

W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

May be republished providing credit is given to *The W5YI Report*.

Fred Maia, W5YI, Editor, P. O. Box 565101, Dallas TX 75356
Electronic mail: fmaia@prodigy.net Website: <http://www.w5yi.org>
Tel. 817-461-6443 FAX: 817-548-9594

In This Issue...

FCC Goes After Mitnick's Ham License
Amateur Station Call Signs to Jan. 1, 2002
FCC Again says "No!" to CC&R Inclusion
"Paper" Electronic Circuits and Batteries
Solar Wing to Become Telecom Platform
Powerline Communications (PLC) Report
Microsoft Builds a Better (Wireless) Mouse
Was Windows XP Sabotaged by Terrorists?
"Hello, This is Your Tire Calling. I Need Air!"
"Pressplay" Napster-like Music Service
Microsoft Selling Expedia Travel Business
Those Shoes are Made forElectric Power
USPS Doing Poorly with Internet Efforts
FCC Amateur Radio Enforcement News
Panel Recommends Phone Band Expansion

Vol. 24, Issue #2

\$1.50

PUBLISHED TWICE A MONTH

January 15, 2002

FCC Begins Legal Process to Yank Kevin Mitnick's Ham License

In a five-page order released December 21st, the FCC claims that 38-year old convicted hacker Kevin Mitnick may not be morally fit to be a ham radio operator.

The Commission has begun a legal proceeding before an FCC Administrative Law Judge to determine, whether the General Class operator/station license of Kevin D. Mitnick, N6NHG should be renewed. Mitnick is a high profile computer hacker whose illegal activities have included the interception of electronic communications, computer fraud, wire fraud, and causing millions of dollars in damage to corporate computers.

The FCC said that based on their information "...Mitnick's criminal behavior raises a substantial and material question of fact as to whether he possesses the requisite character qualifications to be and remain a Commission licensee." And "Given his propensity to engage in criminal activities, particularly those involving fraud, we have serious reservations about Mr. Mitnick's ability to comply with our rules and regulations in the future."

The Commission said they were designating the renewal application of Mitnick for a hearing to determine whether his ham radio license renewal application "...would serve the public interest, convenience, and necessity...."

Background

Kevin Mitnick, N6NHG, a General Class licensee, has been licensed for twenty-five years.

Kevin was first licensed at age 13 and became a phone phreaker (someone who breaks into telephone networks) at 16. On August 9, 1999, Mitnick was convicted in federal court of participating in various computer hacking offenses over 2½ years.

Mitnick admitted that he broke into a number of computer systems and stole proprietary software belonging to Motorola, Novell, Fujitsu, Sun Microsystems and other companies. He committed these crimes using "social engineering" (trickery to gain access to a computer system), cloned cellular telephones (obtaining the electronic serial number of a cellular phone to obtain free service), using "sniffer" programs (to obtain confidential information such as passwords), and various hacker software programs.

Mitnick also acknowledged altering the programming of computer systems belonging to the *University of Southern California* and using these computers to store programs that he had misappropriated. He also admitted that he stole e-mails, monitored computer systems and impersonated employees of victim companies, including Nokia Mobile Phones, Ltd., in his attempt to secure software that was being developed by those companies.

"According to the *United States Department of Justice*, Mr. Mitnick's prolific and damaging hacking career made him the most wanted computer criminal in United States history," FCC said.

As a result of his August 9, 1999 conviction, Mitnick was sentenced to forty-six months in federal prison. He had previously been sentenced to

THE W5YI REPORT [Pub. No. 009-311] is published twice monthly by The W5YI Group, Inc., 2000 E. Randol Mill Road # 608-A, Arlington, TX 76011
SUBSCRIPTION RATE: (U.S., Canada and Mexico) One Year (24 issues) \$24.50 • Two Years: \$45.00 • Three Years: \$64.00. • Tel. 817/461-6443
Foreign Subscriptions via Air Mail: \$39.50 per year. (Payment may be made by Check, Money Order, VISA or MasterCard payable in U.S. funds.)
Periodicals Postage paid at Arlington, TX. POSTMASTER: Send address changes to THE W5YI REPORT, P.O. Box 565101, Dallas, TX 75356

W5YI REPORT

America's Oldest Ham Radio Newsletter

Page #2

January 15, 2002

twenty-two months in prison for possessing cloned cellular phones after his arrest in North Carolina in 1995 and for violating terms of his supervised release imposed after his conviction for unrelated computer fraud in 1989.

Further, he admitted to violating the terms of supervised release by hacking into PacBell voice mail and other systems and by associating with known computer hackers. Mitnick is currently on probation following his release from federal prison in January, 2001.

Hearing ordered

In December 1999, Mr. Mitnick applied to routinely renew his General Class Operator License. The FCC believes that "...evidence of any conviction for misconduct constituting a felony will be relevant to our evaluation of an applicant's or licensee's character" Such evidence is pertinent because it assists the FCC in determining whether a licensee will "...deal truthfully with the Commission and comply with our rules and policies."

Rather than establish a "...hierarchy of felonies that might arise in individual cases," the Commission examines the impact of a conviction on a case-by-case basis.

The courts have ruled that "...a conviction for fraudulent conduct plainly calls into question a licensee's ability to act in a manner consonant with FCC regulations."

Mitnick was convicted after pleading guilty to four counts of wire fraud, two counts of computer fraud, and one count of illegally intercepting a wire communication. The offenses for which he was convicted were indeed felonies involving fraudulent activities. In addition, the misconduct involved, in part, the telecommunications industry over which the FCC has regulatory authority.

Mitnick's loss of his ham radio license is probable, but not automatic. On Dec. 11th, the FCC started the process off by designating Mitnick's General Class license for a hearing to: (a) determine the effect of his criminal convictions on his qualifications to be and remain a Commission licensee; (b) determine whether Kevin Mitnick is qualified to be and remain a licensee and (c) to determine whether the Amateur Radio license renewal filed by Kevin Mitnick should be granted. Appeals go to the full commission and from there to the federal courts.

Mitnick's current activity

Mitnick is on parole until January 2003 under extremely restrictive parole-release conditions. His parole officer has allowed him to use a cell phone (which Mitnick suspects might be used to track his whereabouts), but he is prohibited from using a computer or traveling outside central California.

As a condition of his supervised release, he also is barred from discussing the specifics of his case or from making any profit from telling his story for seven years.

In the meantime, he enjoys near hero status in com-

puter circles and has been getting a lot of writing, speaking, radio and TV show job offers. (He reportedly is represented by the United Talent Agency in Beverly Hills ...one of the world's largest agencies.) But his options are severely limited by the fact that he can't use a computer or travel outside central California.

In addition to appearing on local network news programs, his online resume says he "...has made appearances on Court TV, Good Morning America, 60 Minutes, CNN's Burden of Proof, Street Sweep, Headline News, Talkback Live, Canada AM, Marketplace, and National Public Radio. Kevin has also keynoted at numerous industry events most recently at Giga Information Group's Infrastructures for E-Business Conference, the Software Developers Expo 2000 Conference and the DEFCON security conference. He has written for Time Magazine, Newsweek, U.K. Guardian, SecurityFocus.com, and 2600: The Hacker Quarterly."

Up until recently (Dec. 10th), he hosted a talk radio show on KFI 640 AM - Los Angeles which focused on technology and Internet related issues."

According to *Entertainment Weekly*, Kevin recently appeared as a guest star on ABC-TV's hot spy thriller "Alias." Mitnick played the part of Agent Burnett, a CIA computer whiz who joins forces with double-agent Sydney Bristow (Jennifer Garner). The show producer, J.J. Abrams, had to write a letter to Mitnick's probation officer, explaining that he would only be working with prop computers on "Alias." The EW write-up said Mitnick received rock-star treatment on the set. "I had him sign my iMac with a Sharpie," Abrams said. "But I was a little nervous that federal agents were going to burst through the door and see that he was almost touching a computer."

And on Wednesday, December 19th, Kevin Mitnick was a guest speaker on Art Bell's nationally syndicated overnight "Coast-to-Coast" talk radio show.

This is what the Art Bell website had to say about Mitnick. It said little about his criminal background. Quite the contrary. It made him out to be a security expert.

"As the world's most famous hacker, Kevin has been the subject of countless news and magazine articles published throughout the world. With more than fifteen years of experience in exploring computer security, Kevin Mitnick is a largely self-taught expert in exposing the vulnerabilities of complex operating systems and telecommunications devices. His hobby as an adolescent consisted of studying methods, tactics, and strategies used to circumvent computer security, and to learn more about how computer systems and telecommunication systems work."

Mitnick promotes his speaking engagements through his "Free Kevin" website which, of necessity, is run by someone else. There is even a countdown feature that keeps track of the years, months, days, hours, minutes and seconds until when his parole is over.

W5YI REPORT

America's Oldest Ham Radio Newsletter

Page #3

January 15, 2002

AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of January 2002:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0TG	KI0RZ	(***)	KC0LZV
1 (*)	AA1ZI	KE1MI	(***)	KB1HRH
2 (*)	AB2RE	KG2RN	(***)	KC2IXF
3 (*)	AA3YE	KF3EC	(***)	KB3HJQ
4 (*)	AG4NC	KV4GE	(***)	KG4QYG
5 (*)	AD5HB	KM5XM	(***)	KD5QXI
6 (*)	AE6BC	KR6EV	(***)	KG6JGS
7 (*)	AC7QF	KK7XA	(***)	KD7PLI
8 (*)	AB8LY	KI8KC	(***)	KC8SUL
9 (*)	AB9DR	KG9RA	(***)	KC9AVI
N. Mariana	NH0Z	AH0BB	KH0NP	WH0ABP
Guam	(**)	AH2DO	KH2VU	WH2AOC
Hawaii	(**)	AH6RC	KH7ZZ	WH6DGR
Am. Samoa	AH8W	AH8AI	KH8DP	WH8ABF
Alaska	(**)	AL7RR	KL1GV	WL7CVL
Virgin Isl.	(**)	KP2CS	NP2LU	WP2AIN
Puerto Rico	WP3T	KP3BN	WP3OA	WP4NOW

* = All 1-by-2 and 2-by-1 call signs have all been assigned. AA-AK-by-2 now being assigned.

** = All 2-by-1 call signs have been assigned.

*** = Group "C" (N-by-3) call signs have all been allocated in all districts. (K-by-3 and W-by-3 are not assigned under the sequential call sign system. Available only to the Vanity Call Sign system.)

Note: The following prefix numerals are now allocated to Puerto Rico (KP, NP, WP3 or 4), Hawaii (AH, KH, NH, WH6 or 7) and Alaska (AL, KL, NL WL1-0)

[Source: FCC Amateur Service Database, Washington, DC]

FCC DECLINES TO INCLUDE CC&R's IN PRB-1 RULING

In an *Order* released Dec. 26, 2001 the FCC again denied ARRL's request that "...the Commission expand the limited preemption policy for antennas and antenna support structures used in the Amateur Radio Service to include covenants, conditions and restrictions." CC&Rs are the various landowner agreements contained in deeds, bylaws of homeowner associations (HOA) or regulations of an architectural control committee (ACC).

A year ago, the full commission was asked by the American Radio Relay League to review a Nov. 15, 2000 decision by one of its bureaus concerning antennas and their support structures. Upon review, the FCC said it found "...no basis to reverse the Wireless Telecommunications Bureau's decision."

Background

On Sep. 16, 1985, the FCC preempted state and local regulations governing amateur station facilities, including antennas and their support structures. The "Fed-

eral Preemption of State and Local Regulations Pertaining to Amateur Radio Facilities" limited preemption is commonly referred to by the acronym, PRB-1.

In PRB-1, the FCC specifically decided not to extend its limited preemption policy to CC&Rs in home ownership deeds and in condominium bylaws because "...such agreements are voluntarily entered into by the buyer or tenant when the agreement is executed and do not usually concern the Commission." The key word is "usually."

On Feb. 7, 1996, the League filed a *Petition for Rule Making* seeking a review of the FCC's limited preemption PRB-1 policy and an expansion to include CC&Rs.

In an *Order*, released Nov. 19, 1999, the FCC's Wireless Telecommunications Bureau, denied the petition on the grounds that specific rule provisions bringing private restrictive covenants within the scope of PRB-1 were "...neither necessary nor appropriate."

On Dec. 20, 1999, the ARRL filed a *Petition for Reconsideration* of the bureau's decision not to include CC&Rs within the scope of PRB-1.

The ARRL said it believes FCC's policy set forth in PRB-1 is discriminatory because it does not encompass private covenants. The League went on to argue, based upon the Commission's actions with respect to over the air reception devices (OTARDs) that the Commission does in fact have jurisdiction to preempt CC&Rs.

What is OTARD?

The *Over-the-Air Reception Devices* (OTARD) rule preempted restrictions on the placement of antennas for receiving consumer video programming signals including Direct Broadcast Satellite (DBS dishes must be less than one meter in size), multichannel multipoint distribution service (MMDS is wireless cable), and television broadcast (TVBS) antennas. (Masts higher than 12 feet above the roofline may be subject to local safety requirements.)

It is important to know that the preemption was directed by Congress as part of the *Telecommunications Act of 1996*. The objective of OTARD was to promote the development of new video distribution techniques, some of which were hampered by deed, homeowner or rental property agreement restrictions.

The wide encompassing rule prohibits restrictions that hinder a person's ability to install, maintain, or use an antenna covered by the rule. The rule applies to state or local laws or regulations, including zoning, land-use or building regulations, private covenants, homeowners' association rules, townhome, condominium or cooperative association restrictions, lease restrictions, or similar restrictions on property within the exclusive use or control of the antenna user where the user has an ownership or leasehold interest ...or is a renter of the property.

A restriction "impairs" if it: (1) unreasonably delays or prevents use of; (2) unreasonably increases the cost

of; or (3) precludes a person from receiving or transmitting an acceptable quality video signal from an antenna covered under OTARD. The rule specifically does not apply to antennas used for AM/FM radio, amateur ("ham") radio, Citizen's Band ("CB") radio or Digital Audio Radio Services ("DARS").

Amateur radio not included

But since both receive only (one way) and transmit (two-way) video transmissions and antennas are covered by OTARD, it was the League's view that the preemption should be expanded to include Amateur Radio antennas.

"As a result, [ARRL] asks the Commission to require that private covenants found in deeds, HOA bylaws and ACC regulations state that amateur communications and antennas are subject to the Commission's limited preemption policy, as expressed in the contexts of 'reasonable accommodation' and 'minimum practicable regulation of amateur antennas and support structures.'"

The FCC said it recognized that "...the Amateur Radio service is a voluntary, noncommercial communication service that plays an important role in providing emergency communications. ..."

"Accordingly, we agree with ARRL that there is a strong federal interest in promoting amateur radio communications. However, we believe that PRB-1 adequately protects that predominant federal interest from regulations that would frustrate the important purposes of the Amateur Radio Service, by preempting state and local regulations that preclude amateur communications in their communities.":

The Commission said it "...disagrees with ARRL's analysis in that PRB-1 did not base the decision to exclude CC&Rs from the Commission's preemption policy upon the Commission's jurisdiction, or lack thereof."

ARRL argued that whether CC&Rs are 'voluntary' is 'irrelevant . . . to whether the municipality is violating Federal communications policy.' The FCC said that "While we agree that the voluntary nature of CC&Rs do not always preclude preemption, we believe it is a relevant factor in preemption analysis." In the over the air reception device (OTARD) ruling "...there was a strong statutory policy against restrictions that impaired a viewer's ability to receive over the air video services," FCC noted.

"Here, there has not been a sufficient showing that CC&Rs prevent amateur radio operators from pursuing the basis and purpose of the amateur service. In this regard, we note that there are other methods amateur radio operators can use to transmit amateur service communications that do not require an antenna installation at their residence. These methods include, among other things, operation of the station at a location other than their residence, mobile operations, and use of a club station."

The OTARD rule "...was designed to promote two

complementary federal objectives: (a) to ensure that consumers have access to a broad range of video programming services, and (b) to foster full and fair competition among different types of video programming services. The Commission concluded that preemption was necessary in order to meet those objectives."

The FCC said "...none of these objectives applies to the Amateur Radio Service, which is a voluntary noncommercial service. Furthermore, ARRL has not demonstrated that private covenants have a substantial impact on the ability of amateurs to fulfill the fundamental purposes of the Amateur Radio Service set forth in Section 97.1 of the Commission's Rules. Thus, we conclude that, ...while preemption is appropriate with respect to state and local regulations, it is not similarly appropriate with respect to CC&Rs."

The League also objected to the Bureau's reliance upon the fact that some amateur antennas can be much larger than OTARDs [such as satellite dishes]. The Commission agreed that "...the Bureau's reliance upon the distinctions in antenna size between amateur antennas and OTARDs was reasonably based on legitimate policy considerations."

The Commission acknowledged that while "...ARRL is proposing a policy of reasonable accommodation, as opposed to the total preemption imposed in the OTARD proceeding. Nonetheless, given the great variance in the size and configuration of amateur antennas, we are concerned that such a policy would be considerably more complicated for HOAs and ACCs to administer."

"Finally, we note that ARRL has submitted no specific evidence that would persuade us to abandon our long-standing policy of excluding CC&Rs in private covenants from our ruling in PRB-1. We recognize the importance of preserving the integrity of contractual relations.

"We are therefore reluctant to pre-empt private parties' freedom of contract unless it is shown that private agreements will seriously disrupt the federal regulatory scheme or unless there is another strong countervailing reason to do so, a showing that has not been made here. However, should Congress see fit to enact a statutory directive mandating the expansion of our reasonable accommodation policy, the Commission would expeditiously act to fulfill its obligation thereunder."

"Accordingly, for the reasons discussed above, we conclude that the Bureau's denial of the subject petitions for reconsideration, insofar as they pertain to inclusion of CC&Rs in private covenants, was correct and should be affirmed. Therefore, the scope of the limited preemption policy of PRB-1 for amateur radio stations remains applicable only to regulations of state, county, municipal and other local governing bodies, and is not applicable to HOA bylaws and ACC regulations." (Action by full Commission by *Memorandum Opinion and Order* adopted Dec. 18, 2001.)

CUTTING EDGE TECHNOLOGY

Video clips in a newspaper that can automatically update itself with the latest news may be possible!

Netherland-based Royal Philips Electronics have developed polymer-based transistors that are powerful – and flexible – enough to drive a paper display. It could lead to a newspaper with the instant rewriting capability of a computer monitor.

Using a plastic material instead of silicon makes producing the tiny transistors easier and cheaper. Traditional transistors are created in a clean room by stacking layers of silicon and metals on top of each other at high temperatures.

Philips transistors are created by spraying the liquid polymer material onto a metal foil base, or substrate. While the polymer is still "wet," the entire creation is spun so the polymer material is spread evenly across the base material. Individual transistors are then printed out. The plastic circuits are flexible enough to be folded in half. On the Web: <www-research.philips.com>

New ultrathin flexible batteries can be "printed!" Power Paper Ltd., a tiny Israeli company has developed a case-less battery that can be printed directly onto paper, plastic or any other flexible material using standard printing methods.

The batteries are made up of five printed layers of material; a collector and cathode layer on one side, a collector and anode layer on the other and an electrolyte core. And there is no need for a hermetically sealed metal case; all ingredients are non-toxic and safe, permitting disposal without endangering the environment.

The Power Paper battery produces electrical energy much like ordinary alkaline batteries. What is new is the secret recipe for the power-producing materials, a chemical cocktail that allows the materials to be printed on flexible substrates including paper. The resulting battery is about half a millimeter thick.

Power Paper batteries can be used in so-called "smart" cards – plastic cards that contain microprocessor chips. Current smart credit cards require a separate bulky card reader to display the information stored on the cards' chips. But with a flexible battery, smart-card makers may soon include a tiny display screen on the card itself that would allow users easy access to their balances and account data.

Luggage tags and airline tickets could be printed with tiny radio antennas and circuitry to contain passenger information. Checkpoints equipped with radio receivers would then be able to track passengers and baggage as they move through the airport.

International Paper Co. recently signed a licensing deal with Power Paper Ltd. that looks toward bringing light, sound and other special effects to the e-Packages of consumer products.

A one square-inch printed 1.5 volt battery has a shelf life of 2½ years, a potential mass production cost of a few cents and a capacity of 20mAh (milliamperes per hour) per square inch,

And self-powered musical greeting cards may be next. Check out: <www-powerpaper.com>

Cubic Defense Systems (San Diego, CA) has applied for a U.S. patent for a **remote control system that could be used to stop terrorists from taking control of a plane.** In cases where pilots were killed or disabled, or the aircraft was off course, authorities could remotely initiate ground control via a secure data link. The aircraft would automatically be reprogrammed to approach the nearest safe airport, engage the auto landing sequence and land. Once the ground control station – possibly at a military air base – assumed control, no one on board could guide the plane, disable the controls or dump fuel. <www.cubic.com/cds>

EMERGING COMMUNICATIONS

The number of telecommunication companies keep getting smaller as the nation's No. 1 and No. 3 cable companies agree to join forces.

In a \$72 billion deal, AT&T Broadband (with 13.7 million subscribers) has announced that it will merge its cable-TV operation with Comcast Corp., (8.4 million customers) -- a combination that will have more than 22 million subscribers. The deal supposedly places the value of each cable subscriber at \$4,500 (although the math we did resulted in a figure closer to \$3,200.)

Comcast paid \$47 billion, plus assumed \$25 billion in AT&T debt and liabilities ...\$5 billion of which is an investment by Microsoft Corp. For its \$5 billion investment, Microsoft gets to participate in the widespread deployment of high speed Internet access and to develop the software that will bring interactive televi-

sion ("iTV") to consumers.

Microsoft envisions cable set-top boxes with its software enabling a host of new features such as video-on-demand, digital music and instant messaging ...in much the same way its operating system enables them on a PC. The Microsoft TV "operating system" could be as valuable (or even more valuable) than its Windows operating system.

If the deal goes through – and it looks like it will – five huge cable companies will serve three-fourths of the nation's subscribers. Twenty years ago, thousands of small cable companies served individual communities.

According to Nielsen Media Research there are 72.9 million cable subscribers in the U.S. Thirty percent will be served by the new AT&T Comcast. AOL Time Warner, the No. 2 cable company has 12.8 million customers; Charter Communications: "nearly 7 million" ...Cox Communications, 6.2 million, .

Comcast had previously offered \$41 billion for AT&T Broadband. Cox and AOL Time Warner were also interested in the AT&T cable operation but were outbid.

The new company will have cable subscribers in 41 states and in 17 of the country's 20 largest markets. Before final approval, the proposed merger must be scrutinized by federal regulators. The new merged company will be known as AT&T Comcast, Inc., with headquarters in Philadelphia.

Right on the heels of the AT&T Comcast merger is a deal that would merge DBS broadcasters, EchoStar and DirecTV. That would create a satellite-TV powerhouse with nearly 17 million subscribers.

Solar wing becomes highest flying plane. On August 14th, a NASA pilot-less plane called the "Helios" soared to a new altitude record, 96,500 feet. It is scheduled to embark on a 96 hour flight next year once a new energy storage system is installed. It could stay aloft for months ...or even a year at a time.

The plane, built by NASA-partner AeroVironment (Monrovia, Calif.) has a 250-foot wingspan but weighs only 1600 pounds. It flies at speeds ranging from 15 to 150 mph and can carry a telecom payload weighing 220 pounds.

Its 14 propellers are powered by solar cells by day and the new storage system will stockpile energy to enable continuous flight through the night. Each of its motors have only one moving part. Helios

operates in the stratosphere at altitudes above 50,000 feet – above the jet stream and all weather. Some say it is more of a kite than a conventional aircraft.

One of its uses will be to serve as a telecommunications platform when parked above large cities at 65,000 feet. The Helios tight turn radius makes the platform appear geostationary from a ground equipment perspective and enables use of stationary user antennas.

The plane could provide the equivalent of around 2,000 high-speed lines for Internet users in an area about 40 miles in diameter at a cost cheaper than land or low-orbit satellite systems.

AeroVironment created another company, SkyTower, Inc. in October 2000 to pursue commercial telecom opportunities enabled by its solar-electric aircraft technology. It is now teaming with commercial telecommunication providers to validate the technical and economic viability of the SkyTower platform. Photo of the plane at: <www.skytower-global.com> and <www.era.com>

PLC rides over the largest network infrastructure in the world: the utility power grid. In a report entitled "Watt's Up with Powerline Communications," the Yankee Group, a research company, says that powerline communications (PLC) "... is a promising but still developing technology that aims to provide broadband connectivity to homes and businesses using medium- and low-voltage powerlines.." It is beginning to see commercial success, especially in Europe.

"Driven by the growing appetite for broadband connectivity and the inability of telcos to meet this demand in a timely manner," the Yankee Group says "PLC is closer to being a commercial reality in the United States than ever before."

Powerline communications is a new-wires broadband alternative that brings the Internet through your power lines into your computer at speeds that top 1.5Mbps.

It is somewhat similar to what the phone companies use to deliver DSL: communications are delivered to a neighborhood substation, which then routes them "the last mile" (or further) to your home. But instead of a DSL modem at the PC, a modem plugged into an AC outlet separates the data from the power.

In February, 2000, Intel Corp. paid \$150 million for DSL modem processor maker Ambient Technologies for \$150 million. While the company specialized in DSL, Ambient also developed chips to

virtually connect the home through power lines.

Ambient has been working with utility company Consolidated Edison to begin beta testing a PLC product sometime in 2002. Another company, PowerTrust of Reston, VA, has been conducting field tests with power companies in the Southeast with successful reports of modem speeds higher than 1.5Mbps.

Another new start-up PLC company called Amperion, Inc. (Chelmsford, MA) has been initially funded by electric utility American Electric Power, telecom equipment maker Cisco Systems, and a high-tech venture capital firm. They too are developing hardware and software that will let utility companies send high-speed data over medium-voltage power lines.

The upshot is that customers in search of broadband connectivity get a new alternative to the incumbent broadband providers and utility companies can generate new revenue from their existing networks.

Amperion's bandwidth could also be sold to DSL and cable providers which are too far from their central office to receive service by backhauling the traffic onto power lines. Amperion expects bandwidth speeds to be in the "...multiple megabit range." Motorola Corp. is also experimenting with PLC product lines.

COMPUTERS & SOFTWARE

A news item out of Bombay, India reported that a suspected member of the Al Qaeda terrorist network (Mohammad Afroz Abdul Razzak) claimed that "Islamic militants infiltrated Microsoft and sabotaged the company's Windows XP operating system."

"During interrogation, Afroz, 25, also claimed that a member or members of Osama bin Laden's Al Qaeda network, posing as computer programmers, were able to gain employment at Microsoft and attempted to plant 'trojans, trapdoors, and bugs' in Windows XP."

A Microsoft spokesman said Afroz's claims about the company were "...bizarre and unsubstantiated and should be treated skeptically."

GADGETS & GIZMOS

Microsoft thinks it has built a

better mouse. Their new wireless optical IntelliMouse Explorer (\$74.95) uses miniature cameras to replace the ball and roller mechanism in conventional mouse pointing devices.

It is the first real change in the design of the computer mouse since it was invented three decades ago by Stanford Research Institute scientist, Douglas Englebart. Microsoft's new pointing device eliminates the roller ball entirely, replacing it with a tiny camera and solid state optical technology. And there are no wires between the device and the computer.

The optical mouse can be used on any surface and does not need a special mouse pad. Microsoft's optical IntelliMouse contains a tiny optical camera and a small light inside the base of the mouse. When the mouse is in motion, the light shines on the surface below, allowing the camera to continuously take pictures.

A processor in the mouse analyzes those photos and compares them to see in which direction the mouse is moving. That information is then transmitted up to the computer, which moves the cursor on the screen.

The IntelliMouse's camera, contained in a chip about three-quarters of an inch long and barely one-quarter of an inch wide, takes up to 1,500 images per second. The resolution is high enough that the mouse can read the patterns on any surface – even the fibers in a blank sheet of paper! See it at: <www.microsoft.com/hardware/mouse/>

Improperly inflated tires – the source of thousands of automobile accidents and deaths – has prompted the National Highway Traffic Safety Administration to require all vehicles made after 2003 to come with tire pressure monitor systems (TPMSs).

An indirect TPMS, the cheaper and more common option, uses the wheel-speed sensors of the car's existing anti-lock brake system (ABS) to keep track of each wheel's rotation. An under-inflated tire has a smaller radius and therefore spins faster. When the indirect TPMS system detects a faster wheel, it alerts the driver that they need to check their wheels.

A more accurate TPMS relies on actual pressure sensors installed in all four tires that accurately measure each tire's pressure. The readings, sent by radio to a wireless receiver mounted in the car, can warn drivers which specific tire needs attention. It would add \$100 to \$200 to the sticker price of a 2003 model car.

The Cycloid Company offers a device

W5YI REPORT

America's Oldest Ham Radio Newsletter

Page #7

January 15, 2002

called the AutoPump that not only checks each tire's pressure, but automatically pumps air into those that need it. See: <www.cycloid.com>

Hello. This is your tire calling. In Finland, Nokian Tyres has developed "RoadSnoop," a wireless system that updates drivers with tire pressure and temperature via their cell phone. Deliveries are scheduled to begin in March 2002. <www.nokiantyres.com>

INTERNET & WORLD WIDE WEB

Music industry launches another Napster-like online subscription service. "Pressplay," the second online music-on-demand venture has begun limited operation. The first was AOL's "MusicNet" which we wrote about in our last issue.

Web-based Pressplay will offer music from three major labels (Sony, Universal and EMI) and several independents through MSN Music <music.windows-media.msn.com>, Roxio and Yahoo! <launch.yahoo.com>. Pressplay also has future plans to be satellite-delivered by EchoStar and DirectTV.

Pressplay will offer four pricing plans, as well as a free 14-day trial, which will allow users access to 200 music streams and 20 downloads. The basic plan costs \$9.95 monthly for 300 streams and 30 downloads. <www.pressplay.com>.

The most expensive "platinum" plan goes for \$24.95, providing 1,000 streams, 100 downloads and allows users to burn 20 CD copies. The CD-burning technology will come from Roxio, Inc. which you can try out free at <www.roxio.com>.

The big question is whether consumers will pay \$10 to \$25 monthly for music over the Internet which they were getting for free from Napster. The big recording labels successfully sued Napster for copyright infringement in December 1999.

Listen.com has just launched "Rhapsody," an independent label music streaming service. (Cost is \$5.95 and \$7.95 a month depending on version.) Users can sign up for a free 3-day trial at the <www.listen.com> Web site.

Microsoft Corp. is getting out of the travel business. They are selling online travel firm Expedia to USA Networks, Inc., who will launch a new USA Travel Channel on cable. In 1999, USA

acquired Microsoft's Sidewalk city guides. USA Networks (owned by media mogul Barry Diller) will also change its name to USA Interactive and concentrate on online ticketing, dating, hotel reservations, travel planning and retailing. USA Networks also owns HSN.com, Ticketmaster.com, Match.com and Hotel Reservations Network. <www.usanetworks.com>

Expedia.com announced the opening of its second airport-located wired café for travelers. The Travel Right Café offers free phone jacks to travelers at the Los Angeles International Airport.

One hundred people can hook up their laptop computers to access the Internet, check e-mail and work online while enjoying food and drink at the café restaurant.

The such first outlet opened earlier this year as the Expedia.com Café at the San Jose, Calif. airport. Expedia has an exclusive contract with HMSHost Corp., a travel industry fast food concessionaire to develop the concept.

Google (the innovative search engine people) have a new searchable guide to hundreds of current mail-order catalogs that is really terrific. Available at: <catalogs.google.com>.

Google took retailers' catalogs, scanned the pages, ran the images through optical character recognition software and then indexed the results ...a really neat programming job. The beta copy was just released at: <catalogs.google.com>. Well worth checking out!

More than one quarter of all U.S. Internet users are on America Online which is adding new customers at the rate of one million a month. AOL says it now has 33 million subscribers. It credits its increase to release of its updated software, version 7.0. Microsoft Corp.'s MSN Internet Access is a distant second with 7 million customers. No. 3 EarthLink counts 4.6 million paying customers. Nielsen/ Net Ratings says 115 million (more than 60 percent) of all Americans are using the Internet. About ten million U.S. subscribers have a fast broadband connection: 7 million on cable, 3 million on DSL.

WASHINGTON WHISPERS

A new drug and explosives walk-through non-contact scanner, so sensitive it can tell if you even

touched a dangerous substance days ago, may soon be coming to an airport near you. It is the first real advance in airport security since the launch of the metal detector three decades ago.

The Sentinel Contraband Detection Portal will detect and identify microscopic amounts of over 30 explosive, chemical weapons or illicit narcotic substances. The individual stands in the portal while a light puff from air jets gently dislodges particles. Samples such as those that make up drugs and explosives as well as vapors are collected, separated out and are accurately analyzed within seven seconds.

The ion-scan technique was developed by the Dept. of Energy at the Sandia National Labs in Albuquerque, N.M. If the system finds a suspicious substance, a red light shines and the substance name appears on a video screen. The entire process takes about seven seconds. The Sentinel portal also includes a metal detector, so travelers don't have to pass through two checkpoints.

The FAA and Customs already use similar products from Barringer to scan baggage. <<http://www.barringer.com>>

SRI International, a research firm in Menlo Park, Calif., is working with the U.S. Defense Department to create a shoe that will convert the mechanical energy of walking into electric power to charge up gadgets, batteries and other devices.

The experimental foot-ware has a heel made of a special elastic polymer. As the material is compressed and released – such as by the foot pressure generated during walking – the power boot generates about half a watt of power – more than enough energy to recharge the boot's built-in battery and a cell phone.

SRI is working on an improved version could raise the boot's output to nearly two watts ...enough to power several small electronic devices – such as a cell phone, a handheld computer, and a radio – simultaneously.

The Defense Advanced Research Projects Agency (DARPA) has funded the SRI research under a project called "Energy Harvesting." The goal is to develop unconventional energy sources to power a future soldier's equipment such as radios, navigation aides and electronic gun sights.

Anthrax is not the only problem that the U.S. Postal System is dealing with. They are losing business to the Internet. About five years ago the USPS identified several e-commerce

areas where it could obtain additional revenue by linking some of their services with those involving the Internet.

Some of these initiatives included Electronic Postmarks (EPM), ePayments (businesses sending and consumers paying bills), Internet Change of Address and Move-Related Products (MoversNet), electronic delivery certification (NetPost), electronic delivery of documents, correspondence, newsletters, and other First-Class Mail to mailing lists (NetPost Mailing Online), secure, private, Internet-based document delivery (PosteCS), stamp and other product purchases (Stamps Online/Virtual Store), a merchandise return program (Returns@ease), and electronic fund transfers from the U.S. to Mexico (Dinero Seguro™ means "Sure Money.")

A new Congressional study by the General Accounting Office – the government's investigative agency – says the programs are not going well and that the USPS is plagued by poor management.

The GAO report cites "...fragmentation, inconsistency and poor performance" and said USPS continues to have difficulty defining, identifying and classifying its Internet-related initiatives, including e-commerce initiatives." The deputy postmaster general said they would take action to address the problems.

AMATEUR RADIO NEWS

The Dayton Amateur Radio Association has announced their academic scholarships for 2002.

The DARA Scholarship Program is open to any FCC licensed amateur radio operator graduating from high school in 2002. There are no restrictions on the course or length of study planned by the student. However, schools awarding associate degrees or any technical institution selected must be accredited. Awards must be used for tuition and/or fees at the university, college or institution specified in the student's application.

The awards are made on a combination of factors, including financial need, scholastic achievement, contributions to amateur radio and community involvement.

Application forms are available from Gary N. DesCombes, N8EMO, chairman of the DARA Scholarship Committee, 9873 Lower Valley Pike, Medway, Ohio 45341. <n8emo1@email.msn.com> Application deadline is June 15, 2002.

Are you aware that the Federal Emergency Management Service (FEMA) provides extensive guidelines for establishing and operating Radio Amateur Civil Emergency Service (RACES) networks. It is located online at: <www.fema.gov/library/civilpg.htm>

The German amateur radio society votes to retain Morse exams ...even if the requirement is dropped by the ITU. Our European correspondent tells us that the "DARC" (*Deutscher Amateur Radio Club*) – the national Amateur Radio society in Germany with 65,000 members – has posted the following announcement to their website in German. Here is a translation: "During their meeting on 10 Oct. 2001 the IARU AC [*Administrative Council*] approved a resolution which reflects the current situation particularly in view of the recent ITU Recommendation M 1544 (minimum qualification requirements to the Amateur Radio Service).

"The AC advises that IARU societies world-wide act accordingly and in unison. This is important since a minimum requirement of 5 wpm worldwide is being proposed as an interim up to the WRC (2003).

"These proposals are in accordance with already recommended guidelines and procedures adopted by the DARC Board of Directors (Lippspringe). The DARC Board (EC) has asked the Board of Directors to form a working group to explore possibilities and solutions for adequate examination criteria in Morse telegraphy such that the special radio service status of Amateur Radio is maintained.

"Furthermore, the DARC Board as well as the IARU AC are of the opinion that Morse Telegraphy is an important means for communication. Hence, it can be argued that Morse telegraphy has intrinsic value for Amateur Radio, and is therefore worth keeping and promoting as a requirement. This position will be maintained regardless of whether or not Morse telegraphy remains as an examination element or not."

20 Oct. 2001, on behalf of DARC.
[Signed:] Hans Berg, DJ6T]

FCC Amateur Radio Enforcement

Donald G. Bertone KK6AN (San Francisco, CA) was warned by the FCC for operating on 14.240 MHz for nearly 45 minutes on November 24th without identifying his station.

Ramon Mercado N3UEF (Lares, PR) also received an advisory notice for failing to identify his station while operating on 14.310 MHz.

Chrystian Moszyk KG2BU (Flushing, NY) has been asked by the FCC to respond within 20 days to "numerous complaints" alleging interference from his station on 14.272 MHz.

Ralph S. Bible K4MIJ (Limestone, RTN) has been asked to respond within 20 days to complaints concerning the operation of the Andrew Johnson Amateur Radio Club W4WC repeater. It is alleged that the 145.390 MHz repeater is not coordinated and is causing interference to K4MFD, a coordinated repeater. Bible has been notified by SERA (South Eastern Repeater Assn., the coordinator) but has taken no action to resolve the problem.

Clear Channel Radio, operator of WLW 700AM and Cinergy Corp. (both of Cincinnati, OH) have been notified that the FCC has received several reports over a two year period of what appears to be spurious signals being heard over a wide geographical area. "...the strongest signals appear to originate some distance from the WLW transmitter site, possibly on a high voltage tower owned by Cinergy Corp."

Although WLW and Cinergy "...have expended considerable effort to attempt to locate the cause and source of this noise, to date, the noise is still as strong as ever according to recent reports," FCC said.

"Under FCC rules, either incidental noise radiation from power company equipment or spurious emissions from a broadcast transmitter must be corrected if it causes harmful interference to radio communications."

Both the broadcast AM station and the power company were directed to advise the FCC within 30 days "...what steps your companies are taking to correct the reported interference problem."

Bryan C. Bailey KD5PXQ (Hurst, TX) has had his Technician Class license set aside while the FCC investigates reports that Bailey operated a two meter radio on September 18 and 24 prior to his being licensed on October 3. His unlicensed transmissions deliberately jammed two repeaters and "...interfered with an Amateur radio station attempting to report a tornado sighting..." He was asked to respond to the allegations within 20 days.

ARRL PANEL RECOMMENDS PHONE BAND EXPANSION

Spectrum would come from "refarming" Novice band

The Novice Class was established half century ago (in 1951), at a time when telegraphy was still a common mode of radio communication in commercial, military, and marine services and applications. At that time, the international rules required that all ham operators be Morse code proficient.

In 1979, however, the international Amateur Service regulations were amended to permit administrations to waive the manual Morse proficiency requirement for "...stations making use exclusively of frequencies above 30 MHz." (WARC-1979, Geneva.) That prompted several members of the amateur community to petition the FCC for a license class with no Morse requirement.

Twenty years ago, 20% of all ham operators were Novices but their numbers were declining. In 1983 the FCC responded by proposing a codeless VHF/UHF amateur license. But it was fiercely opposed by the older CW-proficient radioamateur and the ARRL.

To stimulate interest in the Amateur Service, the FCC in 1987 amended the rules to expand Novice privileges. The so-called *Novice Enhancement* proceeding permitted Novices to operate FM telephony on the 222-MHz and 1270 MHz bands at reduced power and the Novice 10 meter subband was enlarged to 28.1-28.5 MHz (CW.) And, for the first time, Novices were permitted SSB phone privileges at 28.3 to 28.5 MHz.

But the improved Novice privileges really did not revitalize the Amateur Radio anywhere near as much as hoped. The only real success of *Novice Enhancement* was that Novices could operate 10 meters in the voice mode. Up until 1987 they had been restricted to CW.

Codeless Technician

The FCC took note and three years later (in 1990) established an entry-level, codeless operator license by eliminating the 5 words-per-minute Morse requirement from the Technician Class. Effective Feb. 14, 1991 new Technicians would now be permitted to operate on all Amateur spectrum above 30 MHz. (PR Docket 90-55.) It met with instant success!

The FCC still retained the Novice license for those who wished to enter ham radio via the Morse code route. There would now be two entry methods into ham radio, the codeless Tech or the 5 wpm Novice path. Extremely few opted for the Novice, however, and the class continued to show a steady decline while a strong interest was shown in the no-code Technician Class operator license.

As recent as 1993, there were more than 100 thousand Novice operators. It wasn't long before the no-code Tech license replaced the Novice Class operator license as the entry-level license class of choice.

Today, about 40,000 Novice licensees remain in the current FCC database, and that number continued to drop by some 6000 each year through attrition and upgrading.

Restructuring the Amateur Service

In July 1998, the ARRL directors voted (9 to 6) to suggest restructuring of the Amateur Service. Their version would contain 4 license classes (which they called A., B, C and D) and 2 CW speeds: 5 and 12 wpm. Class C would be comparable to the General license, but with expanded phone subbands on 75, 40 and 15 meters.

The 50 kHz expansion of the voice sub-bands would result from "refarming" the Novice CW bands which are no longer needed for their original purpose. The League wanted all amateurs now licensed as General, Technician Plus, or Novice to automatically become Class C.

The FCC issued a *Notice of Proposed Rulemaking* a month later (WT Docket No. 98-143, Aug. 10, 1998) essentially proposing the ARRL plan. The FCC concluded that the Novice Class operator license no longer served a significant, useful purpose and should be phased out.

In the NPRM, the FCC asked the Amateur community what they thought should be the disposition of the Novice bands at 10, 15, 40 and 80 meters. "Given the small number of new Novice licenses now being issued," they said "...if we were to discontinue licensing new Novices, would it be appropriate to delete the frequency limitations on Novices and the power limitations on other classes of operators using the Novice frequencies, so that Novices would continue to be limited to 200 watts output power but could operate using the Morse code anywhere within the 80, 40, 15 and 10 meter bands?"

The Commission received and considered over 2,200 comments from the amateur community. On the last business day of 1999, the FCC released their Order that restructured the Amateur Service.

The decided to continue with a new lineup of three Amateur Radio license classes: Technician, General and Extra Class. Novices and Advanced Class licensees were "grandfathered" - that is, they will stay where they are. Their licenses could be renewed or modified, but no new ones would be issued after April 15, 2000.

No Amateur license class received additional frequency privileges and no one lost privileges. The new top CW exam speed of 5 wpm would also eliminate the widespread code waiver abuse.

Refarming of the Novice bands

At the Jan. 2001 ARRL Board meeting, the Directors voted to appoint a committee to solicit membership input about updating the ARRL position on refarming the HF Novice bands in light of the 1999 FCC license restructuring *Report and Order*. The Novice Spectrum Study Committee was directed to submit its final report to the Board

at the Jan. 2002 Annual Board Meeting.

In mid-April, 2001, ARRL President Jim Haynie, W5JBP appointed the committee chaired by ex-ARRL president, Rod Stafford W6ROD. The other committee members are Vice President John Kanode, N4MM; Hudson Division Vice Director Steve Mendelsohn, W2ML; Dakota Division Vice Director Twila Greenheck, N0JPH; Midwest Division Vice Director Bruce Frahm, K0BJ; and New England Vice Director Mike Raisbeck, K1TWF.

The survey was posted to the ARRL Web site and printed in the September, 2001 QST. The Novice Spectrum Committee said it wanted to encourage greater utilization of the current Novice spectrum without decreasing the privileges of any licensee. One of the reasons for Novice refarming was to restore full privileges to higher-class operators in the 80, 40, and 15-meter Novice bands.

The survey was essentially conducted through the ARRL members-only Web site. The committee proposed three alternatives for each of the HF bands, with one being "No Change." The other two alternatives would involve adjusting band segments for various license classes with the idea that the Novice sub-band would be eliminated and Novices would be allowed to operate CW in any portion of the HF bands that General Class licensees can use. The restriction that Novice/Technician Plus licensees would be limited to 200 watts output for CW operation would be retained. On 10 meters, the committee settled on two alternatives, one being "No Change." The committee also concluded that adjusting the band segments would involve expanding the phone portion on each of the HF bands except for 10 meters.

Generally speaking, the committee's predefined options proposed retaining Extra class CW subbands on the affected bands, setting aside expanded CW reserves for all license classes except Technicians who have not passed Element 1, and dividing the remaining spectrum into expanded phone segments for General, Advanced and Extra class operators.

Nearly five thousand radioamateurs expressed their opinions on possible ways to optimize use of the present Novice allocations on 80, 40, 15 and 10 meters now that the FCC no longer issues new Novice licenses. Nearly 61% of those responding were Extra class licensees and nearly all were ARRL members.

A method was also put in place so that non-members could also express their opinions by e-mailing their comments to <novicesurvey@arrl.org> ...but only a few took advantage of that procedure. The ARRL hinted that the survey results might form the basis of a future *Petition for Rule Making* before the FCC.

Results of the survey

On Dec. 21st, the League's study panel released the results of the survey. The ARRL Novice Spectrum Study

Committee recommended that the ARRL petition the FCC to eliminate the Novice CW subbands and allow Novices and Technicians with Element 1 credit to operate CW on the General 80, 40, 15 and 10-meter CW allocations with up to 200 W output.

The panel also suggested that certain segments of those bands be set aside for "slow CW operation" to assist new Morse code operators to improve their CW skills. The committee recommended refarming (that is, readjusting) the current Novice subbands to allow expansion of the phone allocations on 80, 40 and 15 meters for the General, Advanced and Extra Class. Specifically:

On 80 meters, the ARRL said nearly 40% of those responding wanted to extend the U.S. phone allocation down to 3700 kHz (from its current 3750 kHz), with Extra Class operators permitted on the entire subband, and with Advanced starting at 3725 (currently 3775 kHz) and Generals starting at 3800 kHz (currently 3850 kHz) respectively. All would gain 50 kHz of phone spectrum.

On 40 meters, nearly half of the respondents picked the plan to extend the U.S. phone allocation to 7125 kHz (from its current 7150 kHz), with Extra and Advanced licensees allowed on the entire segment and Generals from 7175 kHz and up. Thus Advanced and Extra would gain 25 kHz, Generals 50 kHz. The committee's report suggested no changes to the special allocations for amateurs on certain Pacific or Caribbean islands or in Alaska.

On 15 meters, again, nearly half of those responding wanted the U.S. phone allocation extended down to 21.175 MHz (currently 21.200 MHz), with Extras permitted on the entire subband. The Advanced Class phone band would begin at 21.200 MHz (currently 21.225 MHz) and the General Class at 21,250 kHz (currently 21.300 MHz.) This would get Advanced and Extra Amateurs and additional 25 kHz; Generals another 50 kHz.

On 10 meters - where Novice and Tech Plus licensees already may operate CW, RTTY and data from 28.100 to 28.300 MHz - nearly 55% of the respondents favored a plan to retain the U.S. phone allocation from 28.300 to 29.700 MHz and to extend CW access to Novice/Tech Plus operators down to 28.000 MHz - an additional 100 kHz. Neither the current Novice/Tech Plus 28.300 to 28.500 MHz SSB phone band or the 200 watt CW/SSB power limitation would change.

The committee said in its report that if the ARRL Board adopts the plan, any request for FCC action necessary to implement the changes should be included in an omnibus filing by the League with the FCC encompassing other issues, rather than as a separate petition. Changes to the ARRL Band Plan would be considered following ultimate adoption of any recommendations by the FCC.

The committee's complete report will be presented to the ARRL Board of Directors for consideration during its annual meeting in Dallas beginning January 18th.