

# 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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## THE NETHERLANDS LOOKS AHEAD TO WRC-2003

The Netherlands (Holland) says it has no interest in maintaining the Morse Code requirement (for access to HF Amateur spectrum) after WRC-2003 where its abolition will be considered.

Here is a quote from an address by the national Dutch IARU society (VERON) president Jan Hordijk, PA0AJE at their yearly hamfest "Dag van de Amateur." VERON is an acronym for Vereniging voor Experimentele Radio Onderzoek in Nederland (or the *Society for Experimental Radio Research in the Netherlands*.)

"Concerning the abolition of the Morse requirement there is no clear picture. As I have just noted, there is a proposal at CEPT to reduce the speed requirement to 5 wpm. At the recent IARU Region 3 conference in Darwin [Australia], a decision was made to suggest to the AC [IARU Administrative Council] that abolition of the Morse requirement should be accepted as basis of policy, and to go over to 5 wpm as a temporary measure."

"It is of course quite clear that Morse will some day be abolished. The actual moment that this happens is dependent on the fact that any proposal to do so has a realistic chance of being accepted by being supported by enough countries at the WRC in 2003."

"The VERON will attempt to inform you of developments in a more comprehensive way than has been done up until now. It must be clear to you that the VERON has no interest at all in maintaining the

Morse requirement, and uses only the decisions of the society's council as an guide of how to use its vote at the IARU conference."

One of VERON's local divisions will be voting on the following motion to their leadership at a meeting planned for the end of November [Quote.]

### **A proposal concerning the abolition of the mandatory Morse telegraphy requirement for access to the HF bands.**

The society's council instructs the BOD to make preparations - nationally and internationally - for an alteration to the ITU Radio Regulations article S25, with the aim of having this altered article S25 adopted at the following WRC in 2003 (Agenda point 1.7.1)

Article S25.5, concerning the mandatory Morse telegraphy testing requirement, should be discarded, while at the same time article S25.6 should be left unaltered and intact. The PDNR [Proposed Draft New Recommendation] document known to the ITU as M-AOQ [Mandatory - Amateur Operator Qualifications] should be ignored (in all its different versions) to ensure that no unnecessary "mandatory recommendations" can be added to the requirements for obtaining an amateur radio license.

### **Motivation:**

As in, for example, the mobile maritime service, manual Morse telegraphy can be easily

replaced by other more modern, reliable, accurate, faster and efficient modulation techniques.

The present requirement for manual Morse telegraphy has absolutely no relevance to the futherance of radio reception or transmission technology.

There is no proof whatsoever that the ability to use Morse telegraphy leads to a better motivated or qualified operator.

The Morse requirement works as a barrier to many individuals who are otherwise fully capable of being good and valuable operators for the amateur radio service.

The content of the PDNR known as M-AOQ is no longer that which was put forward by the RSGB [*Radio Society of Great Britain*] at the IARU Region 1 conference in Lillehammer 1999 and accepted by a large majority.

Further procrastination until after WRC 2003 will only cause more damage to, and division within, the amateur radio service.

#### Footnote:

Recent voting among IARU societies withing R1 and R3 have clearly demonstrated that a substantial majority support abolition of the mandatory Morse telegraphy requirement. If we take the results of the 1999 Lillehammer and 2000 Darwin conferences, 72% of the delegates voted for abolition, 14% voted to keep the Morse telegraphy requirement, and 14% abstained from voting. It should be noted that at the Darwin conference only ONE society (the ARRL) voted against a proposal to abolish mandatory Morse telegraphy testing, while one (HARTS) abstained - three years ago HARTS voted to maintain testing.

Rapidly changing attitudes will undoubtedly lead to more and more national societies taking a stance to support abolition. [End Quote.]

#### GAY/LESBIAN HAM GROUP ISSUES PRESS RELEASE

FOR IMMEDIATE RELEASE

Contact: Jim Kelly, KK3K (lambda-arc@geocities.com)

#### **ARRL TO LARC: BOARD VOTE IS NOT AN ENDORSEMENT OF BOY SCOUTS ANTI-GAY DISCRIMINATORY POLICY**

Philadelphia, PA - In correspondence received by Lambda Amateur Radio Club (LARC) officials, American Radio Relay League (ARRL) Executive Vice president Dave Sumner, K1ZZ has addressed concerns raised by LARC relative to the League's desire for closer cooperation with the Boy Scouts of America (BSA).

The BSA has come under intense pressure to drop their anti-gay discriminatory policy, which excludes gay boys and men from scouting. LARC has sought a public statement from the League to the effect that the closer

cooperation that the ARRL wants with the Scouts did not extend to an endorsement of the BSA's anti-gay discriminatory policy.

In addressing LARC's request, Sumner wrote: "Given the chronology of the Supreme Court decision and the ARRL Board's expression of its desire for an expanded relationship with BSA (and lest we forget, GSA -- which, as far as I know, has no parallel policy) I think LARC's desire, as an ARRL affiliated club, for confirmation that this was not intended as an endorsement of the BSA policy is entirely understandable.

The Board's action was not, nor was it intended to be interpreted as, an endorsement of the policy. I have said this to a number of members who have asked. I have also had to point out to a number of people that, contrary to independent press reports, (LARC) did not ask that the League sever its ties with BSA. It's unfortunate that that erroneous idea got loose."

LARC, founded in 1975, is a public service amateur radio whose members are predominately lesbian and gay. LARC is an ARRL Affiliated Club." [End of October 27, 2000 press release.]

Lambda also released the text of a letter it received from ARRL president, Jim Haynie, W5JBP.

September 27, 2000

Mr. Art Joly, N1RPN, President  
Lambda Amateur Radio Club  
Post Office Box 56069  
Philadelphia, PA 19130-6069

Dear Mr. Joly:

Thank you for your letter dated September 12, 2000 addressed to me at ARRL headquarters which I have recently received. Your letter requests that the ARRL "officially and publically distance" itself from the policy of the Boy Scouts of America relative to gay scouts and scoutmasters. You suggest that unless the League affirmatively does this, it "endorse(es) the policy by default."

I am afraid that I must disagree with your conclusion, ARRL cannot be deemed to endorse anything by its silence. I would suggest to you that it is unnecessary for ARRL to take any position on subjects that do not pertain specifically to Amateur Radio, and it would be beyond the scope of the League's charter to address political topics unrelated to its mission and purpose. While LARC may have an interest in the policies of the Boy Scouts as set forth in your letter, the ARRL does not.

I trust this is responsive to your inquiry.

Jim Haynie  
President (ARRL)

● In a stinging editorial in its October Newsletter, Jim Kelly said that LARC never asked to ARRL to sever ties with the BSA. "...we only asked them to simply state that the cooperation that they want with the BSA does not extend to an endorsement of the BSA's anti-gay policy." Questioning whether the ARRL should get cozy with an organization that discriminates, Kelly added, "What's next, the ARRL and the KKK?"

## AMATEUR RADIO CENSUS BY LICENSE CLASS AND MONTH

2000	Extra	Advanced	General	Tech Plus	Tech	Novice	Total
October	92,809	89,318	132,625	104,546	214,761	46,771	680,830
September	92,541	89,605	132,144	105,942	213,560	47,180	680,972
August	92,015	89,937	131,361	107,541	212,046	47,670	680,570
July	91,143	90,320	129,791	109,739	210,103	47,839	678,935
June	90,451	90,837	128,652	112,054	208,838	48,441	679,273
May	83,104	96,759	117,903	123,921	206,646	49,016	677,349
April	77,530	101,725	111,337	132,013	205,857	50,077	678,539
March	75,985	103,048	109,787	133,688	204,646	50,630	677,784
February	75,609	103,215	110,047	133,220	203,492	51,263	676,846
January	75,428	103,360	110,201	133,153	202,814	51,762	676,718

### WHAT'S GOING ON IN AMATEUR RADIO....

*More General and Extra Class, fewer Advanced and Tech Plus*

The restructured Amateur Radio Service began on April 15, 2000. As of that date, no new Novice and Advanced Class licenses have been issued ...although they may be indefinitely modified and renewed. The 13 and 20 words-per-minute Morse code examinations were discontinued ...the fastest exam speed is now 5 wpm.

What has happened since then is totally predictable. The number of Amateur Extra and General Class radio amateurs have both shot up by more than 20 percent. This increase has come from the Advanced and Technician Plus Class which show corresponding declines.

The number of new (No Code Technician Class) radioamateurs continues to increase (about 1,500 a month) although the pace is slowing somewhat.

The Novice Class continues to decrease in numbers ...although some have upgraded to the General Class by simply passing the written (Element 2 and 3) examinations.

There has been very little real growth (less than one percent) in the total number of Amateur Radio operators over a year ago. The number of amateurs in each class has just been re-arranged a little differently.

### Sorting out Novice, Tech, and Tech Plus "credit."

It will be interesting (maybe "puzzling" is a better word) to see what happens to the Technician and Tech Plus Classes. The No Code Tech Class began on February 14, 1991 - but the first license was not issued until March 12, 1991.

These ten year term licenses will be coming up for renewal beginning on December 12, 2000 -- just a month from now. (An amateur license may be renewed 90 days before expiration.) The big question is, how many no code Technicians will there be that renew their license?

Another fact impacting the Technician Class is that the Technician Plus Class will be routinely renewed as "Technician" - see Section 97.(a)(3). They will, of course,

*permanently* retain their 5 wpm code credit for operating purposes - **but NOT for exam credit** after the two year "grace period" expires.

Section 97.505(a)(6) allows 5 wpm Morse code exam credit from a CSCE (*Certificate of Successful Completion of Examination*) only if passed within the previous 365 days.

Thus, a Tech Plus licensee (who began as a Tech operator after February 14, 1991) and whose license has expired by more than two years must retake all of the exams including the 5 wpm code exam if they want to upgrade further.

On the other hand, if they are satisfied with Tech Plus privileges, they would only need to pass Element 2 (Tech written) and use their old 5 wpm CSCE as *operating* credit. Section 97.301(e) authorizes amateurs to operate on the HF (10, 15, 40 and 80 meter - the so-called Novice) bands once they pass a telegraphy examination and this "operating credit" does not expire..

Adding more confusion is the fact that an amateur who previously held a Novice license or a Technician Class license before February 14, 1991 (even though it expired ten years ago) still retains 5 wpm exam credit. (See Section 97.505(a)(5). Complicated, you bet!

It will be especially bewildering for Volunteer Examiners who are left to determine exactly what examination credit an applicant receives. They are already faced with trying to explain to an applicant why an old Novice or Technician (before 1991) retains 5 wpm exam credit forever, but an amateur who began at the General Class level (and had to pass a 13 wpm exam) must retake the 5 wpm Morse exam. The reason for this is that the FCC tried to write the rules to accommodate the most people. But there are still an unfortunate few who are left out.

My guess is that you will probably see a big decrease in the number of Tech Plus amateurs (its decrease will accelerate appreciably) and very little difference in Technician Class "numbers" since the decrease caused by some Techs not renewing will be taken up by Tech Plus amateur licenses being renewed as Technician.

## PERSONAL POSITIONING ON FRS CHANNELS

The FCC has granted a one year rule waiver to Garmin International of Olathe, Kansas that will allow the firm to make and market Family Radio Service transceivers capable of transmitting location information derived from the Global Positioning Service on FRS channels. Garmin, the world leader in the manufacture of pocket-sized GPS receivers, filed their original request on August 4, 1999.

In 1996, the Commission established the 14-channel 462/467 MHz FRS as a very short distance, two-way personal radio service to fill need for short distance communications. The idea was to provide an affordable and convenient means of direct, short range two-way voice communications among small groups of persons, with minimal regulation. It was not intended to be used as a substitute for other personal communications services.

The current Family Radio Service rules [Section 95.193(a) and 95.631(d)] only permit two way FM voice communications and CTCSS tones. Non-voice emission types are not authorized.

Garmin originally wanted to make a handheld communications device that would include a polling feature whereby each unit would be able to page other units thereby causing the other units to automatically transmit their GPS-derived location so that the location of the transmitting unit could be displayed on the map of the receiving unit. The FCC denied that request.

On June 22, 2000, Garmin amended their proposal to an FRS rule waiver request so that it could manufacture FRS voice transceivers that transmit GPS location information using emission type F2D in a digital data burst of not more than one second.

Garmin showed how the enhanced FRS receiver could be used, for example, to find lost family members in the woods or at amusement parks. This enhancement is a direct result of technological developments that have occurred since the creation of FRS.

Agreeing that the enhancement "would further the purposes for which the FRS was created," the FCC agreed to the waiver provided certain conditions were met. Garmin must include information in the instructions accompanying its units that the capability to transmit GPS-derived location information is provided for personal and public safety purposes and that transmission of GPS-derived location information for other location determination purposes is not authorized by the FRS rules.

Furthermore, the enhanced FRS unit may not automatically poll other units to determine their location based on GPS data, to insure that the purpose of the FRS rules is not defeated.

On September 28, 2000, the FCC granted the requested one-year waiver to Garmin International.

## AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of November 2000:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0PC	KI0RX	(***)	KC0JAY
1 (*)	AA1XF	KE1LY	(***)	KB1FVT
2 (*)	AB2RE	KG2RM	(***)	KC2HBL
3 (*)	AA3WC	KF3DZ	(***)	KB3FRC
4 (*)	AG4DR	KV4FR	(***)	KG4KFJ
5 (*)	AD5AU	KM5XF	(***)	KD5MCQ
6 (*)	AD6TP	KR6ER	(***)	KG6DWH
7 (*)	AC7KB	KK7WQ	(***)	KD7KTY
8 (*)	AB8IW	KI8JX	(***)	KC8PQZ
9 (*)	AB9AT	KG9RA	(***)	KB9YHF
N. Mariana	NH0Z	AH0BB	KH0LO	WH0ABP
Guam	(**)	AH2DN	KH2UZ	WH2ANX
Hawaii	(**)	AH6QQ	(***)	WH6DGM
Am. Samoa	AH8T	AH8AI	KH8DO	WH8ABF
Alaska	(**)	AL7RR	KL0ZP	WL7CVE
Virgin Isl.	(**)	KP2CP	NP2LG	WP2AIN
Puerto Rico	WP3P	KP3BL	WP3IP	WP4NOT

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

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

\*\*\* = Group "C" (N-by-3) call signs have been assigned.

**Note:** New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) and Alaska (AL0/KL0)

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

## CANADA HEADS TOWARD TOP CODE SPEED OF 5 WPM

Radio Amateurs of Canada (their national society) is awaiting word from *Industry Canada*, (their telecom regulator), regarding RAC's request to discontinue the 12 wpm Morse code exam. In a recent letter to *Industry Canada*, RAC President Kenneth Oelke, VE6AFO recommended that full HF operating privileges be granted to amateurs who have passed a 5 words-per-minute Morse test.

During the past year, RAC has consulted with the Canadian amateur community in various ways and the RAC Board of Directors has concluded that a majority of Canadian Amateurs are supportive of dropping the 12 wpm Morse test.

At the same time, Mr. Oelke requested that the department consider the strengthening of written tests to expand the requirements for operator knowledge and skills ...and to include more questions on modern modes of communication employed by Radio Amateurs.

This proposal would give Canadian radio amateurs operating privileges similar to those currently accorded to United States amateurs who successfully pass a 5 wpm Morse test.

## CUTTING EDGE TECHNOLOGY

### ■ New Ford automobile safety systems currently under development.

**RescueCar** -- includes a tiny video camera in the rearview mirror linked to a cell phone and a crash sensor. If the car is in a wreck, its computer sends out an alert routed to the nearest emergency dispatcher who gets data from the car ..even a rough estimate of injuries. Two photos show the interior - before and after the crash. Some cellular services (including General Motors Corp.'s "OnStar") already make emergency calls when an air bag deploys.

**SensorCar** -- a vehicle that tries to anticipate crashes by using a sensor system in the front and rear. When a crash is imminent, it tightens the seat belts and sounds an alarm.

**CamCar** -- a system that uses tiny cameras to eliminate blind spots around a vehicle. A Lincoln Navigator with the system had 10 different cameras installed looking forward and backward, including one night-vision camera installed in the rear window for backing up at night.

**SecureCar** -- which uses heartbeat monitors - developed for protecting government nuclear secrets - to keep children from accidentally becoming locked in vehicles. The system also includes a touch-sensitive panel and a carbon dioxide sensor in the trunk to help children keep from suffocating in them.

**EyeCar** -- a Volvo development that automatically adjusts the seat, steering column and instrument panel by measuring the position of a driver's eyes in the vehicle. A camera mated to an infrared light finds a driver's eyes by measuring reflection of light from them.

■ **Artificial body joints going from metal to ceramic.** Hip joints, elbow joints and other metallic objects that have been implanted to replace shattered or diseased bones are giving way to ceramic replacements. The inside of the human body is a tough environment for metal, even if it's impervious to chemical reactions. Just the constant mechanical friction of movement can wear away metal, resulting in flakes or other undesirable debris under the skin. Ceramics are easier to manufacture nowadays, and hold up much better under the strain.

■ **Never send a human to do a robot's job.** Incredible though it may

seem, semiconductor manufacturers often don't trust a living being with a tray full of millions of dollars' worth of microprocessor wafers. They know that robots are more dependable and can also lift several trays full of chips at one time, a task that's often too heavy and strenuous for a person to do repeatedly. More than one robot can be programmed to carry out these tasks at once, and choreographed so that they don't interfere with each other.

■ **How do you identify old circuit breakers?** In an electrical box full of breakers, they often all look alike. But as breakers get older, their internal resistance slowly increases. This makes them hotter during normal operation than newer circuit breakers. An infra-red video camera or temperature probe makes these troublesome components easy to find.

■ **One of the most concentrated RF environments on any given Sunday is an NFL football stadium.** Everyone, it seems, is using a wireless communications system: the coaches, the players, the officials, the TV network technicians, and even fans in the stands with cellular telephones. To keep so many users from "stomping" on one another, the National Football League provides official frequency coordinators for each stadium during a game.

■ **Disposable hearing aids are here!** The "Songbird," developed by the Sarnoff Corporation, is undergoing field testing now. Songbird Hearing says the device is designed to last for only a month, after which the user simply throws it away and gets another one. It's far cheaper (about \$40) and easier to use than conventional hearing aids. Since it's designed to last only for a few weeks, it can be made out of softer, more comfortable rubber; the battery doesn't have to be as large, so the entire device can fit more deeply into the ear.

## EMERGING COMMUNICATIONS

■ **Several European companies are examining the technical and commercial possibilities of using existing powerlines to distribute telecommunications.** If the trials are successful, they will consider rolling out service sometime next year.

Powerline communications is a technology for transmitting voice and data signals over the electricity grid, which its ad-

vocates say is a simple and low-cost alternative to existing telecommunications technologies. It could potentially offer high-speed Internet access and wire-line-standard telephony both in the last mile and in the home in the form of in-house LANs.

In countries with underdeveloped telecommunications infrastructures, powerline could become something approaching a revolution, particularly in providing telephony and Internet access to remote communities.

■ **There is already talk about a Fourth Generation wireless system.** 4G, expected around 2010, will permit personal communications in any form at any time in any place with anybody worldwide. 4G mobile terminals may even become part of the human body ...and used for such purposes as monitoring body temperature, heartbeats, blood pressure, etc.

■ **Home stereo components "talk" to one another.** The IEEE 1394 high-speed communications standard may be used to link individual components of a home entertainment system. The serial data communications system eliminates the nest of wiring behind the console, yet still tells each device about every other device plugged into the network. A CD changer can be in a separate room, yet still be used in the main amplification system. Speakers can be selected according to room, added, or turned off. The data channel tells the digital receiver what the performance curve of each speaker is, to better adjust the sonic quality of each room. Each device "talks" to every other device for maximum efficiency.

■ **At the end of last year, over 86 million Americans** were using mobile (cellular) telephones. That works out to more than one-fourth of the U.S. population.

■ **Motorola may have been the trailblazer in cellular phones but the global sales leader is clearly Nokia.** Their inexpensive cell phones now account for 70 percent of the mobile phone market and they continue to grow further.

Motorola and Ericsson both are losing market share to Nokia because they have failed to design and sell attractive, cheap phones. Nokia's phones include the Web-enabled 6210 and the more affordable 3310 chat phone, which was released during the end of the third quarter.

While Nokia has some fancy sophisticated wireless phones, eight out of 10 cell phones sold are inexpensive entry-level

versions that go to consumers who simply want to make a call from the mall ...or to ensure the wife doesn't get stranded with a flat tire.

Nokia's recently reported a third quarter 2000 sales increase of 50 percent ...and a 40% increase in profit. Make no mistake about it, cell phones are very big business! Nokia will sell more than 400 million mobile phones worldwide this year, 550 million in 2001.

By sharp contract, Motorola's and Ericsson management have slashed their forecasts for growth in the wireless handset market. Motorola is the world's No. 2 supplier of mobile phones, Ericsson (Sweden's largest company), is No. 3.

Jorma Ollila, Nokia Chairman and CEO predicts "One billion cell phone users will be using Nokia phones during 2002." Nokia is headquartered in Helsinki, Finland. <<http://www.nokia.com>>

■ **Will your GSM phone work when you're on the road?** Global System for Mobile communications (GSM) cell phone allows you to travel around the world and make/receive phone calls in some 144 countries that utilize the GSM system. It is especially popular in Europe.

One of every 25 people in the world owns a GSM phone. There are more than 6 million North American customers, 290 million worldwide customers. By the year 2003, one billion GSM customers worldwide are predicted.

GSM services are available to about two-thirds of the U.S. population. To find out if your GSM phone will be compatible in cities or regions along your route, click onto this Web site: <[www.gsm-pcs.org](http://www.gsm-pcs.org)>. For GSM info: <[www.gsmworld.com](http://www.gsmworld.com)>.

■ **HDTV made out of thousands of mirrors.** Hitachi is making a new type of High-Definition Television (HDTV) receiver that uses Texas Instruments' special chip that contains about a million tiny mirrors. Each mirror is computer-controlled and operates an individual pixel. The tiny matrix of mirrors projects its image into a lens system, which expands the image for use in the outside world. Hitachi plans to make this new type of HDTV receiver available by the end of this year.

■ **New life for old cellular phones.** Programs are under way in several U.S. cities to collect old cell phones and redistribute them for abused and battered women. The reason? The phones are first reprogrammed so that they can dial only 911. Most women in abusive relationships cannot afford standard cell phones,

so these allow them to get help at a moment's notice -- wherever they may be.

■ **Hang up and drive.** More U.S. counties are banning cellular telephone use while driving motor vehicles. Suffolk County in Long Island, NY, is one of the latest; their ordinance takes effect on January 1, 2001. After the warning period expires, violators will face a \$150 fine. Hands-free equipment is exempted. (One wonders if people will be ticketed if they're using their cell phones while driving to report crimes in progress. New York City officials recently announced that almost one-fourth of all 911 calls they receive come from cell phones.)

■ **As of this past summer, over 130 TV stations in America were broadcasting High-Definition Television (HDTV) signals.** This does not mean, however, that consumers are breaking the doors down at electronics stores to buy new HDTV receivers. The hottest item this Christmas remains the Sony PlayStation 2, which is far cheaper than any HDTV set.

### COMPUTER INFO

■ **Flat LCD computer screens are very popular in Japan.** The primary reason? It's not price; flat-panel liquid-crystal display screens still cost far more than conventional cathode-ray tube monitors. The reason is space. Japan is one of the most crowded countries in the world, and using office space as efficiently as possible is actively encouraged. Flat-panel displays take up far less room than ordinary monitors.

■ **Monitor "watches" for a user.** Sony's new Multiscan N50 computer monitor contains a sensor that watches for a human user before it. If it detects no one nearby after 20 seconds, it puts itself into "sleep" mode to save energy. When someone comes back, the monitor "snaps" back into action within one second

### INTERNET NEWS

■ **How many Internet domain names (web site addresses) would you guess there are?** The world's 30 millionth Net name recently passed 30 million. Over 18 million of these were dot-coms (".com"), with ".net" next with over three million and ".org" with two million. It has

taken the Internet close to a decade to reach 30 million domain names, but the next 30 million will come within 18 months.

The *Internet Corporation for Assigned Names and Numbers* (ICANN), the international body which oversees domain name management, is currently working on the introduction of possible new domain categories such as .pro for professionals. More than 150 new proposals for top-level domain (TLD) names on the Internet include .gay, .jazz, .sex, .sucks and .war.

ICANN said 47 applications had been received listing over 150 strings from organizations seeking to introduce new TLDs. The new strings applied for range from .ads, .agency, .aids, and .air -- to .women, .world, .writer, .zine and .zone. ICANN hopes to announce the successful applications on November 20.

■ **Having added more than 6 million new members in the past year, America Online, Inc. (AOL) now has more than 25 million subscribers.** AOL is in the process of rolling out its new next generation Version 6.0 service which offers more personalization of content, easier navigation, a new design and beefed up e-mail and e-shopping.

AOL 6.0 will also feature integration between devices and a new media player that will allow the download of streaming media and support all sorts of files. A new voice enablement feature allows America Online customers to access information on the Internet over the telephone by dialing a toll-free number and giving a series of voice commands. (This feature will cost \$4.95 a month beginning January 1, 2001 ...free until then.)

The merger of Dulles, Virginia-based AOL and media giant Time Warner is expected to close this fall. The combination of AOL and Time Warner -- a \$108 billion deal -- would connect cyberspace to Time Warner's cable television system, the second largest in the nation. AOL would also be able to offer these homes high-speed Internet access. Government regulators are currently reviewing the proposed sale of Time Warner to AOL.

MSN, the Microsoft Network with 3.5 million subscribers also has a new look. It now provides unlimited long-distance phone calls via the Internet. Both AOL and MSN cost \$21.95 a month. And both have upgraded their popular "instant messaging" feature.

■ **Advertising cars on line instead of**

**on TV.** Volvo announced that it will bypass TV as a means of advertising one of its latest models of cars, going exclusively to the Internet. Volvo claims the high cost of TV-based advertising caused them to refocus their target audience. The banner ads will appear on America On-Line's Web site. Volvo will still use TV and print ads later on.

■ **Find out more about specific engineering fields in one Internet site.** A detailed collection of questions, answers and tips for many applications is available to everyone at [www.eng-tips.com](http://www.eng-tips.com). It's a wealth of information on the following engineering fields: aeronautic, agricultural, biological, aerospace, automotive, chemical, civil/environmental, geotechnical, electrical, electronic, industrial/manufacturing, mechanical, petroleum, mining, structural, nuclear, materials and many others. If you're an expert in your field and want to help your colleagues, or are a student who wants to learn more about a specific field, here's the place to find out from the professionals.

■ **"Not fast enough."** Surveys show that if an opening Web page on an Internet Web site doesn't deliver its information in less than four seconds, most users won't bother waiting for it to finish loading and will simply click on to another site. Four seconds! It used to be eight seconds, but we're getting used to the idea of instant delivery of information. Web sites cluttered with digital images, sound files and video clips bog down the system and smart Web site designers write opening screens with tight, efficient lists of what's available on the entire site... the Table of Contents, if you will, is mostly text and loads almost instantly. People who want to see more can then point and click to other pages, which they're willing to wait for because they know what they're getting.

### WASHINGTON WHISPERS

■ **Special interests are still trying to kill the Low Power FM broadcast radio bill.** President Clinton has notified Congress that he intends to veto an appropriations bill that had a broad range of "damaging riders" added to the legislation.

Clinton urged Congress "...to drop the rider that would prevent the Federal Communications Commission from licensing new low-power FM radio stations to provide for a diversity of voices in commu-

nities around the country."

Radio broadcasters have widely opposed the creation of a new class of micro-radio broadcast stations. The low-power plan, adopted in January, would create about 1,000 low-power stations operating at 10 and 100 watts and covering between four miles and seven miles from the transmitter.

The FCC already has received 1,200 applications in the 20 states where licenses will be awarded first. These LPFM broadcast stations would serve the needs of churches, community groups, schools and local neighborhoods.

The *National Association of Broadcasters* has fought the administration's plan on the grounds that it would interfere with existing FM radio.

### AMATEUR RADIO

■ **Tiny satellites in orbit.** Hams have played with "microsats," or earth-orbiting satellites less than one foot on a side, for years. But earlier this year, two of the smallest satellites ever launched were put into orbit. Dubbed "picosatellites," they measured 4 inches by 3 inches by 1 inch. They were launched from an Air Force rocket from Vandenberg AFB in California, and built by Stanford University.

■ **Radio Society of Great Britain president Don Beattie, G3OZF,** will be serving a second term as RSGB President. The RSGB Council voted unanimously to extend Don Beattie's term for another year. G3OZF is only the second President since the early 1950s to serve for two consecutive years. The last two-term President was Ian Kyle, G18AYZ, who was President in 1997 and 1998. Don Beattie is a staunch supporter of getting rid of the Morse code exam requirement as a prerequisite for HF access and he has traveled the world preaching that position.

■ **The late Senator Barry Goldwater's famous K7UGA call sign** has been re-issued to the Central Arizona DX Association on October 24. The call sign became available after the mandatory 2-year waiting period for inactive call signs. Goldwater died May 29, 1998.

■ **Enforcement news** - The FCC has written **Ivan Valentin, WP4DRW** (Manati, PR) and questioned why he did not notify the W4VEC that their VE services were discontinued by the W5YI-VEC.

The FCC contacted **Air California**

**Adventures, Inc.,** (La Jolla, CA) concerning unlicensed radio operation on amateur frequencies. The firm responded by saying that it was licensed through the U.S. Hangliding Association to operate on 151.625, 151.925 and 151.955 MHz. The FCC has learned that this license expired on May 16, 2000 and has not been renewed.

**Michael E. Guernsey ND8V** (Kalamazoo, MI) has been notified that his Amateur Radio license is in jeopardy of being revoked by the FCC. He is charged with deliberately interfering with ongoing communications, particularly communications of Hispanic operators and truckers when Guernsey perceives them "to have an improperly 'wide' SSB signal or a signal which in [his] opinion exhibit[s] excessive microphone gain." He is also accused of using foul language and deliberately interfering with the Maritime Mobile Net.

**Lazaro P. Duarte KF4WSM** (Miami, FL) has had his Technician Plus operator license canceled for failure to appear for re-examination prior to October 15<sup>th</sup>. **Joseph Mattern WW4WJD** (Orlando, FL) appeared for re-examination, but failed both the written and code portions of the Tech Plus examination. His license also has been canceled.

**Michael S. Takahashi NH6QZ** has been ordered by the FCC to respond to the allegation that he has been interfering with the WH6CZB repeater operating on 146.28/ 146.88 MHz.

**Alfred Moody KC4UPE** (Trumann, AR) was warned that he, "or someone using your call sign" have operated on the 75-meter Amateur band- a band "not authorized to you under your Technician license." Continued operation could lead to license revocation.

**Mickey Stephen (Gila Bend, AZ)** was warned that the FCC has information that he may have operated on the 2-meter ham band in the Garden City, KS area without a license.

**Rayes Lugo KB9YDM** (Chicago, IL) had his General Class license set aside. He has been asked to respond to allegations that he may have transmitted on 26.715 MHz - a frequency not authorized to the Amateur Service. The FCC also wants information regarding possible VE misconduct.

The FCC has asked **Robert Adams N9DMK** (S. Charleston, WV) to provide additional information on the WX8NWS and W8NLT club call signs he holds ...including the document of origination and directors of the clubs.

## COMMERCE DEPT REVEALS 3G SPECTRUM PLANS

In our last issue we told about how Europe and Asia was ahead of the United States in deploying the so-called 3G (Third Generation) wireless Internet service. Many European countries have already allocated substantial spectrum resources to the wireless Internet. They had an advantage since most did not have to relocate existing users of the spectrum. All radio spectrum in the U.S. is currently allocated to certain services.

Over the past decade, there has been enormous worldwide growth in the use of mobile (cellular) radios. First Generation (824-849 MHz analog) and Second Generation (PCS) services are operating now. PCS stands for Personal Communications Service ...an all digital cellular technology operating at 1850 to 1990 MHz.

3G is an ITU specification for the third generation of digital mobile and satellite-based communications technology. It promises increased bandwidth; up to 384 Kbps for stationary devices or moving at pedestrian speed, 128 Kbps in a car, and 2 Mbps in fixed applications.

The increased bandwidth permits wireless mobile multimedia via the Internet. Such 3G services as mobile (wireless) video phone calls, faxes, personal locating, advertisements, news multicasts, gaming, tour guides, traffic maps and directions, remote airline/movie ticketing, bank account money transfer, and travel information (where is the bus?) ...and more are all in the works.

While Europe and Japan lag the United States in the wireline Internet sector, they are far ahead of the U.S. in the deployment of 3G wireless. A study out this year by Merrill Lynch estimates says worldwide wireless Internet users will surpass wireline Internet users before 2004. And within the next decade, two-thirds of wireless industry revenues will come from data and non-voice communications. From a U.S. economic standpoint, the deployment of third generation wireless is ultra important.

The EU (European Union) is committed to the introduction of a third generation mobile and wireless communications system (the Universal Mobile Telecommunications System or UMTS) by no later than January 1, 2002. The U.S. has not even determined where 3G spectrum will be located ...much less auctioned the licenses.

### United States Embarks on Urgent 3G Plan

In order to remain competitive, on October 13<sup>th</sup> President Clinton ordered the Dept. of Commerce, the FCC and the Defense Department to develop a plan by October 20, 2000 to find and reallocate (both government and non-government) radio spectrum that could be used in the licensing of third generation wireless systems. The executive order won't affect the FCC's auction of spectrum in the 700 MHz bands scheduled for March 2001. Those bands are used by UHF-TV broadcasters and are sought by wireless carriers for 3G services.

WRC-2000 decided that nations should reserve up to 160 MHz for 3G wireless by 2010. It identified the 806-960, 1710-1885, and 2500-2690 MHz bands for 3G terrestrial use. The 1525- 1559, 1610-1660.5, 2483.5-2500, 2500-2520 and 2670-2690 MHz bands were targeted for the satellite portion of 3G systems.

In the United States, the 1755 MHz to 1850 MHz range is extensively used by U.S. military and federal operations, and the 2500 MHz to 2690 MHz range is allocated to wireless cable (*Multipoint Distribution Service*, MDS) channels and the *Instructional Television Fixed Services* (ITFS.) Teachers use ITFS to transmit educational content to students in remote locations.

Although all ham bands above 225 MHz are shared with other Government and non-Government users, no Amateur bands appear to be at risk for future reallocation to 3G spectrum.

### Commerce discloses 3G spectrum strategy

As required by the October 13<sup>th</sup> presidential order, the Commerce Department has now unveiled its plan of attack for hunting down radio spectrum to be auctioned off to potential 3G providers. See NTIA website at <[http://www.ntia.doc.gov/ntiahome/threeg/3g\\_plan14.htm](http://www.ntia.doc.gov/ntiahome/threeg/3g_plan14.htm)> One of the main sources is a huge block of spectrum currently reserved for use by the Defense Department. The Dept. of Defense has agreed to cooperate and find ways to reallocate some of the spectrum currently under its control.

The plan calls for an Interim Report to be issued by the FCC and NTIA (National Telecommunications and Information Administration) on November 15, 2000 describing Third Generation wireless service and the candidate bands.

The FCC plans to release a *Notice of Proposed Rulemaking* (NPRM) on 3G wireless applications on December 31 with a Final Report identifying the potential 3G bands on March 1, 2001. Industry will be asked to comment on these reports.

A *Report and Order* (R&O) is planned to be completed by July 2001 allocating the final 3G selected spectrum. The FCC allocates non-government spectrum. Because certain bands under consideration are allocated to the Federal Government, the Commission will closely coordinate both the NPRM and R&O with NTIA which manages government frequencies.

The spectrum allocation proceeding will be followed by another rule making proceeding on December 15, 2001 to establish service rules. The service rule proceeding will be completed in time to complete auctions of 3G spectrum by June 15, 2002.

The assignment of licenses for 3G spectrum systems will be completed by September 30, 2002. Even with this "hurry up" plan, the United States will still be more than a year behind Europe and Asia.



## PROS AND CONS OF HIGH SPEED INTERNET ACCESS

On October 12<sup>th</sup>, the U.S. General Accounting Office (GAO) released an exhaustive (73-page) report entitled "*Consumer Choice in Internet Service Providers.*" The study was requested by Senator Mike DeWine (R-OH).

To respond to the request from Congress, the GAO interviewed a variety of experts, including representatives of telephone, cable and wireless companies, Internet service, portal and content providers, ...as well as communications equipment and software manufacturers, and industry trade associations.

They also contacted various financial investment firms, consulting firms and educators specializing in communications, officials of 10 municipal franchising authorities, the FCC, the *National Telecommunications and Information Administration* (NTIA), and the *Canadian Radio-Television and Telecommunications Commission*. A market research firm was contracted to survey a randomly selected group of Internet users.

The result was an up-to-the-minute status report of Internet access in America. The report states that the Internet will become a primary medium for communications, commerce, education, and entertainment in the 21st century. The purpose of the study was to assist Congress in making laws concerning Internet access. Follows is a capsule version of Report No. GAO-01-93:

As the Internet becomes a growing force in daily life, the degree of consumer choice among Internet providers has emerged as a key public policy issue. For an American consumer today, gaining access to the Internet usually involves obtaining service from two types of companies.

The first is a transport provider -- a telephone, cable television, or wireless communications company -- that supplies a physical connection over which data are transmitted from the consumer's home computer. The second type of company is an Internet service provider (ISP) that provides a pathway or "on-ramp" from a transport provider's facilities to the Internet.

The majority of Americans (88 percent) currently access the Internet over a relatively slow "narrowband" dial up (conventional) telephone line. This is the most popular transport form because 94 percent of U.S. households had basic dialtone service in 1999.

About 12 percent of users have high speed "broadband" service. The adoption of high-speed transport technologies by Internet users has grown rapidly over the past few years. Two years ago, only about 2 percent subscribed to a broadband service. Cable modem access now accounts for 9 percent of Internet users ...and 3 percent have DSL telephone connections. Various emerging wireless connections account for less than one half of one percent.

## Regulatory Issues

The laws and regulations devised to govern these different networks were generally tailored to the specific services each supported. As a result, different types of Internet service providers are held to different rules. The public telephone networks are governed by a complex web of regulations requiring them to provide nondiscriminatory access to their networks at just and reasonable rates for telephone service and Internet access.

Cable companies are not covered by such obligations when providing cable services, but considerable controversy exists over whether physical transport to the Internet over the cable network should be defined as a cable service or whether it should fall under a different regulatory framework, such as that applied to the telephone network.

As a consequence of both technology and regulation, consumers who use the telephone network to access the Internet have a choice of both transport and ISPs. But consumers who use the higher speed cable or wireless networks generally find themselves automatically connected to an ISP affiliated with -- or chosen by -- the transport provider.

Consumers generally have broad access to Internet portals, applications, and content, either from their ISP or directly from the Internet itself, regardless of the transport provider or ISP they have chosen. The GAO found, however, that ISPs influence consumers' selection of content because they can quickly and easily access the content that ISPs prominently display on their home pages.

As anticipated for some time, "convergence" is occurring in the telecommunications industry. Varied communications providers are redesigning or upgrading their networks to provide Internet access and ultimately many traditional communications services will flow over the Internet. However, even with passage of the *Telecommunications Act of 1996*, communications law retains a "stove-piped" -- or compartmentalized -- structure under which each traditional communications service is governed by particular laws.

Significant debate exists over what laws and regulations apply to certain providers of Internet transport and whether, when providing this service, all providers should be held to the same rules despite fundamental differences in network technologies.

On Sept. 28, 2000, FCC released a *Notice of Inquiry* to examine the issues surrounding the regulatory treatment of cable modem services. In the notice, FCC seeks comment on the appropriate service classification of cable modem service, on whether open access is a desirable policy goal, and if so, the most appropriate means of achieving that goal. FCC also asks whether uniform requirements should be adopted to govern all providers of broadband Internet transport, such as wireless providers.

### Digital Subscriber Line

To respond to users' demands for higher speed and an Internet connection that is "always on" -- meaning there is no need to dial the ISP to establish an Internet connection -- telephone companies adapted an existing technology known as DSL. *Digital Subscriber Line* offers broadband services over existing twisted-pair telephone lines. DSL terminates in a phone jack on your wall.

With DSL, data signals are transmitted over the high-frequency portion of the copper telephone line -- a portion of the line that is not needed for transmitting voice signals. DSL technology thus allows telephone companies to exploit this otherwise dormant capacity and provide both voice and data signals simultaneously over the same conventional telephone line.

Because DSL requires that telephone lines be in good condition, telephone companies must evaluate each line to determine if imperfections could degrade DSL service and, if so, make the necessary line upgrades. In addition, filtering equipment must be installed at both ends of the DSL line to support broadband transmissions.

At the customer's premises, a splitter must be installed to separate the voice and data signals, and a DSL modem must also be installed or integrated within the user's personal computer.

At the telephone company, a splitter and digital subscriber line access multiplexer (DSLAM) must be installed to identify voice and data signals, route voice traffic to the public telephone network, and transmit data signals to the data network from which the customer's ISP takes traffic.

### Cable Internet Access

The design of the cable network differs from that of the telephone network largely because of its original purpose -- the one-way transport of video signals. As such, cable networks were designed in a "tree and branch" configuration with a single source transmitting video programming signals to a dispersion of customers. On a cable system, video signals transmitted by satellites and broadcast television towers are received at a cable company facility known as a headend.

These video signals are then packaged together and sent simultaneously from the headend over coaxial cables to the subscribers' premises. Unlike the telephone network, the cable network does not provide a dedicated line from the headend to each customer's premises. Rather, the tree and branch structure provides a shared medium among subscribers in which a given amount of capacity is available to a group of subscribers.

In the context of Internet use, if certain subscribers use very large amounts of bandwidth during an Internet session, less bandwidth will be available to other subscribers at that time. This shared usage requires the cable operator to expend resources managing the capacity

of its network.

Many cable companies are upgrading their networks in a variety of ways to offer subscribers a greater number of video channels as well as to provide two-way services such as broadband Internet service. To provide Internet service, cable companies must dedicate transmission capacity that would have been used for one or more video channels. At the customer's premises, a cable modem is attached to the cable wire and then to the customer's computer.

Cable companies have also invested in certain ISPs -- such as Excite@Home and Road Runner -- and have merged the physical transport with the ISP functions. Thus, cable modem subscribers purchase a "bundled" transport and ISP service. This contrasts with the telephone network, where users generally purchase ISP service separately from their transport service.

### Strengths and weaknesses

Telephone and cable Internet access have various strengths and weaknesses because of the differences in their technological designs.

For example, the strengths of narrowband telephone service for Internet transport include the wide availability of the public telephone network and the low incremental cost to consumers for the service. Consumers using dial-up telephone service can establish Internet service at no additional cost if they do not purchase a second telephone line and if they select a free ISP. (Ten percent of dial-up users fall in this category.)

However, narrowband telephone service provides limited capacity, so transport speeds are slow, and users must "dial up" their ISP each time they want to initiate an Internet session. By contrast, both DSL and cable modem services offer higher speeds and provide an "always on" Internet connection (no dial-up is needed).

However, DSL can at present only serve users living within about 3 miles of a telephone company's central office facility, and cable modem service does not provide a dedicated line, which results in degraded speeds when many customers are simultaneously using the shared capacity. There are also security concerns about using a shared network.

Cable modems are typically faster for downloads than DSL lines, especially when the cable infrastructure is new or well maintained. A disadvantage of cable over DSL is the upstream (return path). Cable companies use a very narrow band for return signaling -- below the spectrum allocated for TV channels -- which is prone to RF interference within the network and limited in capacity.

Upstream transmissions may therefore compete with others in the area, get delayed due to noise fighting techniques, and cable *Terms Of Service* typically have limitations on upstream service.