



The Spirit of '76 and '88



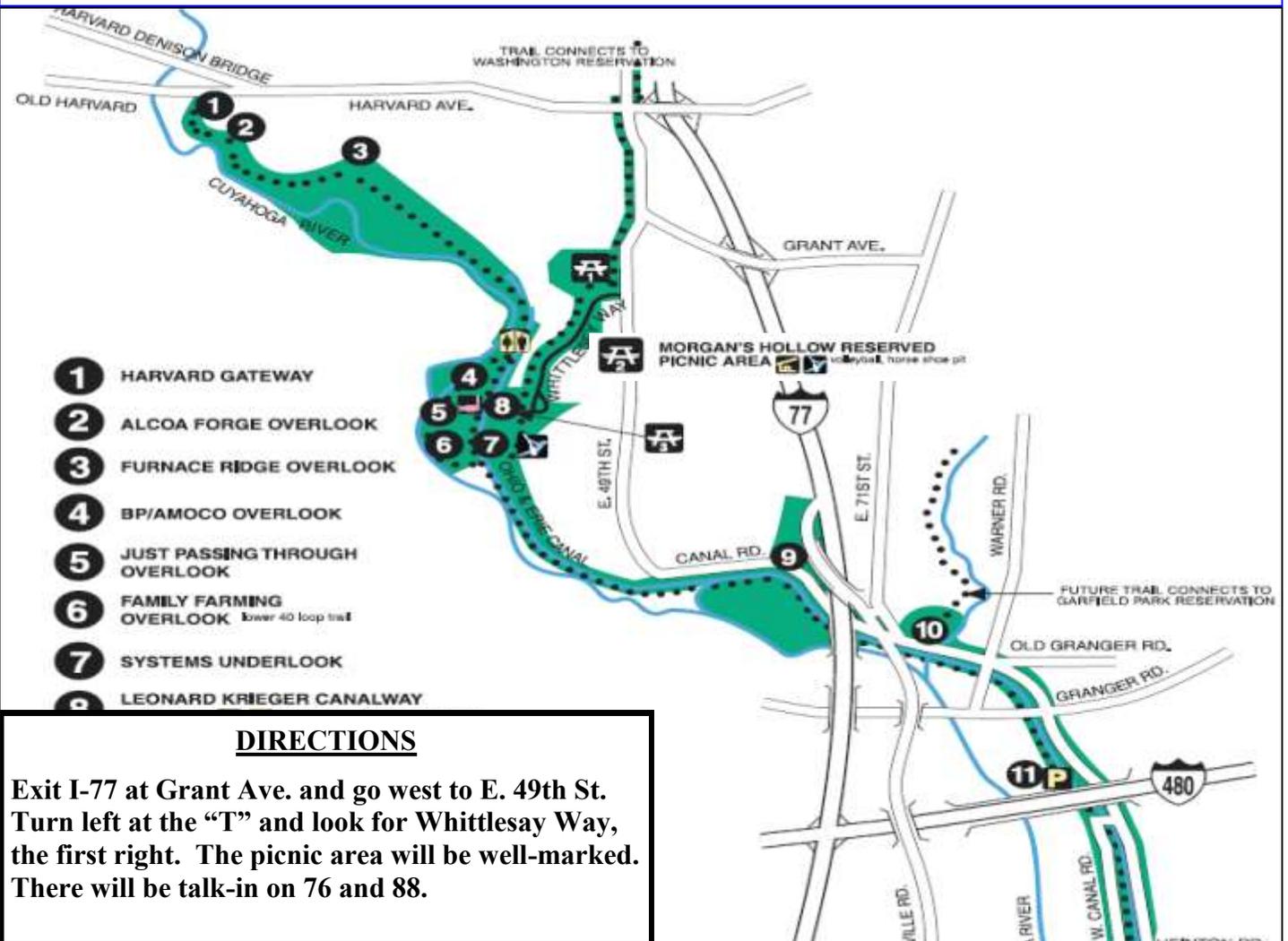
Newsletter of the Lake Erie Amateur Radio Association

Editor: Ron Jakubowski, K2RJ

Publisher: Jeannie St. Marie, KC8MNW

LEARA Picnic: Tuesday, July 28 *NO Dinner Meeting @ Dimitri's This Month!*

The Annual LEARA Picnic returns this year to Morgan's Hollow Picnic Area in the Metro-parks Ohio and Erie Canal Reservation. *There is no dinner meeting at Dimitri's this month.* The club will provide food for the customary \$8 per person. *Get your reservations in early to Marv Grossman so we can get a good headcount. Contact Marv at (440) 248-0031 or w8azo@leara.org by noon Monday, July 27!*



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Jim Ozello Vice President	N8XDO 216-475-7218
Eric Jessen Vice President	N8AUC 440-734-3146
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Al Severson	AB8P (SK)
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Bryan Torok Radio Officer	N8OOF 440-871-5456

The *Spirit of '76 & '88* is published monthly except in December. Contributions must be received by the 2nd Sunday of the month (except on months with 5 Sundays and Tuesdays, when the 3rd Sunday will suffice.)

Editor: Ron Jakubowski, K2RJ

E-mail: editor@leara.org

The Prez Says

by Alex Manuk, WD8JMM



Well, July is here. I'd like to first thank you all for the privilege of serving as President of this organization for the past six months. It's been a great time, we've achieved some good things, and I've had a chance to see what it's like to be 'da prez' for myself. I have to admit, there's a lot more to it than I thought, but I'm enjoying it and I hope I'm fulfilling everyone's expectations.

I didn't get to spend as much time at Field Day as I would have liked this year, but from what

I saw and heard, everyone had a great time. We were even responsible for one of the 'clowns' on HF! Thanks to Eric, N8AUC, Gary, WA8TJL, his XYL, Janet, and all the others who pitched in to help make Field Day the ultimate LEARA summer party.

We've got one more summer event to plan for - the LEARA picnic is Tuesday, July 28th. Once more, our grillmaster, Jim, N8XDO, will be firing up the coals for us. Come on out to the Morgan's Hollow Picnic Area in the Ohio & Erie Canal Reservation and join us for some great food and great conversation. Mike, K8EHP, has promised a couple of foxy surprises for the evening, and it looks to be another wonderful time.

LEARA is set up a bit differently than other amateur organizations in the area. As you know, there are 15 trustees who basically take care of the nuts and bolts of running the club. Trustees are elected for a three-year term, which means that every year we elect five of them. I'd like to encourage any of you who may be interested in joining the Board of Trustees to let one of us know, and we'll see to it that your name is on the ballot in October.

For those of you who enjoy public service events, August 2nd brings us the **Cleveland Triathlon** - contact Tom, KA8BZB to volunteer. Also in August is the 'Big Daddy' of public service stuff, **Pedal to the Point**. This year P2P is August 15th & 16th, contact is Jeff, N8YNR.

And finally - SUNSPOTS! Yes, Old Sol is starting to heat up, cycle 24 has begun, and before you know it, HF will be FUN again! Now is the time to study up and upgrade your privileges to General or Extra so you can take ad-

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The Lake Erie Amateur Radio Assn., Inc., **LEARA**, is a not-for-profit [501(c)(3)] organization dedicated to Amateur Radio and 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 \$25.00. **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 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 on the second Saturday of odd numbered months at 9 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.

Field Day Results

by Eric Jessen, N8AUC

LEARA held its 10th annual Field Day event this year on June 27-28, 2009 at the Cleveland Lakefront State Park. This is the "usual spot", the area known as Upper Gordon Park. For you old-timers, this is right next to where the old "Nike Missile Site" used to be. That was from the days when Nike was a Missile, and not a basketball shoe. Field Day is a blast. If you missed our on participating, you missed a really good time.

Setup began as usual at about 9:00AM on Saturday morning. The weather started out simply wonderful. Saturday was bright and sunny. It wasn't too hot. It wasn't too humid. The bugs weren't bad, including our usual visitors, the "Canadian Soldiers". Some years we are just warmed by them. This year, I think they got more enjoyment of harassing the New York Yankees instead of us. We experienced a slight rain shower at about 5:30AM on Sunday morning, but nothing major until about 11AM, when the heavens opened up on us. But by that time, we had much of the site dismantled and packed up.

John KC8FOC manned our public information booth, handled the "tour guide" duties for our site, and even managed to make 20 contacts on the GOTA station.

Thanks to the efforts of Janet Zimmet (wife of WA8TJL) the food was wonderful, the coffee was always hot, and everyone was well taken care of. I can't thank Janet enough for all she does for us. I believe there is a special place in heaven for people like Janet. She takes excellent care of our Field Day crew and visitors. If you leave hungry, it's not her fault - it's yours.

Our President, Alex WD8JMM was there to run the club meeting. Alex also helped us snag a 100 point bonus for handling the club's Field Day message to the Section Manager via NTS. The club meeting went well. Lots of door prizes. Dinner was excellent, again thanks to Janet. We had 30 people in total show up over the 24 hour event, plus the setup time. Even though 2 of the visitors never signed in, because there were only 28 on the sign-in sheet.

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vantage of the improved propagation which we can finally say is on the way!

Feel free to email me with questions, suggestions, gripes, or whatever, and I'll look for YOU at the picnic!

73 for now -AR-

This is the biggest LEARA Field Day operation to date. Our entry class this year was 3A, and we had a VHF/UHF/Satellite Station, and a GOTA station. The GOTA station was overseen by David, KD8ACO, and it signed his call. Five different operators logged contacts on the GOTA station. Nice job, David!

Our own local AMSAT rep Joe KC8RAN handled the VHF/UHF/Satellite ops, and managed to bag the elusive 100 point bonus for making a contact via one of the Amateur Radio Satellites in orbit. The other stations were manned mainly by Gary WA8TJL who pretty much owned 40 meters, Tom N8UAZ who roamed the higher bands on phone, and Eric N8AUC who worked CW on 80 and 20 meters. Josh, KD8GRC and David, KD8ACO even managed to work a station from the UK on 20 meters, even though it didn't count for points. All in all, we managed to work 70 different ARRL/RAC sections. This included most of the continental US, plus Alaska and Hawaii.

Our score? We did pretty well I think. In spite of the questionable band conditions, we managed to make 63 CW contacts and 233 SSB contacts. We also managed to rack up 1,070 bonus points, for a grand total of 1,788 points. Look for LEARA in the December 2009 issue of QST magazine when they publish the Field Day scores to see how we placed. Thanks to all who participated, helped out, or just stopped by to visit. Can't wait for next year!

-AR-



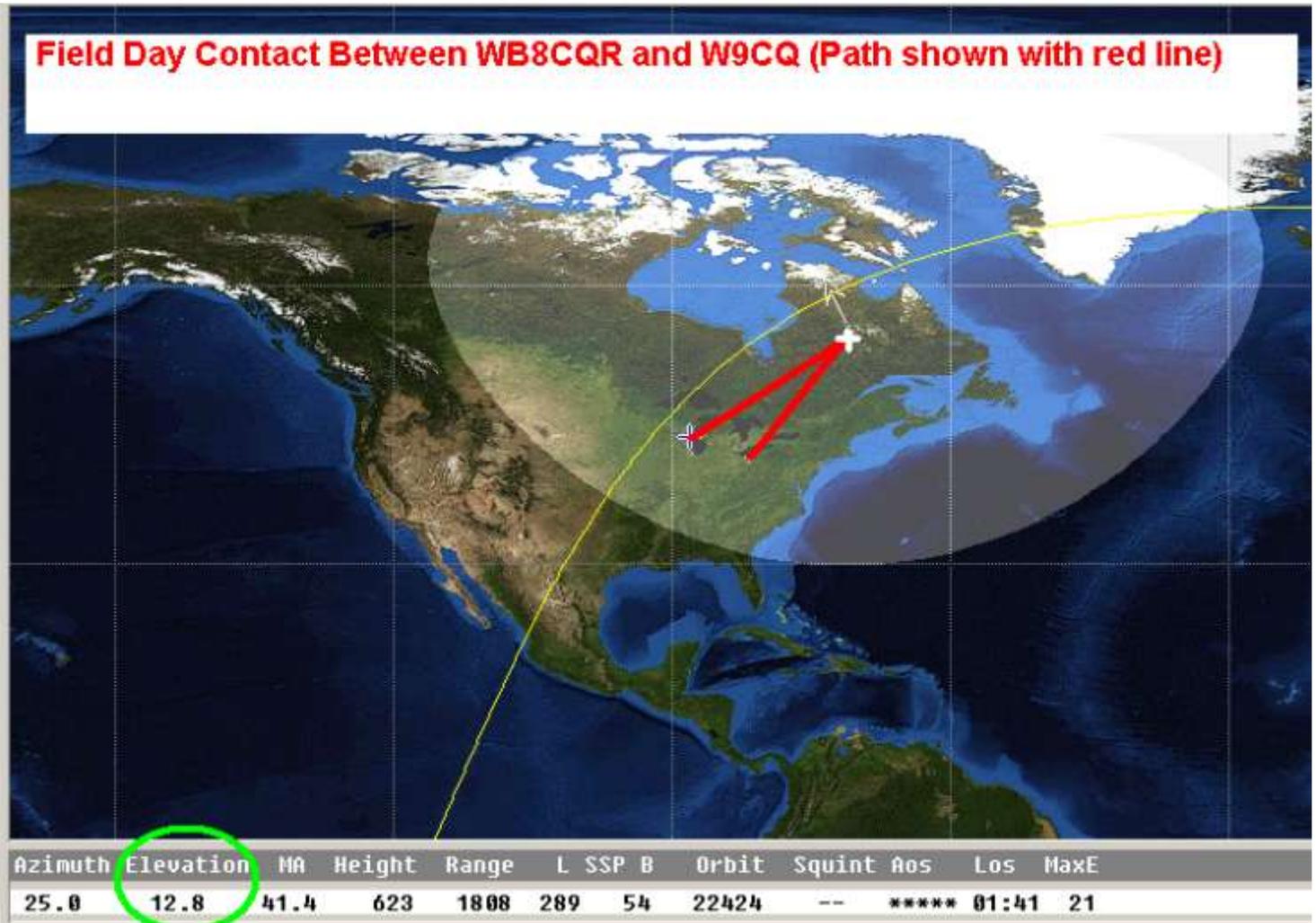
Successful FD Satellite Contact!

by Joe Prokop, KC8RAN

As a satellite operator at the LEARA Field Day site, the theme song is "To Dream the Impossible Dream". While the Field Day site is ideal for dipoles on HF, the surrounding trees present another issue for VHF/UHF operation. An open line of sight is best. While HF seems to have no ill effects, VHF and particularly UHF are impacted by the edges of leaves. The density of the tree trunks and branches have less of an effect than the edges and number of the leaves. Pine trees are worse due to the shape and number of needles in a given area compared to an oak tree, for example. The shorter the wavelength, the greater the impact. As you get into the SHF range (attention satellite TV and Sirius Radio subscribers!) then things like clouds and precipitation come into play as well. You may notice some satellite TV dishes are placed in unusual ways trying to avoid trees. The open sky on the high passes where clear line of site exists is also the time in the pass where Doppler is at its' worse and the rate of change the antennas need to move is at its' fastest. Between passes, I was tossing around some

ideas with Eric, N8AUC about fixed antennas and I may try something fixed next year, such as crossed dipoles as Eric suggested for these passes. Topping off the issues was the failure of a duplexer used to help eliminate the desensing that occurs on the downlink receiver when I transmit, effectively eliminating the use of the homebrew 2M/70cm Cheap Yagi. But in looking at the complete pass list (37 total opportunities of passes above the horizon during Field Day) I saw VO-52 was going to be in an open area near the ranger station (see photo) where I estimated it would be at about 13 degree elevation moving downward toward the horizon (the highest point was at 20 degrees but in the trees). Using the Arrow antenna for the 70cm uplink and the homebrew 2M 3 element beam on the downlink, I was able to hear clearly the downlink. Moving up the passband into an open spot I was able to hear myself after adjusting for Doppler (for the first time in 6 attempts). Locking in the offset on the IC-910 and moving back down where the action was, I was able to make a successful contact with W9CQ in Wisconsin. I attempted to hook up with W9VT in Illinois, but by that time the bird was again in the trees to the left.

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So far at the site I have been able to make 3 satellite contacts in 3 years operating at Field Day. Two have been through linear (SSB) transponders and one through an FM repeater on the ISS. The advantage I had using the ISS FM repeater is the lower altitude and the ability to properly compensate for Doppler on the uplink in the 70cm band. The linear transponders present the best opportunity as we can spread out across the passband, as opposed to FM transponders where we are all fighting for one fixed channel.

Planning for next year, I will look for the linear transponders that pass between due North and about 30 degrees East using similar beam arrangements as I used this year. I will still try the high elevation passes, but probably will build omnidirectional antennas that focus the pattern upward. The trick will still be fighting Doppler and QRM, but it will take the variable of pointing the antenna in the right area off my plate. The omnis will also allow me to operate under shelter in the event of the inevitable FD rain. Currently because I have to "Armstrong" the tripod mounted antennae both for direction and for horizontal or vertical polarization (20 db penalty if it's wrong), so the satellite station must be portable enough to be operated out in the open within reach of the tripods. Forecast of Sunday rain hastened the breakdown of the station Sunday morning. If I had the ability to make contacts in rain, we may have had a shot to talk to Bob, VE3CSA from the ISS on Sunday.



LEARA "On The Air"

Club Net Information

by David Noeth, KD8ACO

Thanks to all those Thursday Club Net participants that came down to the LEARA Field Day site this year ... especially those that helped with setup, operating, and teardown. It was a pleasure meeting each and every one of you. Now, we can all put a face with the voice we so often hear "on the air".

Wednesday Skywarn Practice Net

Skywarn practice nets have returned on the 146.760 (-offset, 110.9 PL) repeater and will continue on Wednesday nights at 8:00 PM local time until the last week in October. Everyone is welcome! The 146.880 (- offset, 110.9 PL) repeater is used, when needed, as a backup. Skywarn nets may be activated on one of these repeaters anytime threatening weather is approaching.

Thursday Club Net

The Lake Erie Amateur Radio Association's weekly club net is held every Thursday evening at 8:00 PM local time 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. You do not have to be a member of LEARA to participate.

Since the club net is a practice and informal net, LEARA would like to recognize those who take the time to check in and keep the net active and alive. During the past month, the weekly Thursday Club Net had a total of sixty-six (66) check-ins. The following were reported by our net control stations to have participated:

Bill AC8CO, David AD8WS, Ron K2RJ, Randy K8CLE, Gene K8ECL, Jeff K8JTK, Steve K8SAS, John KA8GZA, Matt KB1LCS, Lilly KB8MHZ, Carl KB8VXE, Jeff KC8FNK, Mark KC8FQV, Helen KC8IKK, Jeannie KC8MNW, Jean KC8TJH, Curtis KC8UQX, David KD8ACO, Eddie KD8FTS, Don KD8ICR, Rod KD8JRF, Keith KD8KBL, Rick KD8KBO, Eddie KD8LEC, Don KJ5KB, Eric N8AUC, Howie N8CXA, Tom N8UAZ, Bill N8UPZ, Bob W2THU, Sean W8SCC, Stuart W8STU, Gary WA8TJL, Alex WD8JMM, and Mark WD8KHU.

Net Control Stations: David KD8ACO and Don KD8ICR.

Upcoming NCS assignments are:

7/16/09	Don	KD8ICR
7/23/09	Eric	N8AUC
7/30/09	Ken	KG8DN
8/6/09	Bob	W2THU

8/13/09	David	KD8ACO
8/20/09	Don	KD8ICR
8/27/09	Eric	N8AUC

The feedback received from members regarding the Thursday Club Net promotion as announced on the net and at the past few membership meetings has been very encouraging. This promotion encourages participation in both the weekly club net, as well as, the monthly LEARA membership meetings. Specifically, any individual who checks into the Thursday Club Net during a given month will be given one extra door prize ticket at the following month's LEARA club meeting. This extra door prize ticket will be given in addition to any other door prize tickets the individual has already been given. Participation in only one net during the preceding month is required. Participation in the monthly meeting is obviously required.

Saturday SSTV Net

The Lake Erie Amateur Radio Association's weekly slow scan TV net is held every Saturday evening from October through May at 8:00 PM local time on the 146.880 (- offset, 110.9 PL) repeater. Mark your calendar, the SSTV net will resume this fall on the evening of October 3, 2009.

Wanted! Net Control Stations

We now have five Net Control Stations for the Thursday evening LEARA Club Net. There's always room for more stations who would like to give it a try.

Any member of the Lake Erie Amateur Radio Association can be a net control operator for one or all of the nets held on one of the club's repeaters. Never tried it you say? No problem. Now would be a really good time to start. It's as easy as getting in touch with me and we'll schedule you into the rotation. If you should have any questions or requests for assistance to get started, just contact me at one of our club meetings or by using any of my contact information in the membership directory or send me an email at kd8aco@leara.org. Hope to talk with you "on the air" soon! -AR-



LEARA is an Affiliated Club of the ARRL. If LEARA members join or renew their ARRL membership through the club, the LEARA treasury gets to "pocket" a portion of your dues. Another neat way to support your local club!

Hamfest Listing

18 Jul 2009 NOARSFEST

Northern Ohio ARS

<http://www.noars.net>

Talk-In: 146.70- (open repeater)

Contact: Darlene Ohman, KA8VTS

4122 Bush Avenue

Cleveland, OH 44109

Phone: 216-398-8858

Email: dfohman@att.net

Lorain County Community College
(Spitzer Conference Center)

1005 North Abbe Road

26 Jul 2009 Portage Hamfair '09

Portage Amateur Radio Club

<http://Hamfair.com>

Talk-In: 144.790/145.390

Contact: Joanne Solak, KJ3O

9971 Diagonal Road

Mantua, OH 44255

Phone: 330-274-8240

Email: kj3o@arrl.net

Portage County Fairgrounds

4215 Fairgrounds Road

Div: Great Lakes

Sect: Ohio

16 Aug 2009 Warren ARA

<http://www.w8vtd.org>

Talk-In: 146.970

Contact: Chris Brister, KD8BHR

5714 Ensign Road West Farmington,

OH 44491 Phone: 440-548-5616

Email: kd8bhr1@yahoo.com

Cortland, OH, Trumbull County

Fairgrounds, 899 Everett Hull Road

23 Aug 2009 Hamfest and Computer

Show—Cambridge ARA

<http://www.w8vp.org>

Talk-In: 146.850- (PL 91.5)

Contact:

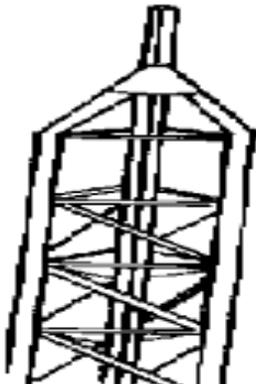
Mary Jane Rhodes-Ellis, KD8EIR

Email: radicalrhodes@yahoo.com

Cambridge, OH

Pritchard Laughlin Civic Center

7033 Glenn Highway



Volunteer Exam Dates and Locations

(from the ARRL website)

25-Jul-2009

Sponsor: WRECS

Time: 9:00 AM (Walk-ins allowed)

Contact: ROBERT C GAUSS

(330)562-3328

Email: N8ZB@YAHOO.COM

VEC: ARRL/VEC

Location: BENTLEYVILLE VIL-

LAGE HALL/CHAGRIN FALLS

6253 CHAGRIN RIVER RD

CORNER SOLON RD & RIVER

RD

BASEMENT

BENTLEYVILLE, OH 44022

01-Aug-2009

Sponsor: LAKE COUNTY ARA

Time: 12 NOON (Walk-ins allowed)

Contact:

SCOTT FARNHAM

(440)256-0320

Email: SCOTTFARN-

HAM@ROADRUNNER.COM

VEC: ARRL/VEC

Location: KIRTLAND LIBRARY

9267 CHILLICOTHE RD

ROUTE 306

1.7 MI S OF I-90

KIRTLAND, OH 44094

01-Sep-2009

Sponsor: CUYAHOGA FALLS ARC

Time: 7:00 PM (Walk-ins allowed)

Contact: BRUCE M FERRY

(330)929-2766

VEC: ARRL/VEC

Location: STOW-MUNROE FALLS

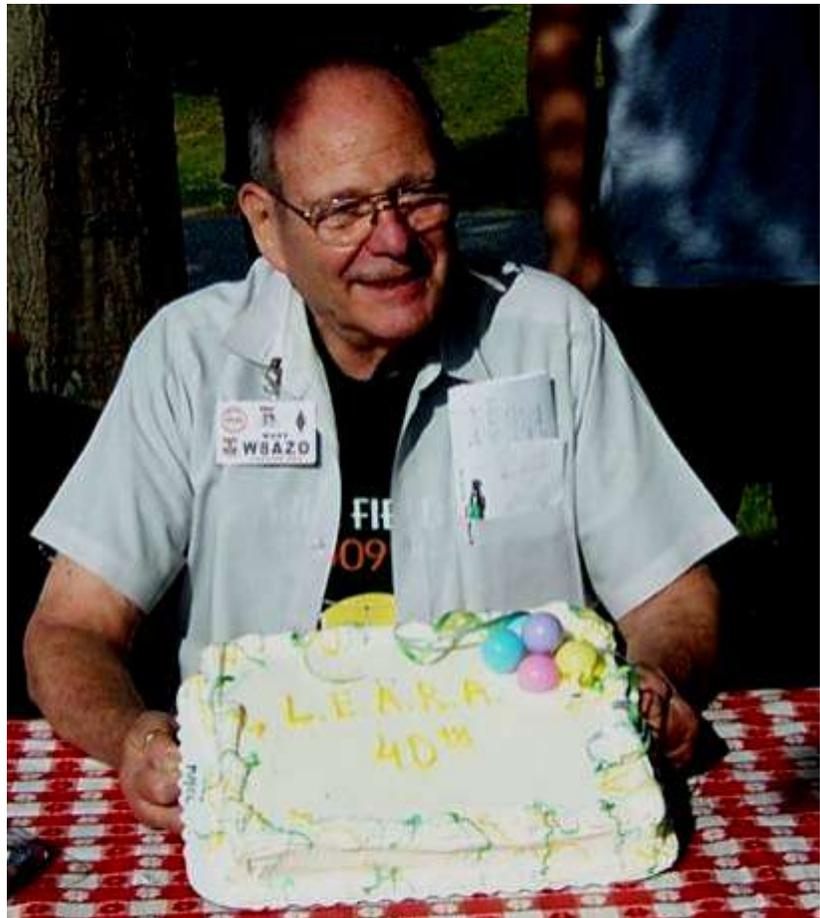
PUBLIC LIBRARY

3512 DARROW RD

HTTP://WWW.AK8B.US/VE

STOW, OH 44224

LEARA Celebrates 40th Birthday at Field Day



LEARA—Our 40th Year—History Part II
GROWTH OF VHF-FM IN NORTHEAST OHIO
and the formation of
The Lake Erie Amateur Radio Association (LEARA)

by Bill Hess, K8SGX , First President of LEARA

The first approach to guard on repeaters was frequently by audible tone-burst rather than sub-audible tone-guard or PL[®]. Again, the sub-audible encoders and decoders needed that would stay on frequency and keep working were surplus Motorola equipment. Many operators without tone encoders tried whistling up the repeater. This turned out to be only fair, at best. These early radios did not meet the carrier frequency stability of commercial equipment either and were often off-frequency. This might not have been a problem if your repeater receiver was of like wide bandwidth but .76 always incorporated a commercial receiver of one type or another. The problem also changed as the ambient temperature of the vehicle's trunk changed. Early commercial two-way radio equipment was trunk-mount. The radios were close enough to frequency to key the repeater when at one temperature, but somewhat off-frequency at another so the audio was distorted at times. On the .76 repeater, a meter was installed to monitor the frequency of the incoming signal and if it was off more than a preset amount (about 1.75 kHz), the transmitter would not key up.

Since the repeater transmitting equipment in use had come from the Lorain area, an alternate input was installed on the old Infirmary Rd (Lorain County) water tower to give better receiver coverage in that area. While great in theory, it did not work out very well. Keep in mind that all the equipment was tube-type and required constant attention even when working the best. With little test equipment available, it was not only difficult to set the frequencies so the UHF link receiver and transmitter would agree but the transmitter also would not stay up to power with its less than new expensive 6907 tubes in both driver and final. It was finally turned down in 1972.

In the summer of 1970, hams from the Ashtabula area purchased used GE Progress Line radios at the Rochester Hamfest to build a repeater of their own in the Ashtabula area. After questioning hams in the Cleveland area, the frequency choice they made was 146.34 input and 148.88 output. This was OK but remember that 146.88 was the input of

the .88/.40 repeater and when .88/40, .34/.88 and .34/.76 were all on the air at the same time, the sound obtained on all three repeaters sounded like the complaint you get when you accidentally step on your cat's tail. Still not sure, to this day, what was causing what but it surely did not function properly. The cure was to move Ashtabula to .34/.76. With directional antennas and pattern shaping, the Cleveland and Ashtabula repeaters were made to not interfere with each other. The transmitter overlap area was about from Routes 44 to 528 along I-90. This was perfect for both user groups.

In the winter of 1970, there was a huge nationally-represented meeting in Westchester PA (near Philadelphia) at which the current 600 kHz split plan was explained and adopted. The meeting was chaired by Gordon Pugh, W1JTB and assisted by Gary Hendrickson, W3DTN. Implementation of this concept solved many problems and made channelized operation possible; .88/.40 was moved to .28/.88; .34/.76 was moved to .16/.76 and the early Red Cross repeater on 146.46 input and 146.82 output was moved to .22/.82. There was much discussion among those of us who attended the meeting whether everyone at the local level in the area clubs would go along with the concept and purchase at least one new crystal; but it seemed to work and was universally accepted and implemented.

Practically immediately to follow in the Cleveland area, an area repeater coordination meeting was held at the Hospitality Inn @ Bagley Rd and I-71. Repeaters represented were WB8CQR 146.34/76 Cleveland, W8IOO 146.34/76 Youngstown which was first operational in 1968, WB8CRV 146.28/88 Cleveland, K8EUR 146.34/76 Ashtabula, and WA8TTO 146.46/82 Cleveland. At this meeting, different PL[®] tones were first agreed upon for Youngstown, Cleveland and Ashtabula. There was discussion of UHF repeater pair assignments. Two MHz splits were originally agreed upon with the understanding that 5 MHz might be the final choice. The decision was also made to continue to keep 146.94

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LEARA—Our 40th Year—History Part II, cont.

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open as the simplex channel. The best records available indicate the Ohio Area Repeater Council (OARC) was not yet formed at this time but meetings of various repeater groups with George Cryder W8LGL who was the trustee of the Central Ohio Radio Club occurred in 1970. The first OARC meetings were held at the audio-visual facility of Ohio Wesleyan University where George worked. Among documents substantiating this are questionnaires about the statistics of NE Ohio repeaters.

At this point, there was another Ohio user of 146.76 - - Newcomerstown. To keep base stations from accessing the wrong repeater, base station inputs were agreed upon and installed on repeaters; in Cleveland (146.37 which was later changed to 146.355), Newcomerstown (146.325) and Ashtabula (146.235). Nice idea but not spectrum-efficient and when frequencies became scarce (!!!) and 146.34/94 was put on the air, the channels were too close and stations interfered. It was a good idea in theory; but in practice, it did not work. Because of off-frequency transmitters accessing the wrong system, the idea was abandoned.

With the purchase of a new Motrac® receiver and good propagation paths between Detroit and Cleveland, particularly when the band gets 'up', the first necessity of having a PL receiver became necessary. To most of us who were repeater technicians who were not involved with commercial two-way radio, the task of getting PL® to work correctly and not be heard was a real learning experience. Soon the still in use 110.9 Hz PL® for Cleveland and 100.0 for Detroit was implemented. To further try to keep Detroit's and Cleveland's hams out of each other's repeaters, an anti-100 circuit was connected to the .16 receiver in Cleveland. If a signal from Detroit was heard and it had 100Hz PL®, it would purposely not be transmitted.

The next feature to be added to the repeater was a Touch-Tone® access and control circuit designed and installed by Pat Shreve, W8GRG. By mid-1976, the circuitry was fully operational. This allowed turning on or off any of the repeater's features from a remote site and access to an autopatch (which was not received with 100% approval in the beginning) and finally the feature of 9-1-1. At the time however, 9-1-1 was not available in the Cleveland area. The original 9-1-1 dialed the Beachwood Police dispatcher. This arrangement was made because, at the time, Beachwood Police dispatched for Warrens-

ville Township (W8AZO was the Township's police chief) and that was where the equipment was (and still is) located. At first, the autopatch was enabled only at night for emergencies. This was the very beginning of a 'controller' and although the circuitry was all gate-level logic and had to be rewired to alter the program, it gave us the remote control abilities we desperately needed.

With the advent of more and better equipment, interest increased in UHF and a repeater was constructed in 1971 on 449.95/447.95. It was one of the first in the Cleveland Area and in spite of a lot of controversy was moved to a standard 5 MHz split in Jan 1981 to comply with the standard band plan. Around this time, the amateurs involved with Lake County CD erected a repeater with input on 53.70 and output on 53.46. A later difference of opinion about moving it to a better location and raising the power led to the start of the 'Backbone' privately owned (closed) repeater on 52.92 and 52.68.

In 1972, for the best interest of the club and the members of its board, the club was incorporated under Ohio laws. In that year, FCC Docket 18803, which governed amateur repeaters and remote base stations came to pass. All repeaters had to be relicensed with special regulations and a repeater call-sign. Repeaters like .16-.76 had to reduce power to 400 watts ERP (it had been about 4000). Topographical surveys were required to justify the amount of ERP and antenna patterns and gains had to be provided for each system. The days of covering as much area with a given repeater as you could get with a lot of power were at an end. In the summer of 1973, LEARA completed re-filing and the new call-sign of WR8ABC was received. Many potential repeater operators instead of going through the aggravation of filing either did not ever construct their repeater or those with little following went off the air. These repeater callsigns were revoked in 1980.

In 1973, after many ideas and proposals, Bill Lightfoot K8ZMF (now silent key) started the first official LEARA publication and it was called the "Repeater ABC'S". After the merger of .76 and .88 in 1974/5, the name was changed to "Spirit of .76 and .88". In 1976, an Addressograph offset duplicating machine was purchased and moved to WB8APD's basement, where the newsletter was printed. Another press was procured in 1980 and was in use until about 1991 when the schedules of the printer and publisher could not be coordinated.

(Continued on page 10)

LEARA—Our 40th Year—History Part II, cont.*(Continued from page 9)*

Most of the time, the newsletter is printed by Marv, W8AZO through the courtesy of Allen Telecom with an occasional trip to a commercial duplicating agency when Marv or Allen can't accommodate it.

To further promote the interest in amateur radio and the concept of hamfests, the Cleveland Hamfest had its first swap/sell meet in 1975.

At this point in the development of two-meters FM, examination of an old listing of repeaters in the northeast Ohio area showed all repeaters listed in two columns on one side of one page - - about 55 total. There was no activity on tertiary channels and there were no assignments in the 144-145 MHz section of the band. Dues for LEARA were \$12 per year. Top sirloin dinners at the Brown Derby meeting place were \$3.65 and an invoice showed a 12AX7 (tube used in the GE exciter) was \$1.37.

Continuing problems seemed to plague the .76 transmitter. With the power output of the 400 watt amplifier turned down to 100 watts and the Motorola Motran exciter able to supply 35 watts (which was about twice too much) to drive the final and no easy way to turn it down, many output transistors were blown at a cost of about \$15 each. (By the way, they didn't replace themselves either.) This failure mode invariably occurred on the night of the club meeting. In the winter of 1973, the transmitter was replaced with a Motorola B53MPB IMTS (mobile-telephone) continuous duty base station. Because of its minimum down-time, it was the main transmitter until the summer of 1995.

In the winter of '74/75, access to the site of .88 became almost impossible. In order to keep a system on the channel, a repeater was temporarily set up at the .76 sites. Representatives of both .76 and .88 had been discussing a merger of the groups and it became a natural thing to do as members common to both groups worked more and more on the same problems. When the concept was placed before the membership of both groups, it was adopted overwhelmingly at the December 1974 joint meeting. At about the same time a new high-rise office building was being constructed in Lakewood. It was a logical place to install .88 so there would be a repeater on the East Side and one on the West. A new (at least to us) GE Mastr® commercial two-way base station was procured and assembled in the configuration of a repeater for the new site. Access to the location of the repeater at the new site was 24 hours.

Interest in 220 MHz became increased and in April

1979, the club decided to purchase and install a repeater on that band also at Lakewood Center North. Getting operational on the band for the individual ham also became easier with the advent of radio availability. At the beginning, a bulk purchase of ten Clegg radios was made and later another purchase was made of forty Midland radios. In 1982, the experimental 223.34/224.94 owned by W8GRG was purchased by the club and moved to the .76 transmitter site.

In the fall of 1977, the .76 repeater 9-1-1 circuit was connected to call C-MED (Cuyahoga County's Emergency Medical Dispatch facility) directly. .88 was arranged similarly by 1982. This would provide a no-delays direct connection to law-enforcement or medical agencies when needed.

The next step was a natural, too - - being asked to provide communications for the largest public service event in the history of Ohio - - the Swine Flu program in October 1976. Thousands of people were inoculated against the flu. Stations were set up at all points involved and communications was provided for the Cleveland Academy of Medicine that administered the program.

Communications was provided for the first Heart-a-Thon by LEARA in the summer of 1977. It was to provide a link between the Cleveland Police, US Marines, C-MED and the Cleveland Area Hospital Association.

On December 2, 1978, a couple dozen hams were used to assist the Ohio National Guard, as well as various law-enforcement and ambulance personnel to relocate all of the patients from Highland View Hospital to its new location at Cleveland Metropolitan General Hospital. The hospital on "the hill" was then closed permanently; but our repeater equipment remained.

Growth of the organization increased from less than 100 members in 1974 to about 525 in 1979. In the summer of 1978, the first club-owned PO box was opened to not only facilitate receipt of mail but to provide a place to send/receive mail that was not associated with any particular individual.

A continued increase in weather spotting assistance by hams which began as early as 1976, produced a continuously-increasing necessity of providing some form of communication path between a directed Sky-Warn net and the National Weather Service (NWS) in Cleveland. The concept of what is now known as

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the "blue box" was developed and installed by Pat Shreve, W8GRG in Feb 1979. This box enabled the weather service personnel to push one of two buttons on the box when weather was being reported and a ham was not at NWS yet. It would send either __ - - __ (?) for I do not understand/please repeat or _ - _ (R) for roger or I copied your transmission. For his various contributions to weather-related communications, in that same year, Pat was given the NWS award for 'civilian of the year'.

The continuing desire to both modify existing repeater control commands and add new ones was the main driving factor that led to the 1981 purchase of the ACC RC-850 controller to control the 147.76 repeater. In 1987, the power at the old Highland View Hospital building was disconnected and the location for the .16 receiver lost. The repeater equipment was all moved to the transmitter site and connected to the antenna through a new duplexer.

The move of Cleveland Hamnet to the basement of WB8APD occurred during 1987. This was the beginning the continual expansion of the hardware and software of this now well-known BBS (bulletin board system).

The National Weather Service announced in 1987, that NEXRAD was coming and, finally in March 1990, additional communications for severe weather spotting would become necessary. Implementation of the new NEXRAD doppler radar allowed subsequent closing of various NWS locations. The decision to perform the link function on six-meters to get reports from and to Erie PA, Mansfield, Akron/ Canton and Toledo to NWS Cleveland on six-meters was made. Although all original multi-county-wide nets would continue to function as before, they now needed to report their findings to Cleveland. This distance in some cases is over one-hundred miles and needs a very wide-coverage repeater. Although some coverage problems exist between Cleveland and Toledo when there is a storm front between them, the six-meter backbone system works quite well and a simulcast transmitter system is in the works which will hopefully solve the lack of coverage in Toledo.

After several outages and a rebuild of the .88 repeater transmitter by K8SGX still failed to make it reliable, the repeater was upgraded from a GE Mastr to an all-solid-state GE Mastr-II base station in the spring of 1994. Also, in that year, a solid-state (Motorola Mocom 70©) transmitter was obtained

for .76. A GE EF-5 amplifier with more power can be switched on for better coverage during SKY-WARN nets was installed as part of the same transmitter upgrade project.

In the summer of 1996, it was decided to regain use of the WR8ABC callsign for the LEARA repeaters. The license was applied for and received as part of the FCC program that allowed reissuing old call-signs.

During 1997 the most outstanding changes to LEARA and its repeater equipment were a) the voter on .76 was changed from a Hall to a Motorola Spectrac® and the UHF receivers which feed the voter were changed from GE Mastr-pro to Motorola Micor® and b) the west 220 MHz repeater was replaced after the original unit was declared no longer serviceable. As part of slimming-down the repeater features that were most 'pranked', some of the emergency autodial numbers were turned off. Direct dialing of the numbers is still possible. All the problems associated with the introduction of area codes '330' & '440' required considerable repeater controller program changes.

Probably, the number-one new and hard-to-solve difficulty facing all land-mobile two-way radio in today's busy overcrowded radio communications world, is interference. It is not economically advantageous to outfit transmitters with combiners and other equipment that would minimize interference. Over the last few years, there has been a noticeable increase of transmitters bothering receivers in totally unrelated services and bands. Much of this interference comes from the new higher-powered 900 MHz paging transmitters, now much more in use. The relative lack of support by the FCC, resulting from their continually-shrinking staff as well as FCC deregulation further reduces the chances of finding and curing interference. -AR-

DO YOU HAVE YOUR LEARA BADGE?

If you never received your badge, or if you wish to change your badge due to a change in call letters, or if you need to replace a lost badge then please notify Bob W2THU via email: w2thu@arrl.net. First time badges are free. Lost and upgraded badges cost \$5.00

Clowning Around During Field Day... Can you recognize our LEARA Clown?



LEARA — The Lake Erie Amateur Radio Association - 40 Years of Serving Greater Cleveland Since 1969 -

VOICE REPEATERS:

- | | |
|-----------------------|--|
| 146.76/R- | • Highland Hills (Use 110.9 Hz tone for remote inputs in Lakewood, Newbury & Willoughby) |
| 146.88/R- <i>IRLP</i> | • Lakewood (Requires 110.9 Hz tone) IRLP Node 4282 |
| 224.90/R- | • Lakewood (141.3 Hz tone) |
| 444.40/R+ | • Highland Hills (131.8 Hz tone) |
| 444.70/R+ | • 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 | • 145.07 MHz & 223.70 MHz (KA-NODE) |
| NBRYX | • 145.07 MHz ⇔ 223.70 MHz Gateway |
| LEARA | • 145.07 MHz & 223.70 MHz PBBS |

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