



THE OHM TOWN NEWS

Voice of the Bridgerland Amateur Radio Club

February 2008

>>>>>> <http://www.barconline.org> <<<<<<<

President's Message

I hope you all enjoy snow, we have been getting a fair amount of it. I have been enjoying it, but I am starting to think a snow blower might have been a good investment against the time spent shoveling. At least it's light and fluffy (with the exception of the road slush plowed up at the end of the driveway.) I appreciate those of you who take the time to monitor the repeaters and respond to calls for assistance during these storms.

Changes

We are already deep into the year and change is upon us. Erik Larson, AD7OV, will be resigning his position as Vice President of the club at the end of this month. His wife Heather, AD7OW, has finished up her teaching program and was hired by the school district in Vernal Utah where her family is. Congratulations to them, we wish them the best. Erik says he wishes to stay in touch with his friends here in the club and has an eye towards participating in LOTOJA this fall.



This leaves us with a club officer and net manager position to fill. The majority of the board members at the last board meeting wanted to open it up to a vote by the club in March, so there will be two votes that meeting. One for the Vice President's office and one for the budget. The net manager position is separate from the VP office.

Sign-Up

We had a great turn out at the January club meeting. Many newly licensed hams showed up and were well fellowshipped by the rest of us. We passed around a paper for people to sign up as elmers and there were many volunteers. Thank you.

We would like to continue to build the list so we know who is willing to elmer, who is looking for an elmer and what interests and skills are out there. We will pass the list around at club meetings. If you aren't able to make the meetings, please feel free to give myself or another board member a call and express your interest.

We will also be passing around the sign-up list for the summer's public service activities at the next

(Continued on page 4)

UPCOMING ACTIVITIES 2008

February Club Meeting - February 9 at 10:00 A.M.

RACES VHF Net - February 21 at 8:00 P.M.

Utah UHF Society Swap Meet - February 23 at 8:00 A.M

For more info see <http://utahvhfs.org/>

VE Test session - March 8 at 8:00 A.M.

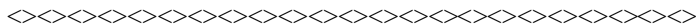
March Club Meeting - March 8

April Club Meeting - April 12

The VE test sessions are usually held in room 407 at Old Main on the USU Campus at 8:00 AM

BARC Club Meetings are normally on the 2nd Saturday of the month at 10:00 A.M. on the 3rd floor of the Cache County Sheriffs Complex on 200 North and 1225 West, Logan, Utah

ARES Meetings are usually held on the Third Wednesday of each month at 7 P.M. at the Cache County Sheriffs Complex. Contact Tyler Griffiths for more information.



The Listening Post

Name	Frequency	Days	Time
Notes			
VHF morning rag chew	146.720- 103.5	M-F	6:30AM
VHF evening rag chew	146.560	M-F	4-5PM
BARC Net	146.720- 103.5	T	9:00PM
SLC SSB VHF Net	144.250 USB	M	9:00PM
(horizontal polarization)			
Logan Storehouse ERC	146.420	1&3 Sn	8:30PM
(W7MOY)			
Ogden Utah North VHF	145.590	2,4 T	7:15PM
(W7OGD)			
SPARC Net	146.800- 88.5	1 W	8:00PM
(Sedgwick Peak)			
RACES VHF Net (IRLP)	147.200+ 103.5	3 Th	8:00PM
(even months)			
HF daily rag chew	7.228	Dy	12:00PM
High Noon Net	7.240	Dy	12:00PM
(relaxed)			
Beehive Utah Net (NTS)	7.272	Dy	12:30PM
HF daily rag chew	3.904	Dy	6:00PM
Ogden Utah North HF	3.993	1,3,5 T	7:15PM
RACES HF Net	3.918	3 S	8:00AM
(odd months)			



Answers to questions on page 8:
1-A, 2-D, 3-C, 4-D, 5-B, 6-B

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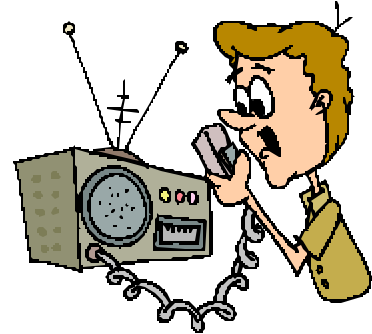
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Membership in **The Bridgerland Amateur Radio Club, Inc.** is open to anyone interested in Amateur Radio. You do not need an amateur license to join. Learn more online at <http://www.barconline.org/> or by emailing membership@barconline.org.

The Bridgerland Amateur Radio Club provides the following to its members:

- A repeater system that covers northern Utah from Bear Lake to Salt Lake Valley.
- An opportunity to meet and learn from other amateur operators. (Club meetings are held the second Saturday each month from October to May.)
- Events where you can practice your radio skills in a fun learning environment.
- Social activities where members can make friends and interact with other members.



Your tax deductible membership fees maintain the repeaters and support club activities.

The Bridgerland Amateur Radio Club, Inc.
Application for the Year 2008 Membership
Dues are in effect January 1, 2008 through December 31, 2008

Name _____ Call Sign _____ Date Paid _____

P.O. Box _____ Street Address _____

City _____ State _____ Zip Code _____

Home Phone () _____ Work Phone () _____

E-mail _____

Individual Membership - \$25 \$ _____

Additional Family members in same household - \$3 ea \$ _____

Equipment Donation \$ _____

(One Newsletter per household)

Names and call signs of additional family members Total \$ _____

Name _____ Call Sign _____

Name _____ Call Sign _____

Name _____ Call Sign _____



Mail your completed form and a check to: B.A.R.C., P.O. Box 111, Providence, UT 84332-0111
 or pay online at <http://www.barconline.org/?q=node/242>

B.A.R.C. is a non-profit organization

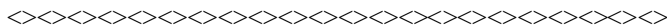
(Presidents Message Continued from page 1)

few club meetings. There are a plethora of fun activities each summer that can get us out of the ham shack and into the fresh air to practice our radio communication skills.

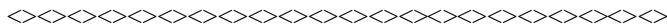
Club meeting ideas and activities

Some ideas for club meetings topics for this year discussed by the board have included a visit from the ARRL Section Leader Mel Parks, weather tracking, go-kits (most likely in March), logging software and the ARRL's Logbook of the World, and DStar.

For activities we hope to have a bunny hunt, a build-it party, field day and public service activities (of course.) Nick, N7DCL?, said plans on putting up a tower in March and he has a method of doing so that he would like to demonstrate. If anyone else is doing some major tower or antenna work, please be sure to let the club know so we can get the word out and hopefully give you a hand.



You can get the BARC club logo put on your own piece of clothing for a very reasonable price, and it is available at the Logo Shop or Cache Design. Also, the Club has those window stickers that you can put on your car or wherever you have some glass that you would like to advertise on.



4-H/BARC Amateur Radio Class and Activities

We are excited about Amateur Radio and the upcoming year.

HAM Class 2008

We are planning to hold another 4-H and Bridgerland Amateur Radio Club (BARC) sponsored Amateur Radio class this spring. It will be held from 7:00 – 9:00 pm. at the ASTE Building on USU's campus each Wednesday, starting on February 6, and ending on March 12, 2008 (6 weekly classes). Youth and adults are both welcome and the focus of the class will be on beginners. The Cache County 4-H Office will handle the registration. Please pass the word about this class and if you are interested in helping, please contact me. My contact information is listed below.

4-H HAM Club

We are starting a Cache County 4H Amateur Radio Club which will be open to all youth of 4-H age. I will be one of the leaders, but we are looking for other adults or teen leaders who want to help. If you are interested in helping or know of youth who might be interested in joining the club, please contact me. Contact information is listed below. We do not plan

to meet in person often rather we will communicate by net. See below. The club will focus on practicing amateur radio skills, emergency communications, exciting activities, talking to people from around the world, making new friends, trying new and different equipment and most important, having fun with treats and food mixed in. Let me know if you are interested.

Youth Net

We are excited about the possibility of starting a youth net each Tuesday evening at 8:30 pm just before the regular BARC net. We hope to have the 4-H club provide leadership for this net and we hope to be able to get this started by February 5, 2008. We will try to get you additional information as it becomes available. Where the BARC repeaters cover the Bear Lake (Rich), Davis, Weber and Box Elder County areas, we hope to eventually make the youth net a Northern Utah Youth net.

4-H Youth Community Service for the Cache Valley Biathlon

We hope that the 4-H club will be able to provide the communications for the Cache Valley Biathlon which will be on Saturday, June 14, 2008. This is a great event for beginner HAMs and we think the 4-Hers in the club along with adult partners will be able to provide the communication support needed for this event. We will discuss this event and prepare for it during 4-H club meetings and nets.

4-H HAM Day Camp

We hope to hold a 4-H Day Camp during June where 4-H youth who are interested in amateur radio can come together to build projects like directional locating antennas for bunny (transmitter) hunts, portable J-pole antennas and participate in other educational workshops, events and activities that day like bunny hunts etc. The date for this event will be Thursday, June 19, 2008 at the ASTE Building on USU's Campus. Details will follow.

As you can see, we are excited about the upcoming year and the activities listed above. Let me know if you are interested in being a part of any of the events described. I have also attached a brochure for the Bridgerland Amateur Radio Club. If you are interested in becoming a member or renewing your membership. Complete the form and send it and your payment to the address listed on the form. Please feel free to send this email on to anyone who you think might be interested in the items listed.

Thank you.

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Disaster "Go-Kits" Updated

I am routinely asked "what personal items do I need to take when sent to a disaster area"? The short answer: Take everything you would need to survive on a camping trip for a week, plus some disaster specific items. Our Go-Kits need to be always on our minds and ready to go. A complete Go-Kit will help us provide better support to our served agencies. Your kit will need to be tailored to meet your specific needs but the following is a suggested minimum content list. Prepare and test your kit well before the next event, as you may need to hit the ground running when called. The idea of your personal kit is to help you survive, be more comfortable and protect yourself from unknowns the best you can. We cannot be productive nor do our job if we are a burden on the system. Your communications equipment "Go-Kit" is a separate list. Remember to register with your local EC, and never self-deploy to a disaster scene.

Training cards: Training cards/certificates for ARRL, FEMA and other certifications are important items to take with you. Laminate your training cards to protect them. Minimal training includes FEMA IS-100, IS-200, IS-700, IS-800 and ARRL EC-001, EC-002 and EC-003. Served agencies are requiring volunteers to have certain training and experience before deploying them. Training will help you to know the lingo, procedures and processes. Red Cross First Aid and CPR training is also a must. A good way to get general training is to enroll in the next Community Emergency Response Team (CERT) class. Then, take the Red Cross training, and the ARRL and FEMA Independent Study online courses.

Vaccinations and medications: Tetanus, Hepatitis -A, Hepatitis-B, TB all are recommended vaccinations. (Check with your doctor to make sure you get the right shots). Personal prescription medications: copies of all prescriptions, including generic names for meds and a note from the prescribing physician on letterhead stationary for controlled substances and injectable medications should be carried. Also: First aid kit or CERT kit; First Aid Quick Reference card and equipment manuals in zip lock bags; acetaminophen, aspirin, ibuprofen, or other medication for pain or fever; mild laxative; anti-diarrheal tablets; throat lozenges; antacid; antifungal and antibacterial ointments or creams; cough suppressant/expectorant.

Documentation: Addresses, e-mail and phone numbers for family, friends, work, doctors; ID cards - make copies of everything in your wallet and leave them with someone at home; paper, pencils; reference material, e.g., frequencies, net schedules, operator instructions for all equipment; reading material for spare time; ARES message forms.

Personal: Cash or traveler's checks, change; cell phone, battery, charger; waterproof watch; moist towelettes for sanitation; disinfectant; laundry detergent; toilet paper; towel (highly absorbent, travel towels if possible); extra pair of prescription glasses, copy of prescription; soap, shampoo, anti-perspirant, shaving kit; tooth brush and paste; lip balm; sunglasses; ear plugs, eye shades; Kleenex.

Clothing: Gloves (leather, medical, non-latex types); comfortable, light-weight long pants, long-sleeved shirts; sturdy shoes and boots (at least two pairs); rain gear; rubber boots; hat/cap; hard hat; safety goggles; dust mask or cotton T-shirt to filter air.

Food and Water: Bottled water; water filters/purification system, tablets; nonperishable food items; Power Bars.

Camping items: Candles, matches, lighter in a zip lock bag; Ziploc bags; flashlight and extra batteries or shake/crank flashlight; can opener; garbage bags (they double as ponchos) and plastic ties; paper towels; fire extinguisher; duct tape; tent; compass; signal flares; hand tool kit; Spare AA, C, and D batteries; knife, such as a Swiss Army Knife or Leatherman; fork, knife, spoon kit; insect repellent containing DEET (up to 50%); sunscreen (preferably SPF 15 or greater); crank-powered weather radio; Pair of FRS radios and spare batteries; ropes of various lengths; pillow, bedding; air-mattress; bungee cords; chemical illumination sticks; electrical tape; small hand saw, or tree limb saw; small Teddy bear for yourself or in case you find an upset child.

Put your go-kit supplies in re-sealable plastic containers, and then pack them full of trash on the way out. Take a spare everything. The idea of your Go-Kit is to prevent you from becoming a problem in the disaster relief effort.—Greg Sar-ratt, W4OZK, ARRL Southeastern Division Director, former Alabama Section Manager and member, National Emergency Response Planning Committee



The ARRL Letter Vol. 27, No. 2 January 18, 2008

MOTOROLA COMPLETES TENDER OFFER FOR YAESU'S PARENT COMPANY

On Wednesday, January 16, Motorola announced that its subsidiary, MI, Inc, has successfully completed its tender offer to acquire a controlling interest in Vertex Standard, parent company of Yaesu. The tender offer period expired on January 15 with approximately 5.4 million shares tendered and accepted. On November 5, 2007, Motorola launched the tender offer, in cooperation with Tokogiken (a privately held Japanese company controlled by Vertex Standard's president and CEO Jun Hasegawa) with the intention of forming a joint venture to develop and sell Vertex Standard products and develop select Motorola products. All regulatory clearances required for the completion of the transaction have been obtained. Starting on January 22, Motorola will have a total ownership stake of approximately 78 percent of Vertex Standard on a fully diluted basis (excluding certain stock acquisition rights that are scheduled to be cancelled), following the settlement of the tender offer for approximately 12 billion Yen (almost \$112 million US dollars) in cash. Through a subsequent restructuring process, Motorola will own 80 percent of Vertex Standard, while Tokogiken will retain a 20 percent stake. "We are extremely pleased to team with Motorola, a global technology leader that has been a leading provider and pioneer in 2-way radio communication solutions," Hasegawa said. "With Motorola, Vertex Standard will be stronger and better positioned to



deliver new and innovative 2-way radio solutions for professionals and consumers." Dennis Motschenbacher, K7BV, Yaesu's Executive Vice President for Amateur Radio Sales in North America, told the ARRL that he sees the joint venture of Vertex Standard and Motorola as "a very good thing for Amateur Radio in general and Yaesu customers in particular. I hope our loyal customers will readily see this business venture for what it is, an opportunity to make a solid 50-plus year old Yaesu company even stronger and more formidable than is already the case. There is absolutely no reason to have the slightest concern about equipment warranties and the continuation of support for our products. I am really excited to see what the joint engineering capabilities of these two huge communications companies will bring in the way of new technology advancement for the Amateur Radio Service." Motschenbacher continued: "There is a unique aspect of business that comes with Amateur Radio. It's not just about a radio. It's the relationship between the ham, the radio itself and the company that makes that radio. This relationship in Amateur Radio is far different than it is, say, between a buyer of a HDTV, the TV and the TV manufacturer. The relationship in Amateur Radio is far more personal and 'bonding,' per se. I am certain that we will do our utmost to ensure that Motorola understands this delicate bond. Since Motorola is leaving the day-to-day management of Yaesu in the hands of my boss, Jun Hasegawa, President of Vertex Standard, we can expect our longtime relationship with hams to remain intact." According to Motorola, "[t]he joint venture is expected to expand and develop a comprehensive suite of products to address the rapidly growing demand for 2-way radio solutions. Vertex Standard's strength in the amateur, marine and airband (avionics) segments provides Motorola with access to new business opportunities. In addition, Vertex Standard's solutions are highly complementary with Motorola's products and add greater depth and breadth to Motorola's Government and Public Safety business. The venture also provides additional engineering talent for Motorola." Following the restructuring, which will be implemented after the settlement of the tender offer, Vertex Standard will be de-listed from the JASDAQ. The joint venture company will continue to be called "Vertex Standard Co, Ltd" and will become a subsidiary of Motorola, with headquarters in Tokyo.

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"THE DOCTOR IS IN" THE ARRL LETTER

This week, ARRL Letter readers are in luck! The ARRL's very own Doctor, author of the popular QST column "The Doctor Is IN," answers a question from his mailbag: Question—Wilber Warke, N9RGE, of Lebanon, Illinois, asks: What happens to a dipole or random wire antenna if end-insulators are not used? Does it change the radiation pattern? What if the ends without insulators are left hanging down? Does that change the radiation from horizontal to vertical?

The Doctor Answers—Wilbur, the insulators themselves don't change antenna performance. The insulators are designed to provide a high impedance path between the end of the antenna, usually a high voltage point, and the support structure. If the support is metal, without an insulator the

current from the antenna will continue to the support and that will become part of the antenna. The resulting performance will depend on the size and shape of the support and how solid a connection there is between the antenna and the support—but often it will be a poor and likely intermittent connection—usually a recipe for a number of different problems. In the more typical case of a tree or other wooden structure, the impedance will be relatively high and it shouldn't matter too much until it gets wet—then you could easily have a very unpredictable situation and likely be sending much of your power into warming up the tree. Very dry tree branches also introduce the risk of fire, especially if high power is used. With respect to "dangling ends," they don't need insulators if they will stay dangling in space. Whatever is holding up the antenna just before the dangle suffers as above. Unfortunately, if the dangling ends aren't secured, they have a tendency to get blown around and can get wrapped around the antenna or other nearby objects. If a "random wire" has both horizontal and vertical segments, each will radiate depending on the magnitude of the current in each segment—this generally changes from band to band. Sometimes this can be used to good advantage. In the case of a balanced half-wave dipole, if both ends are dangling the same amount, the vertical radiation will cancel in the direction of the main horizontal radiation lobe. There will be a small amount of vertical radiation, because the ends have less current than the center, in the direction of the dipole ends.

Antenna insulators are not expensive, so why not use them just to be safe. If you don't have a local source, consider making your own from scrap PVC pipe, or couplings. Just drill a hole through both sides at each end, de burr the holes and use them as insulators—they are pretty close to free.

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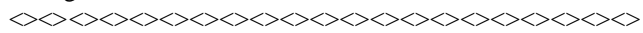
Hiram Percy Maxim II Passes Away at 72:

The grandson of ARRL co-founder Hiram Percy Maxim, W1AW, died at home in Lyme, Connecticut January 12 after a lengthy battle with prostate cancer. Hiram Percy Maxim II—called HPM just like his grandfather—was 72. Not a ham, Maxim told the Newington Amateur Radio League at an October 2002 meeting that he doesn't feel he shares the inventive talents of his grandfather and great-grandfather, who held many patents between them; Maxim's great-grandfather invented the machine gun. He told the club audience that his grandfather took on radio and filmmaking as diversions from inventing—an endeavor he considered extremely hard work. He also thought of Amateur Radio as a means to "bring together" individuals from distant locations and believed that communication was a key to better understanding other people and cultures. The elder Maxim—often referred to as "The Old Man," or "TOM"—was an amateur film buff, and a highlight of his grandson's 2002 presentation was a short 16 mm film that showed HPM and some of his friends working, relaxing and frolicking on the grounds of the family's summer home in Lyme, Connecticut, where HPM II lived until his death. His son, Merritt Maxim, told the ARRL, "Even though he didn't have an Amateur Radio license, he was aware of the importance of

his family's role in founding the League. Through his father, my grandfather—an active engineer—he continued to maintain an interest in all things mechanical." A memorial service will be held at the Lyme Public Hall at 11 AM on Monday, January 21. Burial will be private. Memorial contributions may be made to the Lyme Public Hall Association, 249 Hamburg Rd, Lyme, CT 06371

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The 2007 ARRL Periodicals on CD-ROM Now Shipping:

The 2007 ARRL Periodicals on CD-ROM includes all 2007 issues of QST, NCJ and QEX — every word and photo published throughout the year is included. Search the full text of every article by entering titles, call signs, names or any word. See every word, photo (most in color), drawing and table in technical and general-interest features, columns and product reviews, plus all advertisements. Print what you see, or copy it into other applications. The CD also includes Section News and ARRL Contest Results, including individual scores and Contest Soapbox. System Requirements: Microsoft Windows and Macintosh systems, using Adobe Acrobat Reader (included). Get your copy at <<http://www.arrl.org/catalog>>.

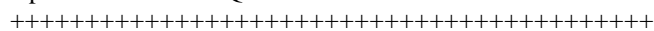


The ARRL Letter Vol. 27, No. 3 January 25, 2008

**HARRISON RE-ELECTED ARRL PRESIDENT
AT JANUARY BOARD MEETING**

The ARRL Board of Directors held its Annual January meeting January 18-19 in Houston, Texas. One of the first items on the agenda was the election of ARRL officers and members of the Executive Committee. Members of the Administration and Finance Committee and Programs and Services Committee were selected Saturday morning. All officers were re-elected to another two-year term without opposition: Joel Harrison, W5ZN, ARRL President; Kay Craigie, N3KN, First Vice President; Rick Roderick, K5UR, Vice President; Rod Stafford, W6ROD, International Affairs Vice President; David Sumner, K1ZZ, Secretary, and James McCobb Jr, K1LU, Treasurer. As ARRL President, Harrison also serves as Chairman of the Executive Committee; its members are Directors that are elected by their fellow Board members. The Executive Committee members for 2008 are Coy Day, N5OK, West Gulf; George Isely, W9GIG, Central; Tom Frenaye, K1KI, New England; Bill Edgar, N3LLR, Atlantic, and Henry Leggette, WD4Q, Delta. Sumner and Craigie also sit on this committee. Members of the Administration and Finance Committee and Programs and Services Committee are appointed by the ARRL President. The Administration and Finance Committee members for 2008 are Chairman Jim Fenstermaker, K9JF, Northwestern; Jim Weaver, K8JE, Great Lakes; Jay Bellows, K0QB, Dakota; Dennis Bodson, W4PWF, Roanoke; Brian Milesosky, N5ZGT, Rocky Mountain, and Cliff Ahrens, K0CA, Vice Director, Midwest. Members of the Programs and Services Committee for 2008 are Chairman Bruce Frahm, K0BJ, Midwest; Greg Sarratt, W4OZK, Southeastern; Dick Norton, N6AA, Southwestern; Frank Fallon, N2FF, Hudson; Bob Vallio, W6RGG, Pacific, and Howard Huntington,

K9KM, Vice Director, Central. Three members were also selected to sit on the Ethics and Elections Committee: Coy Day, N5OK; Frank Fallon, N2FF, and Greg Sarratt, W4OZK. Members of this committee are Directors not up for re-election in 2008. Per the ARRL By-Laws, this committee applies guidelines for ethical conduct by ARRL officials, determines eligibility of candidates for Director and Vice Director, certifies a nominee's eligibility to fill a Vice Director vacancy and supervises the balloting for Director and Vice Director. Further details on the 2008 Annual Meeting will soon be available on the ARRL Web site and in the April 2008 issue of QST.



**SATELLITE SERVES AS VOICE REPEATER—
UPLINKS ON FM, DOWNLINKS ON SIDEBAND**

Launched in January 1990, AMSAT-OSCAR 16 (AO-16) -- a digital satellite -- has been unavailable for use while the command team dealt with a serious computer problem. The satellite has since been recovered, and is now a voice repeater, at least for an unspecified "test period" using FM voice on the uplink, but transmits DSB voice on the downlink (best received on SSB). Since AO-16 was recovered approximately six months ago, the command team -- Bruce Rahn, WB9ANQ, Jim White, WD0E, and Mark Hammond, N8MH-- attempted to reload the satellite software almost a dozen times without success. The team performed a series of memory tests that pointed toward a hardware failure that prevented the spacecraft software from restarting successfully. AMSAT Vice President of Operations Drew Glasbrenner, KO4MA, said, "After concluding that the spacecraft computer system was damaged, and as discussions about decommissioning were taking place, Jim recalled a series of low-level commands that Tom Clark, K3IO, included in the spacecraft design during construction. One of these commands allows an uplink receiver to be directly tied to a downlink transmitter. The twist is that the uplink is regular FM, but the downlink via the BPSK transmitter is DSB (Double Sideband). Mark placed the satellite in this mode early this week and did some testing." Glasbrenner said the satellite hears very well; the reduced bandwidth by using either USB or LSB on the ground station receiver "allows for a very robust downlink. Tuning the downlink is just like on a linear transponder, meaning it is tight and with fast Doppler. Uplink tuning is not required, just as with the FM mode V/U satellites. My personal observations include being able to access and hear the satellite within one degree of the horizon, much lower than any other current bird for my location [in Florida]. This should be an easy satellite with omni antennas and a 70 cm preamp." Glasbrenner said that he would like to open the satellite to general use for a test period. The uplink is 145.920 FM, and the downlink is 437.026 SSB +/- Doppler shift. He asks that users restrict their uplink power to a reasonable power level, and do not transmit without being able to hear the downlink; all general single-channel guidelines apply. Please submit reports via e-mail <ao16@amsat.org>. "Enjoy this bird's new life!" Glasbrenner said.

Questions for Extra License

1. (E1A06) Which frequency bands contain at least one segment authorized to only control operators holding an Amateur Extra Class operator license?
 - A. 80, 75, 40, 20 and 15 meters
 - B. 80, 40, and 20 meters
 - C. 75, 40, 30 and 10 meters
 - D. 160, 80, 40 and 20 meters
2. (E2A09) What is the name of the effect that causes the downlink frequency of a satellite to vary by several kHz during a low-earth orbit?
 - A. The Kepler effect
 - B. The Bernoulli effect
 - C. The Einstein effect
 - D. The Doppler effect
3. (E3B05) On what amateur bands can long-path propagation provide signal enhancement?
 - A. 160 to 40 meters
 - B. 30 to 10 meters
 - C. 160 to 10 meters
 - D. 6 meters to 2 meters
4. (E4A10) What can a logic probe indicate about a digital logic circuit?
 - A. A short-circuit fault
 - B. An open-circuit fault
 - C. The resistance between logic modules
 - D. The high and low logic states
5. (E5B10) How long does it take for an initial charge of 20 V DC to decrease to 0.37 V DC in a 0.01-microfarad capacitor when a 2-megohm resistor is connected across it?
 - A. 0.02 seconds
 - B. 0.08 seconds
 - C. 450 seconds
 - D. 1350 seconds
6. (E6A16) What are the majority charge carriers in N-type semiconductor material?
 - A. Holes
 - B. Free electrons
 - C. Free protons
 - D. Free neutrons

**THE OHM TOWN NEWS
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