

W5YI

Nation's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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Massive Government Spectrum Shift Could Cost Ham Radio

*"This could reduce by one-half the spectrum available for the amateur service in the 13 cm band."
National Telecommunications and Information Administration, U.S. Department of Commerce*

*"We will use every argument that we can muster in favor of none of that band being reallocated."
Bill Tynan, W3XO, President, Radio Amateur Satellite Corp. (AMSAT)*

A new law requiring the government to give up spectrum for commercial use has resulted in a proposal to reallocate part of the 13 cm band (2.4 GHz or 2400 MHz). The segments 2300-2310 and 2390-2450 MHz are currently available on a secondary, non-interference basis to radio amateurs holding licenses of Technician Class and above (see Rule §97.301(a)). This band is viewed as key to current and future amateur space operations.

The Department of Defense is the largest government user of this spectrum, mostly for testing of radiolocation antennas and receivers, airborne navigation systems and operation of enemy radar simulators. According to the *New York Times*, "...the proposal is virtually certain to kick off intense lobbying that will find business and military interests on opposite sides."

Background

A perceived shortage of spectrum for commercial radio services has been of concern on Capitol Hill for years. A legislator who pushed for the reallocation law - House Commerce Committee chairman John Dingell of Michigan - once

lamented that radio engineers were having to spend their time inventing more spectrum-efficient technologies instead of coming up with more uses for the spectrum.

After years of study and hearings, a measure to combat the problem by reallocating federal spectrum to the private sector successfully passed as part of the President's budget legislation last year. This action is known as Title VI, Communications Licensing and Spectrum Allocation Improvement, of the *Omnibus Budget Reconciliation Act of 1993*. This is the same legislation, by the way, that contained a provision for "vanity" call signs in the Amateur Service.

The law establishes a complex timetable for federal agencies to vacate 200 MHz of spectrum. Those bands would be turned over to the FCC as they became available, to be reallocated to private sector services and licensed to the highest bidders. These "spectrum auctions" (actually, license auctions) are expected to generate billions of dollars in federal revenue.

The FCC will have to begin proceedings to determine just who should be allowed to bid for the reallocated bands, and for what purposes.

The process will play itself out over 15 years, but 50 MHz of the 200 MHz can be vacated quickly - by this summer, in fact!

Among the bands the Department of Commerce's *National Telecommunications and Information Administration* (NTIA) has proposed for reallocation are 2390-2400 MHz, 2402-2417 MHz and 4660-4685 MHz. These three bands can be made available to the FCC for reallocation by August 10, 1994. The band 2300-2310 MHz can be made available by January 1, 1996.

Light amateur usage

"The only frequency bands used by amateur licensees that are proposed for reallocation are in the 2300-2450 MHz range, referred to as the 13 cm band by the amateur community," the NTIA said. "Within this range, the amateur service is allocated a total of 70 MHz on a secondary basis to the Federal radiolocation service. The reallocation plan identifies three portions of this range, 2300-2310, 2390-2400 and 2402-2417 MHz, which represent a total of 35 MHz of spectrum for reallocation."

"This could reduce by one-half the spectrum available for the amateur service in the 13 cm band. However, these bands are believed to be very lightly used by radio amateurs, as compared to lower frequency bands. Because of the importance of specific frequencies in the range 2400-2402 MHz for amateur satellite operations, these frequencies were excluded from consideration. It is expected that the amateur community can satisfy the majority of their spectrum requirements in the 13 cm band in the remaining 35 MHz.

"A representative of the American Radio Relay League, an association of amateur licensees, advised NTIA, through the NTIA Spectrum Planning and Policy Advisory Committee, that increasing use is expected of the 2300-2310 and 2390-2450 MHz bands for high-speed computer data links, amateur satellite, amateur TV and other wide-band amateur applications."

AMSAT To Reject Proposal

Directors of AMSAT were considering the proposal as this issue went to press. **Bill Tynan, W3XO**, AMSAT President, was quite clear on what he wants to happen. "We need to defend against this thing," he told us. "We're using the 2400 MHz area right now for the DOVE satellite and for AMSAT-OSCAR 13. We have shown the utility of this band. It will become a mainstay of the Phase III satellite to be launched in 1996."

"We've already lost 80 MHz of this band. We lost 2310-2390 MHz several years ago, reallocated to future

expansion for telemetry. One of the big problems is that the spectrum they would leave us with is the least viable, because of the sharing with microwave ovens. As you get closer to 2450 MHz [where microwave oven energy is concentrated] the interference gets worse."

"Because of pressure elsewhere in the spectrum, the reallocation could even be expanded. They propose to exempt 2400-2402 MHz, but a little piece of spectrum like that is vulnerable. It would be easy to take two more megahertz there and drop reallocation of some other part that is more vigorously defended."

"AMSAT will comment in this proceeding. You can certainly be sure we will use every argument that we can muster in favor of none of that band being reallocated," Tynan said.

Industrial uses

The most familiar and widespread non-government use of the 2400-2450 MHz spectrum is for home microwave ovens - over 80 million in the U.S. in this band at last estimate. The band is also used in industrial cooking. One of the highest-powered 2400 MHz RF gizmos we've discovered (2.5 kW) is for donut frying!

Other applications of 2400 MHz heating equipment include drying of grain, pasta and bacon; curing of nylon, cotton and polyester fabrics, coatings, adhesives, paper, wood, ceramics and rubber and plastic extruded parts.

The 2400 MHz band is also seeing increasing use by unlicensed, low-power (one watt) Part 15 devices for spread-spectrum data communications. It will become the principal band for low-power wireless local-area networks (LANs) over the next two years as the industry develops a standard for this use. Manufacturers of those devices are not likely to be excited over possible reallocation of a portion of the spectrum they utilize.

EXTRA CLASS VEs SURRENDER THEIR LICENSES

Two amateurs previously associated with the Garland Amateur Radio Club (Garland, Texas) weekly testing sessions have surrendered their Amateur Extra Class tickets to the FCC for cancellation.

It became evident to the W5Y-VEC that **Luis A. Rivera, KP4UP** of Garland, Texas, and a person who falsely represented himself as **Gleason R. Pettitt, AB5KT** of Dallas had participated in an unbelievably brazen scheme to assist others - especially those from distant states - to fraudulently pass amateur radio operator examinations during the Fall of 1993 and in

January 1994.

The scam came to light when a routine FCC computer check of individuals being issued amateur radio licenses turned up the name of a Hector Cruz as being examined for an amateur license. The three examiners were Gleason Pettitt, Maria Rodriguez and Luis Rivera. FCC records indicated that a person named Hector Cruz having the same birth date had been involved in a scheme in the early 1980's to obtain licenses that had been previously held by Silent Keys. A "Gleason Pettitt" also was a VE at that test session.

Also involved in that same scheme was a person named Luis A. Rivera (who we will call #1) who was born on February 11, 1963. That is the same birth date of the Luis A. Rivera (#2) who was testing for the Garland Amateur Radio Club. Rivera has steadfastly denied that he is the same person.

In 1986, Rivera (#1) went on to administer amateur radio examinations coordinated by the ARRL-VEC. The review of the Rivera (#2) application did not identify him with the previous Luis Rivera (#1) because of his common Hispanic name and his indication of a different birthday on the application.

Rivera (#1) had been granted a Novice operator license with the station call sign of KA2TJA on Sept. 30, 1983. He upgraded to Technician a couple of months later and changed his call sign to N2EQX.

On Oct. 17, 1984, even though he already held N2EQX, Rivera (#1) applied to change the name of Alvin Vargas, N2CGO (a blind Advanced Class amateur who may have been deceased at the time) to "Luis A. Rivera." A request for a call sign change was also included. In that application, Rivera claimed his date of birth was November 17, 1955, the Vargas date of birth.

On November 2, 1984, Luis A. Rivera (#1) was issued an Advanced Class license with the new call sign KD2JN. Rivera (#1) thus was able to obtain an Advanced Class license by fraudulent means and without taking the required examinations.

A week later, an Edelmiro Cintron, Jr. filed an application for Rivera's Technician license and his N2EQX call sign. He claimed his name had been changed from "Luis A. Rivera" (#1) to "Edelmiro Cintron, Jr." Three weeks later that application was routinely granted by the FCC.

In July 1985, Rivera's (#1) KD2JN was changed to KP4IP and he eventually became Amateur Extra Class WP4S by further upgrading through the MARS-VEC in Puerto Rico. This VEC is now disbanded.

On November 25, 1985, an alleged Gleason R. Pettitt, KØRP, put through an address and call sign change and was issued NN2Y.

Later that year, a group of individuals in the New

York City area were identified as having obtained amateur licenses through falsified name and address manipulation. Some of the applications filed were not granted. It was also established that many of the people who formerly held these licenses were dead.

The Luis A. Rivera (#1) "name change" application was one of the ones discovered by the FCC. Based on the fact that KD2JN was illegally obtained, the Commission invalidated Rivera's WP4S call sign - plus others. Also invalidated, were a number of amateur radio operator licenses authorized through Rivera's (#1) and other VE testing for the League.

The FCC said that it was evident that Rivera conspired with Cintron to permit him to fraudulently apply for his Technician amateur license. "Furthermore, by permitting Cintron to apply for your licenses, you effectively surrendered these licenses."

On January 5th, 1993, "Pettitt" (who may not have been the original imposter since the handwriting was different on the application) put through another call sign and address change. This time to Dallas, Texas. The address was that of one Maria Rodriguez, KP4VU. "Pettitt" was issued an Amateur Extra Class license with a AB5KT station call sign.

Still another change of address was put through by "Gleason" to the Dallas post office box also belonging to Maria Rodriguez, KP4VU. She had previously known Rivera when they both lived in Pennsylvania.

It now appears, however, that the true identity of "Gleason Pettitt" may actually be an unlicensed Anthony Hopkins residing somewhere in the Dallas area. An address in McKinney, Texas, for him proved false. Hopkins simply assumed Pettitt's identity by filing applications for name and call sign changes. One has to assume that he may have obtained the idea for this strategy from Luis A. Rivera (#2). That is, if he indeed is Luis A. Rivera (#1). Again, he denies that he is.

Maria reports that mail for an Anthony Hopkins had been coming to her post office box which "Pettitt" originally said was for his son-in-law. After surrendering his license, however, "Pettitt" reportedly admitted to her that he was indeed Hopkins. It was Luis Rivera (#2) who actually turned in "Pettitt's" Extra Class license for him when he came to the W5YI-VEC Office along with Rodriguez. All three were summoned to the W5YI-VEC Office as part of the investigation. "Pettitt" who was to have been picked up by Rivera (#2), elected not to appear. He told Rivera to simply turn in his ticket.

In any event, the April 1985 issue of QST (the journal of the American Radio Relay League) lists KØRP, Gleason R. Pettitt, of Conway, Missouri, as a

Silent Key. A call to his relatives indeed confirmed his death.

On April 22, 1993, Luis A. Rivera (#2), KP4UP applied to the W5YI-VEC to be a volunteer examiner. He was assigned VE-13994. He upgraded to Amateur Extra Class the following August.

It was about this time that the previous examination team leader for the Garland Amateur Radio Club, Alex Cole, KX5C, resigned his position as Contact VE since he would be moving out of the area. At their urging, Rivera (#2) accepted the responsibility for conducting the examinations for the club. Examinations were administered weekly in a spare room located at a local electronics equipment distributor.

Two of his assisting volunteer examiners became Gleason Pettitt, AB5KT and Maria Rodriguez, KP4VU. Before the scheme was detected, Rivera (#2) had already conducted several examination sessions which included out-of-state applicants who apparently never appeared at the test session ...including his brother, Jose.

When it became evident that the Rivera test sessions apparently contained widespread irregularities, an undercover "examinee" was enlisted to observe their Saturday test sessions. It was quickly ascertained that some of the applicants and volunteer examiners listed on the manifest did not attend the test session.

Rivera eventually agreed to surrender his Amateur Extra Class license once he was confronted with information uncovered during the investigation. It is still not determined exactly what part Maria Rodriguez played in the irregularities. She was the girl friend of Rivera. Although now separated, they lived together for some time.

She maintains that she merely signed amateur radio operator applications based on Luis' recommendation and that she trusted him. Rodriguez admitted that she certified amateur examinations in which she did not participate and believes that Rivera may have slipped in applications of those not in attendance in with others that were examined at the test sessions.

Rodriguez also participated in a Commercial Radio Operator examination administered to Luis Rivera. One of the other examiners signing the "Proof of Passing" Certificate has denied participation in that test session. Rodriguez said she was in a hurry the day of the examination and had to leave before all three examiners signed the certificate.

- The **CB Radio Store at the Shady Grove Truck Stop** in Road Forks, New Mexico, has asked that their \$7,000 fine imposed for offering to sell a 150-watt Blue Streak CB linear amplifier to an FCC inspector be

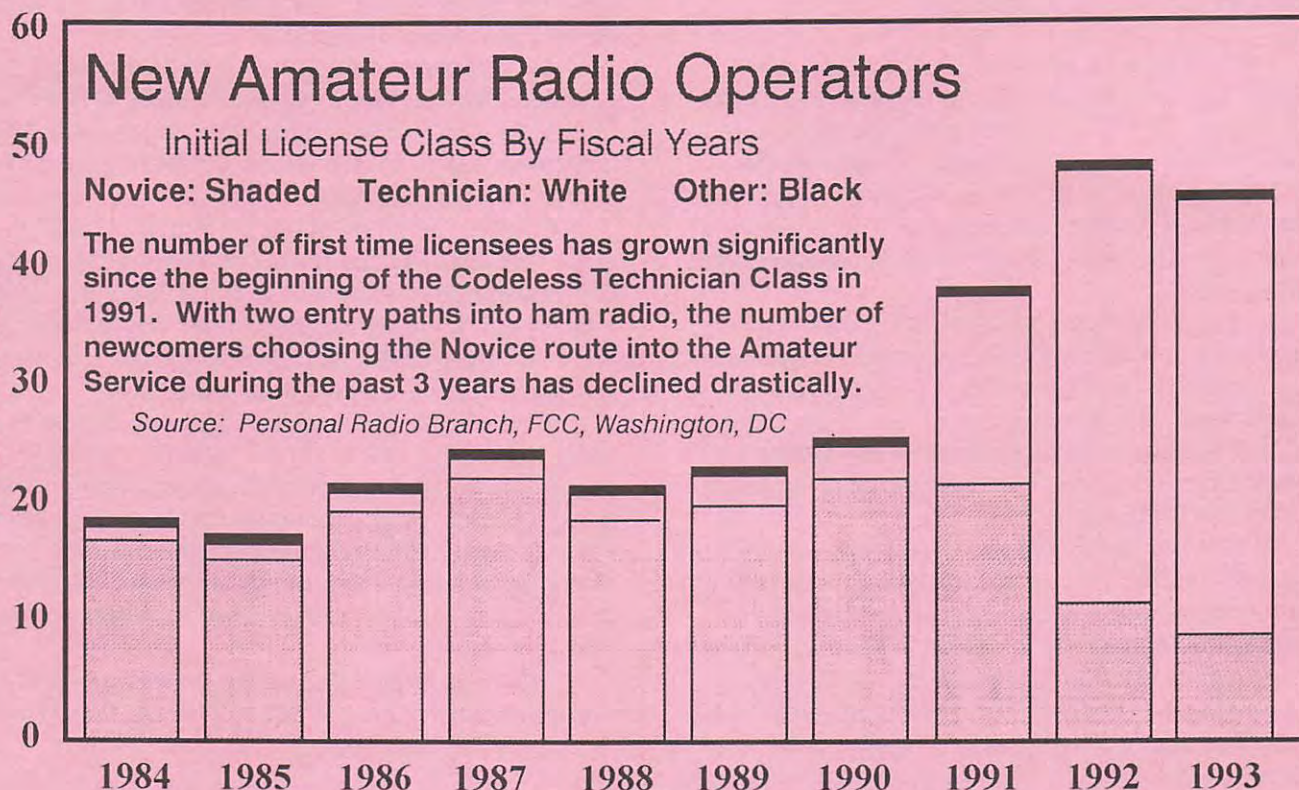
cancelled since no sale took place. FCC rules prohibit the sale, lease, offering for sale, importation, advertising or distribution of any external power amplifier capable of operation on frequencies between 24 and 35 MHz. The FCC said that an actual sale need not take place for a violation to occur. It did, however, reduce the fine to \$5,600 since the defendant had no prior history of violations.

- Col. Andrew Warren "**Andy**" **Freeborn, NØCCZ died February 5, 1994**, in a Colorado Springs hospital. He succumbed to cancer at the age of 71. A pilot and Air Force Colonel, Andy retired to Colorado Springs, Colorado, where he became an amateur and then became involved in packet radio activities.

He served in the Air Force from 1943 to 1972 and was a prisoner of war, a recipient of the Legion of Merit and the Purple Heart. For a number of years Andy was a member of Tucson Amateur Packet Radio Corp's Board of Directors and also served as TAPR's President. He was deeply involved in AMSAT's Microsat project. Andy is survived by his wife, Verena, two sons, a sister and five grandchildren. Burial was at Fort Logan National Cemetery, Denver.

- Recognizing that *information is the key ingredient* for industry, trade, government and social well being, the International Telecommunication Union (ITU) will hold its first **Worldwide Telecommunication Development Conference** in Buenos Aires, Argentina, between March 21 and 29. The conference will review global telecommunications and develop a strategy for balanced telecommunications by the year 2000. Discussed will be how some countries have made substantial telecommunications progress while others have not. The last decade has seen an explosion of new telecommunications products - such as facsimile, mobile communications, global satellite services, fiber optics, ...networking - and at greater speeds and capacity. Yet, two-thirds of the world's population still suffers from poor access to telecommunications. A special program will be presented to assist the LDC's (least developed countries) in achieving parity.

- **New York City taxi drivers apparently have a campaign going to install ham radio equipment in their cabs.** Brochures claiming "Ham radio will keep you from getting killed on the streets of New York City" and "Ham radio is 100 times better than CB Radio" are being circulated. Dispatching of cabs is not condoned but "Ham radio also gives you help from other taxi and livery drivers in locating hard to find streets, clubs, restaurants, knowledge of traffic conditions..." sound like prohibited business communications to us!



AMATEUR RADIO CALL SIGNS

...issued as of the first of February 1994::

Radio District	Gp.*A Extra	Gp.*B Advan.	Gp.*C Tech/Gen	Gp.*D Novice
0 (*)	AA0QC	KG0LB (***)	KB0LQM	
1 (*)	AA1IL	KD1TP	N1RGM	KB1BFT
2 (*)	AA2RC	KF2TQ	N2XUK	KB2QVZ
3 (*)	AA3GZ	KE3LY	N3RKG	KB3BAU
4 (*)	AD4PJ	KR4MI (***)		KE4JKD
5 (*)	AB5SS	KJ5UR (***)		KC5FFG
6 (*)	AC6AC	KN6XZ (***)		KE6FCN
7 (*)	AB7BD	KI7VO (***)		KC7ANO
8 (*)	AA8NZ	KG8GR (***)		KB8RKQ
9 (*)	AA9KB	KF9TV	N9WBZ	KB9IWX
N.Mariana Is.	AH0T	AH0AQ	KH0CK	WH0AAY
Guam	NH2R	AH2CU	KH2IM	WH2ANI
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii	(**)	AH6NF	WH6SG	WH6CRC
Kure Is.			KH7AA	
Amer. Samoa	AH8H	AH8AG	KH8BB	WH8ABB
Wake W.Peale	AH9C	AH9AM	KH9AE	WH9AAI
Alaska	(**)	AL7PM	WL7QG	WL7CHL
Virgin Is.	WP2F	KP2CC	NP2HG	WP2AHU
Puerto Rico	(**)	KP4WG (***)		WP4MNB

*=Group "A", **=Group "B" and ***=Group "C" call signs no longer available in these call sign areas

- **N-by-3 (Group "C") ham call signs are being very quickly used up.** Only the 1st, 2nd, 3rd and 9th call sign regions have them left. The 2nd and 9th areas will run out in about 60 days. The 1st and 9th have enough call signs to last about 6 months. Group "D" (2-by-3) call signs are assigned to General and Technician Class when all Group "C" are allocated.

- The FCC has stepped up their **enforcement program against companies that market uncertified computers.** Century Computers (Greenville, Texas) and Roselius Computer Corp. (Edmond, Oklahoma) each received \$5,600 fines from the FCC.

- There also seems to be a **nationwide FCC campaign underway to check for FCC rule violations by broadcasters.** Twelve broadcast stations (WAWK-AM Kendallville, IN, WCST-AM/FM Berkeley Springs WV, WHLX-FM Wheeling WV, KPER-FM Hobbs NM, KAAS-TV Salina KS, KLGS-AM Versailles MO, KQRC-FM Leavenworth KS, KBCE-FM Boyce, LA, WBSL-AM Bay St. Louis MS, WHLV-AM Hattiesburg MS, WHSY AM/FM Hattiesburg MS and WJKX-FM Ellisville, MS) recently received fines ranging from \$1,800 to \$11,300 each for various technical violations. The infractions involved antenna fence enclosures, defective Emergency Broadcast Systems, faulty control metering and improper handling of the public information file.

STS-60 SAREX Post Flight Synopsis

The first Shuttle Amateur Radio Experiment (SAREX) flight of 1994 can be considered a resounding success. The STS-60 Space Shuttle Discovery mission, which included Astronauts **Charlie Bolden, KE4IQB, Ron Sega, KC5ETH**, and Russian Cosmonaut **Sergei Krikalev, U5MIR** concluded on Friday, February 11, with a picture perfect touchdown at the Kennedy Space Center.

During the mission, nearly 4000 packet connections were made with the SAREX station on Discovery by ham radio operators on the ground. Several voice contacts were also made, primarily late in the mission. True U.S.-Russian cooperation was demonstrated on this flight through on-board experimentation and operation of the SAREX station.

One of the SAREX mission highlights occurred at 10:42 UTC on February 6. Sergei Krikalev, U5MIR, initiated a contact with a school group at the House of Science and Technology for Youth in Moscow, Russia.

Problems with the Wake Shield Facility primary payload affected the SAREX payload somewhat. After two days of trying, Sergei Krikalev finally got through to students in Mars, PA, via ham radio. The contact, had to be rescheduled four times before a successful hook-up could be made.

Eight students were able to ask questions to Sergei Krikalev and astronaut Jan Davis during this contact. "It was just like an amazing sensation, just talking to them," said Julia Dawson, a sixth-grader at Mars Area Middle School who came in with five other students even though classes were canceled because of the cold. The contact was made through a Telebridge (radio/telephone linking) in Texas on orbit number 85. The students asked Krikalev about the differences between the American and Russian space equipment and how he was chosen for the mission.

Shuttle to Mir Radio Link

Earlier in the day, Krikalev exchanged greetings with his comrades on Russia's Mir space station as their spacecraft zoomed around Earth half a world apart. It was not by ham radio, however. The shuttle crew were unsuccessful in their attempts to communicate with the MIR crew using SAREX.

Discovery was 210 miles over the South Pacific and Mir was flying at about the same altitude over the Caribbean when the crews linked via a satellite lash-up for ABC's "Good Morning America."

"We have flown for a long time with Sergei," Mir cosmonaut Valery Polyakov said in Russian. "I just wanted to wish him successful work among his Ameri-

can colleagues and a safe return to Earth and a good landing and future meetings."

Other scheduled school contacts included the Chariton High School, in Chariton, Iowa, where three questions were answered and the James Bean School in Sidney, Maine, where eleven students queried the shuttle crew on Discovery.

Krikalev, who has spent more than a year on Mir, is the first Russian cosmonaut to fly on a NASA shuttle. Several other joint shuttle flights are scheduled in coming years. American astronauts are to begin flying on Mir in early 1995. All this is supposed to lead to a joint international space station by 2001.

Scientifically, Discovery's eight-day flight has been less of a success. The \$13.5 million Wake Shield Facility had to stay aboard Discovery instead of flying 46 miles away, forcing researchers to develop semiconductor film in the dirty shuttle environment. Had it gone as planned, the experiment could have produced high-quality film needed for faster computers.

The following packet message was received by AMSAT member Doug Howard, KG5OA, during one of the last SAREX passes:

[2/10/94 12:11:21]W5RRR-1>QST:
Greetings from Discovery on our sixth day in orbit. We enjoyed a conversation with President Clinton while he was visiting Houston Mission Control yesterday. This morning we talked with our colleagues on Mir via satellite and we hope to talk with the Mir cosmonauts today with SAREX. Thanks for your interest and support of our flight. Best wishes from the crew of STS-60.

QSL information

Those of you who have heard or worked the STS-60 crew and wish to receive a QSL card (only one card to a mission) need to send your signal report and a large SASE or an envelope and IRCs to:

STS-60 QSL
Education Activities Division
American Radio Relay League
225 Main Street
Newington, CT 06111

The next SAREX flight, STS-59 is planned for April 7. It will be a high inclination (57 degree) mission with FM voice and packet (Configuration C) on-board. Payload Commander **Linda M. Godwin, N5RAX**, and Mission Specialist **Jay Apt, N5QWL** are the ham astronauts scheduled for that mission aboard the Shuttle, Atlantis.

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March 1, 1994

• **The FCC has just levied more than \$437,500 in fines** against various broadcasters for airing indecent material during **"The Howard Stern Show"** in August, September and October 1993 between 6 AM and 11 AM.

Total fines involving The Howard Stern Show now total more than \$2 million. For the most part, broadcasters are choosing to ignore them and to let the courts decide what can and cannot be said over the radio.

• AMSAT's **North American Phase 3-D Satellite Development Team** has accepted the offer of a Florida-based volunteer group, called **Space Frontier Operations (SFO) to manage the overall integration (finally assembly prior to launch) effort for the Phase 3-D spacecraft.** The non-profit SFO is based in the Orlando/Cape Canaveral, FL area. Their membership is primarily connected professionally to NASA or other space agencies at the Cape. AMSAT is also considering the Orlando International Airport as the P3D integration site.

Together, SFO brings several decades of 'hands on' experience designing and building a wide variety of government and commercial spacecraft to the Phase 3-D integration effort.

• The Radio Amateur Satellite Corporation (AMSAT) reports that **funding for the Phase 3D amateur satellite is running behind expectation.** AMSAT-NA is expected to contribute a total of \$1.5 million - or about one-third of the \$4.5 million needed to build and launch P3D.

So far, AMSAT has raised just under \$200,000 - some of which has already been spent. (Expenses for 1994 alone are targeted at \$400,000 alone.)

The ARRL has raised another \$185,000 but this is earmarked for the launch - now scheduled for April 1996 aboard an Ariane rocket from Korou, French Guiana. P3D will mean easy access to satellite communications for virtually every ham in the world.

Anyone wishing to donate to the Phase 3D effort should send their contribution to: **AMSAT-NA Phase 3D, Box 27, Washington, DC 20044.** AMSAT is a 501(c)(3) non-profit organization. Contributions by US taxpayers who itemize deductions may qualify as deductible charitable contributions.

• **NEW AMATEUR & SWL BOOKS** we have seen and recommend!

1994 Amateur Radio Almanac (by Doug Grant, K1DG) contains just about everything you would ever want to know about past, present and future ham radio! Rules, questions pools, propagation, contests/awards, QSLing/postal regs, Silent Keys, operating tutorials, ham census ...plus thousands of facts, tables, graphs, maps ...and more! You name it, it is there! Cost: \$19.95 (plus \$4. shipping/handling.) 500 pages! [CQ Communications, Inc., 76 N. Broadway, Hicksville, NY 11801]

Riding the Airwaves with Alpha & Zulu uses a completely new approach to teaching or passing the Technician No-Code examination! It was written by one of our VEs, John Abbott K6YB of Newhall, CA. The profusely illustrated 300-page text uses cartoon characters (called Phonetics whose bodies resemble Morse Code dits and dahs) to cover all the needed material to pass Element 2 and 3(A). \$14.95 plus \$4.00 shipping. [Artsci, Inc., Box 1428, Burbank, CA 91507]

1994-95 Repeater MapBook by Bob Martin, N7JXN is also available from Artsci. It allows users to easily find the 2 meter, 220, 440, 900 MHz and 1.2 GHz repeater you need by consulting a map of all 50 states. The repeater location, frequencies, offsets and PL tones are shown right on the map. Also covers Mexico, Canada and the Caribbean. Cost: \$9.95 +\$2 shipping, 160 pages.

Master Frequency File (\$29.95 + \$4. shipping/handling, 544 pages) by James Tunnel and Robert Kelty, WA6GEL. Contains every known (and unknown) VHF/UHF (25 MHz to 2.1 GHz) frequency and call sign used by the federal government - including the military, FBI, DEA, Secret Service, Internal Revenue Service, Customs Service ...and much more. Even has the code words, names and signals used to obscure those officials being protected. One has to wonder how this book could be legally published! [Tab Book Div. McGraw-Hill, Inc., Blue Ridge Summit, PA]

Amateur Radio Encyclopedia (by Stan Gibilisco, W1GV) - also from Tab Books (First edition: 1994) is a very useful list of every amateur radio term in alphabetical order. (\$49.95 and worth it in my opinion - 608 pages.) Gibilisco, a mathematician by trade, served as the Assistant Technical Editor for QST for five years. (A prolific writer in the fields of mathematics, electronics and astronomy, one of his more than 20 books is entitled: "Understanding Einstein's Theories of Relativity.")

Shortwave Listening Guidebook, A complete guide to hearing the world! By well-known amateur, Harry Helms, AA6FW. Covers everything from selecting a shortwave receiver and antenna to propagation and shortwave broadcast frequencies. 336 pages, \$19.95 plus \$3.00 shipping. [HighText Publications, Inc., PO Box 1489, Solana Beach, CA 92075]

• **The Foundation for Amateur Radio, Inc.,** a non-profit corporation with headquarters in Washington, D.C. plans to administer forty-nine scholarships for the 1994-1995 academic year.

Licensed radio amateurs may compete for these awards if they plan to pursue a full-time course of studies beyond high school and are accepted at an accredited university, college or technical school.

The scholarships range from \$500 to \$2,000 with preference given in some cases to residents of specified geographical areas. Additional information and an application form is available from:

FAR Scholarships

6903 Rhode Island Avenue
College Park, Maryland 20740.

All requests for applications must be postmarked prior to April 30, 1994. FAR Scholarship Committee Chairman is Hugh A. Turnbull, W3ABC who also serves as ARRL Atlantic Div. Director.

• **The number of Canadian hams has grown 62%** since April 1990 when Canada restructured their Amateur Service to include a no-code license. In 1987, more than 60% of all Canadian amateurs were over 50 years old. It is now 54%. 9.6% of all Canadian hams are under 30 years old. (versus 5.5%.)

• In response to a question we posed to Al Gross, W8PAL, regarding his Patent 2,698,380 on the hand-held walkie-talkie, *Al Gross, W8PAL*, sent us a copy of his 1955 U.S. Patent Court Final Hearing Report establishing that he did indeed invent the two-way hand-held radio.

Another patent (dated July 4, 1950) for a two-way radio transceiver was first issued to a D. R. Goddard of RCA. Here is an interesting excerpt from that hearing report:

"Gross, the junior party, has the burden of proving priority of invention... The Goddard patent is assigned to RCA whereas the Gross patent was co-pending at the time of the Goddard assignment.

"The record shows that Gross became interested in amateur radio while in elementary school and obtained his amateur radio license while in junior high school. Gross became very active as a radio experimenter and was particularly interested in high frequency wavelengths 100 megahertz and higher. From 1933 through 1938 Gross designed and built transceivers embodying the elements and structures exhibited in the Gross patent and in models submitted to the Board of Patent Examiners.

"It is a requirement for radio amateurs to maintain written records or logs to show dates and time when communicating with each other. Gross has submitted, in evidence, his logs showing dates and time including details of his transceivers used in establishing two-way radio communications. Photographs, sketches and diagrams bearing dates and time with Gross' signature is included with these exhibits.

"Affidavits, by other radio amateurs, submitted in evidence corroborate dates and times of two-way radio communications by Gross using his transceivers. Affidavits by other radio amateurs that used the Gross transceivers has also been submitted with the exhibits.

"Gross' later models designed and built in 1941-1942 embodies all the elements proclaimed in the Gross patent application.

"Since the transceiver of the Gross exhibit embodies the construction recited in the testimony and is relative to this device obviously a conception by Gross in the 1941-1942 time.

Affidavits by corroborating witnesses testify that two-way radio communications was successfully demonstrated and that the invention was used in the Gross transceiver.

"From reasons already made clear, we have no doubt that Gross is entitled to a date for conception ...on the aforementioned two-way radio communication carried out by Gross and other radio amateurs during 1941-1942.

"Not only does the evidence before us demonstrate that Gross actually did make the invention, but the fact that the invention is of practical nature free from any complicated theoretical aspects indicates that its conception was well within the capabilities of a radio amateur and experimenter such as Gross.

"Priority of invention of the subject matter involved in this issue is hereby awarded to A. Gross, the junior party." Signed: L.F. Kreek, Chief Examiner of Interferences The U.S. Patent Office "Final Hearing 1955 in the U.S. Patent Office before the Board of Patent Interferences" is dated Dec 27, 1955.

It thus appears certain that Al Gross did indeed invent the hand-held transceiver and - thanks to properly maintaining his amateur radio logbook - was able to convince the U.S. government of his accomplishment.

The Nov./Dec. 1993 issue of *Radio Resource* carries a very interesting article about Al Gross, W8PAL and how he also invented radio paging.

In 1951, Gross received FCC type approval for a single tone sub-carrier paging system to operate at 460-462 and 468-470 MHz. This first 50 watt transmitter and four paging receivers was put into service in 1955. Throughout the 1950's and 60's, businesses and public safety agencies continued to use two-way or AM frequencies to broadcast recorded paging messages to hand-held or mobile receivers.

Digital signalling, developed in the 1970s increased channel capacity, pagers grew smaller, equipment got less costly and service using one-way made it possible for almost anyone to carry a palm-sized pager. Today, satellites allow carriers to provide wide area and nationwide paging.

Gross also sent us a copy of his "CB Number One" QSL card. His 460-MHz CB station call sign: 19W0001 was the first Citizen's Band station license

issued (on March 22, 1948) by the Federal Communications Commission. Before that, however, Gross held a number of experimental station licenses for 250 MHz and 460 to 470 MHz CB between 1944 and 1948.

Gross was the first to experiment up in VHF/UHF range. He never advocated HF CB - that was the idea of industry who wanted to sell radios. Al will be celebrating his 60th year as W8PAL in 1994.

Al Gross, today - although aged 76 (his birthday was last Tuesday) - is still at it. W8PAL is a Senior Engineer with Orbital Sciences Corporation and is deeply involved in the implementation of a two-way low-Earth orbit (LEO) mobile communications and position determination satellite system. This system is commercially viable since the launching of small LEO satellites is now relatively inexpensive.

Gross and Orbcomm envision 137 MHz uplinks and 148 MHz downlinks which would be distributed to millions of mobile and hand-held radio service subscribers using packet radio techniques.

People will be able to transmit short alphanumeric messages to and from just about anywhere. The satellite terminal will be small, the size of a pocket calculator. Since the frequency is close to the FM broadcast band, vehicles will share the car's existing antenna. Again, all of this is merely an extension of technology developed in the Amateur Service by AMSAT and TAPR.

Orbcomm believes that their LEO mobile satellite system will support a wide variety of applications which have been grouped into **Emergency** (such as road service, search and rescue and medical applications), **Data Acquisition** (such as environmental/industrial/utilities monitoring), **Tracking** (...wild animals, boxcars, containers, recovering stolen property) and **Messaging** services (...personal/business traffic, handicapped communications, trucking).

Orbcomm will offer subscriber services in the U.S. (on a common carrier basis) both directly to subscribers and to organizations that will retail the services and provide ongoing customer service. They plan to be the first mobile satellite service to serve the mass consumer market and will do so using less than 1 MHz of bandwidth.

ANDY SEYBOLD, W8GEC: Shaping the Wireless World

The February 11th, *Wall Street Journal* carried a special telecommunications report entitled: "A Wireless World." It was about **Andrew M. Seybold, Sr., W8GEC**, of Boulder Creek, California? It seems at age seven, Andy stretched a wire between two tin cans and ran it across several vacant lots to establish voice communications with a friend's house more than 500 feet away. Later -- much to his parents' dismay -- he cannibalized parts from the family TV to build a transmitter for his first ham radio.

Mr. Seybold, now 47, has hit it big in a modern-day high-tech radio offshoot: wireless communications and computing. Combining technical know-how and a showman's flair for self-promotion, Seybold has positioned himself as one of the principal evangelists of the dawning age of mobile computing and wireless communications -- using radio waves to send data and voice from small, portable devices. His monthly newsletter, Andrew Seybold's *Outlook on Mobile Computing*, is praised by top wireless executives at the likes of Motorola Inc., General Electric Co. Apple Computer Inc. and Hewlett-Packard Co. His seminars and conference appearances draw packed houses; his daily consulting fees now occasionally approach five figures. If there are any doubts about the scope of his influence on the wireless movement, just ask him:

"I have a rare combination of expertise in radio and computers, the twin axes of the wireless revolution," Mr. Seybold rumbles, in a deep voice made gravelly by cigarettes. "That makes me unique in this arena. In fact, I am a prototypical wireless warrior."

Some in the industry dismiss him as a blowhard, or worse. They believe he is more of a Gadfly than a Guru. "Andy is a pain," says Bob Ratliffe, vice president of corporate communications for McCaw Cellular Communications Inc., which has been feuding with Mr. Seybold over his blunt criticism of an avant-garde cellular-phone technology that McCaw is promoting as a possible industry standard. "He's strictly a self-proclaimed wireless guru," Mr. Ratliffe says. "We're not impressed."

Andy Seybold is Dyslexic and colorblind, struggled in high school, dropped out of college and became a high-tech gypsy, wandering through jobs, mostly in electronics, mostly as a salesman. He had some successes: He helped develop some of the earliest two-way radios for paramedics and emergency personnel, and he was an early devotee of Apple computers and consultant to the garage-bound Steve Jobs.

Mr. Seybold argues that many companies are focusing too much on pie-in-the-sky future wireless technologies when they should be perfecting today's

devices and building markets for wireless technology closer to hand: things like wireless E-mail and improved wireless modems that will allow users to make wireless connections between their portable devices and their desktop computers.

He was one of the earliest advocates of Radio-Mail Corp.'s fast-growing wireless post office, which allows users to tap in to virtually all of today's different wireless data networks and link up with wired networks, such as MCI-mail and the Internet.

Andy's latest project may turn out to be his most important contribution yet to wireless. He conceived and pulled together the *Portable Computer and Communications Association*, an organization that includes Ericsson GE, Intel, Lotus, Microsoft Corp., Motorola and a dozen other big names in high tech. (McCaw is not a member.) Its mission is to hash out open standards for wireless computing that will enable different manufacturers' products to talk to one another; that's considered crucial to the development of a wireless world.

And he has even found love. He met his second wife, Linda N6VKL, over ham radio five years ago. For many months, theirs was a wireless romance. "I knew the voice before I ever met the man," recalls Linda, a lifelong ham-radio buff. "It was gruff, but I kind of liked it."

AMATEUR COMMUNITY HAS MIXED FEELINGS ON EXTENDING TEMPORARY OPERATING AUTHORITY

The comment and reply comment period has closed on PR Docket 93-267. This is the FCC's proposal to grant immediate temporary operating authority to examinees who have passed the requirements for their initial amateur radio license. As it is now, newcomers to ham radio must wait up to 3 months before making their initial contacts on-the-air since they do not have a call sign with which to identify their transmissions.

Amateurs upgrading their license class and who already have a station call sign, however, may immediately begin using their new frequency privileges. Section §97.119(e) of the rules allows an existing amateur to simply append their existing call sign with a two letter identifier indicating that they have passed the examinations necessary for additional privileges. The identifier is dropped from their station identification when their new operator license arrives from the FCC.

The proceeding is in response to a petition filed last June by **Ray Adams, N4BAQ**, President of the Western Carolina Amateur Radio Society VEC, Inc., of Knoxville, Tennessee. Actually, the possibility of extending temporary operating authority was first dis-

cussed by the FCC at the National VEC Conference held in Gettysburg, PA last June. WCARS liked the idea and immediately fired off a petition asking that the concept be implemented. The petition was assigned: RM-8288 by the Commission and circulated for public comment.

In October, the FCC followed up with a *Notice of Proposed Rule Making* seeking to extend the temporary operating authority to beginners. If adopted, it allow an examinee to immediately begin operation on the amateur airwaves as soon as the necessary qualifying examinations are passed.

The NPRM envisions that until the initial operator license is received, newcomers would identify their station for up to a 6 month period by using the prefix "WZ" followed by the geographical area number and three suffix letters representing their first, middle and last initials of their name. The number would be determined by the person's mailing address. An additional two letter identifier would indicate the license class for which the applicant was qualified.

If adopted, the new rules would not only eliminate the long wait before new licensees could go on-the-air but would also result in a cost savings for the Commission by reducing the number of inquiries by persons checking on the status of their license applications.

The FCC says that amateur operator license applicants make approximately 11,000 status inquiries annually. "Answering such inquiries diverts resources from the processing of license applications." The FCC also said in the NPRM that "...the precedent for permitting temporary operation while awaiting final application grant already exists in several radio services."

Comments and Reply Comments...

The American Radio Relay League opposed the recommendation stating that they felt "...the early implementation of electronic filing was a better way to address the problem of excessive delays." The League said that "...the FCC had, as recently as 1987, denied such a concept and that the absence of an up-to-date database of such temporary call signs would make both self-regulation by amateurs themselves and rules enforcement by the Commission more difficult."

The ARRL also raised legal and practical issues, "...permitting unlicensed persons to choose a call sign and go on the air without a Commission-issued license ...is inviting abuse," they said. The Radio Amateur Satellite Corporation and many other amateurs basically agreed with the League's position.

Seventy-seven comments were received by the Commission. We saw none that supported the use of an examinee's initials in the station call sign since there would be no way for anyone to determine if the

applicant was in fact a qualified operator. Commenters noted that the undisciplined Citizen's Radio Service went to a temporary licensing plan some time ago and now operates on a blanket license basis without any call signs whatsoever.

Some, including The W5YI-VEC, Inc., suggested alternative plans for temporary operating authority. Rather than a self-assigned call sign based on initials, we suggested that prefix blocks be divided by the FCC among the VEC's for distribution by the VEC's in suffix sub-blocks to the VEs. The VE team would be responsible for assigning and recycling specific temporary call signs to new amateurs. For enforcement purposes, each VE team's suffix sub-block could be made a matter of public record.

The historic percentage of applicants that each VEC examines has remained basically the same over the years. Since the ARRL and W5YI VEC programs account for more than 80% of the testing "market-place", we suggested that the prefix WX be allocated to the ARRL-VEC, WY to the W5YI-VEC and all other VECs share the WZ suffix.

Furthermore, the W5YI-VEC, Inc., filed a Request for Special Temporary Operating Authority (STA) to test such a system over a one year trial period in the event the FCC is unable to adopt a system which would allow qualified newcomers to immediately begin using their newly earned frequency privileges.

In their Reply Comments dated February 10, the ARRL again restated their belief that electronic filing will reduce the time between examination and license receipt and the FCC plan was flawed and should not be adopted. "...there would be a significant possibility of duplicate call signs." It pointed out that present temporary operating authority in other services suffer severe problems with unlicensed operators and "...serves as a good example on how not to configure a temporary licensing plan."

The League also opposed any alternative plans stating that "...there is absolutely no statutory basis for [the] delegation of all sign assignment authority... ..VE-assigned temporary call signs do not solve the problem of accountability; there would still not be any centralized database of call sign assignments that is readily available for checking the validity of a particular use of a call sign."

The ARRL asked that the Commission "...not deprive the Amateur Service of the ability to self-regulate ...by making the licensee database effectively useless as a means of determining who is licensed with what call sign. ... the Commission [should] terminate this proceeding without action, and proceed as soon as it is practical ...with implementation of electronic filing arrangements..."