WARC Newsletter

The Monthly Newsletter of the Wantagh Amateur Radio Club April 2004

Meeting Notice: The next monthly meeting of the Wantagh Amateur Radio Club will be held at 8:00 P.M. on Friday, April 9th, at the Wantagh Public Library.

Minutes of the March 12th General Meeting

WARC GENERAL MEETING MINUTES – March 12th, 2004.

Vic, K2IY, President, opened the meeting at 8:15pm P.M.

All Officers were present.

February minutes were accepted as read by the Secretary.

Treasurer's Report: Our current balance is $608.04. Five past members have not renewed their membership as of tonight.

DX Report by len KB2HK :

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Inside This Issue

Radio is Going Digital

But dueling standards complicate transition …

By Gary Krakow

MSNBC

KULPSVILLE, PA, Mar. 12 - If you're sick of all-talk AM radio, scratchy static or short-wave signals that sound like they're being sent from Mars, take heart. Just like television, radio is going digital. But lines are being drawn in a battle between the U.S. choice and the standard set for the rest of the world.

FOR THE MOST PART, AM radio has remained unchanged from the early days of broadcasting. In the United States, AM radio, once our main music medium, is now mostly relegated to talk, sports and all-news formats — because voice sounds good on AM and music sounds not so good.

But what if AM transmissions could be improved to the point where the quality was equal to, or slightly better than, FM transmissions today? And what about CD-quality FM broadcasts?

Last October, the Federal Communications Commission approved digital broadcasting for U.S. radio stations using a system from a company named iBiquity. Within the next few years, AM and FM radio stations across the country will begin broadcasting a digital signal alongside their current analog signals on the same frequency. Of course, you'll need new radios to hear the new iBiquity "HD" radio signal; they

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MINUTES - continued from page 1

Bands are open. Lots of contests going on. Some discussion of electronic filing instead of QSL Cards.

OLD BUSINESS

Sid reported that Diane Ortiz, K2DO, will attend the may meeting with her presentation on public relations for radio clubs. Sid K2LJH does not yet have a date from George Tranos N2GA. There is a possibility that George Gluck WA2WKV will give a talk on ARES in the fall.

Frank N2RSO is looking for an attorney, preferably a ham, for pro-bono help to the club in becoming a tax exempt organization.

Vic K2IY will contact the Chamber of Commerce concerning our participation in the upcoming parade and Bellmore days celebration.

Frank N2RSO gave a brief review of the Gap "HEAR IT" dsp speaker which he purchased for use with an older model Icom HF transceiver, the IC-737. His comments were all favorable.

Sid K2LJH noted that BPL will likely lead to changes to the Part 15 FCC regulations to place the onus of non-interference on the amateur operator instead of the power companies.

Dan KB2HTB then demonstrated the set up of our "Rig in a box".

Meeting closed at 9:15 PM, for coffee and conversation.

Respectfully Submitted by
Bill N2RRX, Secretary ■

This space, and more, is available for your radio-related articles, comments, suggestions, construction projects, etc., etc., etc. Email to n2rso@arrl.net

Radio is Going Digital - Continued from page 1

should be available for sale to the public later this year.
A small but growing number of stations, in places as varied as New York and Birmingham, Ala., have already begun broadcasting digital signals. Currently, 130 stations are licensed to do so, according to iBiquity.
It will take up to ten years to convert all 13,000 AM and FM stations in the United States, said Jeff Jury, a senior vice president at iBiquity.

THE STANDARDS MUDDLE

The HD standard is also available to AM and FM stations worldwide, but faces an uphill battle against competing standards that have already gained approval in Europe and elsewhere. Digital FM radio already has a big foothold in Europe, thanks to Digital Audio Broadcasting, a free, over-the-air digital service that requires

only a special receiver attachment on the listener's end. While DAB is approved in Canada as well, the FCC opted for iBiquity instead of DAB.
Digital radio goes beyond AM and FM, however. In many parts of the world, long wave and shortwave radio are the main sources for news and music. That's where yet another standard, DRM, comes in. Digital Radio Mondiale was formed in 1998 to create a universal, digital system for shortwave, medium-wave and long-wave bands.
(Time for a brief radio jargon lesson: "AM," which stands for amplitude modulated transmissions, is actually used in three major bands of transmissions: long wave, for short-distances; medium wave, which is what we think of as AM radio; and shortwave for around-the-world coverage such as the BBC World Service.)
Both HD and DRM are free to the listener, in contrast with the only form of digital radio most in the United States are now familiar with: satellite radio.
Satellite radio services such as XM and Sirius are more analogous to cable TV, with a far wider variety of channels available than what you can tune in locally — and many of the channels are commercial-free. But like cable TV, there's a monthly service charge for programming.
In the last five years, the DRM group has expanded into an international consortium of more than 70 broadcasters, manufacturers, network operators, research institutions, broadcasting unions and regulatory bodies. Just last week, the International Telecommunication Union cleared the way for broadcasters in Europe, Africa, the Middle East, Asia and Australia/New Zealand to switch to the DRM system for broadcasting.
IBiquity says that the ITU has also approved their system for AM and FM stations worldwide.

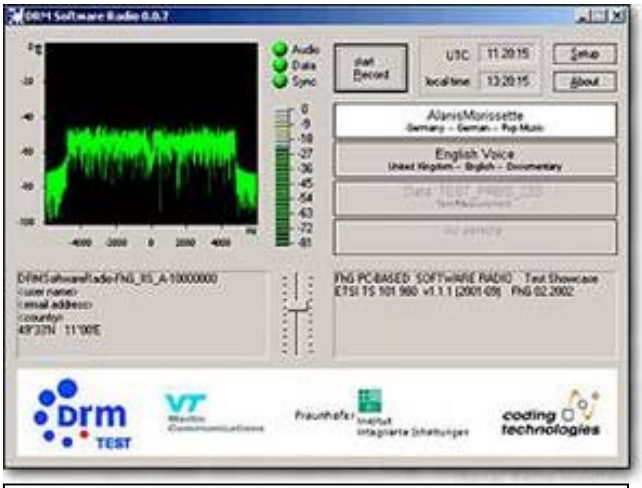
THE BENEFITS

The reasons to switch to digital are numerous.
For the listener, AM radio will now sound like FM, with bandwidth somewhere similar to current FM monaural signals in the United States, improved reception quality, receiving stations on the same frequencies, new, low-cost, energy-efficient receivers and easy tuning by frequency, station name or programming format. You will also be able to get text information from the station that could include things like the title of the song you're currently listening to and the name of the singer.
Broadcasters using the DRM system get the additional benefit of much lower broadcasting costs. DRM estimates its system uses about 20 percent of the total energy needed to produce an old-fashioned AM signal — in other words, they can now reach the same number of people at one-fifth the cost.

Radio manufacturers will benefit from people purchasing new radios in order to receive the upgraded signals. One estimate says that 2.5 billion radio receivers may need to be replaced.

THE SOUND

I traveled last week to the Northeast SWL Fest (a conference of shortwave listeners) to hear DRM in action.
For now, listening to the DRM test transmissions requires a lot of effort. You need a PC with Windows 98 or better, a 16-bit soundcard that supports full duplex at 48 KHz sampling rate,



This is what the DRM software looks like on your computer screen. In addition to all the graphical and text signal information - note the playlist on the right.

LAN or dial-up network installed, a unique software program (available for 60 euros at http://www.drmrx.org/purchase) and a specially modified shortwave receiver with 12 KHz IF output. James Briggs of DRM and Jan Peter Werkman of Radio Netherlands set up the display and also brought with them a very, very, very early beta of a stand alone DRM-enabled radio, which had all of the above built inside. When it worked (I'm being kind) it showed what could be available in the next five to ten years.


Gary Krakow / MSNBC.com

What did work were the three setups using PCs and the special software. Briggs and Werkman got a number of shortwave broadcasters to send test signals to the gathering and the results were very impressive.

Gone was the the fading in and out of the signal. Gone was the very narrow bandwidth, with no treble or bass to speak of. Instead, we heard music that actually sounded like music. People speaking sounded like they were nearby, not thousands of miles away like they do on today's shortwave broadcasts. In short, DRM sounded terrific. It will give AM stations a new lease on life and could give FM and even the satellite radio channels a run for their money. Briggs told me that he's heard the iBiquity system and sound-wise the two systems are very similar. I'm hoping to hear FCC-approved digital in the next few weeks to see if that's true.

THE FUTURE IS COMING

Back to the SWL Fest. Briggs and Werkman told the gathered crowd that all the stuff that now requires a PC, special software and a modified radio will be shrunk-down to one integrated chip. With radio manufacturers like Sony, Sanegan, Bosch, JVC and Telefunken on board the DRM bandwagon I'm sure we'll start seeing receivers very soon. Kenwood and Harmon-Kardon are among the manufacturers working on U.S. radios for the iBiquity standard.

Within five to 10 years the price of digital radios should be low enough for people in remote areas and third-world countries, where reliance on shortwave is particularly strong, to afford new receivers.

The big rollout of DRM is coming this spring at the World Radio Conference in Geneva, when a number of the world's largest broadcasters will announce a permanent schedule for DRM digital transmissions.

Back in the States, local shortwave fans are hoping that the start of digital transmissions will mean the resumption of BBC World Service to North America, which ended a short while ago. German broadcaster Deutsche Welle also plans to end their North American services in the next few weeks. For now, BBC World is available via their Web site and on satellite provider XM.

For now, it looks like we in the United States will have one digital AM and FM radio standard and most of the rest of the world will be using another one (or two if you count DAB). It won't be the first time this has happened: television, HDTV, cell phones, etc.

I'm just hoping that someone out there is working on an AM/FM/LW/SW/DRM/HD/DAB radio — and that it won't be too big or too expensive.

Editor's Note: Thanks to Elliot, N2HYD, for contributing this article.

ARRL Responds to Wall Street Journal Article on BPL:

The ARRL this week responded to a March 2 Wall Street Journal article, "The Web's New Outlet," that presented a one-sided, rosy picture of Broadband over Power Line while avoiding any mention of its interference potential. ARRL CEO David Sumner, K1ZZ, faxed a letter to the editor of the New York-based business and financial publication to point out some of BPL's shortcomings, which were largely missing from the WSJ report.

"Any listing of the pros and cons of using power lines to deliver broadband services must mention its major disadvantage: it pollutes the radio spectrum, interfering with nearby radio receivers," Sumner said. "The only known exception is a microwave system being developed by Corridor Systems of Santa Rosa, California."

Sumner pointed out that BPL involves sending wideband RF "over unshielded wires that were not designed for the purpose." Owing to the laws of physics, Sumner continued, these power lines function much like antennas, and BPL signals passing through wires in the vicinity can interfere with radio reception.

"The frequencies in question are used by public safety agencies, the military, aeronautical and maritime services, broadcasters, radio astronomers, radio amateurs, and others," Sumner noted. He said BPL system designers have had only limited success in resolving the interference issue by notching certain frequencies.

"Yet BPL implementation cannot go forward without solving it, because for very good and obvious reasons it is a violation of FCC regulations for a BPL system to cause radio interference," he went on. "If BPL causes interference--and it does--the BPL system must be shut down." Sumner included references to the ARRL's BPL Web page http://www.arrl.org/tis/info/HTML/plc#video, which documents HF interference the League monitored at four BPL field test sites last fall.

The WSJ article, in the paper's "Marketplace" section, focuses on the announcement this week of what's said to be the largest rollout to date of BPL by Cincinnati-based utility Cinergy Corp and its BPL partner Current Communications. Cinergy and Current Communications hope to be offering the service to between 60,000 and 1.5 million Cincinnati-area customers by year's end and eventually to some 24 million potential customers elsewhere who are served by smaller utilities.

While the article concedes that BPL "is unproven in wide use," it also cites FCC Office of Engineering and Technology Chief Ed Thomas, who called the technology "ready for prime time." Thomas stopped short of saying that the same was true for the BPL industry, however. It also quotes Cinergy Executive Vice President Bill Grealis, who called BPL "the last-mile solution" and said the service--at between $30 and $40 a month--would be "cheaper and faster than DSL or cable."

A March 5 article about the Cinergy/Current Communications BPL rollout appearing in the Cincinnati Enquirer http://www.enquirer.com/editions/2004/03/05/biz_cinergy05.html cites Amateur Radio's concerns, although it also includes comments by FCC and industry sources saying that interference is not a major worry. Featuring a photo of ARRL Ohio Section Manager Joe Phillips, K8QOE, the report quotes the League's comments to the FCC in response to last April's BPL FCC Notice of Inquiry (ET Docket 03-104). Phillips expresses his concerns that interference from RF on unshielded power lines could interfere "with all types of radio transmissions," including emergency agencies.

Sumner, in his letter to the Wall Street Journal, suggested that there are better choices than BPL, even from the standpoint of business and economics. "Potential investors in broadband delivery alternatives to DSL and

cable would be far better off considering the various methods of delivering fiber-to-the-home in densely populated areas," he concluded. "For rural areas, adaptations of wireless LAN technology are generally recognized as offering far more promise than BPL."

Common Sense Technology

Broadband over Power Line. This topic has garnered much attention in the amateur radio community, and this past week was the subject of a less than favorable perspective on the ARRL's ham radio, on the front page of the Wall Street Journal.

The ARRL has been fighting BPL because most systems have transmitted data signals as modulated HF and low VHF radio signals between about 2.5 and 80 Mhz, and have been shown to cause radio interference. The ARRL's approach to the fight, however, is totally wrong. And resulted in this week's WSJ story that presented the BPL issues as "a few old hams" versus millions of Internet users.

A much more effective argument would be to ignore ham radio all together. Instead, arguments should focus strictly on the multiple benefits delivered by the radio spectrum to the general public. Note that BPL will interfere with CB radio, with FEMA disaster communications, with the U.S. military, and air traffic control, Red Cross communications, and even potentially TV channels 2 through 6. Trials performed in other countries were ended due to widespread radio communications interference. The ARRL, on the other hand, has focused on the amateur radio argument - primarily - which provides BPL proponents with a tidy argument that is essentially, "Who cares about ham radio?" The answer is, not all that many people.

Many in the BPL industry claim they will "notch out" selected frequencies to avoid radio interference "where necessary". This claim is rather bogus in that they, potentially, would have to notch out most of the radio spectrum they intend to use.

Alternative BPL systems bypass the HF radio spectrum altogether and modulate data directly in the Part 15 radio spectrum, such as 2.4 to 2.4835 Ghz or the 5 Ghz band. These systems are technically possible and would eliminate the problems created by attempting to use the power lines as leaking HF antennas. Some BPL technologies do, in fact, use the Part 15 radio spectrum. Many others do not. Hopefully, sanity will eventually prevail and the HF radio spectrum will not be obliterated by greedy CEOs who seek to line their own pockets. In fact, there are some who argue that the proposed BPL systems are so unworkable that Wall Street investors will avoid the field entirely. Lacking capital, the systems may go nowhere.

CQ Magazine Response to WSJ BPL March 23 Article

March 25, 2004
To the editor:
As a journalist and an amateur radio operator (I am the editor of CQ Amateur Radio, the world's largest independent amateur radio magazine), I was distressed at the number of significant inaccuracies in Ken Brown's March 23 article, "In This Power Play, High-Wire Act Riles Ham-Radio Fans":

#1) "The nation's vocal but shrinking population of ham-radio operators" isn't shrinking. The number of licensed hams in the United States is near its all-time high (it peaked last summer at more than 685,000 and

is currently around 684,000, according to FCC statistics. In contrast, there were 673,000 licensed hams at this time five years ago; in 1980, there were about 382,000. Far from shrinking, amateur radio in the United States is growing and has nearly doubled its ranks in the past 25 years.). The American Radio Relay League's membership may have fallen sharply in the past decade, but that has more to do with how the organization is perceived by many hams than with the number or licensed or even active hams.

#2) While "a clash between the dots and dashes of the telegraph and the bits and bytes of the Web" makes for nice copy, it doesn't paint a very accurate picture. While Morse code certainly continues to be popular among hams it gets through in marginal conditions when virtually nothing else will, and you need only your brain to decode it, not a computer hams primarily communicate using voi ce, digital modes (we invented wireless e-mail networks in the 1980s) and yes, even the internet to connect with other hams around the world. I am currently reviewing a device that generates and decodes digital voice signals that are sent through standard analog transmitters and receivers.

#3) "Not too many decades ago, ham-radio operators were on the cutting edge of communications technology ... They spread word of disasters that otherwise might have taken days to reach the public." No, not too many decades ago at all in fact, the correct number of decades is zero. There is a permanent ham station at the National Hurricane Center that's staffed whenever a hurricane is near land. Why? Because when power lines and telephone lines go down in a storm, ham radio is STILL the only means of communication that reliably gets through in those critical early hours. When the attacks of 9/11 destroyed New York City's ultra-high-tech Office of Emergency Management, officials relied on ham radio during those critical early hours to relay vital communications between agencies. One FCC official has correctly described amateur radio as America's "fail-safe communications system."

#4) As for suggestions that we are losing our edge in technology, how many other hobbyist groups have their own fleet of communications satellites ... that they've built themselves? Hams around the world have built and launched about 60 satellites since 1961, when we launched the first non-government satellite ever placed into orbit. Hams today are extending the distance limits of high-microwave frequencies, the next "frontier" for wireless communications; and experimenting with laser communications. Today's "hot ticket" technologies such as wide-area wireless computer networking; and text-messaging and still-picture transmissions via cell-phones, were pioneered by hams.

#5) "To become a fully-licensed ham operator, people still need to learn Morse code..." ... not since 1991, when the code requirement was dropped for the Technician class license, which gives full privileges in the VHF and UHF amateur allocations. Hams with Technician licenses are "fully-licensed." Other license classes with additional privileges continue to require a code exam, but at only 5 words per minute, and that only because it was required by international rules until last summer. The FCC is currently considering more than a dozen petitions to bring US rules into line with the new international regulations.

#6) "Aging hams ... are dying." Yup, along with aging non-hams. Not much we can do about that, except to note that hams and non-hams alike are living longer today so they're not dying quite as soon as they might have a couple of decades ago. "Fewer youngsters are replacing them." This is hard to quantify since new privacy rules no longer allow the FCC to collect and release birth dates of licensees. But there are two factors at play here that skew the average age figures: a) there are fewer youngsters, period. The baby boom created a huge population bubble that is working its way into its 60s, and the average age for any activity that includes baby boomers is inexorably rising; b) many of those boomers are becoming hams for the first time in their 50s and 60s, pushing up the average age. With today's advances in health care, these new hams often have 20-30 years in which they can be active, contributing members of the ham radio community. And

since many of them are retired, they have the time to give to staffing emergency operating centers, etc., and providing vital communications in disasters. These older-newer hams are assets, not liabilities.

7) Hams "haunt a series of short-wave radio frequencies set aside for them by the federal government in the 1930s." While some frequency bands were assigned to amateurs (internationally) in the 1930s, we have seen a steady growth in those allocations in more recent decades. Three new allocations were made in the 1980s and one was made just last year. The picture Mr.Brown paints of hams, as ghosts of communications past ("haunting" frequencies since the '30s, for example), is just plain inaccurate.

#8) "One favorite game: trying to contact someone in each of the 3,000-plus counties in the U.S." As sponsors of the primary award for contacting all 3,077 U.S. counties, we are proud that it's a favorite activity. But it's much more than a game. Since many remote counties don't have many resident hams, "county-hunters" often put them on the air by driving there and operating from their cars. This gives hams around the world experience in communicating with stations whose signals might be weak signals Broadband over Power Lines would likely wipe out; and it gives the hams who drive to those counties a knowledge of places from which they can operate and get signals out essential knowledge in an emergency or disaster. Better to take the hours you might need to find those locations while pursuing the hobby aspect of amateur radio than to waste time searching for a spot in an emergency when every minute counts.

#9) Mr. Brown poses a question asked by FCC Chief Engineer Ed Thomas, "Why is this thing a major calamity?" but he doesn't try to get an answer. Here's the answer: One of the many things hams have discovered over the years about the short-wave frequencies where BPL wants to operate is that you don't need a lot of power to communicate over very great distances. Under the right conditions, a few milliwatts might get you a contact thousands of miles away. BPL signals are essentially low-power radio transmissions. Under those same conditions, they may bounce off the ionosphere like any other radio signal and come back down hundre ds or thousands of miles away. Rather than enhancing communication, though, they will block it. Hams tuning around the short-wave frequencies searching for a weak signal from some remote corner of the globe won't be able to hear it and they also won't be able to hear the weak distress signal from a boat in the middle of the ocean somewhere that's in danger of sinking, something that happens at least once or twice a year.

#10) Hams are not the only ones threatened by BPL interference. Every other user of spectrum between 2 MHz and 80 MHz is at risk. This includes international short-wave broadcasters, the US military, the Federal Emergency Management Agency, long-distance airline pilots, Citizens Band (CB), some radio-control airplanes and boats, some baby monitors and cordless phones, and some police and fire departments. The FCC and BPL industry say they'll avoid using certain frequencies where interference occurs, but with so many spectrum users, and the possibility of interference occurring hundreds or thousands of miles from the signals' source, this "notching" technique will soon result in "all hole and no doughnut." It just won't work. Someone inevitably will suffer interference. And once BPL is widely deployed, it will be virtually impossible to un-deploy.

Perhaps a better question for Mr. Brown to be asking than "Why is this thing a major calamity?" is "Why is BPL so important to the FCC?" It is FCC policy not to promote any one particular technology, yet from Chairman Powell on down to the staff level, this policy is being violated with regularity as the FCC has become cheerleaders for a technology with potential for massive interference to a host of long-distance radio services and whose economic potential is unproven at best. Why is BPL so important to the FCC? It's a question that may well be worth the curiosity of the Journal's excellent investigative staff

Thank you for the opportunity to correct the inaccuracies in Mr. Brown's article.

Sincerely,

Richard Moseson
Editor, CQ Amateur Radio magazine

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HOW TO SURVIVE A HEART ATTACK WHEN ALONE

(Contributed by Bill P. KC2MPX)

Read this... It could save your life!!

Let's say it's 6.15p m and you're driving home (alone of course), after an unusually hard day on the job. You're really tired, upset and frustrated.

Suddenly you start experiencing severe pain in your chest that starts to radiate out into your arm and up into your jaw. You are only about five miles from the hospital nearest your home.

Unfortunately you don't know if you'll be able to make it that far. You have been trained in CPR, but the guy that taught the course did not tell you how to perform it on yourself.

HOW TO SURVIVE A HEART ATTACK WHEN ALONE

Since many people are alone when they suffer a heart attack, without help, the person whose heart is beating improperly and who begins to feel faint, has only about 10 seconds left before losing consciousness.

However, these victims can help themselves by coughing repeatedly and very vigorously. A deep breath should be taken before each cough, and the cough must be deep and prolonged, as when producing sputum from deep inside the chest.

A breath and a cough must be repeated about every two seconds without let-up until help arrives, or until the heart is felt to be beating normally again.

Deep breaths get oxygen into the lungs and coughing movements squeeze the heart and keep the blood circulating. The squeezing pressure on the heart also helps it regain normal rhythm. In this way, heart attack victims can get to a hospital. Tell as many other people as possible about this. It could save their lives!!