



The Spirit of '76 and '88

Newsletter of the Lake Erie Amateur Radio Association

Editor: Joe Prokop KC8RAN

Publisher: Jeannie St. Marie, KC8MNW

This Month's Meeting — Feb 28, 2006

ELECTRICAL RESONANCE

Dr. Stephen D. Umans; K8ZBE

Dimitri's Restaurant (Midtown Shopping Center—Snow and Broadview Road)

Dinner 6:30 PM

Meeting starts at 7:30

What happens when L meets C? How does a resonant circuit work? What determines its resonant frequency. What is its "Q"? What is reactive power? Resonance plays a major role in electrical circuits. This talk will give a non-mathematical introduction to the physics of electrical resonance and show some examples (and demonstrations) of its use both in radio and in 60-Hz power systems.

Dinner is served at 6:30 PM, with the meeting and program beginning at 7:30 PM. Dinner choices (Chicken Parmigiana, Steak or Broiled Scrod) are \$15 per person, and reservations are required if you wish to eat. Call Marv Grossman at (440) 248-0031 or online at leara.org.

January Meeting Recap

Sound Card Night!

The digital age and PC sound card has given the radio hobby a new spectrum of operating modes, and most of it is available for the cost of an audio cable. The ham can go beyond voice and CW, moving into the data modes of RTTY, PSK-31. The easiest is actually the most interesting, being picture transmission using SSTV. Programs for each of these modes are available as "freeware".



The meeting for January was titled "Sound Card Night". The program was done by John, N8OBJ and Joe, KC8RAN. They were able to do live demonstrations by transmitting and receiving through HT's using the sound card programs featured for PSK-31 and SSTV. A

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TRUSTEES EMERITUS

Al Amster	W8HYG
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Al Severson	AB8P (SK)

POINTS OF CONTACT

Don Raith "Sunshine"	N8DJG 216-921-7546
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Bryan Torok Radio Officer	N8OOF 146.88/R

Trustees and officers can be emailed at callsign@leara.org

The *Spirit of '76 & '88* is published monthly except in December. Contributions must be received by the 1st of the month.

Editor:

Joe Prokop, KC8RAN

de N8AUC

The last two weeks have been crazy. For those of you who have children in college, or have recently had children in college, you already know that this is FAFSA season. That's the financial aid application that all colleges use. But before you can accurately file one of those, you have to have your income taxes done. The problem with that is, no one (except the company I work for) has your W-2 forms ready before January 31. So you file a FAFSA in January using estimated numbers, because the colleges want you to file as close to Jan 1 as possible. Then when your tax info becomes available you have to refile the FAFSA using the real numbers. If you're getting the idea that this whole exercise is one big circle jerk, you've pretty much got the picture. Complicate matters further by having to perform this exercise for two kids (thank goodness Becki is too young for this right now), and you wonder why N8OBJ can crack jokes about my hairline? All I can say is, when it comes to hair - gray is twice as thick as none!

Speaking of my old friend John, N8OBJ....I sure hope you were at the January meeting. If you weren't there, you really missed out on a fascinating program. John N8OBJ and Joe KC8RAN did a fantastic job with the sound card demo program. They showed us how to do PSK31, SSTV, and RTTY using the sound card in your PC and some free software. If you missed that, then you'd better come to Field Day, because we usually demo that stuff there, as well. Remember swapping pictures with the USS Cod? Or copying the W1AW bulletin on RTTY? That's exactly how we did it. And just to show how much he cares, John N8OBJ got some cleverly embedded shots off at yours truly in the process. By embedded, I mean they were built into the images they used for the demo! We all got a good laugh out of those.

Don't miss the February LEARA meeting, where the program is about resonance. Resonance is a phenomenon that can make your antenna work better, your stereo sound better, or it can cause a suspension bridge to self-destruct before your very eyes. See you at Dimitri's on Feb 28. Hopefully by then all this FAFSA stuff is done and out of the way!

73 de N8AUC!

LEARA is a not-for-profit organization dedicated to Amateur Radio and to Public Service. Club information packets and applications for membership are available from **Marv Grossman, W8AZO, 440-248-0031**, or may be downloaded from our web site at www.leara.org. Annual membership is \$18.00. LEARA's address is: LEARA, PO Box 22823, Beachwood, OH 44122-0823.

LEARA is an ARRL-affiliated club. When you join or renew the ARRL, LEARA benefits monetarily if you so through the club. Send ARRL Applications/renewals to Club Treasurer Dave Foran WB8APD, 5439 Nan Linn Dr. Willoughby, OH 44094-4365. Make the check payable to LEARA, not the ARRL.

Membership Meetings are held the last Tuesday of each month except December at Dimitri's Restaurant, 1830 Snow Rd., Parma, OH (in the Mid-Town Shopping Center, just west of Broadview Road). Dinner is served at 6:30 p.m. The regular meeting begins at 7:30 p.m. Meetings are open to all interested persons. You may attend without eating, but **reservations are required** if you do wish to eat. Call **Marv Grossman, W8AZO at 440-248-0031** to leave a message.

Trustees' Meetings are held on the second Saturday of odd numbered months at 9:00 a.m. at the Parma-Snow Branch of the Cuyahoga County Public Library, 2121 Snow Rd., Parma, OH (opposite the Mid-Town Shopping Center). Meetings are open to all current members of LEARA.

Association News

(Continued from page 1)

list of programs and where to obtain them is found on page 5.

The first program demonstrated was DigiPan. This program is used for various digital modes, but most notably PSK-31. The program generates a 31 baud digital signal that is used to send text messages. The program has the capability to either send live text direct from the keyboard or send predefined messages through macros. The strength of PSK-31 is the ability to yield good copy in poor operating conditions. It's as reliable as CW in getting through when all other modes fail.

The next program demonstrated was MMSSTV. John, N8OBJ, gave an excellent description and run-through of the functions and capabilities of MMSSTV. As soon as you turn on the program and do some minor setup entries, you are ready to receive a picture. Once the program can receive, you are ready to send a picture. It's easy to copy and paste a digital picture or image into the program. You can then overlay a template with your station ID if you wish. Sending the picture is just a click away. While many commercial products are available to connect the radio with the PC, there is a very simple way to send a picture. Joe sent a picture to John using a microphone held over the laptop computer's speakers.

You also can receive and decode satellite weather pictures if you can receive between 137.1 and 137.62 Mhz FM. There are 4 satellites currently orbiting in low polar orbit (North-South ~ 800km high) that send real time images in visible and infrared light. The program demonstrated was WxtoImg. There is no special decoding equipment required as the picture is sent in audio tones under 5 khz. While the picture is low resolution, it still can yield some excellent views of storms. Areas where the skies are clear will also show features such as lakes and rivers. With the infrared images, you can see where precipitation is most likely occurring. While not as accurate as radar, you still get a feel for the big picture on storm fronts.

Other programs demonstrated were MMTTY using audio files recorded from 20 meters RTTY one weekend. Hamscope also does RTTY and CW. However using a computer to copy CW is not easily done as operators have variations in sending techniques. Finally, the G4FON trainer program was demonstrated for those who wish to learn or improve CW skills.

Right: An image John created using MMSTV during the demonstration. John sent this image and it was received by Joe as part of the demo. Both were using HT's. Note the fine print on the lower left!



John, N8OBJ doing the "heavy lifting" during the SSTV demonstration. (photo de KC8MNW)



Joe, KC8RAN showing the MMSSTV program. (photo de KC8MNW)



Club Member Profiles *de Steve KB8UTA*

This months profile is with our newest trustee, Mike Cegelski, K8EHP.

LEARA: How did you get interested in amateur radio? What got you started?

K8EHP: When I started in high school, I immediately joined the Radio Club (W8KTZ). I thought I died and went to heaven! The club moderator and other club members were very helpful, and in a few a bunch of us freshmen passed our Novice exam (my call was KN8EHP). A few weeks later I passed my technician exam.

LEARA: How long have you been licensed, and what class do you currently hold?

K8EHP: I got my novice ticket in September, 1957 which means I've been continuously licensed for over 48 years! I've been an Amateur Extra for many years.

LEARA: What do you like about amateur radio?

K8EHP: I very much enjoy the public service events. I feel an obligation for having the privilege of owning and operating my own, personal radio station. When operating, I love to ragchew, SSTV, and I am very active in ADRF (Amateur Radio Direction Finding). The people you meet in this hobby are generally very friendly and special. I really enjoy the camaraderie on the air and in the clubs.

LEARA: What are your favorite bands to work?

K8EHP: On HF, 17 meters without a doubt. I've never failed to make QSO on that band. It's not as crowded as 40 and usually the QRM is less. VHF and UHF are also fun:

LEARA: Do you collect QSL cards?

K8EHP: Not really. I do collect them, but not with as much vigor as some operators do. As I said earlier, I'm more of a rag chewer than a contester. (Mike, I really don't think that true as anyone who has seen you operate field day can attest to. *de Steve KB8UTA*)

LEARA: What type of award or recognition have you won or been awarded with?

KB8UTA: In the last few years, the only award's I've brought home were for ADRF National competition. (Mike has been in a FEW articles in QST *de Steve KB8UTA*) I still hold very dear to my heart an award I had bestowed on me over twenty years ago when I was president of the South East Amateur Radio Club. They voted me "Man of the Year" The award was a real rubber duckie (Donald) formed over a small two meter rubber duck antenna. I keep it proudly displayed on a bookend on the top shelf of my operating desk.

LEARA: What would you dream station be?

K8EHP: Our idea of a dream station changes as years go by. My present station works very well and if I call em I can work em. The only improvement I'd like is more land to string some serious wire around for 80 and 160 meters. That won't happen as we're happy where we live and moving isn't a consideration. Even if we got the itch to move, I don't know where. Our weather isn't all that bad and living close to a large source of fresh water is a good thing!

LEARA: What other hobbies do you have other than amateur radio?

K8EHP: The XYL and I love to go hiking (orienteering) My top alternate hobby is playing the guitar, if you can call what I do playing. I keep working on it and I'm slowly creeping up on proficiency. I also enjoy boating, but I seriously doubt that I'll ever get active again.

LEARA: What type of work do you do? Or if retired, what did you do?

K8EHP: I've been retired for a few years now. I spent the majority of my career as an electronic technician specializing in coin operated amusement equipment. (pinball, video games, air hockey, juke boxes, pool tables, etc) I spent a few years working as an electronic technician for Antenna Specialists in their R&D lab.

Thanks Mike, for letting our members got to know more about you.
Steve KB8UTA

Announcements and Upcoming Public Service

March of Dimes—WalkAmerica Cleveland April 30, 2006 0800-1300 Local time

This event takes place around the Q Arena in downtown Cleveland. Some hams are needed for communication. Anyone interested in participating should contact T.J. Powell N8UIR via email at: tpowell@neomrc.com.

Sound Card Programs:

SSTV: MMSSTV1.11G
<http://mmhamsoft.ham-radio.ch/>

PSK31: Digipan
<http://www.digipan.net>

RTTY: MMTTY
<http://mmhamsoft.ham-radio.ch/>

CW/RTTY: Hamscope
<http://qsl.net/hamscope/hamscope.html>

CW Trainer: Koch CW Trainer V8
<http://www.g4fon.net/>

APT Weather Satellite Decoders:
-WxToImg
<http://www.wxtoimg.com>

WXSAT
<http://www3.sympatico.ca/konecny/wxsat.htm>
(the above web page has some helpful hints as well as the link to download the program)

SSTV Net

The LEARA SSTV Net has returned to the 88 machine. We are currently running every other Saturday at 8:00. February dates are 2/11 and 2/25. March planned dates (subject to change) are 3/11 and 3/25.

Net control operators are needed to help run the net. Contact KC8RAN or N8OBJ if you are interested. With more net control ops, we can increase the frequency of the net!

January Door Prize Winners:

Bob, W2THU – FREE DINNER

John, N8OBJ – SOLDERING IRON

Tim, KB4FNQ – WATERPROOF FLASHLIGHT

Ron, K2RJ – DROP-TESTED MINI-DMM

Jim, N8XDO – UNTESTED MINI-DMM

Marv, W8AZO – 50/50 (donated prize to club)

The LEARA Net

The Lake Erie Amateur Radio Association's weekly net is held every Thursday evening at 8:00 PM on the 146.760 (- offset, 110.9 PL) repeater. This is an open and informal net intended to provide the opportunity to test radio equipment, promote fellowship among local amateur radio operators, and develop radio traffic handling skills.

Any member of the Lake Erie Amateur Radio Association interested in trying their hand at directing the weekly net is encouraged to contact Joe KC8RAN (kc8ran@leara.org) or as listed on page 2.

Congrats, Kudos, and Well Done!

Have you or know of someone who has:

- Achieved an award or a feat worth celebrating?
- Recently upgraded or newly licensed?
- Done something above and beyond the call?

Submit your nomination with the name, callsign and the accomplishment to the editor (kc8ran@leara.org) so we can recognize the achievement.

SuitSat-1 (AO-54/RS0RS)

Editor's note: I have been able to hear the SuitSat-1 (AO-54/RS0RS) signals very faintly during recent passes. The AMSAT-BB postings have diagnosed the problem in receiving clear, strong signals resulting from possible antenna or connector issues. Ground-based measurements have calculated a power output of 1 to 2 milliwatts (readable signals from space can be made with downlinks from 1/4 watt transmitters). Because the transmit power has limited the drain on the batteries (telemetry indicates that the battery was running at 27 volts after 1 week, losing only 1 volt), the life has been extended. Signal reports have increased in the "intelligence" and readable messages as the suit slowly falls to Earth. To hear and see what has been reported so far, visit www.aj3u.com and click on the SuitSat link. Updates are also on the www.amsat.org and www.suitsat.com websites.



Photos from www.aj3u.com website

The following message is from the AMSAT news service:

Date: Sat, 04 Feb 2006 17:49:04 -0500

From: "Frank H. Bauer" <ka3hdo@comcast.net>

Subject: [amsat-bb] SuitSat Status 4 Feb 2005

For Immediate Release---

Silver Spring, Maryland

4 February 2006 at 22:00 UTC

Paraphrasing Mark Twain....the demise of SuitSat-1 is high exaggerated!!

It is now nearly 24 hours since the successful deployment of the SuitSat-1 experiment. These past 24 hours have been a wild ride of emotions...tremendous highs...deep lows when people reported no signals and said SuitSat-1 was dead and now....some optimism.

It is absolutely clear that SuitSat-1 is alive. It was successfully turned on by the ISS crew prior to deploy and the timing, micro-controller functions and audio appear to be operating nominally. The prime issue appears to be an extremely weak signal.

I have heard several recordings and have monitored two passes today. When the signal is above the noise level, you can clearly hear partials of the student voices, the station ID and the SSTV signal. One of the complicating factors in reception is the very deep fades that occur due to the spin of SuitSat.

Based on the information we know thus far, one can narrow down the issue to the antenna, the feedline, the transmitter output power and/or any of the connections in between. Through your help, we would like to narrow down the issue further and also gather some internal telemetry from the Suit. If the transmitter is running at full power, we would expect the Suit to end operations in the next few days to a week. If it is not, then it will operate much longer. Since we do not know how long this experiment will last, we ask for those with powerful receive stations to listen for SuitSat--especially during direct overhead passes when the Suit is closest to your area. If you can record these passes and send the audio to us, it would be most appreciated. We will continue to be optimistic that this issue will right itself before the batteries are depleted. So please KEEP LISTENING!

We are also working to get the voice repeater set up on ISS to downlink SuitSat audio on 437.80 in the event that the ISS Kenwood radio can receive the SuitSat transmissions. The repeater may be operational as early as mid-day Sunday. Please do NOT transmit on 145.99, voice or packet, until we have confirmed that SuitSat is no longer transmitting. These transmissions interfere with our ability to hear SuitSat.



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ARRL News

ARRL BOARD RAMPS UP FOCUS ON GRASSROOTS LOBBYING, DISASTER PLANNING

From the ARRL Letter

The ARRL Board of Directors will place even greater emphasis on the League's nascent grassroots lobbying effort. Implemented last year, the Grassroots Legislative Action Plan involves direct contact with lawmakers in members' home districts and motivating legislative support for Amateur Radio-related legislation through letter writing by members.

"We want to step up the pace of implementing that plan," ARRL CEO David Sumner, K1ZZ, explained after the January 20-21 Board meeting in Windsor, Connecticut. Acting on a motion by outgoing Grassroots Legislative Action Committee Chairman Frank Fallon, N2FF, ARRL Hudson Division Director--the Board adopted a resolution shifting oversight of the Grassroots Legislative Action Committee to the ARRL Executive Committee (EC), which also will monitor its success. Fallon said afterward that putting the grassroots initiative under the EC will "clarify the reporting responsibility and incorporate the program into the Board culture." Fallon also sits on the EC.

Fallon turned over the chairmanship of the panel to Great Lakes Division Director Jim Weaver, K8JE, but he will remain a committee member and says he's encouraged by the changes the Board made and the fact that new ARRL President Joel Harrison, W5ZN, made the grassroots program a significant part of his post-election remarks to the Board.

The Grassroots committee has been focusing its energy on garnering support and additional cosponsors for House Resolution 230 (H.Res 230) concerning Broadband Over Power Line (BPL), the Spectrum Protection Act of 2005 (S 1236 and HR 691), and the Amateur Radio Emergency Communications Consistency Act of 2005 (HR 3876). More information on these bills is available on the ARRL Government Relations page <<http://www.arrl.org/govrelations/>>.

The Board also resolved to establish an ad hoc ARRL National Emergency Response Planning Committee "to appropriately prepare for future large-scale disasters." The panel will develop a comprehensive recommendation for ARRL responses to national, regional and international disasters. The Board will consider the recommendations at its 2007 annual meeting next January.

The Board also adopted an ARRL Education Mission and Vision Statement. The document calls on the League to "advance the art and science of radio through education" through several avenues. These include providing instruction and instructional materials to prepare newcomers for licensing and current amateurs for upgrading as well as engaging young people in "the magic of radio."

The Board charged the ARRL Technology Task Force with identifying the application of digital voice, software defined radio (SDR) and high-speed multimedia (HSMM) to the Amateur Radio Service in 2010 and beyond. The task force also "shall investigate and identify new technologies or concepts that should be considered for development."

In other action, the Board changed the name of the ARRL Antenna Case Assistance Committee to the Amateur Radio Legal Defense and Assistance Committee and broadened its mandate. Legal cases considered for League funding, subject to an upper limit of \$10,000 per case, not only may include litigation involving antenna height and placement but cases related to interference, RF safety, aesthetics, structural safety, environmental issues and other matters that could impact Amateur Radio.

Outgoing ARRL President Jim Haynie, W5JBP, was named an ARRL President Emeritus "in view of his 15 total years of ARRL Board service that includes his six years of exemplary service as ARRL President."

Additional details on the ARRL Board of Directors annual meeting are on the ARRL Web site <<http://www.arrl.org/news/stories/2006/01/24/3/>>. The Minutes of the ARRL Board's annual meeting are on the League Web site <<http://www.arrl.org/announce/board-0601/>>.

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While the transmission part of the SuitSat experiment has not been stellar, SuitSat-1 has been tremendously successful in several areas. Some of these successes include:

- -We have captured the imagination of students and the general public worldwide through this unique experiment
- -The media attention to the SuitSat project represents one of the biggest ever for amateur radio
- -We have had well over 2 million internet hits on www.suitsat.org today
- -Our student's creative artwork, signatures and voices have been carried in space and are on-board the spacesuit--- the students are now space travelers as the Suit rotates and orbits the Earth
- -Carried in the spacesuit CD are pictures of Roy Neal, K6DUE, and Thomas Kieselbach, DL2MDE, two of our colleagues who have contributed to the ARISS program and have since passed away
- -We successfully deployed an amateur radio satellite in a Spacesuit from the ISS, demonstrating to the space agencies that this can be safely done.
- -This ARISS international team was able to fabricate, test and deliver a safe ham radio system to the ISS team 3 weeks after the international space agencies agreed to allow SuitSat to happen. This was a tremendous feat in of itself.

SuitSat-1/Radioskaf is a space pioneering effort. Pioneering efforts are challenging. Risk is high. But the future payoff is tremendous. As you have seen, we have not had total success. But we have captured the imagination of the students and the general public. And we have already learned a lot from this activity. This will help us and others grow from this experience.

Keep your spirits up and let's continue to be optimistic. And please keep monitoring!!

73, Frank H. Bauer, KA3HDO
ARISS International Chairman
AMSAT-NA VP for Human Spaceflight Programs

Section News

A letter from Jim Weaver, K8JE, Director, Great Lakes Division of the ARRL

Dear member,

A few days ago, I asked you to write to your US Representative (i.e. your member of the US House of Representatives, not your US Senators) urging them to co-sponsor H.Res. (this is a US House Resolution; not a H.R. which signifies a House bill) 230. This resolution calls on the FCC to review in depth the issues related to interference to police, fire, safety and Amateur radio communication and take appropriate action to safeguard these licensed services from QRM.

Many of you have written. Huge numbers of others of you have not. Very frankly, if we stick together and act together in asking our US Representatives to co-sponsor the resolution, we will get it passed and the FCC will be put into a position it cannot ignore. Writing is something that supports Amateur Radio . . . and your privilege to use your hard-earned Amateur Radio license. If you care about your license; if you care about the future of Amateur Radio; if you care about fair play from the FCC, you will send a letter. Amateur Radio needs you . . . now.

With your help and the help of all members in this Division, we can get the job done. The question comes down to a simple, "Do you care?"

You can go to:

<http://www.arrl.org/tis/info/HTML/plc/filings/hres230/HRes230-SampleLtr.doc>

and download the letter. Put in the name and address of your US Representative as well as your name, address

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Hamfest Listing

26 Mar 2006
 Lake County Amateur Radio Association
<http://www.lcara.org>
 Location:
 Madison High School
 3100 Burns Road
 Madison, OH

Talk-In: 147.21 (PL 110.9)
 Contact: Rocky, KB8WFD
 7480 Fern Drive
 Mentor-on-the-Lake, OH 44060-3233
 Phone: 440-209-8953
 Email: rocky@lcara.org

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(include your call sign) and send it. PLEASE BE CERTAIN to send me a COPY OF THE LETTER you send so I can forward this copy to our lobbyist in Washington, DC. Doing this will enable us to nearly double the value of the letter you send.

How should you send the letter? It makes little difference PROVIDED you send me a copy of it. Send it by snail mail to the Representative at his Washington office or at his home office, send it by FAX, send it by E-mail (if he/she has a working E-mail (send it by special courier, send it by carrier pigeon?). The main thing is to SEND IT and to SEND ME a copy.

Who is your US Representative? Go to arrl.org, click on MEMBERS ONLY in the top banner and you'll see the names and addresses of your US Representative and your US Senators. Ignore the Senators at this time (the resolution is in the House, not the Senate; therefore, your Senators probably don't even know a thing about it).

Thanks for your help. The 10 minutes you spend in following through on this action will be well worth your effort.

73,

Jim

Jim Weaver, K8JE, Director
 5065 Bethany Rd., Mason, OH 45040
 E-mail: k8je@arrl.org; Tel: 513-459-0142
 ARRL Great Lakes Division

Volunteer Exam Dates and Locations

19-Feb-2006
 Sponsor: LORAIN COUNTY ARA RED CROSS
 Time: 1:00 PM (Walk-ins allowed)
 Contact: CHARLES S HALL
 (216)433-3036
 Email: VE@W8HF.COM
 VEC: ARRL/VEC
 Location: AMERICAN RED CROSS
 2929 W RIVER RD N
 WWW.W8HF.COM (HOME PAGE)
 ELYRIA, OH 44035

07-Mar-2006
 Sponsor: CUYAHOGA FALLS ARC
 Time: 7:00 PM (Walk-ins allowed)
 Contact: BRUCE M FERRY
 (330)929-2766
 Contact: SEE WEB PAGE
 VEC: ARRL/VEC
 Location: STOW-MUNROE FALLS PUBLIC LIBRARY
 3512 DARROW RD
 HTTP://WWW.AK8B.US/VE
 STOW, OH 44224

12-Mar-2006
 Sponsor: CUYAHOGA ARS
 Time: 9:00 AM (Walk-ins allowed)
 Contact: GARY S DEWEY
 (216)642-8705
 Email: GDEWEY@EN.COM
 VEC: ARRL/VEC
 Location: TOWN HALL
 6652 BRECKSVILLE RD
 STATE ROUTE 21
 INDEPENDENCE, OH 44131

19-Mar-2006
 Sponsor: LORAIN COUNTY ARA RED CROSS
 Time: 1:00 PM (Walk-ins allowed)
 Contact: CHARLES S HALL
 (216)433-3036
 Email: VE@W8HF.COM
 VEC: ARRL/VEC
 Location: AMERICAN RED CROSS
 2929 W RIVER RD N
 WWW.W8HF.COM (HOME PAGE)
 ELYRIA, OH 44035

26-Mar-2006
 Sponsor: LAKE COUNTY ARA - MADISON
 Time: 9:00 AM (Walk-ins allowed)
 Contact: SCOTT FARNHAM
 (440)256-0320
 Email: SCOTTFARNHAM@ADELPHIA.NET
 VEC: ARRL/VEC
 Location: MADISON HIGH SCHOOL
 MIDDLE RIDGE & BURNS RD
 MADISON, OH 44057

LEARA
PO Box 22823
Beachwood OH 44122-0823

FIRST CLASS MAIL

FIRST CLASS MAIL
U.S. POSTAGE PAID
CLEVELAND, OHIO
Permit No. 4340

LEARA — The Lake Erie Amateur Radio Association

VOICE REPEATERS:

53.230/R-
146.76/R-
146.88/R-
224.90/R-
444.40/R+
444.70/R+

- Highland Hills (136.5 Hz tone)
 - Highland Hills (Use 110.9 Hz tone for remote inputs in Lakewood, Newbury & Willoughby)
 - Lakewood (Requires 110.9 Hz tone)
 - Lakewood (141.3 Hz tone)
 - Highland Hills (131.8 Hz tone)
 - Lakewood (131.8 Hz tone)
- (.76, .88, .90 and .70 offer emergency and member-only autopatch lines.)

PACKET NODES: CLE1 145.01 MHz: CLE5 145.05 MHz: CLEV220 223.70 MHz

These nodes are part of the Cleveland Net Cluster in K8EIW's backbone system.

GENERAL: NBRY
NBRYX
LEARA

- 145.07 MHz & 223.70 MHz (KA-NODE)
- 145.07 MHz ↔ 223.70 MHz Gateway
- 145.07 MHz & 223.70 MHz PBBS

INTERNET:

- www.leara.org
- To subscribe via e-mail, send a message to: spirit76-request@leara.org
Put subscribe in the subject area and your name and callsign in the body.
Those who subscribe via e-mail will not receive a paper copy.

Affiliated



Club

Northern Ohio



Affiliate