



# 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 27, 2007



At the February 27th. LEARA meeting, Bill Hertzell (N8HUQ) will present a talk and video slide show of an insiders view of the Network side of the Cell Telephone industry. Cellular radio equipment is very similar to our home radio stations, only so much bigger that most sense of comparison is lost. If you would be interested in viewing 300 foot self supporting towers up close, Coax the size of your forearm, and power supplies capable of over 3000 DC amps , then this is the meeting for you.

The meeting will be held at Dimitri's Restaurant, 1830 Snow Rd., Parma, Ohio (in the Mid-Town Shopping Center, just west of Broadview Road). Dinner will be served at 6:30 PM and the formal meeting will begin at 7:30 PM. Meetings are open to all interested persons. You may attend without eating, but reservations are required if you do wish to eat.

Restaurant service is available only for those who purchase dinner. If you are attending the meeting only, kindly purchase beverages at the bar and bring them to your table. The dinner menu will consist of Steak, Broiled Boston Scrod, or Chicken Parmigiana for \$16. Also available is a vegetable and pasta dish for those who prefer a meatless dinner. The dinner includes a salad, main course, dessert, ice tea or coffee, and gratuity (please note, bar service and soft drinks are not included).

RESERVATIONS ARE REQUIRED BY 11:00 AM OF THE MEETING DATE. Please call in your reservation and your menu choice to Marv Grossman, W8AZO, at 440-248-0031. You can also visit [leara.org](http://leara.org) and make your reservation through the club's website.

### PLEASE BE SURE YOUR DUES ARE CURRENT.

If you haven't paid your 2007 dues, next month's newsletter will be your last. If you get the newsletter electronically, your address will be removed from the notification list. Please contact Marv, W8AZO, (440-248-0031 or [MarvG@apk.net](mailto:MarvG@apk.net)) if you do not know whether or not your dues are up-to-date."

## February 2007

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Trustees and officers can be emailed at [callsign@leara.org](mailto:callsign@leara.org)

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

**Minister of Propaganda:**

Joe Prokop, KC8RAN

*de N8AUC*

The last time I wrote to all of you, we were wondering when, or IF winter was ever going to get here. Now we're wondering when it will leave. Winter arrived a bit late this year, but it arrived with a vengeance! Can you believe how COLD it's been the last couple of weeks?

I'm just glad we don't do Field Day in February. But some people do. I was chatting with Bill, KA8VIT the other day. He got together February 3rd with some folks who call themselves "The Flying Pigs". They're basically a bunch of guys who like to operate QRP on the HF Bands. They have a Field Day like activity they do called the FYBO contest. FYBO stands for "Freeze Your Butt Off", and they certainly did this year. Stations in the coldest climates get an advantage, because their scoring multiplier is determined by the temperature during the contest. The guys Bill operated with had the highest available multiplier for their score, because it was REAL cold.

What did I do? I was at an indoor track meet at Mount Union College. It was warm inside the field house.

If you missed the first LEARA meeting of the year, you missed a good program! David Dennis W8DDD came out and spoke about the Ham Radio Promotion Project. He brought has a really good DVD with him that the Project, under the guidance of Dee Logan WIHEO produced. The project is looking for hams to serve as "elmers" to help out nre hams. That's important, since the licensing requirements aren't what they used to be. When a person becomes a new ham, he or she is going to need help and guidance getting started. A good elmer is crucial to this happening successfully.

Our friend Punxatawney Phil (the star of Ground Hog Day) didn't see his shadow this year. I think that means spring is not far away. The

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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](http://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 2)*

way I heard it explained, if the ground hog sees his shadow we get six more weeks of winter, and if he doesn't then spring will arrive in about a month and a half. Go figure. The important thing is that the Cleveland Indians equipment truck left for Winter Haven, FL last week. And the pitchers and catchers report for spring training on February 15. Soon it will be Baseball season.

Then it will get warm. Then it will be time for public service events, and then it will be time for my two favorite events: The Dayton Hamvention, and Field Day, which are cleverly separated by the Westlake Soccer Tournament over Memorial Day weekend. You are planning on lending a hand with the Soccer Tournament, right? As usual we're going to need all the help we can get, and that includes you.

Definitely something to look forward to. Especially since my windshield washers unfroze today. That made me very happy. Sometimes it's the small things that bring the most joy.

73 de N8AUC  
(da prez)

## Coming Attractions

### March Meeting

The annual Skywarn training meeting is scheduled for the March meeting. Stay tuned for details on this widely attended meeting.

### Upcoming Meetings:

**Feb 27: Insider's View of Cellphone Network**

**Mar 10: Trustees Meeting**

**Mar 27: Skywarn**

**Apr 24: TBD**

Note: Have any ideas for club meeting topics? Contact Tom W8TAB (w8tab@leara.org). Club meetings, with the exception of the June Field Day and picnic meetings, are held at Dimitri's in the MidTown Shopping Center. Trustees Meetings are open to all members in good standing and are held at the Snow Rd. Library across from Dimitri's at 9:00 AM.

## LEARA "On The Air" Club Net Information

### Club 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.

### SSTV Net:

LEARA is sponsoring an informal SSTV net on Saturdays on the "88" machine. This net is open to anyone and everyone. Refer to the January 06 newsletter for hints on how to get started, or check in and we'll get you on the way to exchanging pictures. Check ins are open to anyone, whether sending pictures, receiving pictures only, or just listening in, let us know you are out there!

**Net Control Operators Needed...** Any member of the Lake Erie Amateur Radio Association interested in trying their hand at directing the weekly net or the SSTV net are encouraged to contact Joe KC8RAN (kc8ran@leara.org) or as listed on page 2. It's a good opportunity to be prepared for emergencies or just to upgrade your operating skills.

See you Thursdays on "76" and Saturday Nights on "88"!

**Remember...** Check your expiration date on the mailing label. If it shows your membership as expired, send in your renewal...  
(E-mail subscribers can contact Marv W8AZO if you are unsure)

## Association News

### January Meeting: Ham Radio Promotion Project

Due to a personal issue, Bulldog Battery's Richard Price was forced to reschedule his presentation. In his place, Dave Dennis, W8DDD presented the video "Amateur Radio-Wireless Window to the World".

In this video, viewers get to see a wide variety of how amateur radio is used. There are scenes of public service, Field Day, satellite, school club (with Ken KG8DN) and various modes, including digital, RTTY, CW and SSTV.

LEARA does support an participate the HRPP. Anyone wishing to help grow the hobby is encouraged to sign up to be part of the Elmer corps. Contact the editor or other board members if you are interested.

### Welcome to the Club!

LEARA proudly welcomes the following members:

**LARRY GORDON, KA8WEM**

**MARK WOODWORTH, WD8KHU**

If you hear Larry or Mark on the air, please be sure to welcome them into the club!

### January Meeting Door Prize Winners

**50/50 Drawing:** Jeannie KC8MNW (sorry, Bob, she's my publisher!)

**LEARA Buck:** Dave WB8APD

**Universal AC Adapter:** Jeannie KC8MNW, Howard N8CXA

**Cellphone Holders:** Bill N8UPZ and Jim WA8ZHN

**USB Port AA Battery Charger:** KC8MNW again  
**Nippers/Pouch:** Jack W8JAK

## Antenna Topics (Think Spring!)

*With the expected surge in General Class upgrades now that CW skills will no longer be required to use the HF privileges, the newsletter will present some features to prepare and plan those new antenna projects. Most of the information presented is available in the material referenced in greater detail.*

*de KC8RAN*

The most important part of the success of every station, excluding the skill of the operator, is the antenna. The antenna is the transducer that converts energy into an electromagnetic wave that allows two or more physically unconnected stations to communicate. This is the first of a series of articles about antennas and propagation. This month the focus will be on general theory (without getting too technical) and practice. All of the information presented here can be found in the ARRL Handbook For Radio Amateurs and the ARRL Antenna Handbook.

For the purposes of communications between 2 nearby stations, VHF and above frequencies are

generally used. For example, local club nets, public service events and other local contacts are held on repeaters or on simplex frequencies in the 2M band. Some clubs (such as the Parma Radio Club) may also meet on the 10 meter band for nets as well. Because the communication is local, there is a desire to keep the signal path in "line of sight", where the two antennas can "see" each other. Ground (as in dirt and rock) will act as a barrier to communication as it is opaque to radio signals. This is true of all radio signals.

As you go higher into UHF and above, attenuation becomes greater. Trees become even more of a problem as the microwave region is approached. This is not only about the density of the plant, but

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also because of the edges of the leaves. A phenomenon known as “knife-edge diffraction” occurs at all radio frequencies when an object that is large relative to the wavelength of the signal is between 2 stations. It will tend to cause the signal to be disrupted in its’ expanding and uniform pattern into one that has alternating zones of strong and weak signals in the shadow of the obstruction.

At UHF and higher bands, the shorter wave length is impacted by the edge of the leaves, but the leaf will have almost no impact to the wave pattern at HF frequencies. Both the ARRL Handbook and the Antenna Handbook give a good, in-depth explanation to this.

So, it’s important in local communication that the 2 stations have a line of sight path in order to complete the VHF communication. Besides line of sight, there also needs to be a consistent polarization between the 2 stations when communicating in the VHF and above region. Both stations should both be either vertically or horizontally polarized.

This polarity isn’t the same as the polarity, for example, of a diode or a battery. The polarity of a radio wave is determined by one of its’ components. Radio waves consist of 2 components; the magnetic field and the electric field. The interaction of these two components generate the wave effect that allows the signal to span vast distances without a medium to propagate the signal. By convention, the orientation of the plane of electric field determines the polarity. If the electric field is parallel to the surface of the Earth, the polarity is horizontal. Simplifying this is the physical orientation of the radiator. If the radiator is vertical, the electric field it generates is also vertical. So you can determine the polarization simply by looking at the antenna.

Cross polarization at the VHF and above range will result in typically about a 20db loss in signal strength. Therefore, my 2M satellite beam, angled up at 30 degrees and horizontally polarized, will actually have a net loss of about 6db between me and the ’76 or ’88 machines compared to running the same equipment on a simple  $\frac{1}{4}$  wave antenna.

HF propagation involves a lot more than simple VHF line of sight communication. HF’s allure is the ability to send your signal over distances in the thousands of kilometers range. This requires the signal to be bounced off a reflector. Thanks to structure of the Earth’s ionosphere, we have a reflector that acts as a rather unpolished and rough mirror that bounces the signals back down. The signal, once it hits the ionosphere, will tend to “tumble” a lot, changing polarization along it’s journey. Therefore, there is no advantage to choosing either a horizontal or vertical polarity in terms of signal attenuation in the HF region. The signal is constantly changing polarity as it reaches the receive antenna, therefore negating any improvement in having both stations using the same polarization. Over long distances, a vertically polarized antenna at a DX station will almost be exactly the same if received by a horizontal or vertical antenna.

Orientation of the HF antenna has another, more important effect, being the angle of radiation of the signal. If the signal has a low angle, it will tend to travel farther as the signal will bounce off of the ionosphere further out in the distance than a signal that has a higher angle. The trick then is to use a horizontal dipole (or variation) high enough up in the air to have a low angle, a vertical antenna which by design is a low angle radiator, or a combination of the two in a sloped antenna.

A more in-depth presentation of this material is found in the Propagation sections of both the ARRL Handbook and the Antenna Handbook. Next up, Eric, N8AUC, will present some suggestions on building effective antennas without resorting to towers, beams, rotators and all of the related expenses. A lot of us simple wire antenna users have had great success with these antennas. I have worked 47 states, 110 countries and a whole lot of counties with just a wire strung between the chimney and a tree at the back of the yard. For the newly-minted Generals expected with the no-code ruling, now is the time to plan your spring and summer antenna projects!

## ARRL News (from the ARRL Letter)

### AMATEUR RADIO VOLUNTEERS SUPPORT TORNADO RELIEF OPERATION

When deadly tornados struck Central Florida early Friday, February 2, Amateur Radio volunteers turned out to assist emergency managers and relief organizations to supplement communication and offer other support. The National Weather Service (NWS) rated two of the three twisters as EF-3 events -- 160-165 MPH winds -- on the new "Enhanced Fujita Scale." Since they hit in the early-morning hours, the tornadoes took many residents by surprise. They left behind a landscape of downed trees and extensive structural damage in at least four Florida counties and claimed 20 lives -- most within the tornado's first two minutes, authorities say. Amateur Radio Emergency Service (ARES) and SKYWARN volunteers were active in Lake, Seminole, Sumter and Volusia counties -- all designated as federal disaster areas.

"It's likely to take a long time to recover from this," observed Sparky Leger, N1YLQ, a Red Cross and SKYWARN volunteer in Volusia County, where an EF-1 tornado -- 100-105 MPH -- hit. "Seeing some of the damage during a drive-through, honestly, we're not sure how people managed to survive." He shared his experiences last weekend with members of the VoIP Hurricane Prep Net <<http://www.voipwx.net/>>. An estimated 1500 dwellings were badly damaged or destroyed in the four-county region. Devastation was widespread.

Sumter County ARES Emergency Coordinator JT Fleming, W3GQJ, who says the storm affected only a portion of his county. "Sumter County was very lucky in that the majority of the homes affected were all built in the last two years to the current Florida 110 miles-per-hour standard," he noted. "Lake County that borders on the east side had much greater destruction because the tornado hit a mobile home community." All 20 deaths occurred in Lake County.

Some 20 Sumter County ARES volunteers responded over the course of the weekend to support communication between the county emergency operations center (EOC) and shelters. Many residents opted to remain at their damaged properties, although some are staying with family or friends or in public accommodations.

By all accounts, Amateur Radio communication support was largely unneeded because the cellular telephone network remained operational, although it did get overloaded at times. ARES teams stood by to fill the gaps if needed.

Irv Butler, KB1E, was among those volunteering in hard-hit Lake County. "We are providing comms to The Salvation Army meals relief teams," he told ARRL Northern Florida Section Emergency Coordinator Joe Bushel, W2DWR, over the weekend. He said the county emergency management staff had expressed appreciation for the Amateur Radio assistance.

ARES/RACES volunteers from Seminole and Lake counties installed a backup repeater in Paisley to restore radio communication for Lake County Fire and Rescue.

Volusia County EC Fred Magliacane, KF4VRS, reports the adjacent KE8MR 145.23 MHz repeater was abruptly taken off the air after the storm toppled the 1500-foot commercial radio tower that had supported the repeater's antenna. The repeater typically serves the East Central District ARES during disasters.

"Over the past few years we have learned that we cannot always rely on repeaters," Magliacane says. "We have trained our members to use simplex if and when the repeaters fail. One net a month we have a simplex net, and sometimes during the regular nets, we turn off the repeaters to see if our members remember to go to simplex."

### AMATEUR RADIO STEPS IN FOLLOWING TELEPHONE SERVICE INTERRUPTION

When telephone cables were severed in two Texas locations January 29, Amateur Radio Emergency Service (ARES) volunteers activated to fill the communication gap during repairs, if necessary. ARRL South Texas Section Emergency Coordinator Jerry Reimer, KK5CA, told ARRL Headquarters that the two unrelated incidents affected public 911 and regular telephone service from Midland to Alpine to El Paso.

"The site near Alpine was cut by a road construction crew, not detected, and buried," Reimer reported.

ARRL South Texas Section Manager Ray Taylor, N5NAV, says an ARES net stood by on 40 meters at

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the request of ARRL Brewster County Emergency Coordinator David Cockrum, N5DO, who was at the Alpine Emergency Operations Center (EOC).

"West Texas has a great 2 meter linking system, but it didn't work in some of the areas, so we activated HF on 7.285," Taylor explained. Volunteers also stood by on 2 meters and, Taylor said, stations at several other EOCs also checked into the net, with Roger Podsim, KD5OTH, serving as net control station.

At first it was thought the outage might last up to 18 hours, but the system was back up and running in a little more than 90 minutes, and the ARES net closed.

"I want to thank all those that turned out to help," Taylor remarked afterward. "One thing about ham radio operators - they are always ready to help when needed."

## **LEAGUE ROLLS OUT EMERGENCY RADIO PUBLIC RELATIONS CAMPAIGN, WEB SITE**

"Ham Radio . . . Getting the message through for your family and community" is the theme of the League's 2007 public relations campaign. The "Emergency Radio" Web site <<http://www.emergency-radio.org/>> debuted this week. ARRL Media and Public Relations Manager Allen Pitts, W1AGP, says the 2007 PR initiative picks up the momentum ARRL public information officers started during the just-ended "Hello" campaign.

"As we begin launching the new emergency communications campaign, the friendships and good will developed in Hello will aid in future promotions of Amateur Radio," Pitts said. "For 100 years, radio in its many forms has saved lives and aided in crises. We have a great legacy and a bright future."

The new Web site is a partner to the "Ham Radio . . . Getting the message through for your family and community" brochure now available and, in fact, already starting to make the rounds. "If an emergency or disaster should happen, the new 'Ham Radio . . . Getting the message through' site has the capability to quickly upload current information, providing PIOs with words and pictures to circulate to the media while the event is still news," Pitts explained.

As both the brochure and the "Ham Radio . . . Getting the message through" Web site note: "Amateur Radio . . . has

consistently been the most reliable means of communication in emergencies when other systems failed or were overloaded." The campaign stresses that ham radio works and works well and it doesn't require any external infrastructure, such as telephone lines or even the Internet, to get the message through.

The Web site provides page space for emergency communication and disaster relief organizations to tell about their work. "So far, SKYWARN, MARS, SATERN and RACES have taken advantage of our offer, showing the versatility of ham radio in disasters and emergencies," Pitts says, "and more are expected."

The campaign also emphasizes that ham radio is fun and a good way to keep in touch with friends or family. "You can have this capability for yourself and your family," the campaign points out, inviting members of the general public to get an Amateur Radio license and become active in emergency communication through the Amateur Radio Emergency Service (ARES) or other organization. A "How to Get Started" tab on the Web site offers step-by-step instructions.

## **ARRL BOARD ACCEPTS NATIONAL EMERGENCY RESPONSE PLANNING COMMITTEE REPORT**

The ARRL Board of Directors accepted the Report of the National Emergency Response Planning Committee (NERPC) when it met January 19 and 20 in Windsor, Connecticut. Upon dissolving the committee with its thanks, the Board set in motion a process to identify and implement action items in the report as soon as possible. ARRL First Vice President Kay Craigie, N3KN, chaired the 13-member NERPC, charged with developing comprehensive recommendations to improve the League's response to regional, national and international disasters. Among other things, panel members evaluated the responses and actions of ARRL and the Amateur Radio Emergency Service (ARES) during Hurricane Katrina as well as lessons learned.

"If 'lessons learned' are not followed by 'behaviors changed,' then the lessons have not been learned at all," the report concludes. The report describes disaster preparedness as "a moving target, moving faster all the time." No recommendations, plans or systems should be considered "the permanent answers for all

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circumstances and hazards," the report asserts.

The unprecedented scope of the Katrina response placed ARRL Headquarters into a leadership coordination role through national-level requests for help from served agencies such as the American Red Cross. While the level of expertise in emergency communications and emergency management among US radio amateurs is growing, the report noted, so is the expectation that the ARRL provide first-rate leadership and guidance.

Among the report's wide-ranging recommendations and suggestions:

- \* enhance ARRL and ARES training in basic message handling.
- \* develop a continuing education course covering installation, configuration, and use of Winlink 2000 for e-mail.
- \* formally establish a national ARES volunteer database for use during major disasters and establish training criteria.
- \* institute a Major Disaster Emergency Coordinator (MDEC) function to coordinate responses to large-scale national or regional disasters or emergencies.
- \* become better acquainted with the emergency response needs of distant ARRL sections, such as Pacific, Puerto Rico, Virgin Islands and Alaska.
- \* improve working relationships with national-level served agencies.
- \* ensure ARRL staff training in the Incident Command System (ICS) and National Incident Management System (NIMS) and, as necessary, adapt ARRL's emergency response structure to the Unified Command model.

In addition, ARRL President Joel Harrison, W5ZN, has appointed an ad hoc committee to study issues relating to background investigations as they apply to ARRL Amateur Radio volunteers and to recommend a background investigation policy.

### **Mark Your Calendars for These Events:**

**May 20 Cleveland Marathon (see article)**

**May 26-27 Westlake Soccer Tournament**

**June 23-24 Field Day**

**August 5 Cleveland Triathlon**

**(details will be found in future issues)**

### **"Freeze Your Acorns Off"**

**Saturday Feb 24, 2007**

**Portage County Amateur Radio Service, Inc.  
Second Annual "Freeze Your Acorns Off"  
(FYAO) QRP mini-field day  
Special Event Station  
Operating Time: 10am - 6pm EST**

We will be active in the General areas of the 15, 20 and 40 meter bands (and anything else we can get working).

Club Call Sign KD8CKP

Yes, we'll be braving the cold snowy weather of North Eastern Ohio to set up QRP stations using portable power and antennas. A beautiful color (suitable for framing) 8" x 10" certificate will be available if you send your QSL card and a large SASE to the club call trustee:

Al Atkins KB8VJL  
12433 Chamberlain Rd.  
Aurora, OH 44202

So, from the comfort of your warm radio shack - give us a contact while we're out freezing. We'll need all the contacts we can make to help keep us warm. Your support will be very much appreciated!

Check PCARS out on the web at: [www.portcars.org](http://www.portcars.org)

(tnx to Steve KB8UTA for the heads up!)

### **Cleveland Marathon**

It might be a little early, but two annual events are just around the corner - The Dayton Hamfest and the Cleveland Marathon, both on Sunday, May 20th. I'm just putting out feelers to see what kind of interest there would be on volunteering for the event. Like the past years, we would be doing the communications for the medical support by manning checkpoints, keeping an eye out for injured runners, and watching out for other happenings.

Please let me know.

Thanks,  
Jerry Steele K8CMI  
[Gdsteele@yahoo.com](mailto:Gdsteele@yahoo.com)

## Hamfest Listing

### 15 Apr 2007

52rd Annual Hamfest, Electronics, &  
Computer Show  
Cuyahoga Falls ARC  
<http://www.cfarc.org/hamfest2007.htm>

**Talk-In:** 147.27

Contact: Ted Sarah, W8TTS  
239 Bermont Avenue  
Munroe Falls, OH 44262  
Phone: 330-688-2013  
Email: [hamfest2007@cfarc.org](mailto:hamfest2007@cfarc.org)

Cuyahoga Falls, OH  
Emidio & Sons Party Center  
48 East Bath Road

### 5/18-20/07

**Dayton Hamvention  
Dayton, Ohio**

**9/22 Great Lakes Div Convention  
Cleveland, Ohio**

**9/23 Cleveland Hamfest**



## Notice to Subscribers:

If you receive the newsletter by mail, you are missing the "web subscribers bonus" article in the area occupied by the mailing label.

By subscribing electronically, you not only save the club some postage, you get a little more content.

## Volunteer Exam Dates and Locations

(from the ARRL website)

### 24-Feb-2007

Sponsor: LAKE COUNTY ARA  
Time: 12 NOON (Walk-ins allowed)  
Contact: SCOTT FARNHAM  
(440)256-0320  
Email: SCOTTFARN-  
HAM@ADELPHIA.NET  
VEC: ARRL/VEC  
Location: AMATEUR ELECTRONIC  
SUPPLY  
0.3 MI E OF I-90  
NO TESTS - CSCE'S ONLY  
12 NOON TO 2:00 PM  
WICKLIFFE, OH 44092

### 24-Feb-2007

Sponsor: SUMMIT CO AMERICAN  
RED CROSS  
Time: 2:00 PM (Walk-ins allowed)  
Contact: BRUCE M FERRY  
(330)929-2766  
Contact: SEE WEB PAGE  
VEC: ARRL/VEC  
Location: AMERICAN RED CROSS  
501 W MARKET ST  
[HTTP://WWW.AK8B.US/VE](http://WWW.AK8B.US/VE)  
AKRON, OH 44303

### 06-Mar-2007

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](http://WWW.AK8B.US/VE)  
STOW, OH 44224

### 11-Mar-2007

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

### 18-Mar-2007

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

### 07-Apr-2007

Sponsor: LAKE COUNTY ARA  
Time: 12 NOON (Walk-ins allowed)  
Contact: SCOTT FARNHAM  
(440)256-0320  
Email: SCOTTFARN-  
HAM@ADELPHIA.NET  
VEC: ARRL/VEC  
Location: KIRTLAND LIBRARY  
9267 CHILLICOTHE ROAD  
ROUTE 306  
1.7 MI S OF I-90  
KIRTLAND, OH 44094

### 14-Apr-2007

Sponsor: SUMMIT CO AMERICAN  
RED CROSS  
Time: 2:00 PM (Walk-ins allowed)  
Contact: BRUCE M FERRY  
(330)929-2766  
Contact: SEE WEB PAGE  
VEC: ARRL/VEC  
Location: AMERICAN RED CROSS  
501 W MARKET ST  
[HTTP://WWW.AK8B.US/VE](http://WWW.AK8B.US/VE)  
AKRON, OH 44303

### 15-Apr-2007

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

## SUITSAT-2 GOES TO COLLEGE

from the AMSAT news bulletin

Eleven electrical engineering students at The College of New Jersey had a hand in designing some of the software defined radio (SDR) hardware that will fly aboard SuitSat-2. The college seniors signed up last fall for "Software Defined Radio," taught by adjunct professors Bob McGwier, N4HY, and Frank Brickle, AB2KT -- both members of the Amateur Radio on the International Space Station (ARISS) SuitSat-2 team.

The second-generation SuitSat will have a software designed Amateur Radio transponder (SDX) on board. SuitSat-2 is being viewed as a test bed for the hardware AMSAT hopes to launch on its Phase 3E Eagle satellite.

McGwier and Brickle designed practical, goal-based experiments for the students' projects with an eye toward turning out something that would be a useful SuitSat-2 component. Team members Steve Bible, N7HPR, and Joe Julicher, N9WXU, provided circuit boards employing "bleeding-edge" technology -- dsPIC33F 16-bit direct memory access digital signal controllers. Brickle says the circuits will serve as SuitSat-2's heart and brain.

Early on, the students studied signal processing and communication theory as well as what Brickle calls "esoteric corners of computer science." Then, using Matlab -- a high-level technical computing language -- the students implemented modulators and demodulators for SSB, FM, BPSK and AFSK.

"Students get a little bit of verbal swimming instruction, and then we toss them straight into the ocean," is how Brickle described the process.

By mid-semester, the students were designing their experiments and getting them up and running. Boards were powered up without diagnostic hardware or software, since that's how the circuitry will be on orbit -- "walking a tightrope without a net," as Brickle sees it.

"Given the complexity of what the SDR/SDX in SuitSat-2 will be required to provide, the applications will need to run in an unprecedented software environment: pre-emptive multitasking under freeRTOS," he explained. FreeRTOS is an open-source, round-robin operating system for embedded devices.

Instead of being scared off, the students ran with the challenge and demonstrated obvious enthusiasm, Brickle reports. "We will be doing a very good thing if we continue to involve these kids, and more like them, in our future AMSAT projects," he said. What surprised him most, he added, was that the students focused on taking new approaches to "very fundamental engineering issues that aren't flashy or trendy." McGwier, who's AMSAT-NA's vice president of engineering and a member of the AMSAT Board of Directors, remarked that both students and teachers shared in the excitement.

The SuitSat-2 team, under the leadership of Lou McFadin, W5DID, has been working on the design of a power converter for the solar panels, the internal housekeeping unit, the antenna mount, the transmitting and receiving hardware and how it will mount atop the suit's helmet. An ISS crew could launch SuitSat-2 during a spacewalk as early as next fall. SuitSat-2 could have an operational lifetime of six months or more. -- Rosalie White, K1STO/ARISS

## 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

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