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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Four New FCC Commissioners are Sworn into Office!

The FCC is directed by five Commissioners appointed by the President and confirmed by the Senate for 5-year terms. One of the Commissioners is selected by the President to serve as Chairman. Since the radio spectrum is a limiting resource used by many radio services simultaneously, it must be regulated. The Federal Communications Commission is an independent federal agency responsible directly to Congress.

For the first time in history, the FCC changed 80% of its leadership in one fell swoop! During early November, the agency swore in four new commissioners which included two African Americans and a Hispanic woman from Puerto Rico. Only Commissioner Susan Ness (whose term runs until June 30, 1999) continues as the lone holdover from the previous commission. Early on, Ness had expressed an interest in becoming the FCC chairman.

But Pres. Clinton named FCC General Counsel William E. Kennard as the new FCC Chairman. The others are economist Harold W. Furchtgott-Roth, Gloria Tristani, a state regulator and anti-trust lawyer, Michael K. Powell, son of retired Army chief-of-staff, General Colin Powell.

Senator Jesse Helms (R-North Carolina), tried to block the confirmation on the Senate floor. Helms opposed Kennard because of dissatisfaction with the FCC's treatment of a North Carolina businessman, Zebulon Lee, who has tried unsuccessfully to obtain licenses for several local radio stations. Senators Conrad Burns (R-Montana) and Ted Stevens (R-Alaska) also wanted the confirmations held up until the FCC changed their rules on subsidizing telecommunications services to schools ...and low income and rural areas. But in the end, the Senate vote to confirm the new Commissioners was unanimous.

Bill Kennard

...has been General Counsel of the FCC since December 8, 1993. Previously he was a partner and member of the board of directors of the Washington, D.C. law firm of Verner, Liipfert, Bernhartd, McPherson and Hand. He specialized in communications law, with an emphasis on regulatory and transactional matters for communications companies, including broadcasters, cable television operators, programmers and cellular telephone companies. He has 15 years of experience in communications law

Incoming Chairman Bill Kennard said he was honored that the administration had shown confidence in him and that he would "...continue the FCC's efforts to replace regulation with competition, and to hasten the delivery of many new telecommunications services to the public."

The chairman's position is very important since it is the FCC chairman who sets the agenda. Kennard thus becomes the telecommunications leader for the U.S. It is interesting to note that the two top federal telecomunications regulatory positions in the United States are now held by African-Americans. Along with Mr. Kennard, Clarence (Larry) Irving Jr. heads up

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the National Telecommunications and Information Administration. The NTIA is the White House advisor on telecommunications matters.

Mr. Kennard graduated Phi Beta Kappa from Stanford University in 1978 and received a degree from Yale Law School in 1981.

Harold Furchtgott-Roth

...was the Chief Economist for the House Committee on Commerce. The committee has legislative jurisdiction over laws governing many sectors of the economy including health, telecommunications and finance. Since joining the committee staff, Mr. Furchtgott-Roth has worked on, among other issues, the Balanced Budget Act of 1995, the Telecommunications Act of 1996, and regulation generally. He is a conservative economist who fundamentally believes that regulators should get out of the way and let market forces control the actions of companies.

Mr. Furchtgott-Roth received his bachelor's degree in economics from the Massachusetts Institute of Technology in 1978 and a doctorate in economics from Stanford University in 1986. In between he held numerous internships with government agencies, including the Congressional Budget Office and the Office of Management and Budget.

Michael Powell

...was the Chief of Staff, Antitrust Division, Department of Justice. Mr. Powell advised the Assistant Attorney General on substantive antitrust matters, including policy development, criminal and civil investigations, and mergers. In addition, he counseled the AAG on legislative issues and served as the senior managerial officer in the Division; overseeing the Executive Office, the Division's budget, training, personnel, automation efforts and a wide variety of other administrative activities.

Commissioner Powell, a lawyer - graduated from Georgetown University. Powell, like his father, has a Army military background. After being hurt in a training accident, and spending a year in the hospital, he was retired from active service. He is married to Jane Knott Powell and live with their two sons Jeffrey, 8 and Bryan, 3 in Fairfax Station, Virginia. Powell, a Republican, takes the seat occupied by Rachelle B. Chong. His term ends on June 30, 2002.

Gloria Tristani

...was the first woman elected to the New Mexico State Corporation Commission (SCC) and has held office since January 1, 1995. She served as Commission Chairman in 1996. Among other responsibilities, the SCC assures that telephone companies comply with the law. Tristani, age 43 and a lifelong Democrat, was an attorney in private practice in Albuquerque, NM before holding office. Commissioner Tristani received her law degree from the University of New Mexico School of Law.

Last year, Tristani was named one of the Nation's 100 most influential Hispanics by Hispanic Business magazine. She is married to the Honorable Gerard W. Thomson, a district judge and has two children, Vanesa and Jorge. Although a resident of New Mexico since 1982, she is the first FCC Commissioner to hail from San Juan, Puerto Rico. Her term ends on July 1, 2003.

Outgoing FCC Chairman, Reed E. Hundt expressed his "...heartiest congratulations to the four new FCC Commissioners confirmed by the United States Senate, Harold Furchgott-Roth, Michael Powell, Gloria Tristani, and of course my dear friend, respected colleague, and terrific general counsel, the new chairman of the FCC, William Kennard."

FCC BEGINS ACTIVATING UNIVERSAL LICENSING

The primary mission of the FCC's Wireless Telecommunications Bureau is getting radio licenses issued quickly. This is not a small feat when you consider that the FCC processes hundreds of thousands of license applications annually in the various services.

At present, the FCC has 11 different systems that process applications and issues licenses. The Commission has rethought the entire process and the result is a new "universal" licensing system which combines the separate licensing systems into one.

The new "Universal Licensing System" is web browser-based and contains everything you need for electronic filing. You simply enter the required information into a registration screen. You can also make changes to the licensing database once entered.

The Wireless Telecommunications Bureau (WTB) is now in the process of getting the Universal Licensing System going in the various wireless services. The Amateur Service will perhaps be the last implemented since it was the first to utilize electronic filing of applications and a fast licensing service is already available to amateurs. But it will definitely be integrated into the master licensing plan eventually. The actual transition period for the Amateur Service to fully participate in ULS could be a year away.

The first step in implementing this system is for existing wireless licensees - including amateur radio operators - to register their Taxpayer Identification Number (TIN) and associated call signs. Since ham operators are required to be individuals (and not companies), the TIN is your social security number. Businesses in other services may use their Employer Identification Number (EIN.)

The FCC sent out the following Public Notice on November. 4, 1997 advising the public to begin registering their social security numbers and call signs with the FCC.

PUBLIC NOTICE **Released: November 4,1997**

Federal Communications Commission
1919 M St., N.W.
Washington, D.C. 20554

WIRELESS TELECOMMUNICATIONS BUREAU UNIVERSAL LICENSING SYSTEM REGISTRATION NOW AVAILABLE

The Wireless Telecommunications Bureau (WTB) is in the process of implementing a Universal Licensing System (ULS) for all wireless services. For further information, go to the ULS home page at http://www.fcc.gov/wtb/uls.

The first step in implementing this system is for existing wireless licensees to register their Taxpayer Identification Number and associated call signs. In order to be in compliance with the Debt Collection Improvement Act of 1996, the FCC must collect TIN information to correlate its licensees with any outstanding Federal debt that they might have incurred in other dealings with the Federal Government. Taxpayer Identification Numbers will not be available to the public. However, this information may be released to the U.S. Treasury Department for Debt Collection purposes.

The WTB has received approval from the Office of Management and Budget (OMB Control Number 3060-0795) to require existing licensees to register their Taxpayer Identification Numbers in order to begin populating the Universal Licensing System.

Using the Taxpayer Identification Number and list of associated call signs, the ULS will assign a unique sequential number to each licensee. After registration and implementation, the ULS will be able to process administrative changes to licensee records in a more streamlined and simplified manner.

To submit this information electronically, go to http://www.fcc.gov/wtb/uls and choose "ULS Registration". To file manually, obtain a TIN Registration form, FCC Form 606, from the FCC's Fax-on-demand system by calling (202) 418-0177 from the handset of a fax machine or by calling the FCC's Forms Distribution Center at (800) 418-3676.

For technical assistance, please contact the FCC Technical Support Group at (202) 414-1250.

-FCC-

You can file the registration form electronically by accessing a form located on the FCC's Internet Website at <http://www.fcc.gov/wtb/uls>. Once you are there, you click on the **ULS Registration Form** link.

Any amateur who has a call sign may register their social security number, personal information and call sign with the FCC now. Here is how to do it!

1. Using a web browser, go to the following URL: <http://www.fcc.gov/wtb/uls> and click on "Register"
2. On the next screen, check to box that says "Register Now" and click on "Continue."
3. On the next screen, check the box that indicates you are registering as "An individual."
4. The registration consists of three functions. The first requires you to fill out the **"Licensee Information"**
5. Enter your 9-digit TIN (social security number with no spaces or dashes. Then your name, address, city, state, zip code, and daytime telephone number. Fax number and E-mail address are optional. (It is important that you enter the telephone/fax numbers without spaces, dashes or parenthesis.) You press "tab" to move from one field to another.
6. You do NOT fill in the **"Contact Information"** section since the registering person and the contact person is the same. This section is used primarily when commercial call signs and businesses are involved.
7. Enter a password which must be five characters long. (The letters are case sensitive so be sure to remember whether you used caps and/or lower case letters.) You must re-enter the password again to verify that you entered it correctly the first time.
8. Then enter a "Personal Identifier" word - such as your mother's maiden name. Click on "Submit" to continue.
9. The **"Call Sign Information"** allows you to register your call sign with the FCC. You merely key in your call sign in blank number 1. You may also enter additional call signs if you are a trustee of one or more club stations. Click on submit to continue. (Once registered, you can add, modify or delete your call sign information as necessary.)
10. The next screen will contain your TIN (Social Security Number), Password, Personal Identifier word - and the date and time that you registered. Print out this page using the print command from your Web browser and keep it for further reference. Click on "Go to Home" ...and you are done!
11. If you need to update your record, click on "Update Registration Information" or "Update Call Sign Information" after to click on "Register." You will be asked for your TIN and password. Click on "Continue."
12. A screen will appear that will allow you to update your record. You must delete existing data before entering new data. You save the data by clicking on "Submit."
13. Contact the FCC Technical Support Group at 1-202-414-1250 if you have any questions regarding the TIN Registration process.(Page #2 Column 1)

Again, it must be emphasized that what you are doing is merely providing the FCC with your social security number and other needed database information.

It will be some time before the FCC will be changing the present Amateur Service electronic filing system now used by the VECs to the new Universal Licensing System. But it will happen eventually.

● **ATTENTION FORMER "SHIPMATES," - U.S. NAVY HIGH POWER TRANSMITTING STATION - RADIO NSS, ANNAPOLIS, MD** - Check out the NSS Web page athttp://members.aol.com/k6dc/nss.html>

If you were stationed there, Navy, Marine, or civilian, before or after World War 2 we would like to hear from you. If you care to post your remembrances and/or a photo for all to see, send to: Merle B. Parten - K6DC, 930 Alston Road, Santa Barbara, CA 93108-2312 - or e-mail: K6DC@AOL.COM

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MICRO FM BROADCASTERS GANG UP ON FCC

The illegal FM broadcasting movement is gaining momentum! There are hundreds - maybe even thousands - of pirate micro-broadcasting stations operating around the country. One of the reasons that they are growing so fast is that they sell low power FM radio transmitter kits to each other.

Section 301 of the Communications Act gives the FCC the right "...to maintain the control of the U.S. over all channels of radio transmission... Up until the 1980's, most pirate radio stations used the short-wave (HF) band. Short wave pirates were considered dangerous because they could interfere with international broadcasting, maritime and aeronautical navigation systems, military and government communications.

The current pirate radio phase is the unlicensed FM broadcaster. It began in the early 1990's when Stephen Dunifer, a long time micro radio activist from the San Francisco Bay area, began broadcasting in the evenings out of doors with a home-made 10-watt transmitter from his 1964 Volvo station wagon.

His Free Radio Berkeley programming consisted of music and political commentary ...especially his opposition to the Gulf War. He later published a newsletter, "Reclaiming the Airwaves" - began selling $100 transmitter kits and holding micro broadcasting workshops The FCC slapped him with a $20,000 fine.

Micro broadcasters feel that their communities are under-served by the current broadcast licensing system. They also believe that the speaker and the listener have First Amendment rights which are not conferred by FCC licenses. Some lawyers agree.

Micro broadcasters operate on the FM radio band with power levels less than 100 watts ...below the FCC minimum of 100 watts. *(See Part 73, Sec. 211).* The FCC usually deals with unlicensed broadcast stations by obtaining a permanent injunction against the station. Once the injunction is in place, any further violation puts the broadcaster in contempt of court and the equipment is seized.

The common goal of micro broadcasters is to flood the United States with low power micro radio stations. This would overload the FCC and force them to make a decision on the micro broadcaster's right to operate. The situation is similar to the Citizen's Band when the FCC tried to license the service and then gave up when so many CB radio's were sold and were operated without licenses.

Dunifer is represented by the *Committee for Democratic Communication* ...a part of the National Lawyers Guild in San Francisco. The CDC has strong ties to the ACLU. Now, four years later, Dunifer is still on the air operating openly with 40 watts on 104.1 MHz since a federal court refused to issue an injunction!

On November 12, 1997, Federal Judge Claudia Wilkinson again refused the FCC's request to shut down Radio Free Berkeley. She ordered the FCC to explain why it feels there is no validity to Dunifer's claim that banning low power stations such is unconstitutional.

Dunifer's attorney now believes the latest ruling will lead to a courtroom showdown with the FCC explaining why they give the airwaves only to the super rich. The end result could be that the FCC will have to change its policy and license micro broadcasters who can go on the FM broadcast airwaves for just a few hundred dollars.

The Tampa Party Pirate

Another micro broadcaster who is operating openly is Leslie "Doug" Brewer who operates the Tampa Party Pirate station from his Florida garage. Brewer also once tried to get an FM station license but was turned down. So he went on the air anyway. Now he thumbs his nose at the FCC and offers promotional T-shirts that boast "License? We don't need no stinkin' license."

The fact is that he does have a license - a General Class ham radio license; station call KC4HAZ. But it certainly doesn't permit broadcasting to the public on the FM dial. Doug also operates L.D. Brewers 2-Way Radio shop in Tampa Florida which specializes in distributing low power micro broadcast and used ham radio equipment.

A nearby legally-licensed FM rock station WHPT complained to the Federal Communications Commission more than a year ago that Brewer was interfering with their station operating at 102.5 FM. The government answered by issuing a warning letter to Brewer but it was ignored - as was a subsequent $1,000 fine.

Doug told us, "I believe the airwaves belong to the people, not the corporations." He said his station "...is just another effort to make the world better for all the people, not just the rich."

Brewer's latest tactic is to buy time by applying for a legitimate license and requesting "special temporary authority" to operate while the application is being considered. This legal maneuver has somehow legally prevented the government from seizing his equipment. The FCC did, however, deny both requests.

The Tampa Party Pirate station saga even made the front page of a recent *Wall Street Journal!* The station has a rock and roll format with regular hosts and survives on advertising revenue obtained from small businesses - such as local music stores and strip clubs.

Their audience is primarily college students and bikers. They also have a rather elaborate Internet website complete with quality music at: <http://www.ldbrewer.-com/pirate.html>. In fact, I am listening to it as I write this issue. Broadcasting on the Internet, by the way, is totally legal and does not require a license.

The FCC believes it is only a matter of time before they shut the station down. Brewer thinks differently. He said he would, "...give up my transmitter when they pry my cold, dead fingers from around it." We shall see.

CUTTING EDGE TECHNOLOGY

■ **There is a new use for cell phones in Finland ...paying for vending machine goods.** Telecom Finland has developed a digital interface device that can access Coca-Cola machines and juke boxes by dialing an access code. The device automatically debits your phone bill once the goods are delivered. It is only a matter of time before gasoline pumps will be able to be activated by your car phone.

■ **TheTrip.com, a new advertising-supported Web site catering to air fare bargain hunters, launches on Dec. 9th.** What makes it different is that it uses electronic intelligent agent technology to search through a multitude of top travel sites to retrieve the lowest fare. To use "IntelliTrip," users must download a plug-in. Once you find the fare, click on the link and you go to that travel site. The search of multiple sites takes less than 2 minutes.

EMERGING COMMUNICATIONS

■ **MCI Communications's new 10-321 "dial around" telephone service is apparently a smashing success!** Now national in scope, the novel service was introduced in January of this year. It is aimed at the consumer that spends very little on long distance charges.

MCI guarantees a saving over AT&T for short calls and a 50% savings on calls longer than 20 minutes. The best feature of the 10-321 service is that you do not need to switch your long distance service to get the cheaper rate. You just dial the five numbers before the long distance number you are calling.

And it is a good deal for MCI, too! It costs a phone company about $40 to switch a customer form one carrier to another. If the customer has small long distance charges, it takes a long time for the new carrier to recoup the switch over cost. The 10-321 service is managed through MCI's wholly owned subsidiary, Telecom USA. (MCI is never mentioned in the 10-321 service TV advertising.)

COMPUTER INFO

■ The PC and the TV begin to merge! Microsoft's upcoming **Windows 98 operating system will contain software which will enable PCs with TV tuners to receive web data broadcasts** over the airwaves. WaveTop, Inc. (headquartered in Phoenix, AZ), is currently beta testing a new wireless home PC service. A full roll-out is expected early next year.

WaveTop will be a free service, requiring customers to have either a broadcast-ready PC (with a built-in TV-tuner) or an add-on TV-tuner card with a TV antenna. Without using a phone line, customers will be able to receive broadcast Internet data at rates of 56.6 Kbps. Toshiba, Gateway 2000 and Compaq already offer PCs that have TV tuners built in. And more are on the way.

WaveTop will charge fees to content providers and will take a share of the advertising revenue from the broadcasts' accompanying commercials.

WaveTop has already licensed vacant (VBI) spectrum from the Public Broadcasting System and will embed their signals in PBS's 264 member stations which reach more than 99% of television households in the U.S.

More than 20 companies have agreed to provide multimedia Internet content to WaveTop - including CBS Sports, Time Magazine, the Wall Street Journal, the Weather Channel, Quote.com (for stock quotes) ...and more.

The WaveTop content will be organized into eight channels. ZD Net and Time, Inc. each will provide content for their own channels. The other six channels are NewsTop, StockTop, KidsTop, TechTop, FamilyTop and FunTop. Check out their Website at: <http://www.wavetop.net>

The Yankee Group - a leading technology forecasting organization -- projects that broadcast PC technology will reside in more than 18 million home computers by the year 2000.

■ **Just what is the Vertical Blanking Interval and "VBI Data Broadcasting?"** In a nutshell, the Vertical Blanking Interval is the electronic space in-between the visible video picture frames. A standard North American television signal consists of 525 horizontal lines divided into two fields - each with 262.5 lines.

The first 21 lines of each field comprise the Vertical Blanking Interval (VBI) ...the black stripe seen when a TV picture loses vertical hold and rolls. The VBI is black because it is empty; it's part of the video signal - but carries no information. The television receiver needs lines 1 to 9 of the VBI for timing set-up, but lines 10 to 21 are not allocated.

Because these lines are not used, they are available for data transmission. For example, line 21 of the VBI has been used for many years to deliver closed captioning. This information is available to the hearing impaired (via a decoder unit) everywhere the television signal can be received.

Because VBI data is actually encoded as video, it becomes an integral part of the television signal. VBI data broadcasting uses lines 10 to 20 of the VBI to transport virtually any type of data along with the television signal.

Look for many companies to begin using the VBI to deliver Internet data to consumers - especially now that Microsoft intends to support it by bundling the needed software with Windows 98.

INTERNET NEWS

■ **Web sex-site visitors who had their computer modems hijacked will get nearly $3 million in refunds.** Through a very complex scheme, thousands of Canadian and U.S. Web surfers ran up huge international phone bills - some totaling several thousand dollars!.

They had been told online that they could download erotic pictures from four different sites for later viewing through a special "david7.exe" program available free on the sex-site.

In reality, what the "david7.exe" did was to secretly drop their ISP (Internet Service Provider) and silently call a number in Moldova, an eastern European country in the former Soviet Union. The call would then be routed to a web server in Dallas, Texas where the porno-pix resided. To make the scam legal, at least one sex site contained a fine-print disclaimer warning about potential long distance charges to Moldova.

The surprise came when huge long distance charges began appearing on residential phone bills. The scam promoters made their money though a kick-back arrangement with various offshore telecommunication carriers.

In a Federal Trade Commission settlement, the promoters must reimburse U.S. long distance companies for the phone bill credits they will issue to the victims.

The lesson to be learned. Don't download executable computer programs from the Internet unless you know the firm is ethical. The sleazier the site, the greater the chance you have of getting ripped off.

■ **It looks like that the Internet Domain Name overhaul will take place in early 1998.** It was supposed to be in place by now but the plan to add seven new domains (.firm, .store, .web, .arts, .rec, .info and .nom) has yet to receive political and technical approval.

Critics fear that the new top-level domain name will create confusion on the Web and cause firms to have to re-purchase their corporate names in the new domains from cyber-speculators at inflated prices. For example, "Ford.firm" could well be bought back by Ford Motor to end the confusion that might exist if that name was also used by another company.

Internet officials are working on a system that would automatically register "globally registered trademarks" across the seven new names.

■ **The late October stock market plunge reeked havoc on the Internet!** During the 1987 crash, people turned to television to get the news, in 1997 to the Internet. Web traffic doubled and the net slowed to a crawl as millions of investors tried to visit their favorite financial site. Many otherwise dependable sites were not able to get quotes to - or accept orders from - their customers. In some cases, it was two days before things returned to normal.

WASHINGTON WHISPERS

■ Not only is the **Dept. of Justice taking a hard look at Microsoft's marketing practices, but so is the state of Texas.** Both are concerned about the firm's reported stranglehold on PC hardware firms.

At the center of the controversy is Microsoft's insistence that if hardware manufacturers want to bundle their *Windows 95* operating system with their machines, they must include Microsoft's new Internet *Explorer 4.0* browser as well.

With more than 80% of the market, *"Windows"* has become the world-wide PC operating system standard. Not so, however, with their Web browser. The *Explorer* still trails Netscape's *Navigator* by a wide margin.

But it is steadily gaining ground which Netscape believes is because of Microsoft's unfair marketing practices. Netscape - which once commanded a 90% browser penetration - has now slipped to 60% while Microsoft's share has risen over the last two years from zero to nearly 40% of the market.

The U.S. government now wants federal courts to fine Microsoft $1 million per day until they stop requiring computer makers to include their browser as a condition to getting *Windows.* The Justice Dept. says the provisions violate a 1995 consent decree barring it from imposing anti-competitive licensing terms on computer manufacturers.

Microsoft's position is that their browser is an important part of its operating system, the functions of which they are permitted to improve. The Justice Department claims it is a separate product.

Microsoft CEO, Bill Gates argues that "...supporting browsing capabilities in Windows is a logical and incremental step in the evolution of the operating system." He accuses the Justice Dept. of using antitrust charges to inhibit the development of Windows.

Microsoft contends that the government knew for more than three years that they were going to integrate their browser into Windows ....and noted that any PC maker can bundle any software they wish with their PCs ...including the Netscape browser. But at least two leading computer makers (Compaq and Packard-Bell) said there is not sufficient demand to include both browsers on their machines.

And to add fuel to the fire, Texas Attorney General Dan Morales is accusing Microsoft of trying to make it harder for their state antitrust investigators. At issue is a clause in the software giant's contracts that requires firms to agree in writing to first alert Microsoft officials before providing investigators information.

The state of Texas says this amounts to an illegal "watchdog system" which has a "chilling effect" on state investigation into Microsoft's marketing and licensing practices.

■ **States and cities say "Tax the Web" - the Feds say "No!"** - The U.S. Senate Commerce Committee has approved a bill that would **prohibit state and local governments from taxing business on the Internet for at least six years.**

The *Internet Tax Freedom Act* places a moratorium on taxing electronic commerce. The bill now goes to the full Senate for debate and voting. A similar bill (H.R. 1054) has been working its way through the House.

There are more than 30,000 taxing jurisdictions in the U.S. and many want to collect taxes from World Wide Web business dealings. Several states already impose some tax on Internet transactions including Connecticut, Massachusetts, Tennessee, Pennsylvania, Texas, Ohio and Wisconsin.

The bill is vehemently opposed by the National Governors' Association, the U.S. Conference of Mayors, the National Association of Counties and the National League of Cities.

■ **To speed the roll-out of digital television, the FCC seeks to preempt tower construction. But the U.S. Senator from Vermont says, No!"** - As a result of a joint petition by *National Association of Broadcasters* (NAB) and the *Association for Maximum Service Television,* on August 19, 1997, the FCC issued a rulemaking (Mass Media Docket. No. 97-182) that would preempt local zoning authority over broadcast (but not amateur radio) towers.

Formal comments closed on October 30, replies on December 1. The NPRM limits State and local zoning officials from having authority over the siting and construction of broadcast towers as the shift to digital television (DTV) occurs.

About 1,000 towers need to be replaced or upgraded. The FCC said that local zoning and land use ordinances could present an obstacle to the rapid implementation of digital television service.

The petitioners wanted the preemption to include all types of broadcast antennas and towers - not just those necessitated by the switch to DTV. (Some AM/FM station antennas are co-located on TV towers.)

The FCC noted that historically they have tried not to become unnecessarily involved in local zoning disputes regarding tower placement. "Nevertheless, we have adopted rules preempting local zoning ordinances where the record established that such ordinances were inhibiting the implementation of Congressional or FCC objectives, including with regard to locating satellite "dish" antennas and amateur radio towers (*Federal Preemption of State and Local Regulations Pertaining to Amateur Radio Facilities,* PRB -1 50 Fed. Reg.

38813 - September 25, 1985)."

The FCC fears that delays in local zoning and land use decisions will hold up the construction of the DTV transmission system and make it impossible for DTV stations to deploy their signal by the required deadline.

At the same time, the FCC said it "...was sensitive to the rights of states and localities to protect the legitimate interests of their citizens and we do not seek to unnecessarily infringe these rights."

■ **Senator Patrick Leahy (D-Vermont) strongly objected to the proposed FCC rules** which would permit the placement of commercial telecommunications, radio or television towers near homes, residential communities and in scenic areas.

Leahy said such towers would reduce property values and that states and localities should be able to exercise control over their construction. "The bill also prohibits towns and cities from having stricter health and safety standards regarding environmental effects of radio frequency emissions," he said.

Senator Leahy has now introduced legislation that repeals the 1996 Telecom bill authority given to the FCC to preempt State and local regulations on the placement of new telecommunications towers.

"I don't want Vermont turned into a giant pin cushion with 200 foot towers indiscriminately sprouting up on every mountain and in every valley, ruining the view that most of us have spent a lifetime enjoying."

He said he did not want Vermont "left out of technological progress [but we should] have a role in deciding where these towers are going to go." Senate bill 1350 permits State and local governments to regulate the placement of telecommunications towers and prohibits the FCC from adopting the NPRM.

■ **Uniden (the largest manufacturer of scanners) and Radio Shack (the largest dealer) have agreed to discontinue selling scanner service manuals to the public.** The voluntary agreement, made in cooperation with FCC officials, is to make it more difficult for consumers to alter electronic circuits which preclude reception of the cellular telephone bands. The FCC and the scanner industry have been under pressure from Congress to crack down on illegal scanner modifications.

AMATEUR RADIO

■ **One thing that broadcasters and ham operators both seem to feel important is their station call sign!** Station call letters serve three purposes. They identify the nationality, type of station and licensee. By international agreement, the first letter of the call sign identifies the country. The United States is assigned N, K, W and shares the initial letter A with some other countries.

K and W prefixes go to domestic broadcast stations. Generally speaking, those beginning with K are assigned to stations west of the Mississippi River while those beginning with W are assigned to broadcasting stations in the east.

Radio stations with call letters at variance with this system were assigned before the allocation plan was adopted. Station KDKA in Pittsburgh, PA and WBAP in Dallas, TX are two examples. In the early days of broadcasting, stations could be assigned three-letter call signs.

Since the start of radio broadcasting in the 1920's, stations have had the privilege of requesting specific call signs. There has been a preference for letter combinations embodying initials of names, places or slogans. For example, the suffix letters NBC, CBS, ABC, TBS are used by large broadcast networks.

Other examples are WNYC (New York City municipal station), WIOD, Miami ("Wonderful Isle of Dreams"), WLS Chicago ("World's Largest Store"), WACO (Waco, TX), WTOP, Washington DC ("Top of the dial"), and KABL Oakland (was selected to represent San Francisco's famous cable cars.)

International Radio Regulations do not require the use of call signs by broadcast stations if some other suitable means of identification is employed. For example, many foreign broadcast stations identify by announcing, "The Voice of _____."

Although amateur call signs are for the purpose of identification of the station rather than the operator, call signs often are considered personal. They appear on correspondence and on automobile license plates. There are even grave stones bearing the cherished call signs of amateurs who have sent their final sign-off signal "SK."

Now ham operators can also obtain call letters of their choice. As of December 2, 1997, Gate No. 4 of the Vanity Call Sign System is opening and the FCC is permitting *any* licensed ham operator to select their station call sign subject to certain guidelines (and payment of a $50 regulatory fee.)

Most ham operators - more than half a million - today hold Technician, Technician Plus and General Class licenses. These operators are eligible for any available call sign beginning with K, N or W - followed by an area numeral and three user-selected suffix letters.

Ham stations are now joining their broadcast counterparts by selecting call sign suffix letters that mean something to them!

■ **British full 'Class A' amateurs will be getting another new Low Frequency band.** The UK's Radiocommunications Agency (RA) has told the *Radio Society of Great Britain* (RSGB) that they hope to release the 136 kHz LF band shortly for use by all UK Class A amateur licensees. (Class A license holders are Morse proficient.) The RA is the British telecommunications regulator - similar to our FCC.

The CEPT-agreed 136 kHz band is an allocation available to European amateurs. This will be a new allocation for which no *Notice of Variation* (special permit) - will be required. The frequency limits of the 136 kHz band will be from 135.7 to 137.8 kHz. It is likely that the new band will be added to UK Table of Allocations as soon as an official *Gazette Notice* is published.

The RSGB's *GB2RS News* broadcast reported that the present UK-only 73 kHz band will continue in parallel with the new allocation until the 30th of June 2000.

No new 73 kHz band 'Notice of Variation' permits will be issued after the 30th of June 1998, and the 73 kHz band will be withdrawn from amateur use two years after that.

The UK 73kHz frequency allocation came about after lengthy negotiations between the RSGB and the RA. The RSGB was also heavily involved with international discussions which led to the new European allocation at 136 kHz.

British amateurs have been experimenting on 73 kHz for over a year and several are now achieving distances in excess of 200 kilometers (about 125 miles) on that band.

W5YI REPORT

America's Oldest Ham Radio Newsletter

WRC-97 TO SHAPE TOMORROW'S RADIO

For the past month, the Geneva Conference Center has been hosting WRC-97, an event which will play a key role in determining what kinds of radio-based communications systems will be available at the start of the next millennium.

World Radiocommunication Conferences (WRC's) are bi-annual international meetings held by the International Telecommunication Union, at which internationally binding treaties on the use of the radio frequency spectrum are adopted for all types of radio services including amateur radio. All Member States of the ITU (currently 188 countries) have the right to attend, and private organizations are able to participate through representation on these national delegations.

During the past four weeks, WRC-97's 2,000 delegates have been debating a wide range of issues which will have enormous ramifications for the way radio communications systems develop in the future.

Communications systems based on radio are today the fastest-growing sector of the telecommunications industry, and have already overtaken fixed line networks in terms of number of new subscribers. During the last five years, worldwide growth rates for mobile telephony have hovered at an astonishing 50 per cent per annum, and at present some countries are actually doubling their mobile subscriber base every year.

Other radio-based services such as paging, subscriber radio and television delivered by satellite, global positioning systems and so on are also enjoying rapid growth in many of the world's markets. Add to this increasingly sophisticated systems for navigation, air and maritime safety, new laptop computer-based mobile data systems, proposed services such as Global Mobile Personal Communications by Satellite (GMPCS), and dozens more new applications still in the pipeline, and it quickly becomes apparent why the shortage of radio-frequency spectrum has become such a pressing issue.

Unfortunately, the radio-frequency spectrum is a limited and measurable property which is already heavily used by some 40 services.. The equitable distribution of this natural resource, as well as the development of new ways of increasing radio spectrum efficiency - the ability to deliver the same service using less spectrum or to share spectrum with other services without causing interference – is one of the most important tasks of World Radiocommunication Conferences.

As usual, this year's conference had many urgent and important items on its agenda, including: improved frequency allocations for satellite services, including new GMPCS services; a revision of the way the high-frequency bands are used for broadcasting; new operational provisions for the aeronautical mobile service; the requirements for the full-scale implementation of the Global Maritime Distress and Safety System; a review of the spectrum used for direct-to-home television broadcasting; updates of plans for the broadcasting satellite service; and frequency allocations for space science services, many of which are not easily able to share with other services.

With ever-increasing demand for frequency allocations for new or expanded services, the atmosphere at WRC's in recent years has become highly charged, with delegations often engaging in intense lobbying over the issues contained in the meeting's hundreds of pages of reports and proposals.

Because the conclusions of World Radiocommunication Conferences are laid down in Final Acts, which become binding intergovernmental treaties, the decisions taken during WRC-97 will have an enormous impact on the future development of radio-based services. The agenda for each WRC is prepared well in advance ...as much as four years before the conference itself, then fine-tuned by the WRC that precedes it and adopted by the ITU Council.

There were no strictly Amateur Radio items on the agenda. But it was clear from the beginning, that the Amateur Service could be impacted since most amateur spectrum at the VHF and higher frequency range is shared with other services. The availability of radio spectrum is big business to commercial operators such as those who are gearing up to provide mobile telephone services via low earth orbiting (LEO) satellites. ITU member nations place huge importance on spectrum access since their economy is at stake.

"Radio" is currently the fastest growing segment of the international telecommunications market. Add to this the fact that some bands are unsuitable, for technical or economic reasons, for use by certain systems, and the problem of congestion becomes clear.

The main agenda items for WRC-97 include:

1.) an ongoing investigation into **Simplifying the Radio Regulations,** the internationally-binding treaty on the use of radio communications.

2.) Changes to the **High Frequency Broadcasting Service.** The use of the HF bands for broadcasting has been the subject of debate for some 50 years. In 1995, the WRC reviewed a new frequency coordination plan and requested WRC 97 to consider the new system. There is also a planned introduction of single-sideband transmissions and other spectrum efficient techniques (such as frequency agile equipment and digital signal processing) in the HF broadcast bands.

For sometime, HF broadcasters and amateurs have recognized the need to realign the bands around 7 MHz. At WARC-92, the United States proposed the adjustment of the bands around 7 MHz to align the HF broadcasting allocations and to provide a non-overlapping 300 kHz worldwide allocation to the Amateur Service. This may be possible now as a consequence of expanded HF broadcasting allocations.

Realignment depends on developing a consensus of HF broadcasters and the cooperation of services presently having

allocations in adjacent bands.

3.) **Maritime and Aeronautical Safety and Navigation.** Since full-scale implementation of GMDSS (Global Maritime Distress and Safety Systems) comes into effect on February 1, 1999, WRC-97 is examining the need to overhaul other procedures - including communication between GMDSS-equipped ships and those which do not have the new system, search and rescue operations, calling procedures, licensing, and operator qualifications.

4.) **Frequency Allocations to Satellite Systems** - including Global Mobile Personal Communications by Satellite systems (GMPCS). The rapid development of new Low Earth Orbit (LEO), Medium Earth Orbit (MEO) and Highly Elliptical Orbit (HEO) satellite systems is taking place in a very congested part of the spectrum. Satisfying the large demand from the many operators planning LEO, MEO and HEO systems has turned out to be one of the conference's most important challenges.

"Little LEO" - For GMPCS systems operating below 1 GHz, delegates are considering ways to alleviating spectrum sharing and overcrowding difficulties. The sharing difficulties with terrestrial services are compounded in many systems by the high number of satellites many of these systems comprise, and the high number of zones over which they operate.

"Big LEO" - The main problem in providing further allocations to the mobile satellite systems in this band is the potential interference to the large number of terrestrial services already occupying this part of the spectrum. Current US proposals do not include any plans to share amateur frequencies. Little LEO (non-voice, non-geostationary mobile satellite) interests appear to be moving toward agreement that the segments 146 to 148, 170 to 230, and 406.1 to 430 MHz are not open for consideration for Little LEO allocations at this time.

5.) **Fixed versus Mobile Satellite Services** - The issue of sharing between geostationary fixed satellite systems and non-geostationary mobile satellite systems (such as many planned global mobile telephony systems operating in bands around 20 GHz and 30 GHz) is being considered. New regulations need to be adopted for new broadband systems operating in low earth orbits (such as the Bill Gates/Craig McCaw-backed *Teledesic* project, Alcatel's *SkyBridge* and Motorola's *Celestri* which will provide a fixed-satellite service using non-geostationary constellations of satellites.

All in all, as with WRC-95, satellite system allocations are the most hotly contested agenda items. Satellite operators are lobbying hard for the space they need to get these costly systems up and running as quickly as possible in order to win the market share needed to make their systems viable.

The United States also wants WRC-97 to designate spectrum for stratospheric stations in the 47.2-47.5 GHz and 47.9-48.2 GHz bands on a non-exclusive basis. These hovering airships beam broadband radio services (such as the Internet) to metropolitan areas ...sort of a repeater in the sky.

6.) **Space Science Services** - Spectrum is needed for meteorological-satellite and earth exploration-satellite systems, active and passive sensing systems incorporated into satellites. They are used primarily for meteorology, climatic studies, the production of satellite images such as weather maps, and other kinds of environmental monitoring. WRC-97 delegates also are being asked to consider adding the Earth Exploration Satellite service to the 430 to 440 MHz band and to upgrade the status of EES in the 1240 to 1300 MHz band.

7.) **Implementation of Wind Profile Radars** at frequencies near 50 MHz, 400 MHz and 1000 MHz. Wind profilers are air safety warning devices that operate near airports. A European proposal for 420 to 435 and 438 to 440 MHz is no longer under consideration. Wind profiler radar issues appear to be close to resolution, with amateur satellite segments being protected.

8.) **Satellite Network Co-ordination** - For satellite systems to operate effectively, they need to be 'co-ordinated' so that they do not cause interference to other satellites already in place. At present, there is no formal means of resolving such disputes. WRC-97 is reviewing ITU's frequency coordination and planning framework for satellite networks.

9.) The problem of **'Paper Satellites'** - These are satellite systems which have been co-ordinated, but which have never been launched because of desire to 'hoard' satellite slots for future use. A new proposal requires that operators pay a filing and registration fee covering new satellite system which would be refundable when that system comes into service.

10.) **Direct Television Broadcasting** - WRC-97 is looking into the possibility of creating a single global frequency allocation for use in direct television broadcasting applications. This would enable broadcasters wanting to offer service on a worldwide basis to broadcast on the same frequency in all countries which agree to accept their service, greatly simplifying worldwide frequency co-ordination as well as the broadcaster's own technical and marketing operations.

11.) **WRC-1999 and preliminary WRC-2001 Agenda** - WRC-97 will recommend to the Council "urgent action" items for inclusion in the agenda for the WRC-99, and to give its views on the preliminary agenda for WRC-2001.

A review of Article S-25 of the International Radio Regulations, concerning the definition of the Amateur Service and licensing qualifications were initially to be on the agenda of WRC-99. The United States is already on record as supporting the following three preliminary WRC-99 agenda items that impact the Amateur Service:

Item No. 2.2 - consideration of Article S25 concerning the amateur and amateur-satellite services;

Item No. 2.3 - examination of the adequacy of the frequency allocations for HF broadcasting from about 4 MHz to 10 MHz taking into account the planning procedures, if any, adopted by WRC-97 and the needs of other existing services; and,

Item No. 2.9 - alignment of allocations in the 7 MHz band allocated to the amateur service (Recommendation No. 718 - WARC-92) to eliminate the regional differences between the allocations to the broadcasting service and the amateur services, to allocate the band 6900–7200 kHz to the amateur service worldwide, and to allocate a band starting at 7200 kHz to the broadcasting service.

We now hear, that due to a crowded WRC-99, that consideration of S-25 will probably be put off until WRC-2001. Article S25 contains the international radio regulations that are specific to the Amateur and Amateur-Satellite Services, including the Morse code requirement for operation below 30 MHz. If this is true, the Morse code qualification will be with us well into the 21 st Century.

MORE ON RF SAFETY IN THE AMATEUR SERVICE

On November 12th, the FCC released still another correction to the **RF Safety Evaluation Table** contained in Sec. 97.13(c)(1) of the Amateur Service rules. The Third Erratum corrects the Second Erratum definition of the word "power." The Second Erratum specified that:

*** Power = power input to antenna except, for repeater stations only, power exclusion is based on ERP (effective radiated power).**

It has now been clarified to read:

*** Power = PEP input to antenna except, for repeater stations only, power exclusion is based on ERP (effective radiated power).**

The clarification was made so that amateurs would know exactly what kind of power the FCC was talking about. Transmitter power can be referenced in two ways: as average power or peak power. In the Amateur Service, transmitter power has always been referred to as peak-envelope-power (PEP). This is defined as the average of the modulation crests.

In an amplitude modulated signal (such as single side band), the PEP is always greater than the average power. (Depending upon voice characteristics, average power is about half the peak power level in an SSB modulated signal.) In the case of FM (or phase modulation) the carrier amplitude does not change, so the peak envelope power is the same as the average power. Thus PEP can be used to refer to all emission types.

Here is how Sec. 97.13(c)(1) now reads after the Third Erratum:

§ 97.13 Restrictions on station location.

(c) Before causing or allowing an amateur station to transmit from any place where the operation of the station could cause human exposure to levels of radiofrequency (RF) radiation in excess of that allowed under § 1.1210 of this chapter, the licensee is required to take certain actions.

(1) The licensee must perform the routine RF environmental evaluation prescribed by § 1.1307(b) of this chapter, if the power of the licensee's station exceeds the limits given in the following table:

Wavelength Band	Evaluation Required if Power* (watts) Exceeds:
MF	
160 m	500
HF	
80 m	500
75 m	500
40 m	500
30 m	425
20 m	225 (Watts)
17 m	125
15 m	100
12 m	75
10 m	50
VHF (all bands)	50
UHF	
70 cm	70
33 cm	150
23 cm	200
13 cm	250
SHF (all bands)	250
EHF (all bands)	250
Repeater stations	(all bands) non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 500 W ERP building-mounted antennas: power > 500 W ERP

*** Power = PEP input to antenna except, for repeater stations only, power exclusion is based on ERP (effective radiated power).**

The FCC also plans to have a fill-in-the-blanks "***Worksheet and Record of Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields for Amateur Radio Stations.***" The optional RF Compliance Worksheet is planned to be included in the new *Amateur Radio Supplement "B"* that the FCC will be issuing shortly.

Basically the worksheet converts transmitter PEP output to dBW - then subtracts the feedline losses in dB to arrive at a PEP input to the antenna in dBW. The dBW is then converted back to PEP input to the antenna in Watts. If the resulting power is under the above threshold levels, no further evaluation is necessary.

The next section of the Compliance Worksheet adjusts for emission type and transmit (on/off) duty cycle to arrive as an adjusted average power input to the antenna. Then the gain of the antenna must be taken into consideration to determine the safe distances to the controlled (radio operator and his/her family) and uncontrolled (other people in the vicinity) environments. There is also a section that applies to repeater installations.

Actually, the *Amateur Radio Supplement "B"* to OET Bulletin No. 65 *(Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields - August 1997)* was supposed to have been completed by now, but as of press time, it still was being debated by the amateur community and OET. The best guess is that it should be available at the FCC's Office of Engineering and Technology Web site about December 1st. Their URL address on the Internet is: <http://www.fcc.gov/oet/rfsafety/>