

# Dial Radio Club

Middletown, Ohio

APRS Digipeater: W8MWO (MWO) 144.39

Repeaters: 52.21/53.21, 146.01/146.61, 147.915/147.315, 223.36/224.96, 449.825/444.825

Web page: <http://www.gsl.net/w8blv/>

e-mail: [dial@qth.net](mailto:dial@qth.net)

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**President:**

Art Frasier, N8PI

**Vice-president:**

Mark Johnson, WD8DFK

**Secretary:**

Ernie Howard., W8EH

**Treasurer:**

Carl Morgan, K8CM

**Activities Manager:**

Lorie Urschel, W8LKU

**Newsletter Printing**

Ron Spaulding, N8NQG

**Newsletter Distribution:**

Ruth Howard, N8OZN

Elaine Howard, KC8WOF

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December 2004

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# Merry Christmas

**Minutes of the November 15, 2004  
Dial Radio Club Meeting**

**Attendance:**

W8EH, N8EH, N8HRA, N8NQG, KC8TXA, KB8VSX, KB8ZMO, Sarah, K8CM, W8WLM, N8HP, KD8W, WA8DTU, W8LKU, KC8ZJM, N8DIG, WD8DFK, KC8QQH, AB8QP, N8PI, Ben, KB8WKL, Scott Harshman, KE8OH, Tillie, N8OZN, Molly, N8RYS, Ari, W8MVN, Bonnie, W8GNV, N8TFH, WB8MYT, WA8PRA, N8DHW, KC8DUZ, WD8NKJ.

**Call to Order:**

The meeting was called to order by Art, N8PI. This meeting was moved to the *Golden Dragon* at the last minute due to a scheduling conflict at our usual place. Our special guest, Donald L. Corbet, representing D. L. Corbet & Associates, LLC, was acknowledged.

Following the meeting, Mr. Corbet presented a very interesting and informative overview of the Linux operating system. Linux is a very stable and useful computer operating system that may be used in a variety of amateur radio applications.

**Secretary's Report:**

Motion by Ron, N8NQG, second by Ernie, N8EH, to dispense with the reading and approve the minutes of the last meeting as published in the *Newsletter*. Motion approved.

**Treasurer's Report:**

Carl, K8CM, presented the Treasurer's report for October. We have 109 members and 17 renewals for 2005. Motion to approve by Ron, N8NQG, second by Ernie, N8EH. Motion approved.

**Repeater/Station Report:**

The 146.61 repeater is receiving QRM from some paging transmitters. Carl, K8CM, and Ernie, W8EH, went to the repeater site and performed some tests with a spectrum analyzer. We are 99% sure the problem is not in our equipment. It is only present when our transmitter is on. It is mixing somewhere with a 900 MHz paging transmitter. We will keep checking to try to find the transmitters involved in the mix.

**Activity Report:**

Lorie, W8LKU, reminded all of us of the *Sweepstakes* weekend at Ed & Sandi's (KF8PD and AB8LA) home. Lorie also reminded us to check-in to the two *DIAL* nets; Thursday evening at 9 and Saturday at 9:30 pm. Both nets meet on the 146.01/.61 repeater.

**Classes & Exams**

General class going on, Art, N8PI, and Don, WA8DTU, teaching this Wednesday.

**Old Business:**

Dave, KD8W, reported for the nominating committee. Candidates for election at the December meeting are: Art, N8PI, President; Mark, WD8DFK, Vice-president; Ron, N8NQG, Treasurer; Jon, K8TNF, Secretary; and Lorie, W8LKU, Activities Manager.

Nominations will also be accepted from the floor at the December meeting.

**New Business:**

Dick, W8GNV, made a motion that we find a place to meet so we could have guests and where we didn't have to eat. There was no second but much discussion. It appeared that by a show of hands that most want to eat. The motion was withdrawn.

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Next Meeting: Monday, December 20, *Golden Corral Buffet & Grill*; dinner at 6 meeting at 7

Mr. Harshman spoke about a Boy Scout troop that is sponsored by metro housing. He would like to introduce amateur radio to the Scouts and is looking for help. Several offered to work with them.

Art, N8PI, tossed out several names for an audit committee. Those appointed were Dave, KD8W; Jody, AB8QP; and Mark, WD8DFK. They will audit the Club's financial records [year 2004] and issue a final report at the January meeting.

### Adjourn:

There being no further business, a motion to adjourn was made by Ernie, N8EH, and duly seconded by Carl, K8CM. Motion approved, without dissent, by the membership.

Ernie Howard, Jr., W8EH  
Secretary

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### **Nominations for DIAL Officers for the Year-2005**

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Dave, KD8W, reporting for the nominating committee, lists the following as officer nominees for 2005. Additional nominations may be received from the floor, prior to voting, at the regular December membership meeting.

President	Art Frasier, N8PI
Vice President	Mark Johnson, WD8DFK
Secretary	Jon Slone, K8TNF
Treasurer	Ron Spaulding, N8N9F
Activities Mgr.	Lorie Urschel, W8LKU

Election of officers will be the focus of the December meeting and a great time for you to become involved in the management of your radio club.

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### **November Sweepstakes - Phone November 20 - 21**

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Sandi and I would like to thank all of you that came out and visited, ate, operated, and supported this event. We had a wonderful time doing it! I counted 25 people total. There may be 1 or 2 that I missed, so if you know of someone, please let me know so I can add their name to this list. We doubled the amount of people from last year. Also, for those whose spouses made food and deserts for you to bring, please send along a great big thanks from all of us!

In attendance were: N8HP, N8GGE, N8PI, AB8QP, BEN, W8EH, KC8WOF, N8OZN, WA8DTU, W8LKU, W8ULC and Marilyn, K8TNF, KC8ZJM, N8TVU, KC8VDT, N8DHW, KD8W, N8DIG, Matt, Buck Randall (future ham), Tommy, Jessica, AB8LA, and KF8PD.

We made 240 contacts, worked all 80 sections for a *CLEAN SWEEP*, and ended up with 38,400 points. We operated 23hrs and 59 minutes of the 24 hrs allowed.

A couple of funny things happened that I'd like to share. If you have something you'd like to share, please tell it so we can all get a good laugh. I may be opening this up for self humiliation, but it may be YOU that the joke is on!

Jon, K8TNF, asked for check-ins on Saturday evening for the roundtable net. He was in the mobile when he did it. I lost count of the number of check-ins he had. He said he couldn't write them all

down while driving. Guess he didn't expect quite so many!

Kelley, KC8ZJM, beat Jon, K8TNF, at air hockey! We all enjoyed that one.

And one more. Kelly, KC8ZJM, doesn't even know about this one yet. I was working a pileup on 80m and moving along pretty good. I was using the headphones so he probably couldn't hear much. He taps me on the shoulder while I'm picking out calls in this pileup. With my back to him, I raised up my finger to say "wait just a minute" and went back to listening. He taps me again, then again. I raised up my finger again and it still doesn't work. Then I think about what I'm doing and start cracking up inside while trying to listen for calls.....DUH!

Have a good Thanksgiving!

[Ed (KF8PD) and Sandi (AB8LA)]

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### **Ham License Exams**

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An examination session in Technician, General and Extra Class Amateur Radio Operator's License will be conducted on:

**Wednesday evening, December 15, 2004  
at 6:30 p.m. in room 13 Johnston Hall,  
Miami University-Middletown, Middletown, OH**

Doors will open for registration at 6 p.m. Please plan to arrive early as all registration activities must be completed by 7 p.m.

Applicants must furnish the original and one photocopy of their current license (if any), original and one photocopy of any certificates of successful completion of examination (CSCE) they may hold, positive (photo) identification, social security (TIN) or Licensee ID number, and the test fee of \$12.

NCVEC Form 605, Application for License, will be available at the test site. Advance registrations are recommended but not required ... walk-ins are accepted on a "space available" basis. Map to exam site and/or NCVEC 605 form available from K8CM for SASE.

Advance registration consists of a completed NCVEC 605, copies of your current license and valid CSCEs, and a check (\$12) made payable to the *Dial Radio Club*. Please enclose a note stating the class of license you will be attempting. Advance registrations should be mailed to: David Williamson, 5766 Trenton-Franklin Road, Middletown, OH, 45042, and must arrive no later than Monday, December 13. ***Please include your telephone number on your check.***

Special examination accommodations must be requested at least two weeks prior to the test date.

Additional information may be obtained from David Williamson, KD8W (424-5819).

***Talk-in on 146.610 -***

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### **Amateur Radio Class Winter 2004-2005 Ham Radio Class**

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The Technician Class section of the **DIAL RADIO CLUB's** Winter, 2004-2005, Amateur Radio class will begin on January 12, in Middletown, 6-9 pm. Meeting in Johnston Hall, on the Middletown Campus of Miami University, classes will be offered to prepare a candidate for examination in Technician Class amateur operator license.

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Next Meeting: Monday, December 20, *Golden Corral Buffet & Grill*; dinner at 6 meeting at 7

Theory instruction will conclude March 2. *Morse code proficiency is not a requirement for the Technician Class license.*

Amateur radio operator license examinations will be available, in Middletown, at the conclusion of General class instruction, on March 9.

Although there is no charge for the instructional portion of these classes, students should be prepared to purchase a license training manual and supplies (approximately \$20-25) for use in class. License training manuals are expected to be available, for purchase, the first night of class.

Class enrollment will be limited to forty students. For registration and/or additional information, please call Miami's Continuing Education office at (513) 727-3200.

## **The 19<sup>th</sup> Annual SWOH Digital Symposium**

The 19<sup>th</sup> Annual SWOH Digital Symposium will be held on January 15, 2005, 9 a.m. to 4 p.m. in Thesken Hall, Miami University, Middletown, OH. This symposium is co-sponsored by the Center for Chemistry Education, Miami University, and the *DIAL* Radio Club, Middletown, OH.

The afternoon program will feature an active presentation by William (Bill) Hayes, AE4QL, entitled *Standing Up for Standing Waves*. This is a topic of utmost interest to hams endeavoring to better understand how their equipment functions.

Program will, again, be under the able leadership of Hank Greeb, N8XX. Details may be obtained by contacting Hank at [hgreeb@one.net](mailto:hgreeb@one.net).

Check out <http://www.swohdigi.org/> for up-to-date information.

*This is an ARRL sanctioned activity.*

## **Butler County ARES**

Each year the ARRL has amateur operators nationwide test their Emergency Communications skills during the National Simulated Emergency Test the first weekend in October.

Many operators are working from portable stations similar to "field day", setup with a portable antenna, generator or battery power, and working out of a backpack full of gear.

The object of the game is to contact and handle NTS style traffic for as many agencies as possible within your own county, and forward messages to their headquarters in the capitol city in each state.

It is a little like contesting, but at the same time your honing your skills to handle those unusual messages from your agencies that don't quite fit the NTS format, so you have to make it fit without changing the context of the message!

Since we had just had the countywide Weapons of Mass Destruction (WMD) drill in September, we took the opportunity to the National SET to hone our operator skills with some new tracking software that will be used by our Net Control Operators (NCO).

The software keeps track of assigned operators, location of shelters, Missing People; operators not assigned that are available, formal and informal messages, and team member's vital information.

We utilized this software in the N8TVU response trailer in West Chester during the President Bush visit to keep track of operators on site and their changing status and assignments.

We are working on the technology required to link the computer

LANs at the Amateur Radio Emergency Communications Center to a radio link so offsite computers can update the system as well. (Any of the gurus with an idea on this--please get with Rob N8OMW or Bob N8TVU. We would greatly appreciate it.)

Butler County Emergency Management Agency on October 25<sup>th</sup> delivered a brand new 8' X 8'X 28' trailer for ARES/RACES to utilize. The trailer came equipped with 110-volt fluorescent lighting and outlets, 12 volt lighting, 5500 watt gasoline generator & slide tray mount, roof mounted air conditioner with heat strip and tandem axle with electric brakes. The trailer belongs to EMA and ARES/RACES -- no one else will be using the trailer for any other purpose.

It is up to the ARES team to design a floor plan for the interior of the unit.

We had a non-stop two hour brain storming session at the November meeting.

Designing the operator positions to be large enough to be comfortable and to make as much use of the available space as possible, lead to setting up "mock" tables and chairs in the meeting room to "see" what room was left.

This and many other projects are going on within the Butler County Amateur Radio Emergency Communications team.

We meet every 2<sup>nd</sup> Wednesday of the month from 7 to 9 P.M. at Butler Tech Main Campus Room 229 -- Come Join Us!

Robert Spratt N8TVU

Butler County EC

Home - 513-825-8902

Cell - 513-266-6102

Web: [www.qsl.net/n8tvu](http://www.qsl.net/n8tvu)

## **FCC BPL Report And Order Stresses Interference Avoidance, Resolution; ARLB032**

The FCC has released the full BPL Report and Order (R&O) in ET Docket 04-37 that it adopted just two weeks ago. While extolling the purported benefits of broadband over power line technology, the 81-page document also declares the FCC's intention to "protect licensed services from harmful interference."

"We recognize that some radio operations in the bands being used for Access BPL, such as those of Amateur Radio licensees, may occur at distances sufficiently close to power lines as to make harmful interference a possibility," the FCC conceded. "We believe that those situations can be addressed through interference avoidance techniques by the Access BPL provider such as frequency band selection, notching, or judicious device placement."

Notches would have to be at least 20 dB below applicable Part 15 limits on HF and at least 10 dB below on VHF. The FCC called the ability to alter a system's operation to notch out transmissions on specific frequencies where interference is occurring "a necessary feature for resolving interference without disrupting service to BPL subscribers."

The FCC declined to reduce the Part 15 radiated emission limit for BPL systems. It maintained that emissions from BPL systems are very localized and at low enough levels to generally preclude harmful interference.

The FCC said while it had no evidence before it that BPL operation would significantly contribute to background noise levels, it seemed to put some of the onus on Amateur Radio licensees to take steps to avoid power-line interference--and, by inference, BPL interference--in advance.

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"In addition, because power lines inherently can radiate significant noise emissions as noted by NTIA and ARRL, good engineering practice is to locate sensitive receiver antennas as far as practicable from power lines," the FCC said.

In a footnote, the FCC admonished ARRL that in cases where its members experience RF noise, "such noise can often be avoided by carefully locating their antennas; in many instances an antenna relocation of only a relatively short distance can resolve noise interference."

BPL operators would be required to avoid certain bands, such as those used for life and safety communications by aeronautical mobile or US Coast Guard stations. The FCC R&O makes clear, however, that similar rules will not apply to the Amateur Service.

"We similarly do not find that Amateur Radio frequencies warrant the special protection afforded frequencies reserved for international aeronautical and maritime safety operations," the Commission said. "While we recognize that amateurs may on occasion assist in providing emergency communications," the FCC added. It described typical amateur operations as "routine communications and hobby activities."

The Commission reiterated its belief that BPL's public benefits "are sufficiently important and significant so as to outweigh the limited potential for increased harmful interference that may arise."

Among other specific provisions, the FCC's new rules mandate certification of BPL equipment instead of the less-stringent verification, a public BPL database--something the BPL industry did not want--and mechanisms to deal swiftly with interference complaints. BPL systems will have to incorporate the ability to modify operation and performance "to mitigate or avoid potential harmful interference" and to deactivate problematic units, the R&O says.

Further, the new rules spell out the locations of "small geographic exclusion zones" as well as excluded bands or frequencies--concessions made primarily at the insistence of the NTIA, which administers radio spectrum for federal government users--and "coordination areas" where BPL deployments at any frequency must be "precoordinated by BPL operators." They also detail techniques to measure BPL emissions from system equipment and power lines.

The FCC said it expects "good faith" on both sides in the event of interference complaints. Shutting down a BPL system in response to a valid interference complaint "would be a last resort when all other efforts to satisfactorily reduce interference have failed," the FCC said.

ARRL officials are studying the R&O and considering possible responses. The ARRL Executive Committee (EC) already has authorized filing a Petition for Reconsideration. The EC also authorized ARRL General Counsel Chris Imlay, W3KD, to "prepare to pursue other available remedies as to procedural and substantive defects" in the BPL proceeding.

For more information on BPL, visit the "Broadband Over Power Line (BPL) and Amateur Radio" page at, <http://www.arrl.org/tis/info/HTML/plc/>.

[ARRL Bulletin]

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## **ARRL Disappointed With Administration Over BPL Report and Order**

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The ARRL has expressed its disappointment with the Bush

administration's failure "to prevent radio spectrum pollution by BPL systems." In a November 1 letter to Secretary of Commerce Donald L. Evans copied to President George W. Bush, ARRL President Jim Haynie, W5JBP, recalled Evans' assurances on the administration's behalf earlier this year "that we are responsible and sensitive to valuable incumbent [radiocommunication] systems." Haynie told Evans the FCC's BPL Report and Order (R&O) in ET Docket 04-37--adopted October 14 and released two weeks later--suggests otherwise.

"Despite excellent work conducted by the technical staff of your National Telecommunications and Information Administration (NTIA) to document the extensive harmful interference that will occur if BPL systems are deployed at the radiated emission limits presently permitted by the FCC rules," Haynie said, "it appears that the NTIA concurred in the FCC's decision not to tighten those limits."

The FCC maintains that BPL emissions are localized and at low enough levels to preclude harmful interference in the first place, and it has left the door open to possibly upping the limit in the future.

Haynie pointed out that both international treaty and US law entitle licensed radiocommunication services to protection from harmful interference that unlicensed systems like BPL might generate. "Despite this," he continued, "the FCC has shifted the burden for initiating interference mitigation from the BPL system operator to the radio licensee." The NTIA's September 13 submission to the FCC shows that at FCC Part 15 limits, the probability of harmful interference is essentially 100 percent within 200 to 400 meters (approximately 660 to 1300 feet) of a power line carrying BPL signals--depending on the operating frequency.

"Amateur Radio stations are typically located in residential areas, nearly always well within such distances," Haynie noted. "The FCC's Report and Order provides no assurance that when interference occurs--as it unquestionably will--it will be promptly eliminated."

As part of the Commerce Department, the NTIA not only administers radio spectrum allocated to federal government users but advises the White House on telecommunications policy. On June 24, President Bush extolled BPL during a speech on technological innovation even while acknowledging interference concerns.

Haynie said the League will continue efforts to improve the R&O. Calling the HF spectrum "a unique and priceless resource," the ARRL president expressed regret that the administration "is willing to squander such a unique natural resource in order to provide a short-range broadband connection that can easily be provided by several other non-polluting means."

ARRL CEO David Sumner, K1ZZ, echoed Haynie's concerns. The FCC R&O, he said, "shifts the burden to licensed operators to react to interference rather than adopting rules to prevent interference from occurring." The R&O advises locating "sensitive receiver antennas" as far as practically possible from power lines. Additionally, the FCC admonished ARRL that in cases where its members experience RF noise, "such noise can often be avoided by carefully locating their antennas."

Reacted Sumner: "If a BPL system operator wants to meet its obligation by picking up all of the costs of relocating a licensee's antenna, it's free to make the offer."

If interference occurs, the new Part 15 rules will require BPL system operators to employ "interference avoidance techniques" such as "frequency band selection, notching, or judicious device placement." Notches would have to be at least 20 dB--slightly more than 3 S units--below applicable Part 15 limits on HF and at least 10

dB below Part 15 limits on VHF--not much protection for weaker signals common in HF work.

"We might be more optimistic if there had, to date, been a single instance when the FCC had ordered a BPL system to terminate operation for causing harmful interference," Sumner said. "The Commission continues to be in denial, despite hundreds of pages of documentation of ongoing interference."

Sumner said the ARRL was gratified that the FCC R&O recognized that BPL devices have significantly greater interference potential than other Part 15 devices and that the Commission will require certification of BPL systems rather than the less-stringent verification. Additionally, Sumner said, the League was pleased that the FCC-mandated public BPL system database will require systems to be listed several weeks ahead of actual implementation so that amateurs and others have advance notice.

ARRL officials continue to mull possible formal responses to the R&O. The ARRL Executive Committee already has okayed the filing of a Petition for Reconsideration. It further authorized ARRL General Counsel Chris Imlay, W3KD, to "prepare to pursue other available remedies as to procedural and substantive defects" in the BPL proceeding.

For more information on BPL, visit the Broadband Over Power Line (BPL) and Amateur Radio Web page <http://www.arrl.org/bpl>.  
[ARRL Letter]

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### **ARRL Participating in IEEE, Industry Efforts to Set BPL Standards**

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Working with industry through the IEEE Broadband over Power Line (BPL) Study Group <<http://grouper.ieee.org/groups/bpl>> and in other venues, the ARRL is taking part in efforts aimed at defining and establishing key BPL technical standards. Among other issues, these standards will address the avoidance of interference from BPL to licensed radio services. The study group has held three meetings this year, and the next session is set for January 14 in San Diego. The study group met most recently in Piscataway, New Jersey, on October 13, the day before the FCC adopted new Part 15 rules to govern BPL deployment. ARRL Lab Manager Ed Hare, W1RFI, told those attending that gathering that any BPL standards must address issues of electromagnetic compatibility (EMC).

"The consensus of the committee is still that dealing with emissions and EMC is very high on the importance list," Hare said later. In terms of EMC, he said, the components of any IEEE BPL standard should "include the needs of the BPL industry to have a workable environment in which to manufacture and market BPL technology while addressing the need for licensed radio services to operate in an environment that does not result in harmful interference."

Hare's presentation focused on explaining why the BPL industry's measurements using spectrum analyzers and test probes differ from the impact BPL emissions have on communications receivers attached to typical amateur antenna systems.

"I also continued to extend our offer to work cooperatively with industry representatives," Hare said. The ARRL and the FCC's Enforcement Bureau have a long history of cooperating in resolving Part 15 interference complaints resulting from power line noise.

Hare and ARRL Chief Technology Officer Paul Rinaldo, W4RI--who attended a July study group meeting in Piscataway--have been charged with drafting the part of the IEEE study group's "white

paper" dealing with affected radio services, including Amateur Radio. Other aspects of the document will include safety; compatibility between access BPL and in-home BPL; compatibility with utility distribution systems, and security, privacy and authentication issues.

Following the July study group meeting, Rinaldo said the consensus of participants was that the core issue confronting the BPL industry was dealing successfully with the issue of interference from and to BPL. "BPL won't survive unless that fundamental problem is solved soon," Rinaldo asserted.

Rinaldo also took part in a Power Line Communications Association (PLCA) Strategic Summit and Business Briefing in late October in the DC area. His presentation concluded, among other things, that best practice for the BPL industry would be to avoid Amateur Radio spectrum at the equipment design level.

A few days earlier, Rinaldo had represented the League at a meeting of the National Association of Regulatory Utilities Commissioners (NARUC) Broadband over Power Lines Task Force.

[ARRL Letter]

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### **Permanent ISS Ham Station Human Crews Share Fourth Anniversary**

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Four years ago this week, the Expedition 1 crew arrived aboard the International Space Station, home of the first permanent Amateur Radio station in space. Just weeks earlier, the FCC granted the station's distinctive NA1SS call sign. By the time William Shepherd, KD5GSL, Sergei Krikalev, U5MIR, and Yuri Gidzenko arrived on November 2, 2000, the Phase 1 or "initial station" Amateur Radio on the International Space Station (ARISS) gear was already on board for the crew to install. Crew increments comprised of US astronauts and Russian cosmonauts have rotated duty tours continuously ever since, and ham radio has played a role in each crew's routine.

"Every challenge for the International Space Station crews, flight control teams and management adds to the knowledge base we need to develop longer spaceflight missions to places like the moon and Mars," said International Space Station Program Manager Bill Gerstenmaier. "The work we're doing on station is directly connected to future exploration missions." ARISS International currently is mulling Amateur Radio's role in NASA's "Moon, Mars and Beyond" initiative.

With NASA's shuttle fleet now grounded, crew increments have shrunk to two people, while duty tours have stretched from four to six months. Despite fewer hands on deck, NASA says the two-person crews sometimes have been able to do more with less--often improvising.

The Expedition 10 crew of Commander Leroy Chiao, KE5BRW, and ISS Flight Engineer Salizhan Sharipov, arrived at the ISS just last month--aboard a Russian Soyuz vehicle, just as the Expedition 1 crew did, although other crews traveled via the shuttle. Over the years, in addition to visiting space shuttle crews, there have even been a couple of paying "space tourists" and other short-term visitors who took advantage of the ARISS gear onboard. More recently, Russian Space Forces Test Cosmonaut Yuri Shargin--who arrived with the Expedition 10 crew--completed two ARISS contacts with school groups in Europe.

The Expedition 10 crew is not expected to begin its own series of school group contacts until the week of November 15 at the earliest. Unscheduled ham radio activity by crew members typically is suspended during crew changeover periods. As of November 4, the

NAISS FM voice repeater remained off and the ARISS Phase 2 equipment was back in packet mode under the RS0ISS call sign.

This week marked a first when Chiao cast his vote in the November 2 presidential election while orbiting 230 miles above Earth. A law the Texas State Legislature passed in 1997 allows astronauts to vote electronically from space. Chiao submitted his electronic ballot to his county clerk's office via e-mail.

Some statistics: Since the Expedition 1 crew carried out the first successful ARISS school group contact--with Luther Burbank Elementary School near Chicago on December 21, 2000--ISS crews have racked up 150 similar Amateur Radio contacts. Approximately two-thirds of them have been direct, 2-meter QSOs, while the rest were carried out via "telebridge" stations, where two-way audio was teleconferenced to the school via an Earth station convenient to QSO NAISS directly.

The crew holding the record for the most ARISS school group contacts was Expedition 3. Commander Frank Culbertson, KD5OPQ, answered questions via ham radio posed by students at 22 different schools. Culbertson also activated NAISS during the 2001 Jamboree On The Air (JOTA) scouting event.

NASA recently announced that after an extensive review, it's planning its return-to-flight shuttle mission, STS-114, for a launch window that opens next May. ARISS International Chairman Frank Bauer, KA3HDO, says PCSat 2--an externally mounted ham radio payload--is expected to fly on that shuttle flight, which also will mark the return of three-person ISS crews. "We will also be able to better negotiate the delivery of our computer, which is essential for the SSTV system," Bauer added.--some information from NASA

[ARRL Letter]

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### **HF Propagation Falls Victim to Strong Solar Winds; VHFers Exult**

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As HF radio conditions drifted in the doldrums over the past week, the Space Environment Center (SEC) <<http://www.sec.noaa.gov/SWN/index.html>> reports that geomagnetic storm activity spiked into the "extreme" (G5) category November 9. A result of disturbances in Earth's geomagnetic field caused by gusts of "solar wind" blowing past the planet, geomagnetic storms adversely affected HF radio propagation during much of the week and even resulted in limited radio blackouts. The SEC estimates that G5-scale geomagnetic conditions will occur on just four days of each 11-year solar cycle. Things calmed to "minor" (G1) by week's end, and the near-term prediction was for geomagnetic storm activity to dwindle. Even at the G1 level, geomagnetic activity can cause weak power grid fluctuations, possibly affect satellite operations and still generate aurora at higher latitudes.

At the same time, HFers were suffering, however, VHF enthusiasts were exulting in the propagation the space weather generated on 6 meters. Chip Margelli, K7JA, in California says that as ARRL November Sweepstakes (CW) was coming to a close, many HF signals exhibited auroral characteristics. Six meters, however, was becoming a hotbed of DX. Early on November 8 (UTC), he says, KH6SX reported on the 50 MHz Propagation Logger <<http://www.dxworld.com/50prop.html>> that he was hearing the K6FV beacon.

"I quickly rotated my beam in his direction, and with one call I had him in the log," Margelli reported. "His signal was full of rapid aurora flutter, which is astounding for a path to Hawaii!"

Margelli says the opening later shifted to the west and north, and additional stations were able to add Hawaii to their 6 meter WAS list. A path then opened between Hawaii and Alaska (BP51) and ultimately between Hawaii and Japan.

"It's hard to imagine a 'normal' Es opening with such a wide distribution, and the westward progression suggests an enhancement ahead of the heliopause," Margelli said. "But I think the book may need some re-writing on this one."

Among the lucky stations in the east was ARRL Sales and Marketing Manager Dennis Motschenbacher, K7BV, who bagged his 50th state on 50 MHz by working NL7Z in Alaska via aurora.

On HF, Junji Saito, JA7SSB, told ARRL propagation bulletin editor Tad Cook, K7RA, that he was able to generate big 20 and 30-meter pileups on November 8 around 1430-1500 UTC, late evening in Japan, when the bands usually are closed. He noted deep fading and echoes on signals.

The recent space weather conditions resulted in auroral displays visible as far south as the Middle Atlantic states.

In terms of radio blackouts--disturbances of the ionosphere caused by X-ray emissions from the sun--the SEC reported conditions as moderate (R2) at midweek but nil as week's end. Solar radiation storm activity dropped from the "moderate" (S2) level at midweek to minor (S1) by week's end. At the S1 level, solar radiation storms can have a minor effect on HF radio propagation in the polar regions.

See this week's "Solar Update" (below) for additional details and the current forecast.

[ARRL Letter]

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### **The Tone's the Thing for 2004 ARRL Frequency Measuring Test**

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There's a new twist to the ARRL Maxim Memorial Station W1AW Frequency Measuring Test (FMT). The 2004 FMT takes place November 18 starting at 0245 UTC (the evening of Wednesday, November 17, in US time zones), replacing the W1AW phone bulletin normally transmitted then. Rather than measuring the transmission's carrier frequency, participants in this year's FMT will attempt to accurately determine the frequency of an audio tone. Engineer and ARRL Contributing Editor Ward Silver, N0AX, says measuring an audio tone will reinforce understanding of the relationship between carrier frequency and the components of a transmitted signal.

"The carrier is suppressed for SSB signals, leaving only the sideband components," Silver explains in "The FMT Strikes a New Tone," in November QST. "The frequency of components of the modulating audio signal is preserved as the difference between the carrier frequency and the transmitted component. A single modulating tone results in a single transmitted component."

W1AW will make the 2004 FMT transmissions on 80, 40 and 20 meters. The FMT will begin with a general W1AW "QST" starting at 0245 UTC sent simultaneously on the three W1AW transmission frequencies. The test itself will consist of three 60-second tone transmissions on each band, followed by a station identification. The whole test will run for about 15 minutes and will end with a station ID.

The tone frequency will be the same on all three bands.

During the 2004 FMT, W1AW will indicate the band on which participants should measure. After the initial call-up, W1AW will begin the test by announcing, "Now 80 meters." Except for the tone

transmission, all transmissions will be voice. Frequencies are 3990 kHz (LSB), 7290 kHz (LSB) and 14,290 kHz (USB). All frequencies will be accurate to at least 0.1 ppm (eg, 3990 ±0.4 Hz).

Submitted reports should include name, call sign, location, time of reception and, of course, the tone frequency. Those using an indirect measurement method also should include calculations showing how they arrived at the tone frequency. For additional details on indirect and direct measurement methods, see Silver's article "The ARRL Frequency Measuring Tests," on the ARRL Web site, <<http://www.arrl.org/w1aw/fmt/0210051.pdf>>, or in Oct 2002 QST.

Send entries postmarked by Friday, December 17, 2004, to W1AW/FMT, ARRL, 225 Main St, Newington, CT 06111. Separate reports for each band are welcome. All entrants qualify for a Certificate of Participation. Those coming closest to the measured frequency will be listed in the test report and get special recognition on their certificates.

[ARRL Letter]

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### **FCC Reallocation of Federal Users Includes Some Amateur 2.3 GHz Spectrum**

The FCC has acted to include the first five 5 megahertz of the 2390-2417 MHz Amateur Radio Service primary allocation among spectrum it's opened up to accommodate federal users shifted from other bands. The spectrum relocations, which also involved nonamateur spectrum at 2 GHz, are aimed at making room for advanced wireless services (AWS), including so-called "third-generation" (3G) wireless systems.

After voting unanimously October 14 to adopt a Seventh Report and Order (R&O) in ET Docket 00-258 and WT Docket 02-8, the FCC called the action "an important step towards the future auction of 90 MHz of spectrum for AWS." The Commission said it worked with the US Department of Defense and the National Telecommunications and Information Administration to reallocate spectrum to allow for relocation of critical military and other operations into the 2360 to 2395 MHz band.

The FCC says its action will make room available to shift federal government aeronautical mobile flight test telemetry (AMT) operations from the 1.7 GHz band to the 2.3 GHz band by extending the primary allocation for AMT to include an additional 10 megahertz from 2385 to 2395 MHz. "Making the additional spectrum available for non-federal AMT will accommodate the higher data rates needed for non-federal flight testing," the FCC said.

The Commission similarly extended the existing secondary spectrum allocations for federal and non-federal non-aeronautical mobile telemetry operations in the 2360-2385 MHz band to include the 2385 to 2395 MHz band. In addition, it extended the existing federal primary radiolocation and secondary fixed allocations from 2360 to 2385 MHz to include 2385 to 2390 MHz.

Last December, the ARRL announced that it had agreed in principle with the Aerospace and Flight Test Radio Coordinating Council (AFTRCC) to develop coordination procedures. The League told the FCC it could support Amateur Radio sharing of 2390 to 2395 MHz on a co-primary basis with flight test telemetry operations. But it has insisted that 2395 to 2400 MHz remain an exclusive amateur primary allocation.

[ARRL Letter]

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### **British Amateurs Get Additional 100 KHz on 40 Meters October 31**

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Starting at 0100 UTC October 31, the 40 meter band in the British Isles effectively doubled in size when radio amateurs there gain access to 7100 to 7200 kHz. Ofcom, the UK telecommunications regulatory authority, announced the Notice of Variation October 26.

The change, in the works since last year, is a result of actions taken during World Radiocommunication Conference 2003, where conferees agreed to move broadcasters out of 7100 to 7200 kHz in Regions 1 and 3 to make room for the Amateur Service. Coincidentally, the UK band expansion, which also includes independently governed regions where Ofcom regulates telecommunications, will occur just about halfway through the CQ World Wide Contest (SSB) this weekend. Contesters take note!

The Ofcom NOV makes the segment available on a secondary basis, and amateur stations in the UK and affected regions may not cause interference to stations operating in other radio services inside or outside the UK.

The UK and Ofcom-administered regions join the Republic of Ireland--which reportedly gained access October 20--as well as Croatia, Norway and San Marino among Region 1 countries that have authorized access to the additional spectrum on a secondary basis. The WRC-03 change does not formally go into effect until 2009.-thanks to Lawrence Woolf, GJ3RAX; RSGB

[ARRL Letter]

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### **Experimental Licensees Moving Low-frequency Agenda Forward**

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With no Amateur Radio low-frequency allocation in North America, stations operating under FCC Part 5 Experimental licenses <<https://gullfoss2.fcc.gov/prod/oet/cf/els/index.cfm>> in the US or under special experimental authorizations in Canada nonetheless continue to research the nether regions of the radio spectrum. By and large, LF experimentation is occurring in the vicinity of 136 kHz--typically 135.7 to 137.8 kHz--where amateur allocations already exist elsewhere in the world. The FCC rejected the ARRL's 1998 petition for LF allocations at 135.7 to 137.8 kHz and 160 to 190 kHz, however, after electric utilities objected that ham radio transmissions might interfere with power line carrier (PLC) signals used to control the power grid.

"Most of the new LF activity of Part 5 licensees has been in the shared 137 kHz amateur allocation available in some parts of the world," says low-frequency experimenter Laurence Howell, KL1X/5. "Although not in the Amateur Radio Service, these Part 5 experimental stations continue to add to our knowledge on propagation and engineering."

The holder of Part 5 Experimental license WD2XDW, Howell--who's also GM4DMA--previously operated LF from Alaska. He's since relocated to Oklahoma, and has now resumed his LF work on 137.7752 and 137.7756 kHz. Already he's reporting some spectacular success, despite antenna limitations. On October 28, New Zealand LFER Mike McAlevey, ZL4OL, copied WD2XDW's 137 kHz carrier "bursts" over a path of more than 13,000 km (8000 miles).

Howell believes the reception probably marked the first transpacific reception of a US-generated signal. "The land mass between Oklahoma and the ocean was considered to be a large

obstacle to long-range communications," Howell remarked, "but obviously not."

The next day, Jim Moritz, M0BMU, copied the LF signals of three North American in the vicinity of 137 kHz (137.777 kHz)--including Howell's WD2XDW and WD2XES, operated by John Andrews, W1TAG, in Massachusetts--using Argo software, which can detect signals not otherwise readable. The third station, Joe Craig, VO1NA, in Newfoundland, has been operating a beacon on 137 kHz. Howell says, VO1NA's signals serve as a bellwether of LF transatlantic propagation. LF signals of European amateurs likewise are heard in North America.

On November 12, Andrews and another LF experimenter in Massachusetts completed the first two-way data exchange between Part 5 Experimental license stations on 137 kHz. Andrews worked Warren Ziegler, K2ORS, operating as WD2XGJ in Wayland, using conventional CW. The stations are about 25 miles apart, and both used loop antennas for transmitting. Jay Rusgrove, W1VD, some 100 miles to the south in Connecticut, monitored and recorded the QSO.

In British Columbia, Lorne Tilley, VE7TIL, and Steve McDonald, VE7SL, have been heard throughout North America on LF. Howell says both are starting a formal study of variances in groundwave propagation.

Howell says the disturbed solar conditions earlier this month wiped out long-haul paths through or close to the auroral oval during nighttime hours--especially at higher latitudes. He notes, however, that daytime signals over paths of between 1000 and 1500 km (620 and 930 miles) showed increased signal strengths during the disturbances. Howell has more LF information on his Web site <<http://myweb.cableone.net/flow>>.

[ARRL Letter]

### Useful Life of UO-22 Satellite Appears Over

According to AMSAT-UK, the UO-22 satellite is not in good shape, and its useful life may be over.

"The SSTL [Surrey Satellite Technology Limited] Ground Station control centre at the University of Surrey have attempted several times in recent weeks to reactivate the satellite," AMSAT-UK reports. "After one attempt it did come back to life, but only briefly. Other attempts have failed completely."

The SSTL ground control station may make further attempts to reactivate UO-22, "but it seems unlikely that they will be completely successful." The cause of the satellite's failure is not known for certain, but SSTL believes it may be related either to the spacecraft's batteries or to the fact that the satellite is very hot due to orbital precession, which has put it generally in full sunlight. The elevated temperature has been causing problems with the receivers as well as with the batteries.

Launched on July 17, 1991, from Kourou, French Guiana, UO-22 has served for many years as the 9600 baud store-and-forward satellite for the Amateur Radio packet radio worldwide SatGate service, which linked packet radio networks in many countries. AMSAT-NA reports UO-22 as "non-operational." For further information on UO 22 contact Jim Heck, G3WGM [g3wgm@amsat.org](mailto:g3wgm@amsat.org).

[ARRL Letter]

### Next Meeting & Last Month's SNAFU

Our meeting time is 7pm (6pm if you are coming for dinner) and will be at the Golden Corral Buffet & Grill at 3350 Village Drive, Franklin, OH (Towne Mall area).

We regret the confusion last month, resulting from the quick shift of our meeting from *The Golden Corral* to the *Golden Dragon Buffet*. Upon arrival the *Golden Corral* (about 5:15pm) we discovered a full parking lot and "no room at the inn". The *Golden Corral* was hosting a program recognizing veterans' service to their country and had a overflow crowd. Their management insisted that they had notified us of the change in plans; however, none of the officers had any knowledge of it.

The good news was that most of the members found us and we had 35+ in attendance; the bad news was that a few members had no knowledge of where we had gone although Art had posted a notice at *Golden Corral*. Guess this underscores the usefulness of having your radio on while enroute to the meetings.

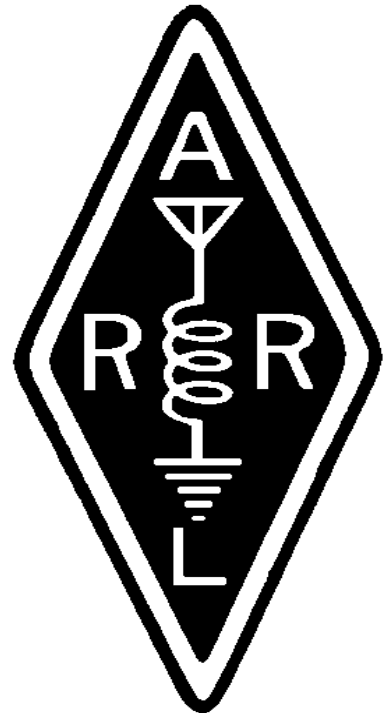
Keep in mind the December meeting will include election of officers for 2005. Be sure to attend and cast your vote for those who can best work together.

**Hope to see you on Monday, December 20, 2004!!**

A loyal friend laughs at your jokes when they're not so good, and sympathizes with your problems when they're not so bad.

*Arnold Glasgow*

**Demonstrate  
your support  
for amateur  
radio by joining  
the ARRL  
today !!**



# December

# 2004

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
<b>December 8: Butler County Emergency Communication Team Meeting, 6:30pm Rm 229, D. Russel Lee JVS</b>			<b>1</b> <b>General Ham Class</b> Johnston Hall MU-Middletown 6 - 9 pm	<b>2</b> <b>Net Tonight</b> 9pm W8BLV/R	<b>3</b> <b>ARRL 160 Meter Contest</b>	<b>4</b> <b>ARRL 160 Meter Contest</b> <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R <b>ARRL International EME Competition</b>
5  <b>ARRL 160 Meter Contest</b> <b>ARRL International EME Competition</b>	6	7	8  <b>General Ham Class</b> Johnston Hall MU-Middletown 6 - 9 pm	9  <b>Net Tonight</b> 9pm W8BLV/R	10	11 <b>BCVHFA License Exams - 8:30am</b> <b>OH-KY-IN Fox Hunt - 10am</b> <b>ARRL 10 Meter Contest</b> <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R
12  <b>ARRL 10 Meter Contest</b>	13	14 <b>Butler County ARES Net</b> 7:30 pm 147.330 - PL 118.8	15 <b>Ham Exams</b> Johnston Hall MU-Middletown Registration Opens @ 6 pm	16 <b>Net Tonight</b> 9pm W8BLV/R	17	18  <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R
19	20 <b>Dial Meeting</b> 7pm Golden Corral Buffet & Grill Dinner at 6pm	21	22	23 <b>Net Tonight</b> 9pm W8BLV/R	24	25  <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R
26	27	28	29	30	31	

# January

# 2005

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
<p>The 19<sup>th</sup> Annual Southwest Ohio Digital Symposium will be held in Thesken Hall, Miami University-Middletown, on Saturday, January 15, 2005, 0900-1600 EST. Parking and admission is free. Plan to attend and learn more about amateur radio's digital communications techniques. See page 3; December 2004 Newsletter for more information or go to:</p> <p style="text-align: center;"><a href="http://www.swohdigi.org/">http://www.swohdigi.org/</a></p>						<p>1 <b>New Year's Day</b> ARRL Straight Key Night <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R</p>
2	3	4	5	6 Net Tonight 9pm W8BLV/R	7	8 BCVHFA License Exams - 9am <b>OH-KY-IN</b> Fox Hunt - 10am ARRL RTTY Round-up <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R
9 ARRL RTTY Round-up	10	11 Butler County ARES Net 7:30 pm 147.330 - PL 118.8	12 Amateur License Class Begins @ 6pm Johnston Hall Miami-Middletown	13 Net Tonight 9pm W8BLV/R	14	15 <b>SWOH Digital Symposium</b> <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R
16 SCARFest 2005 Nelsonville, OH	17 Dial Meeting 7pm Golden Corral Buffet & Grill Dinner at 6pm	18	19 Amateur License Class 6pm Johnston Hall Miami-Middletown	20 Net Tonight 9pm W8BLV/R	21	22 ARRL January VHF Sweepstakes <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R
23 ARRL January VHF Sweepstakes TUSCO ARC Strasburg, OH	24	25	26 Amateur License Class 6pm Johnston Hall Miami-Middletown	27 Net Tonight 9pm W8BLV/R	28	29 <b>DIAL Roundtable Net</b> @ 9:30 pm W8BLV/R
30	31	<p style="text-align: center;"><b>January 12: Butler County Emergency Communication Team Meeting, 7pm</b> Rm 229, D. Russel Lee JVS</p>				