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.

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In This Issue...

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FCC Requests Preliminary Comments on Rulemaking Petitions

The FCC has put the two most recently received *Petitions for Rulemaking* out for 30 day public comment. RM-10412 suggests requiring commercially-made Amateur Radio equipment to be manufactured in a manner in which they can easily be repaired in the field

RM-10413 requests elimination of the 80, 40 and 15-meter Novice/Technician Plus CW subbands and reuse of the spectrum to expand the 80 and 40-meter phone allocations to higher class radioamateurs.

The preliminary comment period expires on May 16, 2002. The purpose of the short comment period is so the FCC can determine whether they should go forward with these proposals to the next rulemaking stage.

A recent check of the FCC's *Electronic Comment Filing System* (ECFS) shows that comments are already pouring in. And as always, radioamateurs have firm opinions! Here's the low down.

RM-10412, Filed by: Nicholas E. Leggett, N3NL (Reston VA), February 11, 2002. Requests that Amateur Radio equipment have the capability to be repaired in the field.

Leggett says that "....engineering designs of current commercially-manufactured amateur radio equipment are having a negative impact on the goals and capabilities of the amateur radio service." He argues that most amateur radio systems are not easy to repair in the field which is important "...because it enhances emergency communications preparedness and the growth of technical knowledge."

He wants amateur radio equipment manufacturers to be compelled by rule to include such capabilities as field-replaceable modules or circuit boards, minimum spacing between components, test points and jacks for taking measurements, chassis with doors and removable shielding, service manuals containing schematic diagrams with specified voltages, currents and waveforms, etc.

He asks that a *Notice of Proposed Rulemaking* or a *Notice of Inquiry* be issued requesting input on the subject of field repair of amateur radio equipment.

Typical Comments filed:

John Dewey KA9CAR, Crystal Lake, IL opposes the petition. "Radios can already be repaired by swapping boards. Requiring lower level repairs would increase size, and cost, and inhibit advances in the equipment by manufacturers."

Carl Swanson K6CRS, (Thousand Oaks, CA) also opposes the proposal. He says Leggett is trying to "...hobble the commercial amateur radio equipment industry so he can quickly strip down and field repair a transceiver in the middle of an emergency." He believes this "...will lead to drastically less equipment [being] available for sale to amateur radio licensees. ...Many licensees enjoy the art of communication in itself, and either don't understand or cannot be bothered with 'how' the radio works, just that it 'does'. ...I find it hard to believe that Mr. Leggett's petition was even accepted for filing."

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Chris Cieslak KC9L, (Melrose Park, IL) also feels the Petition is "without merit." He believes that this proposal would cause manufacturers to have to "...completely re-engineer every single product, ...re-design every manufacturing process" and "...use lesser-available (and therefore more expensive) through-hole components, as opposed to the now-common surface mount devices."

He says enactment "...would practically drive every single manufacturer out of the market – and even if a manufacturer complied, the radio would be too expensive for all but the most affluent amateurs." He concludes "For those wanting hands-on experience in radio technology, there are already hundreds of kits, as well as thousands of published circuits, to choose from."

Robin B. Rumbolt WA4TEM, (Knoxville,TN) says he "...has been a licensed amateur for 39 years, is an engineer, an avid builder, and currently works in the consumer electronics field. ...To require manufacturers to make all equipment field repairable would deny the latest technology to the amateur radio community, make equipment much larger, limit its functionality, and add great cost. In short, it would mean a great step backwards for our hobby."

John Wagner N1QO, (Holland, VT) says "There is no reason to require manufacturers of amateur equipment to make their equipment 'field serviceable.' If someone wants gear they can repair in the field, they should build it themselves - many, including myself do just that."

RM-10413, Filed by: American Radio Relay League (Newingtn, CT), March 22, 2002. Requests that the Novice bands at 80, 40, and 15 meters be re-allocated to additional phone spectrum for General, Advanced and Extra Class licensees.

ARRL also asks that (1.) Spread Spectrum emission be permitted on the 222-225 MHz band and (2.) the special event call sign program be expanded to provide for prefixes that do not have a mailing address.

Typical Comments filed:

Rich Eyre-Eagles K7REC, (Scottsdale, AZ) supports the ARRL proposal to "refarm" the Novice/Technician spectrum and expand the phone bands ...and to supplement the special event call sign program. He is concerned, however, about allowing Spread Spectrum in the 222-225 MHz band since it is already thoroughly coordinated to repeaters or other uses in Southern California. "If such operations are ever approved, we remind potential users that coordinated users have spectrum priority over uncoordinated users."

Richard E. LaBanca KA1EZE, (Hope, RI) belongs to the ARRL, but disagrees. ":This refarming takes away digital mode spectrum in favor of voice.."

Jeffrey L. Davis N9AVG, (Muncie, IN) believes this proposal seeks to expand the voice portions of the amateur bands at the expense of CW and Digital enthusiasts. He says "our country is presently at war" and that we should not "...endanger existing amateur communication networks (HF CW Nets) that have been long established simply to allow a little more 'elbow room' for voice operators." Davis feels the ARRL proposal "should be shelved for a few years" so that the amateur service can evaluate its evolving role in supporting Homeland Security, allow the seed of digital experimentation to germinate and allow the dust to settle from the recent license restructuring. "Who knows, one new technology discovery could make it more prudent to downsize the phone bands in favor of more digital spectrum in the near future."

Kevin Manzer AC5DK, Mountain Home, AR) has been licensed over 25 years. He disagrees with certain aspects of the ARRL's plan. He would prefer that General and Advanced class radioamateurs have the same privileges and that the Novice and Tech Plus Class privileges be combined by granting Novice class licensees all amateur privileges above 30 MHz. This, in effect would eliminate the Novice and Advanced Classes. He would also "...allow Novice and Tech plus licensees all amateur allocations on 10 meters." Manzer also suggests that "...the phone allocations on 15m band be amended to allow the General class and up access to the 21.200-21.300 MHz segment which is the satellite uplink frequencies on 15 meters."

Robert D. Montgomery K3BM, (Laporte, PA) believes "This is a step forward for the radio service. Adding more voice allocations will improve our chances of interference free communications and will also give some lesser class licensees a bit more room to operate."

Hans Brakob KØHB, Plymouth, MN contends that the ARRL's "refarming" does not address the implementation of new technologies. It simply proposes to eliminate the Novice segments and "reshuffle" that spectrum among existing legacy modes. Brakob proposes the establishment of an "experimental reservation" for radioamateurs using innovative modulation schemes such as digitized voice, digitized image, and other "forward looking" communications methods and non-traditional technologies and experimental modes in the current Novice sub-bands. The current power output level of 200W would be retained with circuitry added to reduce the output to the lowest level consistent with reliable communications. He also suggests that all Novice (and Technicians with code credit) licensees be authorized to use Morse code in the same band segments now authorized for General class licensees.

Amateurs may view and comment on these proposals via the FCC's Electronic Comment Filing System (ECFS), http://www.fcc.gov/e-file/ecfs.html. (Click on "Search for Filed Comments." In the "Proceeding" field enter the rulemaking number, with "RM" in upper-case and the hyphen included.)

ADDITIONAL PETITIONS UNDER FCC CONSIDERATION

While you are at the *Electronic Comment Filing System,* take a look at the comments on these five additional petitions that the FCC has received but not yet acted on.

RM-10352 -- William R. Tippett, W4ZV, (New London, NC) and Jeffrey T Briggs K1ZM (Hopewell Junction, NY) filed a very detailed 21-page *Petition for Rulemaking* on September 17, 2001 seeking to separate wideband and narrowband activity in the 160-meter band.

They ask that the 160-meter frequencies from 1.843 to 2.000 MHz be FCC-allocated to wideband emissions such as SSB, AM and SSTV with 1.800 to1.843 MHz being reserved for narrowband modes such as CW and digital. The petitioners chose 1843 kHz to ensure that the lower edge of a LSB signal would not extend below 1840.

They say that a FCC-mandated subband "...is essential to supplement the newly-revised ARRL 160M bandplan which we believe will prove ineffective in maintaining a separation of wideband and narrowband modes." The ARRL Board approved a 160M voluntary bandplan last July which excludes wideband operation below 1840 kHz.

Tippett and Briggs are long time 160-meter DX enthusiasts and each has more than 300 confirmed DXCC country contacts at 160M. Both served on the ARRL 160M bandplan review committee which was appointed by ARRL President Jim Haynie in the Spring of 2001.

The comment period closed on February 7, 2002 and the comments have proved to be very controversial. More than 524 comments have been filed on the ECFS. Those opposed to RM-10352 (and there were many!) say that the FCC-mandated CW/Digital subband would benefit only a very few CW-oriented DXers and contesters.

RM-10353 – Gary R. Harrison, K0BC (Bolivar, MO), president of The Quarter Century Wireless Association (QCWA) petitioned the FCC to change its amateur vanity call sign system rules to permit radioamateurs to designate a specific ham radio club to receive their station call sign after their death.

"The current rule excludes current licensees from speaking for themselves *ante mortem* [before death] in this regard," QCWA said in their 4-page petition filed with the Commission on December 27, 2001. Instead, club trustees must request a written statement from a close relative "...attesting to the person's association with the club and showing consent of the relative to the request."

There were 14 comments filed on this petition. Strangely, several opposed it saying that it would increase the FCC's involvement and would make many desirable callsigns unavailable for Vanity callsign reassignment.

RM-10354 – Novice licensee John S. Rippey W3ULS, (Montross, VA) petitioned the FCC on December 27, 2001 to allow increased frequency privileges for entry-level licensees who have demonstrated proficiency in telegraphy. He says his request is based on the "...fundamental assumption [that] the public interest is served by having a growing number of radioamateurs..."

Rippey, first licensed in the 1950's, let his General Class license lapse for 45 years. He obtained his previous W3ULS call sign under the Vanity callsign program after retesting in 1999. He maintains "...the HF operating privileges authorized today for a Novice or Technician Plus license fall far short of providing adequate value."

He says "a basic license allowing significant HF operating privileges on phone and CW is a good way of encouraging new entrants into the amateur radio service." He proposes to add additional CW spectrum for Novices at 80, 40, 30, 17, 15, 12 and 10 meters and new phone privileges at 17 and 12 meters which he feels "...will add significant value to the Novice license."

Rippey believes his proposal will "...engender little opposition or controversy" and should be of no concern to the "...more controversial project involving 'refarming' and therefore pose no obstacle to prompt consideration...."

There were 36 comments filed with extremely few agreeing to his proposal. Most commented similar to Dr. David Colburn KD4E: "If he, or anyone else, wants more HF access they can get it the old fashioned way, earn it!"

RM-10355 -- Glenn L. Williams AF8C, (Bay Village, OH) secretary of the *NASA John H. Glenn Research Center Amateur Radio Club* of Cleveland asks that the rules be amended to permit retransmission of manned spacecraft communications from the International Space Station in addition to the Space Shuttle. Section §97.113(e) rule permits only amateur retransmission of NASA manned shuttle communications. Most of the 14 commenters were in support. But some said expansion of one way broadcasting is not in the best interest of ham radio. Harold Tate N8FXH (Bridgeport, WV) called it "unnecessary interference on already crowded ham radio frequencies."

RM-10313 – Thomas C. Wineland (Suwanee, GA), president of Kenwood Communications Corp. filed a petition on May 1, 2001 seeking to relax the frequency restrictions on auxiliary operation which Kenwood contends is "poorly defined" in the rules and "significantly over-regulated." Now limited to above 222.15 MHz, Kenwood wants to extend auxiliary operation to 2-meters.

The petition actually is another effort by Kenwood to make its "Sky Command" remote station control system legal. The device allows a fixed HF station to be controlled using a pair of dual-band (2-meter/70-cm) transceivers. The 46 comments were evenly split over whether the rules should be relaxed to permit Sky Command use.

Two years ago, the FCC ruled that use of Sky Command did not comply with rule Sec. 97.201(b) and refused to grant a waiver allowing use. The ARRL agreed and earlier refused Sky Command advertisements in QST.

CUTTING EDGE TECHNOLOGY

Your thumbprint or eye scan becomes your credit card. - CityMoney Inc. (Putnam,CT) has developed a new Internet retrieval system called the "eyeTeller" which allows customers to do banking transactions and to retrieve cash without the use of credit or debit cards.

It works like this: A potential customer fills out an application for a line of credit much in the same manner as you apply for a credit card. You get a line of credit for cash or for spending within a retail environment. Instead of using your credit card to get cash at an ATM or at a grocery store, restaurant, gas station or at the mall, you simply use your thumbprint at a designated "eyeTeller" machine. The machine recognizes you through your thumbprint or eyeball (retina) scan and gives your credit balance and how much you can spend or the amount of cash you can withdraw. <www.city-money.com>.

General Motors has developed computer-generated virtual crash testing. Engineers can conduct hundreds of preliminary crash and durability tests, before the actual crash tests take place.

EMERGING COMMUNICATIONS

There is no business or technology area in the world today in such a state of turmoil and confusion as the telecommunications industry. Lost wireline minutes are moving over to wireless as cellphone pricing plans adversely impact wireline telecom service providers.

Major consumer long distance carriers attribute declining wireline usage and nose-diving second access line growth to the public's substitution of wireless and e-mail services. Estimates are that AT&T's consumer LD revenue will decline 25% this year. Decreased demand for wireline provider services is also reducing demand for new wireline products.

Many plans now offer huge (or unlimited) night and weekend minutes, including nationwide long distance. For example, Cingular charges $29.99 for 250 "anytime" minutes and up to 3500 (nearly 60 hours) of after 9 p.m. night and all weekend minutes (from Friday 9 p.m. to Monday 7 a.m.) including long distance.

If a person has a wireless phone with a plan that includes lots of long distance minutes, then that subscriber time-shifts their calls and starts using those minutes. Many wireless users have already completely dropped their traditional home telephones

Some wireless companies (like VoiceStream with 3,000 anytime minutes for $49.99 monthly) don't care about the impact on landline because it doesn't have any wireline operations in the U.S. The average wireless usage has increased over six times in the past five years.

Technology Futures, Inc., (Austin, Texas) predicts that by within 15 years almost 70% of all North American households will no longer have a standard wireline connection and will use wireless or computer telephony instead. Also predicted is that 88% of North American households will be online ...82% served by a high speed broadband connection.

In 2015, people will still watch a lot of TV but many households will access some of their television programming over the Internet via high-speed streaming video delivered to televisions and occasionally computers. About two-thirds of households will have at least one high-definition television (HDTV) set, and regular over-the-air and cable HDTV programming will be commonplace.

Most households in 2015 will get their Internet access, cable television service, and wireline voice from the same company. Wireline voice revenues will continue to decline throughout the 2000s.

Wireless will largely displace wireline for voice and low-speed data applications. Within fifteen years, about 90% of North Americans will be wireless users. All wireless systems in 2015 will be digital, and over 90% of wireless subscribers will be on third-generation (3G) systems that provide packetized data as well as voice.

Broadband wireline and 3G wireless will all but replace the use of analog modems ...less than 2% will still access the Internet over analog narrowband phone lines. North American telephone carriers will provide less than 25 million wireline narrowband lines supporting voice and/or narrowband data. That's 80 percent less than the peak of 135 million lines in 2001.

In 2015, fiber dominates the outside telephone plant. Little will remain of the local exchange network that was in place at the turn of the century ...most of the copper cable is no longer used. Of the $355 billion in network investment in place in 2001, less than 10 percent will still be in use in 2015.

Hard to believe? Then consider the progress made during the past 15 years. In 1986, the household PC penetration was less than 1 percent, typical modem speed was 1200 baud and the average PC was a 286(XT) with a 20 meg hard drive. Only 7 percent of all recordings were CDs and the cellular phone penetration was less than 1 percent. *(From research report: "The Local Exchange Network in 2015.")*

Cable systems supplier, **Scientific-Atlanta Inc. said they shipped 38,000 of their Explorer '3100-HD' high-definition TV set-top-boxes** to six "North American cable customers" in the past 3 months but wouldn't say who they were. <www.sciatl.com/customers/-prod_sub_explorer_family.htm>

Consumer Electronics Association President and CEO Gary Shapiro announced that DTV (digital television) sales totaled 148,369 units in March, which increased 86 percent compared to the same period in 2001 and totaled dollar sales of more than $257 million. Reason for the big increase? HDTV programming of NCAA Basketball Tournament, Winter Olympics and Masters Golf Tournament.

It was also the strongest first quarter start in DTV history, totaling 431,424 units - an 84 percent increase over the first quarter of 2001.

CEA projects that 2.1 million DTV sets will be sold in 2002, 4 million in 2003, 5.4 million in 2004, 8 million in 2005 and 10.5 million in 2006.

Jupiter Media Metrix estimates that 16% of U.S. online households (10.4 million) have high-speed access and that another 24% are considering signing up in the next 12 months. Primary motivation for dial-up users to move to broadband? The "always on" feature.

COMPUTERS & SOFTWARE

Anti-Virus companies say to be on the lookout for a new strains of the "Klez Worm." It is making its way around the Internet and has the capability to replace legitimate executable programs with its own malicious code. The Klez worms - Klez.g, Klez.h and Klez.k -

arrive attached to e-mail sporting one of 120 different subject lines, or spread within local networks by copying itself to shared computer drives.

The Klez worms also carry with them variants of a second virus known as "El-Kern," which Klez deposits on compromised PCs and then launches. Other versions of Klez carry a destructive payload that begins a mass-destruction of files on infected computers on the 13th day of even-numbered months.

"Klez.h" poses a special threat. It scans the disks of an infected computer and attaches one of its files to each infected e-mail it distributes. While anti-virus companies say their software can spot all versions of Klez, its ability to disable some virus-checking software can make it difficult to clean up once it gets a foothold on a PC.

Researcher, CompuWire says that **Japan in March 2002 recorded its 12th straight decline in monthly PC sales.**

Voters in some South Florida counties will no longer be seeing punch card ballots and hanging chads. They will be using an ATM-like device with a touch screen which is activated by an inserted voter card provided by a poll worker. Voters can select either an English or Spanish language ballot. There is even an on-screen keyboard for write in candidates. You can try it yourself at: <www.sun-sentinel.com/extras/-graphics/news/pvote/>

Hard drive television: VCRs and computers merge -- Personal video recorders (PVRs) consist of two components. The hardware contains a hard disk that looks a lot like DVD player. Then, there's the subscriber service which is delivered either through a phone line or over the Internet. You need that so you program your PVR to the TV schedule. The two main products are TiVo or ReplayTV. They can do everything a VCR can do and much, much more.

For example, you can do your own "instant replays," slow motion on live TV ...even display a single frame at a time. PVRs can be programmed in many ways and record in three speed modes, which produce different levels of image quality. The higher the quality, the less storage you can get on the hard disk. With PVRs you can pause a live show and resume it at your will.

A very big advantage to watching a show off the hard disk is that they can be played back without commercial interruption allowing you to watch an entire hour's programming in 40 minutes. It automatically marks the entry and exit points of a commercial and during playback, instantaneously skips the entire commercial block. TV networks and advertisers are infuriated by this feature.

Early adopters of personal video recorder systems are watching TV only 30 per cent in "real time" ...and 70 per cent off the PVR's hard disk. People who have these gadgets say they will never again go back to regular TV. <www.tivo.com> and <www.sonicblue.com/video>

GADGETS & GIZMOS

Korean manufacturer, Samsung Electronics is working on a new paperback book-sized computer that looks and folds like a book ...ideal for reading e-books. Two flat-panel LCD 5-by-7 inch screens fold along a central hinge. Samsung says the new screen also consumes less power than existing screens.

A wearable electronic shark repellent called "Shark Shield" has been developed by Australia-based, SeaChange Technology. The one pound battery-operated gadget (about the size of a cellphone) is strapped to a swimmer's ankle with a velcro strap. The electronic field keeps sharks at bay by affecting their nervous system. It causes intolerable muscle spasms if it continues to approach. In several hundred tests involving great white sharks, Shark Shield repelled the creature every time.

INTERNET & WORLD WIDE WEB

A survey from Website analyzer, <www.OneStat.com> (headquartered in Amsterdam, The Netherlands) showed that Google drew the largest global search audience on the Web in March 2002, with nearly 46 percent of all surfers using its site. Web portal Yahoo came in second with 20.6 percent usage, and Microsoft's MSN followed with 7.8 percent reach. America Online's search service was seventh on the list, attracting 1.8 percent of Web users worldwide.

The Economist, a respected business publication, regards the privately-held Google web-search service as a hot prospect for a successful initial public offering because of its search technology and because the company already claims to be making money.

Like Yahoo, Google was launched as a research project at Stanford University by two students (Sergey Brin, now 28 and Larry Page. 29) before raising venture capital in 1999. Both are sons of university professors.

Google now has the capacity to instantaneously handle an average of 100 million inquiries every day. The business takes its name from the mathematical term "googol," which means the number one followed by 100 zeros. Yahoo uses the Google search technology for which it pays more than $6 million a year. The contract on that deal expires next month.

San Francisco-based **Look-Smart, an Internet search service featuring paid listings, has bought the Santa Clara-based WiseNut, Inc. search firm** for more than $9 million. WiseNut automatically generates categories (a process they call "contextual clustering") that are related to the words in your query. It was voted CNET's *Editor's Choice* for "Up and Coming Search Engines" in December 2001 for its ability to produce highly relevant results. See: <www.wisenut.com>

Get answers to your questions for a fee. Search engine Google Inc., is testing a fee-based question-and-answer service called "Google Answers" in which people ask a question and indicate how much they are willing to pay for the answer within a specified time frame.

The price can be as low as $4 or as high as $50 based on difficulty and urgency. Registered experts (real people) will bid to respond. Researchers earn 75% of the amount you bid.

You can ask any question that can be answered with words or numbers except topics deemed to be "...personal, confidential, proprietary, illegal, or harmful." In addition, professional advice is excluded such as "...specific medical, psychiatric, psychological, tax, legal, investment, or accounting advice." Payment is by a monthly charge to your credit card or when you reach $50 whichever is sooner.

Applicants applying to become a registered researcher must write an essay explaining why he or she wants to take part in the program and successfully answer a number of test questions. Customers rate the answer and researchers with poor ratings are eliminated from the program.

Anyone will be able to read questions and the answers, and also be able to add comments. E-mail addresses are not shown. Users must pay 50¢ to list a question. And, if users aren't happy with the response, they can ask for a refund. See: <https://answers.google.com>.

Announced at this year's NAB convention was the formation of MovieLink (Los Angeles, CA), an Internet video-on-demand joint venture between five major Hollywood movie studios: Sony Pictures, Paramount Pictures, Metro-Goldwyn-Mayer, Warner Bros. and Universal Studios.

It will launch later this year using the new MPEG-4 video technology to deliver movies over broadband connections. Like its predecessors, MPEG-4 comprises audio and video technologies that compress large digital files into smaller ones that can be easily transferred via the Web.

Movies may be viewed on computers or a television connected via an ordinary S-video cable. <www.movielink.com>.

Sales over the Internet are booming and accelerating! E-commerce research firm, Biz-Rate.com says first-quarter retail sales over the Internet shot up 41% to an estimated $11.6 billion vs. the same period a year ago. Both the number of sales and the average transaction increased this year, with 91 million purchases compared to 68 million, and $127 per transaction vs. 2001's $120.

Nielsen/NetRatings says Web surfers are getting ready for summer vacations. Nearly 40 percent – more than 50 million – Internet users visited an online travel Web site in March. The most popular travel site: Expedia.com with 11.6 million visitors, followed by Travelocity, Orbitz.com, Southwest Airlines and CheapTickets.com.

Another research firm, ComScore Networks, reported that a record $6.9 billion was spent at travel Web sites in the U.S. during the first quarter ...accounting for 41% of all online spending.

WASHINGTON WHISPERS

Introduction of digital sound broadcasting in the HFBC (high frequency broadcast bands) below 30 MHz. – On April 17, 2002, the FCC's WRC-2003 Advisory Committee recommended the introduction of digital sound broadcasting below 30 MHz and the FCC and the NTIA say they generally support the proposal.

WRC-2003 Agenda Item 1.2 looks towards the use of digital modulation for broadcasting in the HF bands between 5900 and 26100 kHz. It is endorsed by many HF broadcasters who wish to abandon the transition to SSB mandated by WARC-92 and instead change directly to digital modulation which requires more spectrum per channel. The FCC has asked for comments by May 10, 2002 on the recommendation.

"The development of digital modulation techniques has progressed to the point where it is expected that by the end of 2003, or not long thereafter, there will be on the market receivers that include a HF digital capability."

"It is because of this progress that this agenda item and this proposal exist -- and, without diminishing broadcaster and listener access to traditional amplitude modulation, simply permits digital modulation in the mix of acceptable and available listening."

Digital techniques are being introduced into many existing services which allow more effective utilization of the frequency spectrum than double-sideband (DSB) techniques with improved reception quality.

In short, "...digital modulation techniques are expected to provide the means to achieve the optimum balance between sound quality, circuit reliability and bandwidth... [and] provide more efficient coverage than amplitude-modulated transmissions by using fewer simultaneous frequencies and less power."

It is also proposed that DSB would cease after 2015. In a mixed DSB, SSB and Digital environment the channel spacing would be 10 kHz. In an all inclusive SSB environment, the channel spacing and carrier frequency separation would be 5 kHz. A full digitally modulated emission would have a 10 kHz bandwidth....

Most of the nation's 1288 TV stations did not meet the FCC's mandate to begin digital televison broadcasting by May 1. According to the NAB, there are only 297 DTV stations operating in the U.S. The rest said they couldn't meet the deadline for financial, legal or technical reasons and asked for an extension.

Most of these stations are in the smaller markets. Many televison stations in smaller cities and rural locations see no point in investing $1 million or more to covert to the digital format when there are so few HDTV sets are in operation. In order to have an extension granted, stations must show "proof of progress," such as orders for DTV transmitters, etc.

Since there are no power level requirements, some broadcasters will simply put a very low power DTV signal on the air to buy more time. At the recent NAB convention, manufacturers were offering bargain-basement turnkey DTV transmitters for as low as $30,000 for a 100 watt system which offers extremely little coverage. Stations can increase power (and coverage) as more digital TV's are sold in their market area. We even heard about a "quick fix" transmitter that costs less than $10,000 which can be paid for with a credit card!

As part of the FCC organizational reform, **on March 25th the FCC's Consumer Information Bureau (CIB) became the Consumer and Governmental Affairs Bureau (CGB)** with increased policymaking and intergovernmental affairs responsibility.

The new bureau "...will engage consumers, states, other governmental organizations and the industry in an ongoing discussion, with one objective being to better inform and educate consumers to enable them to make smart choices in the increasingly competitive telecom marketplace."

The Consumer and Governmental Affairs Bureau has a new Internet address at: <www.fcc.gov/cgb> and the bureau's electronic news bulletin has been renamed the "CGBNews." *(FCC Public Notice)*

AMATEUR RADIO NEWS

After several unheeded warnings, **U.S. Marshals working in conjunction with FCC Agents and the U.S. Attorney for the Eastern District of New York arrested Paul Dorleans** on April 15th for operating an unlicensed FM broadcast station. He had refused to shut down the pirate radio station which operated on 87.9 MHz in Brooklyn, New York. The FCC had seized his radio transmitting equipment on one previous occasion. Operators of illegal unlicensed broadcast stations are subject to fines of up to $ 11,000 per violation.

The FCC has already shut down of over 20 unlicensed broadcast stations so this year.

Ireland is refusing to let British radio amateurs holding the new "Foundation" 10-watt license operate in their neighboring country. The Foundation license is the UK's new beginning ham ticket which allows HF operation with basically no Morse proficiency.

Examinees must pass a "Morse Assessment" which amounts to recognizing various code characters using an information (crib) sheet. Candidates may copy the code either as letters or dots and dashes and if required use the decoding sheet to recover the message sent. There is no speed requirement and the failure rate is basically "zero." Sending a few code characters by hand is required, but applicants again may refer to their Morse alphabet reference sheet. The Morse Assessment is to satisfy the current ITU requirement that candidates be able to send and receive the international Morse Code.

The Irish Office of the Director of Communications Regulation said that because the Foundation license is not part of the CEPT (universal European) system, it can't be used outside Great Britain.

Singapore is the latest to lower the telegraphy sending and receiving speed for full access to the amateur HF bands. The *Infocomm Development Authority* (IDA) of Singapore has now reduced the amateur license code test speed in that country to 5-words per minute.

The *Singapore Amateur Radio Transmitting Society* (SARTS) recognized the worldwide lowering of the code requirement to 5 wpm and approached the IDA to reduce the examination test speed.

In the longer term SARTS, in line with IARU policy, supports an end to Morse code tests being an amateur licence examination requirement.

The newest ham satellite, RS21, a tiny Russian-Australian microsatellite scientific education venture, is now operational. Also known as Kolibri-2000, it is a joint project of students at the Ravenswood Girls School and the Knox Grammar School for Boys, both in Sydney, Australia, and the Obninsk, Russia elementary and high schools near Moscow.

Most of the design work and construction was carried out by the *Space Research Institute of Russian Academy of Sciences.* The satellite ground stations in Australia and Russia were built by the students. The purpose of the microsat is to educate young people about space flight.

The students named the microsat, Kolibri-2000 which means hummingbird. The Kolibri microsat will also report on the structure and intensity of low-frequency electromagnetic fields around Earth.

The microsatellite rode a Russian Progress cargo freighter up to the International Space Station some months ago, but apparently was not launched into space until March 20th. RS21 has been sending telemetry data and transmitting digitally recorded voice messages.

Downlink frequencies are 145.825 (2 meters) and 435.335 MHz (70-cm), using both CW and FSK. Kolibri has no engine or thrusters of its own and is expected to burn up as it drops into the Earth's atmosphere after a few months. *(Reported by Wireless Institute of Australia, Victoria)*

The *Radio Society of Great Britain* reports that **His Royal Highness Prince Philip, Duke of Edinburgh, will visit the GB50 Special Event Station to celebrate the Queen's Golden Jubilee.** GB50, which stands for 'Great Britain Fifty,' will be on the air from the grounds of Windsor Castle between the 29th of May and the 9th of June.

Special event station GB90MGY operated April 13 to 15 to commemorate the 90th anniversary of the Titanic disaster and the loss of more than 1500 lives. The callsign suffix recalls the MGY callsign the Titanic used on her fateful maiden voyage in 1912. Members of the Titanic Wireless Commemorative Group operated GB90MGY using CW only from a replica of the Titanic`s wireless room located in Surrey, the birthplace of the Titanic's radio operator Jack Phillips, who stayed at his post sending out distress calls to alert other ships and helping to save more than 700 lives.

Radioamateurs in South Africa now have an easier time upgrading from a no-code ZU or ZR call sign to a full privilege ZS license now that the process is handled by the South African Radio League (SARL). Candidates simply provide evidence of passing the required Morse code and written RAE (Radio Amateur Examination), along with the license fee and up to three available "preferred" ZS call signs to SARL. One of the call signs is allocated to the candidate and the application is "fast tracked" to ICASA, *(Independent Communications Authority of South Africa)* ...their radio regulatory authority.

The South African Radio League has three formal programs aimed at developing Amateur Radio activity in schools:

YARIA - Youth for Amateur Radio in Africa - is an activity during which amateur radio stations are set up at various schools, demonstrating how useful Amateur Radio is in connecting people and promoting dialogue.

SCHOOLTALK is a program initiated by two or more schools where an Amateur Radio Station is set up at each school and learners of the two school discuss a subject of interest. Both the YARIA and SCHOOLTALK programs are under the supervision of a licensed Amateur.

ARISAS - Amateur Radio in South African Schools - is a SARL program with a goal of educating teachers so that they may qualify as licensed radioamateurs so that they can introduce the Amateur Radio Learners license and start Amateur Radio Clubs in their school.

The Learner's License is an entry level into Amateur Radio, teaching radio skills through a training course involving practical projects. During the course learners construct a low power transmitter and a small receiver.

America at War: Hams praised at NAB Amateur Radio mixer - The heroism of ham radio operators who donate their services in times of national disaster, and especially those who volunteered in the days following the 911 terrorist attacks was not forgotten at this year's National Association of Broadcasters Ham Radio Reception. The April 10th gathering was co-hosted by Kenwood Communications and CQ Magazine.

It was CQ publisher Dick Ross, K2MGA, who took time to honor those hams who put their lives on hold, to be there when needed:

"I do want to take a moment to focus a little bit of attention on how proud we have a right to be as Radio Amateurs. I think we saw that on September 11th, when thousands upon thousands of hams throughout the United States jumped in their cars - or - in the New York area - hopped onto the subways - with back packs filled with radio equipment and did whatever they could. They are still doing "whatever they can,' and that is really what Amateur Radio is all about." *(Thanks, WA6ITF)*

UWB: BEGINNING OF A NEW AGE OF COMMUNICATION

Two years ago, the FCC began considering a proposal to approve using ultra-wideband (UWB) wireless technology on unlicensed spectrum. According to their Office of Engineering and Technology, with appropriate technical standards, ultra-wideband devices appear capable of operating on spectrum already occupied by existing radio services without causing interference thereby permitting scarce spectrum resources to be used more efficiently.

UWB devices operate by radiating very narrow or short duration electrical pulses that result in very large or wideband transmission bandwidths. These pulses – at power levels 10,000 times lower than PCS handsets -- are transmitted under the noise level so they don't interrupt existing communications.

> The Commission's processes and mission have evolved during the past 70 years. While we still spend a great deal of time on spectrum management, the number of potential users and uses increases dramatically each year. Instead of exclusively focusing on broadcasting and hardwired phones, we concentrate on expanding the spectrum to accommodate new technologies like third- generation wireless and ultra-wideband. *FCC Chairman Michael Powell, Senate Commerce Subcommittee, June 28, 2001*
>
> Spectrum management decisions are always complex and challenging. In an environment where the amount of unencumbered spectrum is decreasing while demand continues to grow, it is even more critical we make interference and sharing decisions that do not waste this precious natural resource. Inevitably, we will depend more and more on sharing the spectrum currently available to avoid such waste. *Statement, FCC Commissioner Kevin J. Martin, February 14, 2002*

The key to turning those pulses into intelligence lies in an UWB receiver's ability to replicate the exact pulse sequence used by the transmitter. Like spread spectrum, UWB was originally developed for the military since it is very secure. UWB is immune to eavesdropping, to interference and to being jammed. And there appears to be virtually no limit to the number of UWB signals that can share the same spectrum.

The basic difference between spread spectrum and UWB is that spread spectrum travels around certain frequencies according to a specified formula. UWB, on the other hand, uses all frequencies at the same time which means the data-carrying capacity of UWB is enormous.

The FCC is well aware that it is hard to regulate a signal that can't be detected by traditional radios and doesn't interfere, so the agency wants to allow UWB communication on an unlicensed basis. The first commercial UWB transceivers will probably be used for wireless computer networks and cellular phones.

One of the difficulties of UWB is its relatively short range ...less than a mile -- and that is with a high gain antenna. But this would work for PCS cellular phones and could also solve the "last mile problem" ...the distribution of the high-speed Internet to homes from neighborhood fiber-served distribution points. The slow telephone wire would be a thing of the past. Since the power level is very low, batteries would last infinitely longer.

It very well might be that UWB will offer a better and less costly alternative to existing communications methods. Adoption, on the other hand, could cause a huge upheaval in existing communication infrastructure which might be rendered obsolete. Local phone companies, cable TV companies, mobile phone companies, and Internet Service Providers all look vulnerable. And what about those companies that have paid billions for spectrum which may no longer be valuable ...or needed.

First Report and Order

On February 14, 2002, the Federal Communications Commission (FCC) adopted a *First Report and Order* for UWB technology which authorized the commercial deployment of UWB technology. But the Order was not released until two months later ...on April 22nd.

Back in February, the FCC said that UWB technology "...holds great promise for a vast array of new applications that have the potential to provide significant benefits for public safety, businesses and consumers in a variety of applications such as radar imaging of objects buried under the ground or behind walls and short-range, high-speed data transmissions."

UWB can provide public safety personnel with short range communications technologies for emergencies, track firefighters inside a building, detect victims under earthquake rubble, find land mines, oil or mineral deposits underground, detect the movements of a hostage taker through a wall ...and help cars avoid collisions by determining the location and speed of oncoming vehicles.

There are no ultra-wide band radios available today so there is little operational experience with which to gauge the impact of UWB on existing radio services that share spectrum. The big question is to what degree will a massive increase of UWB signals raise the noise floor and impact spectrum users. Of particular concern is the possible impact on radio astronomy, radio navigation and safety-of-life systems caused by ultra-wideband signals.

After weeks of furious negotiations with Commerce, the FCC agreed to a compromise that moderately limits the power levels and frequency bands in which UWB can operate.

The Commission said it "...will act vigorously to enforce the rules and act quickly on any reports of interference." The agency said it would review the standards for UWB devices during the coming year and issue a *Further Notice of Proposed Rule Making* to explore more flexible standards and address the operation of additional types of UWB operations and technology.

FCC Amateur Radio Enforcement News

Paul A. Miller, mayor of the city of Orangeburg. SC has been advised by the FCC that their electric utility operation may be causing harmful radio interference to James L. Brown, WM3O an Orangeburg amateur radio operator. The FCC said that an "unintentional radiator" may not cause interference to an authorized radio station ...adding that an "unresolved problem may be a violation of FCC rules which could result in a monetary forfeiture...." The city was urged to contact ARRL's Radio Frequency Interference Desk for assistance. The city is to advise the complainant within 30 days of the steps being taken to correct the reported interference problem. The FCC also wants to be contacted if the problem cannot be resolved within 90 days.

Tomas D. Batista KC2DDD (Corona, NY) and Gerardo Arias N2IFU (Staten Island, NY) were advised last February 15th that the FCC had information that they are operating an uncoordinated repeater with an output on 147.020 MHz and input on 143.020 MHz. "The frequency 143.020 MHz is not allocated to the Amateur Radio Service." The FCC believes that these operators are "using this repeater as a reverse auto-patch, that it is not being identified, and that it is causing interference to coordinated repeaters." FCC records also show Batista to be a Novice operator who is not authorized to operate on the two meter amateur band.

The pair were directed to respond within 20 days "...furnishing: 1) full details about the operation of the repeater; 2) the identity of control operators, if any; 3) the call signs of the users; 4) names and addresses of any unlicensed users; and 5) the location of the repeater. If the repeater is located on property that you do not own or rent, state the name and address of the landlord or site manager."

When Batista did not respond, the FCC sent another letter on April 4th extending the response date to April 20.

Peter M. Figueroa N6IWH (Berkeley, CA) has been sent a formal warning notice by the FCC stating that it "...has received information that you have been operating radio-transmitting equipment without a license on frequencies in the two-meter Amateur band. We note that your license for Amateur Radio N6IWH expired on February 11, 2002 and no renewal application has been filed." He was asked to contact the FCC at once. Unlicensed operation subjects him to a fine which "...normally range from $7,500 to $10,000" as well as seizure of his transmitting equipment.

Ramon D. Florimon KB2PRV, (Elmhurst, NY) was sent a letter last October "regarding repeater operation on 448.975 MHz in Brooklyn, NY." That FCC letter requested information about the operation of the repeater as well as proof of coordination. Although he answered the letter, the coordination documents were not provided. "You stated on October 29, 2001 that Mr. William Ospina, KF2J, was going to furnish the coordination documents but was out of town." Florimon was directed "to furnish the documents within 10 days....." Failure to do so "will result in enforcement action...."

James M. Hicks K4JPE, (Durham, NC) was advised by the FCC that he may be "operating an uncoordinated repeater with an input on 146.590 MHz and an output on 147.590 MHz." Information indicates that this system may be using an uncoordinated 70cm auxiliary frequency to provide a link between the receiver site and the transmitter site. Furthermore, the frequencies he is using do not conform to the national band plan for two-meters. "Although band plans are not mandatory under Commission rules, the FCC relies upon them to prevent the need to allocate Commission resources to resolve interference disputes in the Amateur Service." Hicks was directed to furnish coordination information and "..the circumstances, if any, under which you are operating the repeater in a manner not consistent with the coordination." The FCC also wanted to know complete details concerning the configuration of the repeater and if he had received complaints about its operation.

L2N Design & Construction Co., (Boise, ID) was advised that their drivers for their business may be transmitting without a license on the Amateur ten meter band. Continued operation will subject them to a fine and equipment seizure. The firm was directed to contact the FCC at once.

James A. Ruppe N4XCV, (Rutherfordton, NC) was warned by the FCC that it has information indicating that he has been observed operating on various Amateur frequencies after his license was cancelled on June 15, 2001. He too is subject to a fine and equipment seizure. He is to contact the FCC.

AMATEUR STATION CALL SIGNS as of May 1, 2002:

District	Extra	Advanced	Tech./General/Novice	
0	AB0UZ	KI0SF	----->	KC0NCI
1	AB1AJ	KE1MD	----->	KB1IGO
2	AB2RE	KG2RO	----->	KC2JMC
3	AA3ZZ	KF3EC	----->	KB3HYV
4	AG4RI	KV4GI	----->	KG4SZW
5	AD5IX	KM5XP	----->	KD5SFB
6	AE6DM	KR6FA	----->	KG6KYW
7	AC7SU	KK7XH	----->	KD7RBU
8	AB8NT	KI8KD	----->	KC8TSI
9	AB9FF	G9RA	----->	KC9BQA
Hawaii	----->	AH6RH	KH7ZZ	WH6DGR
Alaska	----->	AL7RR	KL1HZ	WL7CVQ
Virgin Isl.	----->	KP2CS	NP2LW	WP2AIN
Puerto Rico	WP3T	KP3BN	WP3QN	WP4NOZ

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

MORE HDTV PROGRAMMING IS TO BE AVAILABLE SHORTLY

High-definition digital television (HDTV) signals offer a much higher resolution and wider (16:9 width-to-height) aspect ratio than traditional (4:3) NTSC signals. It means sharper video, up to six "surround sound" audio channels and screens nearly twice as wide as its height ...the same as movie theaters.

Roughly 34 million TV sets were sold last year. Of those, 750,000 were digital and only 25,000 – less than one percent – had tuners capable of receiving HDTV. As mentioned in our last issue, in early April FCC Chairman Mike Powell proposed voluntary steps that the TV industry should take to encourage the transition to digital, including setting deadlines, boosting available programming, and getting TV set makers to include HDTV tuners in their digital televisions.

Powell urged the four major broadcast networks and two premium movie channels to offer high-definition or other digital programming during at least half of their prime-time schedules starting this fall. ABC, CBS and NBC have already said they would comply.

The slowpokes are the FOX television network and cable TV in general. The cable industry downplays the importance of high definition because the technology takes up three times more spectrum space on their "pipe" than does a digital signal. That equates to less programming coming down the wire, and with it -- less advertising dollars. It is hard to justify the bandwidth when more than 99 percent of cable customers don't own an HDTV set.

While cable television seems to be in no hurry to get on the high-definition bandwagon, DBS (direct broadcast satellite) television providers, the DISH network and DirecTV are stepping up their HDTV programming. DISH already offers some HBO and Showtime movies in HDTV. At present, most of Showtime's movies are "upconverted" ...a process by which a standard definition picture is changed to a wide-screen (16:9) simulated high-definition picture. Its better than analog TV but far from the quality of true HDTV.

DirecTV has HBO and HDNet, an all high-definition network featuring sports, documentaries, movies and concerts. HDNet is the brainchild of Mark Cuban, owner of the NBA Dallas Mavericks basketball team. Cuban chose DBS on which to launch his high-definition network because one satellite can cover the entire United States. Both the DISH network and DirecTV also offer pay-per-view HDTV movies on a limited scale.

Now comes word that Discovery Communications, Inc. is taking the major step on June 17, 2002, of launching a 24-hour, high-definition television network. The date coincides with the 17th anniversary of the Discovery Channel's first transmission on June 17, 1985. The flagship channel operates in more than 155 countries and territories with over 700 million cumulative subscribers.

The new channel, which will be called the Discovery HD Theater®, is intended to support Powell's recent call for more high-definition programming to spur the rollout of digital television.

Discovery HD Theater will transmit high-definition content in all the popular categories of entertainment now offered by Discovery including nature, history, world cultures, geographic explorations, science, education, travel, and a wealth of children's and "how-to" programming. The programmer said it already has over 115 high-definition titles ready for transmission and their new productions will be shot in high-definition resolution.

Discovery HD Theater will be delivered via satellite to cable systems, satellite providers and other multi-channel distribution systems via Satcom 4, Transponder 14. The HDTV digital signal will be delivered in 1080i high-definition resolution and will utilize 3 MHz of spectrum. That's 1080 horizontal lines and more pixels-per-inch than in NTSC's 480 analog lines. A pixel, short for 'picture element,' are the "dots" that make up the image.

The higher the resolution, the more picture detail there is. There are more than 2.1 million pixels (1080 lines, each with 1920 color "dots") on an HDTV screen. Today's typical analog television line holds roughly 440 pixels. So, each frame (480x440) uses a little over 200,000 color pixels to create the image. That's a huge difference in picture quality ...about six times more clarity when you consider that a high-definition screen is one-third wider.

The big question is which systems will pick up the new Discovery programming. DBS providers are already scurrying to free up transponders. In the satellite industry, one high-definition program takes up the bandwidth normally required for six to eight of the satellite's normal digital programs. No word has yet been heard from the nation's cable networks.

Discovery Communications, Inc. also transmits several special-interest digital channels such as TLC (The Learning Channel), Animal Planet, the Travel Channel, Discovery Health Channel, and Discovery Kids. Discovery HD Theater will present programming covering the full-range of the company's entertainment categories.

In addition, on April 22nd, the DirecTV DBS service (with 10.7 million subscribers) announced that it was adding the Showtime (east coast feed) in high definition to their channel line up. The 24-hour-a- day Showtime high resolution service with 1080i resolution and Dolby Digital 5.1 surround sound will launch on April 30 on DirecTV Channel 543 and will be included with all subscriptions to the Showtime premium service.

This will add many top Hollywood hits and original movies and series in high-definition resolution to the DirecTV lineup. Showtime-HD will be broadcast from the 110° west longitude orbital slot.