

FCC ACCEPTING COMMENTS IN "BROADBAND OVER POWER LINE" INQUIRY

The FCC released its Notice of Inquiry (NOI) on the deployment of "Broadband over Power Line" (BPL) technology April 28 and now is accepting electronically filed comments in the proceeding, ET Docket 03-104. The technology has raised concerns of substantial interference to the Amateur Radio HF bands. BPL would couple high-frequency RF to parts of the power grid and use existing power lines as the transmission medium to deliver broadband and Internet services.

The FCC has expressed unabashed enthusiasm for BPL. ARRL CEO David Sumner, K1ZZ, says Commission members have been acting more like cheerleaders than regulators. "We were disappointed in the tenor of some commissioners' statements, but we were encouraged by the fact that in the NOI itself the FCC did point out that licensed services--including Amateur Radio--'must be protected from harmful interference' from BPL," he said.

In the NOI, the FCC acknowledges the interference risk from BPL. "The multiple-

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NTIA ADMINISTRATOR LAUDS, CAUTIONS FCC IN "BROADBAND OVER POWER LINE" INQUIRY

The administrator of the National Telecommunications and Information Administration (NTIA) <http://www.ntia.doc.gov/>, Nancy J. Victory, has applauded the FCC's decision to launch its inquiry into Broadband over Power Line (BPL)--a form of power line communications (PLC). In an April 24 letter to FCC Chairman Michael Powell, the other four commissioners and to FCC Office of Engineering and Technology Chief Edmond J. Thomas, Victory said BPL "holds great promise" and urged the Commission to "move forward expeditiously with its inquiry." At the same time, she called on the FCC to make sure that BPL does not cause harmful interference to other services.

"I also urge the Commission to promptly adopt any subsequent rule changes that may be appropriate to facilitate broadband PLC deployment, while ensuring that those rules prevent harmful radio frequency (RF) interference to other communications mediums." Victory wrote.

BPL has raised the specter of substantial interference to the HF bands since it involves coupling high-frequency RF to parts of the power grid and using existing power lines as the transmission medium to deliver broadband and Internet services. The new so-called "access BPL" and "in-home BPL" devices operate on multiple carriers spread over a wide spectrum, which could be as much as from 2 MHz up to 80 MHz.

Victory offered NTIA's services in assisting the FCC with measuring and testing broadband PLC emissions. An arm of the US Department of Commerce, the NTIA regulates radio spectrum allocated to the federal government.

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Who we are...

The Fauquier Amateur Radio Association (FARA) is an ARRL- affiliated association in the Roanoke Division. The Club call sign is W4FAU. Our focus is on ARES activities, support of the community in emergency situations and education. Our ARES coordinator is Don, N2VA. Our education coordinator is Neil, AB4YK. FARA sponsors the W4FAU repeater in Warrenton, Virginia on a frequency of 147.165(+) MHz. A net is held on the repeater each Wednesday evening at 2100 hours local. The repeater committee chairman is Bill-W4NFR. The Fauquier Amateur Radio Association operates a packet radio network on the following frequencies:

145.070, 145.090, 223.54, 446.075 and 7.1009.

The primary packet node is FARA7 on 145.070. The BBS can be accessed on all frequencies by connecting to the Node alias of FBBS9 or by connecting directly to N4YXW-1 on 145.090. The BBS type is F6FBB and has several call books available over the air including DX. Both the nodes and the packet station are open to all amateurs. The sysop is Chuck, N4YXW.

The Fauquier Amateur Radio Association (FARA) Newsletter, "Toroid", is published monthly through the efforts of the members of FARA. The opinions expressed in this Newsletter are those of the individual authors and not necessarily that of FARA.

Visit the Club's web page:
www.gsl.net/w4fau

PRESIDENT'S CORNER
Chuck N4YXW

(Editor's note: For some reason I don't have Chuck's column. E-mail problems, perhaps?).

BPL

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carrier transmission nature of the new high-speed BPL technology could pose increased risk of harmful interference, and thus new BPL devices may need a higher degree of oversight to ensure that authorized users are not subject to interference," the FCC said.

The major interference threat to amateurs comes from so-called "access BPL," because its signals can radiate from outside power lines—possibly for great distances. The FCC also concedes that close proximity of access BPL equipment on utility poles might affect--and be affected by--cable TV and DSL service.

Current FCC Part 15 rules limit the amount of RF energy that can be injected into the power lines, but, as the FCC concedes, "the new generation of high-speed BPL devices that use wide spectrum was not contemplated" when those rules were formulated. The FCC has invited comments on possible changes to those rules.

The FCC also seeks information on a possible access BPL standards, spectrum and bandwidth, modulation techniques and data transmission speeds. Additionally, the Commission seeks the status of BPL development and anticipated deployment in the marketplace.

ARRL Laboratory Manager and RFI guru Ed Hare, W1RFI, has cautioned that BPL deployment could mean "a significant increase in noise levels" on HF. "Right now with BPL/PLC, there are more questions than answers, and until those questions are answered, these systems should not be widely deployed," Hare said. "The time to raise and answer these questions is now. I truly hope that the NOI will provide a means for the FCC to do just that."

The ARRL Lab has prepared a compre-

hensive information page, "Power Line Communications (PLC) and Amateur Radio," on the ARRL Web site
<<http://www.arrl.org/tis/info/HTML/plc/>>
ARRL Lab staff members also plan to visit sites where BPL is undergoing field testing.

The complete NOI is available on the FCC Web site
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-100A1.doc>. The FCC now is accepting electronically filed comments via its Electronic Comment Filing System (ECFS)
<<http://www.fcc.gov/cgb/ecfs/>>. Under ECFS Main Links, click on "Submit a Filing." In the "Proceeding" field, enter "03-104" and complete the required fields. Comments may be typed into a form, you may attach a file containing your comments or submit them via e-mail, per instructions on the ECFS page. The comment deadline will be 45 days after publication of the NOI in the Federal Register.

**“FOUNDATION” LICENSE BIG
SUCCESS IN GREAT BRITAIN**

Great Britain's new Foundation license <<http://www.arrl.org/news/stories/2002/01/10/1/>> has reversed the slide in licensee numbers and reinvigorated Amateur Radio in the UK. That was the assessment of Radio Society of Great Britain (RSGB) <http://www.rsqb.org> President Bob Whelan, G3PJT, who headed an RSGB contingent that visited ARRL Headquarters April 29-30.

"We had some pretty alarming statistics," Whelan told his audience of ARRL staff members. He said the RSGB realized that if nothing changed, the number of Amateur Radio exams given would drop to zero in five years, "and time was marching on." That trend, coupled with a rising median age in the Amateur Radio population in the UK and

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NTIA

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The FCC released a Notice of Inquiry on BPL deployment, ET Docket 03-104, on April 28. The complete NOI is available on the FCC Web site
<http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-100A1.doc>.

Interested parties may submit electronically filed comments via the FCC's Electronic Comment Filing System (ECFS) <http://www.fcc.gov/cgb/ecfs/>. Under ECFS Main Links, click on "Submit a Filing." In the "Proceeding" field, enter "03-104" and complete the required field. Comments may be typed into a form or you may attach a file containing your comments. Comments also may be submitted via e-mail, per instructions on the ECFS page. The comment deadline will be 45 days after publication of the NOI in the Federal Register.

ARRL Laboratory Manager Ed Hare, W1RFI, has urged League members to become informed and to comment in the proceeding. "The time to raise and answer interference questions is now," he said. The ARRL Lab has prepared a comprehensive information page, "Power Line Communications (PLC) and Amateur Radio," <http://www.arrl.org/tis/info/HTML/plc/>. ARRL Lab staff also will visit sites where BPL is undergoing field testing.

FOUNDATION

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RSGB members' desire for a "practical, progressive" approach to licensing prompted the RSGB to rethink the licensing structure, Whelan said.

As a result, the RSGB conceived of and convinced the Radiocommunications Agency to approve the Foundation license as a "radically different" entry-level approach

to Amateur Radio and the first step in a three-tiered licensing structure. Among other new requirements, Foundation applications must demonstrate the ability to make an on-the-air contact. Because the RSGB considered HF access "essential" to newcomers, it devised a Morse assessment--rather than a proficiency examination--to qualify applicants.

Since the Foundation license became available January 1, 2002, Great Britain has seen the number of amateurs rise by 4000--approximately a quarter of them under age 21. "It was slightly unexpected," Whelan conceded. The RSGB had planned on an initial rush of 1000 candidates, but three months into the new program, the organization found itself inundated with 3000 applications. There are 50,000 amateur licensees in the UK. Foundation licensees sport M3-prefix call signs and have privileges on all bands from 136 kHz to 440 MHz--except 10 meters--with a 10 W power limit.

Foundation license classes often are offered through weekend sessions sponsored by local radio clubs. In addition to the Morse assessment, which has no specific code speed requirement, applicants must pass a 20-question (soon to be 25-question) written examination.

More information on the Foundation License is available on the RSGB Web site <<http://www.rsgb.org/>> (click on "Foundation Licence Courses").

The RSGB delegation also included General Manager Peter Kirby, G0TWW, and Commercial Manager Mark Allgar, M1MPA. While at ARRL Headquarters, the RSGB team also discussed with ARRL staff members preparations for World Radio-communication Conference 2003, International Amateur Radio Union concerns, power line communications, sales and marketing issues and other topics of mutual interest.

AMATEUR RADIO TODAY SENT TO MEMBERS OF CONGRESS

A copy of the new Amateur Radio Today CD-ROM video presentation this week went out to all 535 members of the US Congress. The ARRL video tells Amateur Radio's public service story from a non-Amateur Radio perspective. Former CBS news anchorman Walter Cronkite, KB2GSD, narrates the six-minute presentation.

"After viewing the video, I am sure you will agree that hams are a valuable public safety resource, and continued threats to the spectrum they operate on is not in our national interest," say identical letters to their colleagues from US Rep Michael Bilirakis, a Florida Republican, and US senators Michael Crapo, an Idaho Republican, and Daniel Akaka, a Hawaii Democrat. The letters also seek additional cosponsors for The Amateur Radio Spectrum Protection Act of 2003. Bilirakis is the House sponsor of the Amateur Radio Spectrum Protection Act of 2003, HR 713, while Crapo sponsored the Senate version of the bill, S 537. Akaka is an original cosponsor of the Senate measure.

The bills, an ARRL initiative, are on their third try in Congress. HR 713 and S 537 would protect existing Amateur Radio spectrum against reallocations to or sharing with other services unless the FCC provides "equivalent replacement spectrum" elsewhere. That would include reallocation of primary amateur allocations, any reduction in secondary amateur allocations, or "additional allocations within such bands" that would substantially reduce their utility to amateurs. The chairman of the House Subcommittee on Telecommunications and the Internet has agreed to hear testimony on the House version of the bill later this spring.

The text of HR 713 and S 537 is available via the Thomas Web site <http://thomas.loc.gov/>

ARRL'S "LOGBOOK OF THE WORLD" ENTERS OPEN BETA-TESTING PHASE

The long-anticipated "Logbook of the World" (LoTW)--the ARRL's secure electronic contact-confirmation system--is being opened for beta testing. While a formal unveiling was set for the Hamvention DX Forum May 17, LoTW now is available to all who wish to participate in the beta testing program, expected to last 60 days.

At the heart of the Logbook of the World concept is a huge repository of log data provided by operators--from individual DXers and contesters to major DXpeditions--and maintained by ARRL. Logbook of the World Project Leader Wayne Mills, N7NG, says the system will benefit big and little guns alike by providing quick QSO credit for awards offered by ARRL--and, it's hoped, those offered by other organizations as well--without having to first collect and submit hard-copy QSL cards.

Visit the ARRL Logbook of the World Web site <<http://www.arrl.org/lotw>> to learn more, download the necessary software and take part in the beta testing effort. For the purposes of the beta test, validated users are asked to submit log data for contacts made on or after January 1, 1998. Once a certificate is issued, beta testers may e-mail their log data to the LoTW database lotw-test@arrl.org.

LoTW will accept authenticated data--either in Cabrillo or ADIF format--directly from computerized logs via the Internet. Software Development Manager Jon Bloom, KE3Z, noted that because the software still is under development, any data uploaded during the beta-testing period will be erased before LoTW "goes live." Beta participants will have to obtain new certification even if they've participated in earlier LoTW testing. The

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NEW 60-METER BAND TO BECOME AVAILABLE JULY 3!

The new five-channel 60-meter amateur allocation becomes available to US Amateur Radio operators at midnight (12:00 AM) local time on July 3. The local time designation means that amateurs in the US territory of Guam likely will be the first to get a crack at the new band.

The new band will be a secondary allocation--federal government users are primary--and the first on which the only permitted mode will be upper-sideband (USB) phone (emission type 2K8J3E). The FCC last month announced it would grant hams access to five discrete 2.8-kHz-wide channels instead of the 150 kHz-wide band ARRL had requested and the FCC initially proposed. The League remains optimistic, however, that Amateur Radio eventually may be able to enjoy a band segment with multiple mode privileges at 60 meters. ARRL CEO David Sumner, K1ZZ, has said that in the meantime hams will have to be on their best behavior when taking advantage of the limited channelized allocation, open to General and higher class licensees.

The FCC has granted amateurs center-channel frequencies of 5332, 5348, 5368, 5373 and 5405 kHz--the last channel common to the amateur experimental operation under way in the United Kingdom <<http://www.rsgb-hfc.org.uk/5mhz.htm>>. To be "on channel," users of 60 meters should set their transmitted carrier frequency 1.5 kHz lower than the channel-center frequency. In terms of day-to-day operation, the new band is expected to resemble the sort of channel sharing typical on local repeaters.

ARRL Laboratory Manager Ed Hare, W1RFI, says hams need to be very careful if they're considering modifying their current transceiver or transmitter for 5 MHz. The ARRL advises that members check with the appropriate equipment manufacturers regarding

specific modification information. Some modifications not only may void the warranty but could affect or alter a transmitter's operation in unpredictable ways.

"Hams need to be sure that any modifications put them right on the desired channel," Hare said. "Most hams are used to just having to think about band edges, so on other bands, if a mod were a bit 'off,' all operators would need to ensure is that they are not transmitting outside the band."

Hare recommended that on 5 MHz amateurs remain within "a few tens of Hertz" of suppressed-carrier accuracy. He also pointed out that hams have a mandate not to have any of their signal occupy spectrum outside the assigned 2.8 kHz channels.

Noting that high-frequency audio response can vary considerably from radio to radio, Hare has suggested restricting occupied channel audio bandwidth to 2600 Hz, rolling off below 200 Hz on the low end and above 2800 Hz on the high end.

Last-minute opposition to the granting of a band segment at 5 MHz came last year from the National Telecommunications and Information Administration (NTIA), which cited the ongoing spectrum requirements of federal government licensees having homeland security responsibilities. The NTIA administers spectrum allocated to the federal government. A compromise between the FCC and the NTIA resulted in the limited, channelized allocation.

The NTIA selected the channels the FCC authorized to minimize the possibility of interference to federal government users, and it dictated the use of USB so that federal government users--who also use only USB--could readily identify amateur stations if necessary.

The FCC has set maximum power at 50 W ERP and said it would consider a typical half-wave dipole to exhibit no gain.

ARRL, DEPARTMENT OF HOMELAND SECURITY TO INK STATEMENT OF AFFILIATION

ARRL and the Department of Homeland Security (DHS) <http://www.dhs.gov/dhspublic/> will sign a Statement of Affiliation (SoA) at the League's 2003 National Convention later this month in Texas. The convention will be held June 20-22 at the Arlington Convention Center in conjunction with Ham-Com <<http://www.hamcom.org>>. Since both ARRL and DHS view community disaster preparedness and response as top priorities, they will pledge mutual support for Citizen Corps--a community-based training and outreach initiative that brings together volunteers and first responders.

"This is all part of the bigger picture of getting emergency communications, aligned with what our government needs," said ARRL President Jim Haynie, W5JBP, who will sign the SoA on the League's behalf. "Amateur Radio stands ready to serve the country as needed in times of emergency."

Chief Operating Officer of the Emergency Preparedness and Response Directorate Ron Castleman will represent the DHS at the signing and serve as the lead speaker during the ARRL Forum, Saturday, June 21, at 10 AM. The forum will take place in an unnumbered room that's to the right of the Ham-Com registration area, not in Room M5 as originally scheduled.

Programs under the Citizen Corps umbrella are aimed at helping communities prevent, prepare for and respond to terrorism, public health issues and disasters.

The Statement of Affiliation will call on ARRL

and DHS to collaborate in several areas, including raising public awareness of Amateur Radio as a public safety resource and providing training and accreditation for Amateur Radio emergency communications. The DHS and the League also will work together to promote formation and assist Citizen Corps councils in education, training and volunteer service opportunities that support first responders, disaster relief organizations and community safety efforts.

A schedule of Ham-Com/2003 ARRL National Convention programs is available on the Ham-Com Web site <<http://www.hamcom.org/programs/Programs.pdf>>

LOGBOOK

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beta certification will be good only for the beta-test period.

Bloom emphasized that every call sign would need a separate certificate.

Bloom and Mills encouraged beta-test DXers and contesters to upload their log files--the bigger the better--to test the robustness of the software as well as to populate the database and create a more realistic environment. LoTW will find and match contacts between stations based on the log data submitted by users, and the results will appear on the Logbook of the World Web page.

"We're not replacing the whole paper QSL scheme with Logbook of the World," said Mills, who is also ARRL's Membership Services manager. "This is really a system to offer credits for awards."

40-METER "REALIGNMENT" TOPS WRC-2003 AMATEUR RADIO ISSUES

When delegates gather June 9 in Geneva, Switzerland, for World Radiocommunication Conference 2003 (WRC-03), Amateur Radio will enjoy robust representation. The International Amateur Radio Union (IARU) is looking to WRC-03 to resolve the longstanding issue of a harmonized worldwide 40-meter amateur allocation. In addition, the IARU has taken positions on several other issues of importance to hams.

"Forty meters is the biggie," says ARRL CEO David Sumner, K1ZZ, who will attend the month-long international assembly in the role of administrative officer of the IARU observer delegation headed by President Larry Price, W4RA. "It's complicated, controversial and involves multiple radio services, and there's simply no way of predicting what the outcome will be."

Citing its desire to "meet the needs of communications for humanitarian assistance," the IARU has expressed strong support for a realignment of the band to make available to hams globally 300 kHz of spectrum in the vicinity of 7 MHz.

While Region 2 amateurs--including US hams--now enjoy 7.000 to 7.300 MHz, hams in most of the rest of the world--Regions 1 and 3--may use only 7.000 to 7.100 MHz. Methods to get the issue off the dime must address the incompatibility arising from how, where and on what timetable the broadcasters in Regions 1 and 3 should be shifted to higher frequencies while continuing to meet the needs of other services in band.

Other Amateur Radio-related agenda items include proposed revisions to Article 25 of the Radio Regulations. Article 25 details the requirements for Amateur Radio and in-

cludes the obligation to demonstrate Morse code proficiency to operate below 30 MHz. Sumner said he expects the WRC-03 delegates to delete the international requirement, although administrations could continue to require Morse proficiency if they wished to do so.

The IARU favors a revision to Paragraph 25.6 to incorporate an ITU Recommendation (ITU-R M.1544) by reference to establish a minimum international standard for Amateur Radio licensing. The IARU also supports adding new provisions urging administrations to take steps to allow amateur stations to prepare for and meet communication needs to support disaster relief and to permit individuals licensed in another country to operate temporarily while in their territory. The IARU also supports giving greater flexibility to administrations in the formation of Amateur Radio call signs.

Expressing concern over interference potential, the IARU opposes allocating any spectrum to the Earth Exploration Satellite Service (Active) to deploy spaceborne synthetic aperture radars (SARs) in the 430 to 440 MHz band. Amateur Radio is co-primary at 430 to 440 MHz in Region 1 and in several countries in Region 2.

As an observer at the conference, the IARU can only request that ITU member-states take its views into consideration when deciding on WRC-03 agenda items. ARRL has launched a special WRC-03 campaign <<http://www.arrl.org/defense>> to help generate the funds needed to continue the defense of Amateur Radio spectrum. Sumner said "unquantifiable thousands of hours by volunteers and staff members" have gone into WRC-03 preparations.

More information on WRC-03 is available on the ITU WRC-03 Web page <<http://www.itu.int/ITU-R/conferences/wrc/wrc-03/index.asp>>

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Fauquier Amateur Radio Association
(FARA)

May 8, 2003
Meeting Minutes

Welcome and Introduction: Chuck Gould N4YXW

Announcements:

Next club breakfast will be May 31, 2003, at 08:00 at the Town & Country Restaurant at New Baltimore.

Next club meeting is June 12, 2003 in the conference room of Sun Trust Bank.

Treasurer's Report:	Beginning Balance	\$1944.18
	Deposit Dues	40.00
	FCC License	- 14.00
	Ending Balance	\$1970.18

Treasurers Report was approved as presented. Motion to accept by Larry (K4LLQ), second by Don (N2VA), approved.

Secretaries Report:

Tom Beavers read the Minutes from the April Meeting. Motion to accept by Larry (K4LLQ), second by Marty (KE4VA).

Old Business:

Repeater: Bill (W4NFR), Frank (W4NHJ), and Dave (K3SK) gave a report on the Repeater repairs. 1) Perm Tech Tower Company was requested by Frank to look at the Antenna and Cable condition which was done with findings of loose cables, crushed cable (which was spliced). Bill furnished the connectors at no cost to FARA. 2) The Repeater was taken to Bill's house where it was repaired with another Pre-amp then placed in a new cabinet that contains the whole set-up. Then return to the tower, checked out, and installed. A second back-up antenna was installed for future use if needed. Antenna was furnished by Bill. (Good work and Thanks).

Chuck (N4YXW) reworked the packet station and software, changed the call sign. Packet station procedures were discussed and should be available soon to the members.

Neil (AB4YK) showed pictures of an Antenna Party where Dave Gerrish was present and helping.

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Presentation was made to Dave Gerrish Jr., as a Memorial to Dave Gerrish Sr., a copy of K4VA License given to FARA in honor of the Senior Gerrish. K4VA is now the call sign for the FARA Repeater. Thanks were expressed for the K4VA.

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Field Day: Location - Vint Hill Area. The grass will be mowed twice before the Field Day Event. Harry (WB3BIC) has received several E-mails for personal participation desires and equipment. The Boy Scouts plan to attend also. Stations: CW, Novice, Phone, Rtty/PSK-31. WR9R software will be used for logging. FARA will furnish the drinks, and each person will furnish their own food. Buckwalter (K3SK) will furnish a canopy.

The FARA Insurance was paid.

Auto Patch - Larry will furnish a power supply for six months. Chuck (N4YXW) will work on getting it set up.

There are membership Certificates available if desired by members.

New Business:

Marty (KE4VA) recommend a dues change to help offset the Budget deficit. This requires a by-laws change with a corm of membership present for the vote. Don (N2VA) will write the change to the by-laws. The effective date January 2004. The Board will set the dues.

Manassas Ham Fest is June 1, 2003.

Program:

Auction: Members brought equipment items to the meeting which were auctioned by Larry (K4LLQ). Proceeds going to FARA on some items amounted to \$34.50.

Meeting Adjourned: 9:30 PM. Motion by Chuck, second by Marty.

Tom Beavers (KD5CMI), Secretary

EDITOR'S MUSINGS

Dave WB4FUR

Greetings again. This is rapidly degenerating into a bimonthly exercise. Health continues to be an issue. I appreciate your continued prayers and thoughts here.

Field Day. It's the "last rainy weekend" in June, as always. The plans are being cooked up as I write. I hope to be there (although I may not get to do an all-nighter like I have in the past). Hope you plan to attend also.

60-meter band. How about this? We now have a band where CW is NOT welcome! We sure got a whale of a boost in the broadband-over-powerline issue, because NTIA is concerned enough about homeland security and HF that they didn't support the band assignment that ARRL was looking for.

Broadband-over-powerlines. This is potentially the largest threat to both Amateur Radio and to other services in the HF spectrum that I have seen in a long, long time. If the comment period is still open when you read this, PLEASE take the time to file just a short note asking the FCC not to open this box without REAL testing being done. Don't be emotional—just tell them not to do it without verifying that it will NOT cause interference to other services in the band, or DON'T DO IT. Also, it won't hurt to write the ARRL and tell them that you support their efforts to be present where testing is being done.

I have been trying to put together some points for comments, but I really, really am getting bogged down in other stuff. Basically here is what I see:

1. The HF spectrum is the only spectrum available that enables worldwide long-range communications without the need for satellite systems or terrestrial landline links. No other spectral allocation shares these

characteristics. As such it is a unique, invaluable natural resource and must be treated as such.

2. There are over 43,000 Federal HF radio frequency assignments currently on file. Obviously the Federal government itself considers HF valuable to its current operations. It should be noted that NTIA recently opposed granting an additional 5-MHz HF allocation to the Amateur Radio Service, limiting it to only 5 3-kHz channel assignments as opposed to a 150-kHz wide allocation. This was done by NTIA ostensibly out of concern over potential harmful effects to Homeland Security communications in the 5-MHz band. This again affirms the interest of the Federal Government in protecting the usefulness of the HF spectrum.

3. There are over 1,500 non-Federal government assignments (state and local) in the HF spectrum which can be adversely affected by interference from these systems.

4. There are still tens of thousands of licensees in the 30-50 MHz range which can be adversely affected by interference from these systems.

5. The BPL systems being proposed will ALL radiate from their transmission medium (power lines) to a greater or lesser extent. This will have the effect of introducing additional interference into the HF spectrum.

6. All the services that currently operate in the HF spectrum expect to operate in a noise-limited environment (one in which receiver internal noise and atmospheric noise are the limiting factors). Requiring existing users to convert from a noise-limited to an interference-limited mode of operation would require either (a) significant increases in transmitter power to deal with increased interference or (b) channel coding methods to identify desired signals in (or possibly under) interference. Both of these approaches will require wholesale

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replacement of hardware. No funding mechanism has been identified to pay for this transition for any of the licensees involved. For the FCC to render government systems useless without either (a) a statement from the agencies involved that the systems are no longer required or (b) a funding mechanism to effect correction may represent abuse of government funding.

It is not obvious that the same case can be made for non-government systems (e.g. Amateur Radio). However, it seems reasonable that the wholesale destruction of value of existing amateur radio equipment may be actionable as a taking of private property through the destruction of its usefulness to the end user. What case law might apply to this is unknown but should be explored.

6. This technology may well have a limited life, as the total bandwidth available from this approach is limited. No estimates have been provided to show how this technology will meet the needs of its projected customer base, or for how long.

7. No analysis has been published to show what the effect of corona or semiconducting joints in the field of this operation will cause, or what the physical plant maintenance requirements will be if this technology is deployed. It is theoretically possible that 3rd-order intermodulation products created from these impairments in the physical plant involved could extend as far up as 158 MHz. This could potentially have adverse effects on aircraft communications and communications by DoD and state / local governments in the 150 MHz range. The deployment of this technology may be a move on the part of electric utilities to be relieved from the elimination of noise in the 2-80 MHz range. This would obviously have economic benefit to the utilities, while harming the other users of that spectrum.

8. A better approach might be to move the operation higher in the spectrum (e.g. 30-46 MHz), requiring utilities choosing to deploy this technology to relocate existing noise-limited users in that spectrum before proceeding. This would ensure that no user is adversely affected without due compensation and that the HF portion of the spectrum remains protected from interference, at least for a while.

That's a long diatribe. I hope to clean it up and get it to the FCC.

40-meter realignment. We may be getting closer on this. I will sure welcome it (assuming of course that the broadband-over-powerline folks don't get to wreck HF...get those comments in to the FCC!).

While on vacation recently I got to do some 40-meter mobile work. Very enjoyable.

Mobile antennas. The "normal" model for an HF mobile antenna is a capacitive reactance (tuned out, we hope, with a loading coil), and a resistance made up of radiation resistance, ground resistance, and loading coil resistance. Assuming this simple series network is a good model it should be possible to tune out reactance anywhere along the feedline between the antenna and the radio and make the antenna work well, taking into account possible additional coax losses caused by high SWR between antenna and tuner. My experience is that the center-loaded HF mobile antenna has a definite "natural" resonant frequency (set by loading coil and capacitive reactance), and off of that frequency it doesn't work as well, regardless of what tuner, etc., is used with it. I am inclined to believe there is some parallel-resonant effect in play that hasn't been accounted for. Comments?

Hope to see you at the meeting, and 73!

Dave WB4FUR