspot numbers, August 2003 through July 2004 were 114.3, 82.6, 118.9, 103, 75.7, 62.3, 75.6, 81, 59.3, 77.3, 77 and 87.8.

The monthly averages of solar flux for the same period were 122.1, 112.2, 155.5, 140.8, 116.1, 114.1, 107, 112.1, 101.2, 99.8, 97.4 and 119.8.

Geomagnetic conditions have been nice and quiet over the past week, with the A index in the low single digits and periods when the K index was 0 at all latitudes. Over this weekend, we could see a rise in geomagnetic activity to unsettled levels. The predicted planetary A index for August 6-10 is 8, 15, 15, 15 and 8.

Solar flux is expected to remain under 100 over the weekend, but slowly rise to a predicted peak around 120 from August 14-19. An increase in activity after August 12 is expected because of the return of sunspot 652, which came into view July 17 during its last transit across the sun, disappearing after July 29. It was squarely facing the earth on July 23, just after the peak in sunspot and solar flux numbers for the month.

Sunspot numbers for July 29 through August 4 were 32, 33, 39, 40, 39, 52 and 62 with a mean of 42.4. 10.7 cm flux was 99.7, 88.7, 86.4, 83.4, 84.5, 87.6 and 85.4, with a mean of 88. Estimated planetary A indices were 9, 7, 9, 8, 8, 5 and 4, with a mean of 7.1. Estimated mid-latitude A indices were 6, 7, 7, 9, 5, 2 and 2, with a mean of 5.4.



ARRL DX Bulletin

DX Bulletin 31 ARLD031

From ARRL Headquarters
Newington CT August 5, 2004
To all radio amateurs

This week's bulletin was made possible with information provided by EA8FE, JE1RXJ, K7BV, UT3UZ, the OPDX Bulletin, The Daily DX, 425DXnews, DXNL, WA7BNM and Contest Corral from QST. Thanks to all.

SWAZILAND, 3DA0. Dave, K4SV and Neil, VA7DX will be QRV as 3DA0SV and 3DA0WC, respectively, from August 7 to 11. Activity will be on 160 to 10 meters, including 6 and 2 meters, using CW, SSB, RTTY, with other digital modes, and EME and Meteor Scatter with FSK44 and JT65 on 6 and 2 meters. QSL both calls via K4YL.

AZORES, CU. Uwe, CU7/DH9YAT is QRV on 40, 20 and 15 meters CW using QRP until August 20. QSL to home call.

CANARY ISLANDS, EA8. EA8FE is QRV from Lanzarote Island, IOTA AF-004. Activity is on 40 and 20 meters using CW, RTTY and PSK31. QSL to home call.

LIBERIA, EL. EL2DX is QRV from Monrovia and has been active on 20 meters around 2155z. QSL via K8SJP.

FRENCH POLYNESIA, FO. Vincent, F5MJV is signing FO5RN/p from Tahiti, IOTA OC-046, until September. QSL to home call.

SWITZERLAND, HB. Special event station HE5IBC is active during the month of August to celebrate the 10 GHz ATV world record made on July 1, 2004. QSL via HB9MM.

DOMINICAN REPUBLIC, HI. Mark, KB2MS is QRV as HI3/KB2MS until August 15 and is active on 20 and 6 meters. QSL to home call.

SOUTH KOREA, HL. Some operators of the Seoul National University Amateur Radio Club will be QRV as HL0U/4 from Sounyu Island, IOTA AS-148, from August 11 to 15. Activity will be on 40 to 10 meters using CW and SSB. QSL via bureau.

ITALY, I. Scout station IU1J is QRV from Genoa until August 12. QSL via bureau.

GUANTANAMO BAY, KG4. Bill, W4WX will be QRV as KG4DX from the Guantanamo club station from August 10 to 14. Activity will be on most bands, using SSB, RTTY and PSK31. QSL to home call.

GUAM, KH2. Tack, JE1RXJ is QRV as NB6A/KH2 until August 8. Activity is on 160 to 6 meters, including the newer bands, using CW, SSB and RTTY. QSL to home call.

DODECANESE, SV5. Goran, SM0CMH will be QRV as SV5/SM8C from Kalymnos, IOTA EU-001 from August 7 to September 4. He will operate mainly CW on 80 to 10 meters, and possibly 160 meters. QSL to home call.

UKRAINE, UR. EM0U team members are QRV as EM0U/p from Chernobyl until August 8. Activity is on 160 to 6 meters using CW and SSB. QSL via UT3UZ.

UZBEKISTAN, UZ. Ravil, UK8OAR has been QRV using RTTY on 20 meters around 1730z.

MARSHALL ISLANDS, V7. Aki, JA1KAJ will be QRV as V73V from Majuro Island, IOTA OC-029, from August 11 to 16. Activity will be on 80 to 10 meters using CW, SSB and RTTY. QSL to home call.

TURKS AND CAICOS ISLANDS, VP5. Dennis, K7BV will be QRV as VP5/K7BV from Providenciales from August 9 to 16. His activity will be on HF and mainly 6 and 2 meters with WSJT during the Perseids Meteor shower. QSL to home call.

AFGHANISTAN, YA. Rene, DL2JRM will be QRV as YA7X from Kabul from August 11 through early September. QSL via DL1JJL.



5NN TU

By Paul Dunphy, VE1DX

One of the local QRPers came by the other day and he was in a bit of a quandary. "You know," he began, "ever since I got my ticket, I've always wondered why hams get on the air during Straight Key Night. I can understand a few might want to

go back to the traditional ways of doing things now and then, but why use a straight key? And why dedicate a whole night to it?" We shrugged for the moment, for we were sure this was leading somewhere other than Straight Key Night. "The thing is," he continued, "I don't see why they waste the time and energy tying up the bands with their shaky fists and poorly weighted code. As you know, I send perfect CW. Always."

We had to know more. "Yes, but what does one night hurt? Is there a one-day DXpedition planned for that evening? You've always been a good CW operator... we've heard you in there dozens of times busting the pileups. Have you been working SSB too much and lost your CW?"

The QRPer took a few steps back and forth and turned to look us right in the eye. "No. Nothing like that. I just can't work CW with a straight key anymore. Why, 10-12 years ago I could send 20 WPM CW with my trusty old Marconi Marine key. Remember that one? It was a classic from the 50s and I picked it up at a Hamfest for a couple of dollars. You were there when I bought it, remember?" We recalled that day and said, "Yes, we were. And you got a real winner, with ball bearings and all. You were lucky to get to it before anyone else. Don't you have it anymore?"

The QRPer beamed with pride. "I sure do have it! And it's still in mint condition, too! However, I found that in the pileups I just wasn't making it when the DX was rattling off QSOs at 30 WPM... and while I could copy that fast, I found that if I didn't match the DX operators speed fairly close, he rarely would work me." We had to agree that we too had noticed this. After all, this wasn't one of the Eternal Enigmas of DXing. For as the Old Timer had so often advised, "When in Rome do as Rome does, and when working DX, do as the DX does."

"So what happened?" We asked. "Well, I bought an iambic keyer and got my speed up to about 28-30 WPM and that made sure I got through most of the DX pileups."

We got an inkling of where this was going, so we just nodded for the QRPer to continue. "And then I found out that the place to fill band countries was during the contests. Those guys show up from some pretty rare locations and most of them send at 35-40 WPM... why I bet some of the top dogs can hit 50 WPM at peaks. And, iambic keyer or

not, I couldn't keep up with them. So I got one of those MFJ-464 keyboards to key my rig... perfect CW with a buffer and memory and all that. And more recently I got a computer with tons of memory and a CW sending program. Now I send and receive at no less than 30 WPM and I'm comfortable at 40-50. No DXpedition or contest operator can out 5NN TU me!"

We just gazed at the QRPer for a moment with a poker face. He kept on going, "The thing is, I hooked up my straight key a day or so ago and I can't send anything with it. Why, I can't even call CQ DX! It's too slow. And even worse, I went up to the novice portion of the bands and listened to the newcomers sending at 5-10 WPM and I could hardly copy a character they were sending. They are just plain too slow! So I went to the Packet Cluster and found a DX spot, when I tuned on him at about 35 WPM, the 5NN TU just jumped out at me. And when I called him and he came back, my call was crystal clear at 35 WPM. Where are all the good CW ops these days? Are they all DXers and testers? If they would send at a decent speed and use a memory keyer or computer, they'd be a lot easier to work! I really think the ARRL should lobby the FCC to make the entry level 25 WPM."

Son of a Gun! We looked at the QRPer for a few moments. "And you can copy and send your call and 5NN TU at 50 WPM, right?" The QRPer nodded in agreement. "And how about your QTH, or the operators call, or anything else that might be sent or received?"

It was the QRPer's turn to look puzzled. "Why would I want to? Their call is on the Packet Cluster and all I have to do is adjust my sending program so my speed will match theirs. To be a DXer you

have to watch the Packet Cluster religiously and then press the send button. I don't understand why anyone would want to tie up a whole night creeping along at 15 WPM with a straight key... and I'm pretty sure some of the ones that I heard were Ws working other Ws. Why do they do that?"

There are many things in this world that defy logic and explanation. This was one of them, so we just looked at the QRPer for a moment and said, "They probably do it because they like it." The QRPer looked back, shook his head slowly and said, "These are really strange times on the bands, aren't they?" And before we could answer, he was off down the hill, hands in his pockets and still slowly shaking his head back and forth. One of us was marching to the beat of a different drummer. We'd been in this situation with the QRPer before and sometimes it wasn't obvious who was out of step. This time we had a pretty good idea. DX IS! But don't try to work the guys on Straight Key Night at 50 WPM with a computer!



Helpful Hints

Take your trashcan with you to the supermarket so that you can see which items you have recently run out of.



Shallow Thoughts

Can you be a closet claustrophobe?

Carbon Amateur Radio Club – 2003-2004 Officers

President: Anthony "Goody" Good, K3NG, goody@fast.net
Vice President: Rob Roomberg, KB3BYT, roomberg@ptd.net
Secretary: Darryl Gibson, N2DIY, n2diy@losch.net
Treasurer: John Schreibmaier, W3MF, w3mf@ptd.net
W3HA Callsign Trustee: John Bednar, K3CT, k3ct@fast.net
W3HA Repeater Trustee: John Bednar, K3CT, k3ct@fast.net
Public Information Officer: Lisa Kelley, ldkelley@voicenet.com

Directors

John Bednar, K3CT, k3ct@fast.net
Bob Culp, KB3IDV
Bill, KA3UKL, ldkelley@voicenet.com

ARES/RACES Committee

Bruce Fritz, KB3DZN (DC), bruce56@ptd.net
Darryl Gibson, N2DIY, n2diy@losch.net
Todd Deem, KB3IKX, kb3ikx@localnet.com

Services

W3HA Repeater: 147.255 MHz + PL 131.8

CARC Website: <http://www.learnmorsecode.com/carc/>
Webmaster: Rob, KB3BYT roomberg@ptd.net

CARC Email Reflector: see www.qth.net CarbonARC list for details

Emergency Power Equipment Trustees: Lisa and Bill Kelley, KA3UKL,
ldkelley@voicenet.com

CARC Membership Information

Regular Membership is \$15.00, which includes autopatch privileges.

All amateur radio operators are invited to join the CARC ARES / RACES net held 21:00 local time every Wednesday on the W3HA repeater at 147.255 MHz + offset, PL 131.8. Any amateur radio operator or anyone with an interest in ham radio is welcome to attend our monthly meetings which occur the third Thursday of each month at 7:30 PM at the Carbon County EMA Center on Route 93 in Nesquehoning.

Carbon Amateur Radio Club
c/o Bob Schreibmaier K3PH
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