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...

Vol. 23, Issue #2 **$1.50** PUBLISHED TWICE A MONTH **January 15, 2001**

LOW POWER FM RADIO CRIPPLED BY CONGRESS, NAB AND NPR!

"One of the fundamental tenets of our democracy is to ensure that diverse interests have opportunities to express themselves at different levels, and that they are not locked out in a monopolistic, globalized fashion. It is as fundamental as free speech. Radio is perhaps the most qualified of any media outlet to provide community access. It is a relatively inexpensive medium to produce and is well-suited to cover community issues and local music. Unfortunately, today's radio is the most concentrated and formulaic medium in the country. Providing licenses to low power FM radio stations would create new opportunities for local voices to be heard in their communities." *From a March 10,1999 letter from Congressman David Bonior to FCC Chairman William Kennard*

Most colleges, churches and community groups can forget about an FCC plan to create a new low power FM service. A late added amendment, buried deep within the Clinton administration's massive $1.8 trillion spending bill has greatly curtailed a pet project of FCC Chairman Bill Kennard to create 1,000 new low-power FM community radio stations.

The objective was to make the commercial FM airwaves more diverse by offering "niche" non-profit programming from local governments, educational organizations, neighborhoods, and community groups. It was Kennard's view that these voices had been silenced by the proliferation of an increasingly consolidated corporate radio market. At the end of 1999, the top ten broadcasters controlled 2,000 stations ...more than triple that of just three years earlier.

Existing FM radio broadcasters - represented by the *National Association of Broadcasters* (NAB) and *National Public Radio* (NPR) - lobbied long and hard against the initiative out of concern that the new service would siphon off their audience and interfere with their transmissions. Pres. Clinton signed the appropriations bill into law on December 21st. And with it the prospect of community broadcast radio stations for many applicants was over.

LPFM radio was originally requested in *Petitions for Rule Making* filed by two Extra Class ham radio operators, Nicholas Leggett N3NL of Reston, VA and Rodger Skinner W4FM of Pompano Beach, FL. On January 28, 1999, the FCC responded to their request by proposing three low-power non-commercial FM station classes running from 1 to 10, 50 to100 and 1000 watts. The Commission labeled them LP-10, LP-100 and LP-1000. The objective was to provide a means by which local communities could speak to people located less than ten miles away. LP-10 stations would have a range of one to two miles from the antenna while LP-100 could reach listeners three or four miles away.

A year later (on Jan. 27, 2000) the FCC voted 4 to 1 to create the new class of low-tech FM broadcast stations to "...serve very localized communities or under-represented groups within communities" by authorizing two new classes of non-commercial LPFM radio service, LP-10 and LP-100. The threat of interference to existing FM broadcasters, however, persuaded the FCC to back away from the

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

possibility of 1,000 watt (LP-1000) stations. The new LPFM service is be exclusively non-commercial. In addition, current broadcast licensees or parties with interests in other media – cable or newspapers – are not be eligible for LPFM stations.

The FCC surprisingly even made provisions for previously unlicensed ("Pirate") radio stations to be able to apply for a "micro-radio" (LP-10) license as long as they had voluntarily closed down or immediately ceased operation after being cited by the FCC. This plan infuriated traditional FM broadcasters.

LPFM opposed by broadcasters

A strong coalition of lobbyists and broadcasters quickly turned to Congress in an attempt to eliminate low power broadcasting. The result was the *Radio Broadcasting Preservation Act of 2000,* (S.3020) introduced Sep. 7th by outgoing Sen. Rod Grams (R-Minn.) and spearheaded by Senate Majority Leader Trent Lott, long a supporter of the NAB.

The original House bill [H.R. 3439] "To prohibit the Federal Communications Commission from establishing rules authorizing the operation of new, low power FM radio stations" was amended in S.3020 to read "A bill to require the FCC to revise its regulations authorizing the operation of new, low-power FM radio stations."

"The 'compromise' legislation allows [low-power radio stations] to go forward, while minimizing interference for millions of radio listeners,'" said Edward Fritts, head of the *National Association of Broadcasters.* In reality, it basically eliminates most of them.

Grams' bill allows up to nine remotely located low-power stations to be licensed right away to test the feasibility of LPFM stations. None can be in metropolitan areas. And instead of the FCC regulating radio stations, Grams' bill essentially transfers authority to approve and regulate LPFM to Congress who would later decide whether to introduce legislation allowing the agency to authorize more micro-radio stations.

An angry Kennard termed it "...interference with the operation of the Commission" and a "trampling on the First Amendment." He said the Congressional move "...shows the dangers of politicizing spectrum management," which interferes with "everyone's right" to share a common resource. "We can't allow people who have the spectrum to use their political clout to shut out voices that don't have the same clout," he said ...adding. "I regret that so many of our nation's schools, churches and community-based organizations will not have the benefit of this opportunity."

In support of the legislation, *National Public Radio* (NPR) said S.3020 was "...a carefully balanced approach" toward the licensing of new LPFM stations. "This is the practical, rational way to achieve the laudable goal of compatibility between existing public radio stations and the new, low power service. Under the bill, the FCC may go forward with immediately licensing LPFM stations as long as interference protections to existing stations are maintained, including protections to third adjacent channels."

NPR added that "...it supports LPFM in concept and believes that public radio and LPFM can be compatible, complementary services." But it also feels that "... the FCC took inadequate steps in adopting its LPFM decision to protect the signals and transmissions of public radio stations and radio reading services [delivered on special sub-carrier FM channels.]"

The view of Cheryl Leanza, deputy director of the *Media Access Project,* was different. She said "I think it's pretty clear that the strategy of the legislation was to stop low-power radio." The *Media Access Project* represented several religious, communication, consumer, and public interest groups before the FCC in support of LPFM.

Peter Franck of the San Francisco-based *Center for Democratic Communications* (CDC) – another LPFM advocate – called the legislation "...a phony 'compromise' because it may allow 60 or 70 LPFM stations in the most rural and unpopulated parts of the country."

Exactly what does the legislation say?

In a nutshell, the *Radio Broadcasting Preservation Act of 2000* requires the so-called "third-adjacent channel" protection to be maintained. That means that LPFM stations may not be located three channels away from existing FM stations. This has the effect of eliminating up to 80% of the available LPFM slots. The FCC may license low-power stations in places where there is no need to relax third-channel buffers such as in rural areas that do not have many FM stations.

Contrary to the FCC's original plans, previously unlicensed FM "pirates" are now left out of low power broadcasting altogether. The bill specifically forbids the FCC from awarding a LPFM license to any applicant who has engaged in unlicensed operation at any time and under all circumstances.

The bill compels the FCC to further evaluate the need for third-adjacent channel protection. This is to be accomplished by an experimental program in no more than nine FM radio markets to test whether low-power FM radio stations will result in harmful interference to existing FM radio stations.

The FCC also must appoint an independent testing agency to oversee interference field tests, conduct "independent audience listening tests" and the public must be given an opportunity to comment on any interference potential ...a tactic that makes any hope of full-scale LPFM many years down the road.

A full report must be submitted by the FCC to Congress addressing the impact on (1) incumbent FM radio broadcasters, (2) the coming transition of terrestrial FM

radio broadcasters to digital radio (also known as IBOC - In Band - On Channel), (3) stations that provide a reading service for the blind to the public and (4) FM radio translator stations.

Kennard believes the requirement that the FCC study the economic impact of LPFM stations on existing FM stations is contrary to the NAB's argument that its opposition to low-power radio is based solely on the potential interference to existing FM stations. Actually, while unsaid, FM broadcasters are equally concerned about listeners being siphoned off to new competition within their market and their ability to attract advertising dollars.

LPFM applications pouring in

The FCC began accepting applications for Low Power FM licenses in phases -- a few states at a time. LP-100 (100-watt) stations were to be authorized first. To apply, applicants had to file FCC Form 318, *Application for Construction Permit for a Low Power FM Broadcast Station.* (No fee is required.) The FCC even went as far as to post "LPFM Channel Finder" software on their website to help applicants locate an FM channel that meets the requirements. See: <http://www.fcc.gov/mmb/asd/lpfm>.

The first 5-day application period (May 30 to June 8, 2000) included applications from ten states plus the District of Columbia and the Mariana Islands. The second filing window (Aug. 28th to Sep. 1) opened it up to another ten. Additional filing windows were scheduled to open at three-month intervals. Only one application can be filed by an organization.

The FCC said the third LPFM filing window would open as scheduled for five days beginning Jan. 16, 2001 to applicants in American Samoa, Colorado, Delaware, Hawaii, Idaho, Missouri, New York, Ohio, South Carolina, South Dakota, and Wisconsin.

Already over 1,300 applications for low-power FM licenses have been received from school systems, municipalities, churches, colleges and community groups in the first 20 states. The FCC was preparing to begin awarding licenses when the budget bill amendment was "ram-rodded" through Congress.

The same day that Pres. Clinton signed the budget bill, the FCC announced that it had selected 255 applications from the first 20 states that meet the new scaled back criteria. School districts, musical arts associations, churches and ethnic organizations are among those chosen. They will receive their construction permits for the stations after a 30-day comment period.

Senate Commerce Committee Chairman John McCain (R-Ariz.), a strong supporter of LPFM stations, will seek to overturn the rider when the Senate reconvenes after the first of the year. He called the budget bill amendment "...an atrocity ...that will hurt minorities and small churches and organizations that want to broadcast local information."

Unlicensed FM broadcasting may escalate

In a Dec. 18th feature story, the *San Francisco Chronicle* newspaper said it believes "Pirate radio received an unintended boost with the death of the Federal Communications Commission's plan to license hundreds of low-power FM radio stations." National Lawyers Guild spokesman, Philip Tymon believes "What we're going to see now is the resurrection of a lot of unlicensed stations."

The Bay Area has been a national focal point for the micro-broadcasting movement and pirate radio. San Francisco Liberation Radio (97.3 FM), Berkeley Liberation Radio (104.1 FM) and Free Radio Santa Cruz (96.3 FM) -- pirates all and proud of it -- continue their daily programming.

"I'm sure we'll keep doing what we're doing," said Sue Supriano, an activist and programmer for Berkeley Liberation Radio. "We've never had a license or thought of applying for one."

AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of January 2001

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0PN	KI0RX	(***)	KC0JLZ
1 (*)	AA1XN	KE1LY	(***)	KB1GCX
2 (*)	AB2RE	KG2RM	(***)	KC2HHY
3 (*)	AA3WL	KF3DZ	(***)	KB3FXU
4 (*)	AG4FB	KV4FJ	(***)	KG4LBC
5 (*)	AD5BN	KM5XF	(***)	KD5MSZ
6 (*)	AD6UF	KR6ER	(***)	KG6EQP
7 (*)	AC7KT	KK7WR	(***)	KD7LMA
8 (*)	AB8JP	KI8JX	(***)	KC8QBK
9 (*)	AB9BD	KG9RA	(***)	KB9YPN
N. Mariana	NH0Z	AH0BB	KH0LO	WH0ABP
Guam	(**)	AH2DN	KH2VD	WH2ANX
Hawaii	(**)	AH6QU	(***)	WH6DGM
Am.Samoa	AH8U	AH8AI	KH8DO	WH8ABF
Alaska	(**)	AL7RR	KL1AM	WL7CVE
Virgin Isl.	(**)	KP2CP	NP2LM	WP2AIN
Puerto Rico	WP3K	KP3BL	WP3IW	WP4NOT

* = All 1-by-2 & 2-by-1 call signs have been assigned. Group A (2-by-2 call signs beginning with AA to AL) now being assigned.

** = All 2-by-1 call signs have been assigned. (Group B call signs now being assigned.)

***= All Group "C" (N-by-3) call signs have run out and Group "D" (2-by-3) call signs are being assigned.

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) & Alaska (AL0/KL0,1)

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

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CUTTING EDGE TECHNOLOGY

A new generation of electronic connectors is being developed. With microprocessors consuming ever-larger amounts of current at speeds of 1 GHz and above, the voltage drop across a cable connector can seriously degrade performance. Research and development is hammering out the bugs. Larger-size conductors and stronger mechanical connections could be just two of the parameters to deal with. Inductance must be kept to an absolute minimum.

LCD heat shield. Too much heat (infrared energy) can darken a liquid-crystal display, perhaps even damaging or destroying it. In many outdoor applications, it is difficult or impossible to keep an LCD in the shade for long. That's why there are dedicated infrared (IR) filters available just for LCDs. They allow visible light to pass through, but block out IR light.

Sound does matter. Psychological tests have shown that in teleconferencing applications, audio with too much delay makes viewers think that the picture looks worse than it actually is.

More companies are looking into on-site electricity generation. Almost one-fourth of America's biggest and most energy-hungry companies are exploring options for generating their own electricity.

Hazards of ESD. Electro-static discharge can damage or destroy a valuable electronic component in less than a heartbeat. CMOS chips are particularly susceptible. Workers who handle these devices are required to wear "grounders" on their shoes when walking across a room. "Grounders" dissipate electric potential from the human body to ground. Even wearing only one grounder can allow chips to be damaged; every time your foot leaves the floor, you're not grounded. Grounders on both feet create better contact and electron flow, preventing electrical charges from collecting. They also provide better grounding while you're seated.

Pay-as-you-go electricity. Electric companies are experimenting with a new method of billing and power delivery that uses a smart card. PAYGo is a pre- paid service that allows customers in their homes to pay for their electricity in advance by sliding a data card into the reader, which is plugged into one of the power outlets in their home.

The reader contains an electric meter, telecommunications device, and controller that exchanges information and control signals with the utility company over the power lines. When a predetermined billing period is about to expire, PAYGo beeps and warns the customer (also via liquid-crystal display) that he is almost out of electricity. The customer then re-inserts the smart card to pay for more power, and service continues uninterrupted. This system is ideal for customers with poor credit, who may not be able to pay for large amounts of electricity in advance.

The LCD/wattmeter also shows customers exactly how much power they are using at the moment. Customers can therefore turn off various electric devices to see for themselves how much they affect their bill.

If the billing period expires without more "credit" being inserted, the utility commands the PAYGo controller to turn off that home's power. This can be overridden during times of severe heat or cold.

Customer reaction to this service has been generally positive; no longer do customers need to call the utility's billing department and be put on hold; no longer do bills need to be sent out; and no longer do meter-readers need to drop by every month.

EMERGING COMMUNICATIONS

While AT&T has not said so, it appears their goal to route phone-over-cable is not going well. AT&T Broadband -- the biggest U.S. cable-TV operator -- recently directed several of its suppliers to temporarily halt shipping orders to its broadband business. The move could also be a way for Broadband to conserve cash as AT&T seeks to cut costs and increase revenue. At least two suppliers (Antec and CommScope) saw their shares immediately fall 20 to 30% on the New York Stock Exchange. And AT&T stock has dropped 66% since April 2000. The 1996 law which deregulated telecommunications has generally not been good for business.

Two recent medical studies on analog cell phone use released by the New England Journal of Medicine and the American Medical Association shows no relationship between brain cancer and low power phone use. The Food and Drug Administration also has said there is no evidence that the phones are unsafe. More than 300 million people worldwide use mobile phones.

Researcher Dr. Peter Inskip of the National Cancer Institute said "Our results do not substantiate the concern that some brain tumors diagnosed in the United States during the mid-1990s were caused by the use of handheld cellular telephones." The study which investigated use by 1,600 patients with malignant and noncancerous tumors concluded that the phones were not linked to malignant tumors regardless of the amount or length of phone use, and tumors weren't more likely to appear on the same side of the head where the telephone was used.

Another research study conducted by epidemiologist Joshua Muscat and Dr. Mark Malkin of the American Health Foundation concluded that cancer patients didn't use their cell phones more than those without the disease. Furthermore, people who rarely or never used cell phones weren't less likely to develop cancer.

The studies were completed on cell phone user of three years or less duration. The researchers said that longer-term studies are needed as well as research on digital phone use.

In a study entitled "Mobile Phones and Health," a British research group reached somewhat – but not exactly – the same conclusion. "The balance of evidence to date does not suggest that emissions from mobile phones and base stations put the health of the UK population at risk," it said.

They added, however, "There is now some preliminary scientific evidence that exposures to radiofrequency (RF) radiation may cause subtle effects on biological functions, including those of the brain. This does not necessarily mean that health is affected but it is not possible to say that exposure to RF radiation, even at levels below national guidelines, is totally without potential adverse health effects."

The group recommended "a precautionary approach to the use of mobile phone technologies be adopted" until more information becomes available and that "The widespread use of mobile phones by children for non-essential calls should be discouraged."

The British government has now released a leaflet advising that children be discouraged from using the cellular handsets at all.

What tower? In an effort to make cellular telephone towers easier on the eye, engineers in Great Britain have created a tower that resembles a pine tree, using steel and epoxy resin. Towers elsewhere have been disguised as palm trees and even cactus plants.

The Dec. 19th *New York Times* tells how cellular telephone use is surging among the world's poor. The reason? The lack of wireline connections and infrastructure in many of the world's under-developed countries. For example, less than 1 percent of Haiti's eight million people have a conventional fixed-line telephone compared with 95 percent in the U.S. There are 400,000 Haitians on the waiting list to get a regular telephone which can take as long as five years.

While the number of wireless users grew by 24 percent in the United States last year and 70 percent in Europe, the growth rate in Africa was 116 percent. Zimbabwe had the fastest-growing wireless industry in the world in 1999, with wireless subscribers increasing by more than 800 percent, to 174,000. In Botswana, Rwanda and the Ivory Coast, wireless phone subscribers already outnumber users of the traditional telephone network.

Convert faxes to E-mail. Offices can now purchase dedicated devices that convert faxes and voice-mail messages into image files and audio files for transmission on the Internet. The .TIF or .WAV files can be tacked onto an E-mail message and sent anywhere. This saves money on long- distance phone charges.

Satellite telecommunications carrier now offers digital data. Globalstar USA now allows its customers to exchange digital data through their satellite system. Globalstar Internet Access lets you plug your laptop into their handset and receive data at speeds of up to 9,600 bps. Such technology does not come cheap, however. Globalstar phones can easily cost as much as $1,000 and the usage fees are well over a dollar a minute. It is ideal for the business traveler who is out of range of normal cellular networks. But you must have a clear view of the sky for the link to work properly.

Technology continues to become obsolete, faster than ever. The service life of a typical office computer system is only 18 months to three years long. An office's telephone system can expect to be replaced within five to 10 years. All this because the technology becomes obsolete faster than the hardware can fail.

Movie theaters in homes is edging toward reality. Blockbuster Video is experimenting with video streaming which could eliminate the need to ever rent a movie. A trial in 1,000 homes is delivering full-length video content directly into consumers' homes. Participants in the tryout can "rent" movies digitally directly from a TV set top box.

To participate in Blockbuster's program, consumers must receive digital subscriber line (DSL) "last mile" service plus pay $4.99 per movie rental. For the test, Blockbuster is installing and leasing the required set-top box and DSL service for free. If the trial is successful, however, the company will likely charge $10 monthly.

A splitter in the back of the set-top box divides the DSL service between a user's PC and their television set. Movies are streamed over a fiber-optic network, through the local carrier's DSL line and into the subscriber's home. Movies rented for TV use cannot be viewed on the PC.

Unlike pay-per-view, which consumers must watch according to a pre-set schedule, video-on-demand users can select and watch a movie whenever they want ...as well as pause, rewind and fast-forward. Blockbuster is also working on a download pay-per-view service in collaboration with TiVo and a satellite video-on-demand service with DirecTV.

But Blockbuster may never be able to commercially offer the service since movie studios also want to offer video-on-demand and keep the distribution profits to themselves.

COMPUTER INFO

The average price per megabyte of disk drive storage has fallen from $11.54 in 1988 to about two cents last year ...a 99.83% reduction! To put this in proper perspective, this decrease is comparable to a $100,000 home selling twelve years later for under $200.

Computers will keep growing in storage size; so what do we call these new, larger amounts? 1,000 gigabytes is a terabyte. 1,000 terabytes is a petabyte. 1,000 petabytes is an exabyte. 1,000 exabytes is a zettabyte, and 1,000 zettabytes is a yottabyte. Will we eventually see a microprocessor capable of handling 1,000 yottabytes all by itself?

Microsoft Corp.'s tumbling stock price has caused Bill Gates' net worth to shrink dramatically in recent months. Two years ago his holdings were valued $90 billion, a year ago they stood at $60 billion. They are now down to about 30 billion. That is a reduction of nearly $600 million a week – $3.5 million *an hour* based on a 24-hour day!

Breaking the back of Moore's Law? Doubling the number of transistors in a microprocessor every 18 months should eventually reach a brick wall, from a physics point of view. Many engineers predicted the end of the road of transistor miniaturization would come in 2010, when we just couldn't make transistors smaller than atoms. 100-nanometer transistors are already common. But newer, smaller transistors are coming right along to make processors even more powerful -- and could push the limit of Moore's Law as far away as 2025 -- or even 2050. It is currently very tricky to make transistors work reliably when they're smaller than 10 nanometers because the properties of atomic physics begin to overpower normal circuit behavior. If an insulator is too thin, it won't stop electrons from flowing, and thus it stops being an insulator. This is one of the many problems semiconductor engineers are trying to solve. Intel has already developed a 30-nanometer transistor process that should allow future microprocessors to run at a bus voltage of only 1 volt, with a 10-GHz clock frequency.

IBM says it is spending $4 billion over the next three years to get into the "on-demand computer services" business. They join a host of other companies (including EDS, Hewlett Packard, Oracle and Sun Microsystems) planning to adopt a "usage fee pricing model" rather than selling licenses to use specific computer applications.

Renting computer applications over the Internet is expected to be worth $50 billion in three years. The "per transaction pricing model" requires that software vendors rewrite their applications to support Internet standards.

Canceling out echoes. Acoustic echo cancellation makes use of powerful

computers to automatically adjust an audio signal in real time to react to acoustic changes of a large room. This eliminates distracting echoes. The digital signal processor approximates the room's echoes and subtracts them from the real echoes, thus canceling them out. The processor's algorithm is fast enough and powerful enough to automatically adjust itself whenever something in the room changes, such as doors opening, large masses of people entering or leaving, and even positions of the microphones and speakers.

High-current processors. Advanced Micro Devices' *Athlon* processor recently broke the 40-amp current draw for a single desktop computer microprocessor. It runs at 1.6 volts. Delivering 40 amps from just one regulator in a power supply is a bit much to ask, so engineers split the task in half and let two (sometimes more) regulators work in parallel to handle the load. Another new 64-bit processor runs at 2.0 volts, but consumes 70 amps -- with switching currents as high as 200 amps.

Are wearable computers worth it? In some applications, such as maintenance on large trucks, tanks and airplanes, having a virtual-reality service manual before your eyes while you're busy with a wrench is just the thing. But for the rest of us, computers of this type remain very expensive. They can cost twice as much as a laptop computer with identical memory and speed. Besides, the greatest cost in wearable computers comes not from the hardware itself, but from creating the software and databases geared for this type of technology. It takes time and money to translate an airframe service manual from paper to an interactive video display. Still, soldiers can diagnose technical problems in the field more quickly and assembly line workers can move about without being restrained by electrical cables.

Manufacturing color plasma displays continues to be tricky. One computer manufacturer says that bad pixels in the display is the leading reason why customers return laptop computers, especially those that contain DVD drives that can show movies.

INTERNET NEWS

Your local florist is about to get some serious competition! Hallmark, famous for its high quality greeting card line, is spending "tens of millions of dollars" to get into the next-day flower delivery service. The web-based business will be operating full power in time for Valentines Day 2001 -- the biggest flower day of the year. Right now the concept is in the final "limited launch" stage.

The goal is next day delivery of any floral order received online by 9-pm eastern time to anywhere in the US. Furthermore, the flowers will be fresher than those bought locally. Hallmark Flowers has built a distribution system that takes flowers from the hands of the grower around the world, to the hands of recipients, in 2-6 days -- more than a week faster than traditional flower distribution systems. Their goal is to sell hundreds of thousands of florai arrangements.

The traditional US flower delivery industry has many middlemen and blooms can be up to nine days old when they arrive at a customer's address. Hallmark Flowers will cut the supply chain to three parties - the growers, the Hallmark depot, and delivery company Federal Express - ensuring that the flowers are, at most, four days old when it reaches the customer.

Flowers will come from 20 growers in the US, South America, Asia and Europe, who will deal direct with Hallmark rather than through third parties. Bouquets will be arranged and shipped from a 106,000 sq. ft. depot (which has a 30,000 sq. ft. cooler) in Memphis, Tennessee where Federal Express has its hub.

One third of all flower orders will arrive in the three hours before midnight and still be delivered by 3-pm the following day. Special Oracle software powers Hallmark's website and distribution system. Retail: $39.95 to $69.95 plus $9.95 shipping . <http://www.hallmark.com>. Click on flowers.

In what some are calling a bad April Fool's Day joke, a London-based firm says it owns the patent on a commonly used Web technology. UK's biggest telephone company, British Telecommunications (commonly known as "BT") has startled the Internet world with its claim that it has discovered that it owns a U.S. patent for the invention of the hyperlink.

Hyperlinks connect highlighted text and images to associated items on the Web when a user clicks on it. Some 2-billion Web pages typically have up to 100 hyperlinks per page making it the most used Internet technology by far.

The patent was granted in 1989 and is only still valid in the US. Patent No. 4,873,662 expires in 2006. (US Patent & Trademark Office website shows it at http://www.uspto.gov/patft/index.html.)

BT has already contacted more than a dozen American ISPs requesting compensation in exchange for the licensed right to use the technology. [Let's see, at a penny apiece, that's over $1 billion!]

The first suit seeking to protect its "Hidden Page" hyperlink patent was filed last month against Prodigy Communications Corp. in White Plains, N.Y. federal court after it ignored BT's demand. BT said that it would not pursue patent claims against individual users.

Some Internet authorities are calling the suit frivolous, and there is indeed evidence of the existence of hyperlink technology which pre-dates BT's claim by eight years. Supposedly a Stanford University 1968 film talks about the first mouse, and other innovations such as hyperlinks. See: <http://sloan.stanford.edu/MouseSite/-1968Demo.html>.

According to NetRatings, the Internet audience measurement service from Nielsen Media Research, 56 percent of the U.S. population (or 153.8 million individuals) had Internet access from home in November 2000, jumping from a 43 percent access rate (or 118.4 million) last year during the same period.

In addition, the number of page views rose 32 percent this year, which according to NetRatings indicates that users are more fully exploring the content on a given site. The most visited website: America Online. AOL had 70 million home and office users followed by Yahoo with 65 million. But Yahoo managed to keep its users twice as long as AOL.

While we all talk about the explosive growth of the Internet, **the reality is that only 5% of the world's adult population are active Internet users.** A research study estimates that there are now 230 million people aged 14 and up actively using the Internet, a number that' will triple within three years. Even then, only 14% of the world's adults will be active Netizens. *(Computer User, 11 Dec 2000)*

As we go to press, **manufacturers are getting ready to show a new generation of "net-centric" consumer devices** at the Consumer Electronics Show (CES.) Sony, Panasonic, Thomson,

Zenith, Philips and Mitsubishi will show new set-tops, Internet TVs, wireless Web pads, e-mail terminals, personal video recorders (PVRs) and media players. Many of the systems combine a storage device with a modem, built-in intelligence and graphics capabilities to download audio and video from the Net.

Priceline.com founder and Vice Chairman Jay Walker has been selling off some of the 35 million Priceline shares he owns ...at less money each time. In September he sold 2 million shares at $25.00. PCLN stock has unbelievably plunged from high of more than $150 to about $1.00 now ...a 99.5 percent drop! On Dec. 29th, Jay Walker resigned from Priceline's board. According to Forbes magazine, he was once one of the 400 richest people in America. This year alone, his paper losses totaled $2.9 billion.

Headstones in the Dot.Com Graveyard: Desktop.com., Babygear.com, Garden.com, Shoplink.com, Streamline.com, MotherNature.com, More.com, Pets.com, Furniture.com, Webhouse.com, Living.com, Productopia.com, Hardware,com, Reel.com., ToyTime.com, Auctions.com, HomeWarehouse.com, FasTV.com, PetStore.com, CraftShop.com, ToySmart.com, ValueAmerica.com ...and a host of others! All have recently gone out of business ...victims of the massive Internet shakeout.

But tens of thousands of good companies remain online. Check a web merchant rating service -- such as WebWatchdog.com, Biz-rate.com, ValueFind.com, OnLineStoreRatings.com (and our personal favorite) ... Gomez.com - to find out who is giving good service.

And some dot-com companies had banner holiday sales as consumers spent more than double what they did a year ago. A survey by PC Data shows that sales were up more than 100 percent over the $4.2 billion spent online last year.

One Christmas Eve, online retailer (Amazon.com, Inc.) announced that it had logged 31 million orders during the holiday-selling season and boasted that 99 percent of those orders arrived in time for Christmas gift-giving.

Research by the Boston Consulting Group and Harris Interactive projected that 49 million consumers spent money online through the week of Dec. 11, ...about three-quarters through the holiday selling season. The survey indicates that the average online holiday shopper purchased six gifts online totaling an average of $234. That compares to $170 per consumer spent online last Christmas.

The Nielsen/NetRatings' Holiday E-Commerce Index, which measures at-home and at- work visits to e-commerce sites, said e-shopping hit an all-time high of 68.4 million "shopping trips" during the week ended Dec. 10.

Online Bill Payment is becoming a major industry! Consumers are motivated by convenience ...and no checks, envelopes or postage. And banks save a fortune by not having to hand process all those paper checks.

Jupiter Research says more than 40 million U.S. households will pay at least some of their bills online by 2005. The Gartner Group predicts that by 2004, about 25 million people will choose to access all their online bills in one place.

Another research firm, IDC, forecasts that by 2004, electronic bill payment services will generate more than $1 billion in revenue worldwide, up from just $32 million last year.

There are three main ways to pay bills on the Web. Fees range $3 to $10 per month -- about the price of stamps.

(1.) You change your billing address to a company that receives your bills in the mail, scans them and posts images of them on its Web site. You pay those bills online ...even to individuals. The service will send a paper check if the recipient doesn't accept electronic payments. *(Paytrust, PayMyBills.com and StatusFactory* are in this category.).

(2.) You continue to get most of your bills mailed to your home, but you elect to receive some bills electronically. You sign up with a company that lets you pay all of these bills over its Web site. Paper checks are sent if electronic payments are not accepted. *(Quicken, Yahoo Bill Pay, U.S. Postal Service, Charles Schwab, First Union and industry leader: CheckFree* with over 4 million bill-paying consumers. CheckFree has e-billing arrangements with over 1,000 businesses and handles bill paying for over 350 banks.)

(3.) You sign up for a service that allows you to pay over the Web to a select set of companies that send you electronic bills. You must send your own checks to individuals or companies that aren't on their list. *(TransPoint, Microsoft Money Central and Citibank.)*

WASHINGTON WHISPERS

The Justice Dept has released an independent report on Carnivore, the e-mail sniffing software, which is similar to a wiretap. The FBI says it uses the program to monitor suspected criminals by installing the system at Internet providers to monitor their e-mail activity. The study was ordered by Congress after civil-liberty groups raised concerns about unreasonable search and seizure.

The use of the surveillance software came to light when ISP EarthLink resisted having the program installed on its network. The FBI and DOJ maintain the surveillance system is only deployed to monitor specific criminal activity under a court order. But privacy advocates question the allegation and point out that the software can be configured to capture all Internet traffic and track users.

The report completed by a group of researchers at the Illinois Institute of Technology concluded that the controversial FBI electronic wiretap tool was appropriate for law-enforcement use but recommended the DOJ maintain tighter control of the e-mail monitoring system. They also said all Carnivore searches should require specific Justice Department approval and that the software should be modified to document all of its activities to prevent abuse.

On the final day before adjournment, the 106th Congress set up a $25 million fund to help state and local law enforcement agencies fight computer crime. The fund will assist non-federal officials in investigating such computer crimes such as fraud, theft of information, sabotage, computer viruses and stolen laptops.

Congress also approved legislation strengthening current laws to make it illegal to produce or distribute false identification documents over the Internet

The $450 billion federal budget had another bill attached to it -- a common practice among legislators wanting to get controversial measures past the president. Passed Dec. 15th just before Congress adjourned for the year, the *Children's Internet Protection Act* requires schools and libraries to use Internet filtering software beginning next year to protect

children from pornography or risk losing federal money.

Free speech advocates say it violates the Constitution's guarantee of free speech and software vendors readily admit that filtering technology does not always work as planned. Supporters say that some protection is better than no protection at all. President Clinton signed the bill into law on Dec. 21st. .

Calling it "mandated censorship," the American Civil Liberties Union says it will sue to block implementation of the law since "...no adult anymore can read what they want at the library." The bill does, however, permit librarians to disable filtering software when a computer is used by an adult. The ACLU has made successful challenges in the past to similar laws..

Long a believer in competition, **the FCC may force America Online to open up its "Instant Messaging" system to other Internet services** as a condition to their agreeing to their merger with Time-Warner, the second biggest cable company in the United States. Instant messaging allows AOL's 29 million subscribers to communicate in real time with other subscribers.

The Federal Trade Commission has already approved the AOL-Time Warner deal after they agreed to several conditions designed to ensure high-speed Internet competition via cable lines as well as interactive television. Microsoft has been pressuring the government to open up IM to competition so that it may become a standardized platform.

The FCC's ongoing auction of valuable wireless spectrum broke a record on Dec. 22nd pulling in $11.1 billion in bids. The spectrum sale is the first time that new spectrum has been sold publicly in more than four years. The auction, which will last until mid-January is expected to draw in $15 to $20 billion, topped the agency's 1996 auction of PCS licenses that netted $9.2 billion. The big bidder so far is Verizon Wireless at $3.47 billion, followed by SBC Communications and BellSouth Corp. While 422 licenses are up for grabs, licenses in the big markets are drawing the most interest and the highest bids. A single license for New York City is currently bid at $969 million.

AMATEUR RADIO

Code speed in Germany goes to 5 wpm! On December 13th, the German Minister of Economics and Technology ordered the Amateur Radio Morse code exam speed reduced from "...a minimum of 12 words (5 characters each) per minute" to "a minimum of 5 words (5 characters each) per minute. This change becomes effective on its day of publication." On December 20th, the German Federal Legal Gazette announced the "Change of Amateur Radio Regulations."

The FCC has implemented their **"Real Time Amateur Service Application Processing" system.** The means that all applications filed by the VECs are processed immediately rather than being held in a file for processing later that night. Generally, renewal, name/call sign/address changes, upgrades and new license applications are granted within a few minutes of being input.

Amateur Radio Enforcement:

Paul Ventrella (Simi Valley, CA) has been cited for filing a renewal application for KA6PPV that expired in 1986. Ventrella, who never held the call, was asked by the FCC to explain the filing.

Bradley S. Smith WW9WWW (Rockford, IL) has been asked by the FCC to explain a series of eight "Vanity" call sign application filings in less than a year "...that raise questions regarding abuse of our processes."

Kenneth Robbins WA6PYJ (Gardena, CA) has been asked to explain his need for at least 25 different club call signs.

Michael Deignan KH6HZ (Chepachet, RI) has been asked to explain his need for 8 Hawaiian address club call signs that were granted within the same month. The FCC said "The person whose address you listed for the club call signs in Hawaii has notified us that he does not wish to be associated with the club call signs and does not wish his address to be used."

Robert M. Adams N9DMK (S. Charleston, WV) had 2 club call signs (WX6NWS and W8NLT) canceled by the FCC because he failed to provide supporting documentation for this club calls.

Charles N. Puckett KF4ZMG (Nicholasville, KY) was cited by the FCC for allegedly operating on spectrum (3.860 MHz) not available to Technician Class licensees. **Stephen Anderson AA8DP (Somerset, KY)** was warned that he was monitored operating on 6.890 MHz "...a frequency not licensed to you under your Extra Class license."

Danny A. Kenwood WA6CNQ (San Francisco, CA) has had his license modified to "HF CW only" for a period of two years (until Nov. 30, 2002.) Kenwood had a history of "interference and harassment" on 2-meter repeaters.

Jerry W. Pack KD5KEL (Stephenville, TX) has been ordered to retake all license examinations up to and including the General Class. **James R. Vining N5RLX (Conroe, TX)** is being required to retake his Extra Class license examinations. **Lorenzo Eady KG4SIHK (Myrtle Beach, CA)** was ordered to retake the 5 wpm Morse code test.

The FCC also had a rash of repeater enforcement actions: **Donald Bertone KK6AN (San Francisco, CA)** was cited for "threatening retaliatory jamming ...or interference" after being asked not to use the W6MTF repeater. **Henry Schott KA3BMS (Newton Square, PA)**: "keying up repeaters, interference, failure to identify and using obscenities." **George F. Brannock WA4CQK (Mt. Airy, NC), Terrence Williams KR4RR (Robbinsville, NC), Ronald A. Wright N9EE (New Port Richey, FL)** and **Wilbur Cashwell W4EFK (Tampa, FL)**: allegedly were all operating uncoordinated repeaters which were causing interference to coordinated repeaters. **Charles Carman KD6RZO (Antioch, CA):** deliberate interference to the K6POU repeater. **William T. James K6RJR (Alto, TX):** interfering with the proper operation of the 146.04/.64 W7JPI repeater by transmitting control codes. **Robert W. Scott W6GAE (Ontario, CA):** allowing a malfunctioning repeater - which did not identify - to remain in continuous transmit mode for several days even when the licensee was aware of the problem. And the **Sheriff's Dept in Schoharie, NY** was notified that its 155.730 MHz radio system was interfering with three Amateur Radio repeaters.

Michael E. Gallagher KB1DTA (W. Concord, MA) has entered into a Consent Decree in exchange for terminating a $7,500 forfeiture proceeding. He has turned in his Amateur license for cancellation and will not re-apply for a period of five years. Gallagher was determined - and later admitted - to be the source of 1999 unidentified interference to the Phil-Mont Radio Club repeater.

COMMUNICATIONS PIONEER AL GROSS, W8PAL SK.

The man who brought the world such indispensable wireless communications concepts and devices as the walkie-talkie, pager and cordless telephone passed away on Dec. 21. Al Gross W8PAL, of Sun City AZ, was 82.

Gross' lifelong interest in radio communications began when he was just nine-years-old. While traveling aboard a steamboat on Lake Erie, the ship's radio operator allowed Gross to listen to the wireless. Gross prevailed upon his father to buy him a crystal radio set and Al tuned in to the broadcasts of local amateur operators.

By age 12, Gross had converted his family's Cleveland basement into an amateur radio station, using equipment he'd salvaged and patched together from junkyards. W8PAL obtained his Amateur Radio license in 1934 (at age 16) and it was still current at the time of his death.

Gross' first invention was the portable hand-held radio which had interesting two-way communication features. Developed in 1938 while still in high school in Cleveland, he christened it the "walkie-talkie."

In 1940, he enrolled in the Electrical Engineering program at nearby Case School of Applied Sciences (now a part of Case Western University), and focused his energies upon creating a portable short-range transceiver before he graduated.

The device caught the attention of the Communications Group of the U.S. Office of Strategic Services (OSS), the forerunner of the U.S. Central Intelligence Agency, which promptly recruited Gross, and led to another important invention - a two-way air-to-ground communications system used during World War II. It was used extensively by the military behind enemy lines during the war.

The system, known as "Joan-Eleanor" and classified "top secret" until 1976, allowed OSS agents in occupied countries and Germany to communicate with high-flying aircraft. The ability to gather intelligence and safely communicate it from behind enemy lines helped expedite an end to the war and saved thousands of lives. The U.S. Joint Chiefs of Staff have called Gross' system one of the most successful wireless intelligence-gathering methods ever used.

In the late 1930's, Al also discovered a way to cause miniature vacuum tubes to operate in the unexplored VHF/UHF region of the radio spectrum. These radios were used to successfully communicate with other amateur operators over a distance of 30 miles.

In 1945, FCC Commissioner E. K. "Jack" Jett was the first FCC official to propose extending the use of short range two-way radio to private citizens. His imagination had been fired by meetings and discussions with Al Gross W8PAL, a young and avid amateur radio operator who had developed the portable radio and investigated the use of VHF/UHF spectrum for short-range communications. Jett's 4-page article on the possibility of UHF personal radio communications entitled *"Phone Me By Air"* in the July 28, 1945 *Saturday Evening Post* is a classic.

After the war the FCC allocated the very first frequencies for the newly formed Citizens Radio Service Frequency Band. Gross left the OSS Communications Group and formed Gross Electronics, Inc., to make 11-ounce walkie-talkie sets for private use. In 1948, equipment made by his re-named company - Citizens Radio Corporation - was also the first to win FCC approval for use in the new "Citizens' Band."

Many of Al Gross' visionary mobile wireless inventions were far ahead of his generation's ability to make practical use of them. He was the first to come up with the idea of a 2-way miniaturized radio, the forerunner of today's cellular telephone. It caught the fancy of cartoonist Chester Gould who asked Gross if he could use the idea in his comic strip. The result, the "Dick Tracy" two-way wristwatch.

Gross also invented the first wireless pager in 1949, a device initially intended for use by doctors. Ironically, Gross first introduced his pager at a medical convention, but it was rejected for fear the beeping device would upset patients and interrupt golf games.

In the 1950s, Gross tried, again in vain, to interest U.S. companies in his pager. The FCC finally approved the use of the pager in 1960. Today, over 300 million pagers are in use. During the 50's and 60's, Gross continued to invent mobile personal communications devices, securing 12 patents for various cell and cordless phone devices, while working for his own company and for the U.S. government.

Eventually, Gross began working as a communications systems specialist in the research divisions of large companies, including Sperry, GTE Communications Systems, Westinghouse Electric and AG Communications. Since 1990, he has worked as a senior principal electrical engineer for Orbital Sciences Corporation in Chandler, AZ. He was still employed there (at age 82!) at the time of his death.

He has received numerous awards and honors during his distinguished career, including the Radio Club of America's 1992 Fred B. Link Award, the 1997 Marconi Memorial Gold Medal of Achievement from the Veteran Wireless Operators Association, the 1999 Edwin Howard Armstrong Achievement Award from the Institute of Electrical and Electronics Engineers (IEEE), and he is this year's winner of the Lemelson-MIT Lifetime Achievement Award for invention and innovation ...and for playing a major role in the wireless personal communications field. In 1981, he was given a Presidential Commendation in Telecommunications from Ronald Reagan.

He is survived by his wife, Ethel. Burial mass was held December 27th at the St. Clement of Rome Catholic Church, Sun City. Interment followed at the Sunland Memorial Park.

Amateur Radio and Digital Networking Go Hand and Hand

HAM RADIO LEADING TECHNOLOGY SURGE IN THAILAND!

Could the number of radio amateur operators be an index for a nation's readiness for the digital economy

The Bangkok Post (Thailand) ran a two part feature story in its Nov. 29th and Dec. 6th editions entitled "The link between ham radio and the Net." It told how radio amateur operators from as far away as the United States and Finland converged on Pattaya for the 28th annual Southeast Asia Network Convention otherwise known as Seanet 2000. Pattaya is a seaside resort area just south of Bangkok.

Staff reporter Tony Waltham, HSØ/G4UAV said "This was largely a social gathering, but then the hobby of amateur radio which has almost three million licensed practitioners around the world is, by its nature, a social activity. ...With the exception of North Korea and the super-cautious generals in Rangoon *[Burma -- now called Myanmar -- located north of Thailand],* amateur radio is permitted and licensed in all countries around the world but, not surprisingly, the population of radio amateurs varies greatly from country to country. "

G4UAV believes there is a correlation between interest in Amateur Radio and a readiness for the digital economy. "Countries with high densities of radio amateurs tend to be leaders in other technologies. " He calls it the "Amateur Radio Index, ...a relationship between the number of ham operators in a country and the penetration of the Internet, as well as that country's interest in and involvement in technology." He said "...based on the very high number of radio amateurs in [Thailand], we can expect much higher interest in the Internet here in the future."

He points out that "The United States, Scandinavia (Sweden, Denmark, Norway and Finland), Korea and Japan lead the world both when it comes to the adoption of the Internet and also in the number of amateur radio operators. It is also significant that other countries with strong economies and a high-level of Internet use also rank highly in terms of the number of radio amateurs. The United Kingdom, Germany, Australia and the Netherlands all fall into this category."

He expects that "Thailand, with its low level of Internet penetration, will soon join the digital networked world since (according to the IARU) there are more than 140,000 ham operators in the Kingdom."

"This is a healthy figure if we bear in mind that each licensed operator has passed the examination set by the Post and Telegraph Department, and it means that Thailand ranks fifth in the world if the ratio of the radio of hams to the general population is factored."

"Leading the rankings that I compiled is Japan (with its obsession for things technical, and its leadership in wireless Internet and robotics), followed by Taiwan and Korea (both very technically advanced) and then the US."

"Thailand in fifth place is followed by the other leading nations when it comes to the wireless Internet -- the Scandinavia's Denmark and Sweden -- along with Canada and Spain. Then come the European power economies of Germany and the United Kingdom, while The Netherlands and Australia are not far behind."

In the second part of the story published in the Dec. 6th Bangkok Post, Waltham says ham radio in Thailand may be even more popular than the figures published by the IARU indicate.

The Radio Amateur Society of Thailand (RAST is their national ham radio society) contends "...there are now over 170,000 licensed radio amateurs with a callsign here, while almost 320,000 have now passed the Post and Telegraph Department's amateur radio examinations."

"This puts Thailand in third place after Japan and Taiwan if the first of these two figures are taken, or firmly in second place (with about half the density of hams in Japan) if those who sat for and passed the exam are counted. There is another factor here that makes this figure all the more remarkable, for amateur radio was only fully-legalized here in Thailand in 1987, and limited activities were granted prior to that in and around Bangkok as 'volunteer radio operators' - but only beginning in 1982."

"In other words, the interest in radio as a hobby here has really surged over a short period of a little more than 10 years -- compared with close to the 100 years that it has had to grow in popularity in Japan. I firmly believe that this is a very good 'hidden' indicator of Thailand's potential when it comes to applying Internet technologies."

"Amateur radio is a unique hobby in that it combines technical expertise and knowledge with practical communications - be it in Morse code, voice communication or digitized packet radio. I firmly believe that the high level of interest in it here reflects Thailand's potential to absorb and benefit from being part of a digital world. We may not have the vision of Singapore to provide a broadband connection to almost everyone's living room, but we do appear to have a strong 'do-it-ourselves' capability that should help to offset the worrisome delays in getting telephone lines out to most villages."

"Indeed, all the indications are that wireless communications will soon be providing the data link for many people, and here it may well be that the over 100,000-strong force of radio hams can pitch in to help. In the provinces, where there is a small cable operator providing satellite television to a community, almost invariably this is a radio ham putting theory into practice."