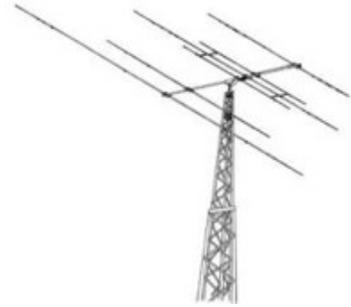


The Waveguide



Lapeer County Amateur Radio Association

PO Box 12, Hadley MI 48440-0012
<http://www.w8lap.com> | gso@w8lap.com

April 2017

Officers <table border="1"><tr><td>President</td><td>Gerret Peters</td><td>KD8YUK</td></tr><tr><td>Vice President</td><td>Kevin Boxey</td><td>KB8TAR</td></tr><tr><td>Treasurer</td><td>William (Bill) Miller</td><td>KD8VP</td></tr><tr><td>Secretary</td><td>Lee Dziekan</td><td>N8LJ</td></tr></table> Committees & Appointments <p>Club Call Trustee: Mike Zedan, KN8Z</p> <p>Repeater Technical Team:</p> <ul style="list-style-type: none">• Mike Zedan, KN8Z (Trustee)• Lee Dziekan, N8LJ• Will Stanton, KB8YGA <p>Meeting Refreshments: Bill Miller, KD8VP</p> <p>Newsletter Editor: Daniel Peters, KE8CFI</p> <p>Webmaster: David Erskine, KD8GXW</p> <p>County EC*: Kevin Boxey, KB8TAR</p> <ul style="list-style-type: none">• SkyWarn AEC: Tom Oliver, KD8EBY <p>Operation CARE: Tom Oliver, KD8EBY Seeking New Coordinator</p> <p><small>*Emergency Coordinator. AEC: Assistant EC</small></p>	President	Gerret Peters	KD8YUK	Vice President	Kevin Boxey	KB8TAR	Treasurer	William (Bill) Miller	KD8VP	Secretary	Lee Dziekan	N8LJ	W8LAP Repeaters <p>2 Meter: 146.620 -100 Hz PL Tone 70 CM: 442.750 +123 Hz PL Tone</p> Next Club Meeting <p>Tuesday, April 11, 7:30pm</p> Meeting Location <p>Lapeer County EOC / Dispatch 2332 West Genesee Street Lapeer, MI 48446</p> ARES Team Meetings <p>Third Wednesday of each month (See the club calendar section for specifics.)</p> ARES Nets <p>Tuesdays, 8pm, 2 Meter Repeater <i>All amateur operators are welcome to check in!</i></p>
President	Gerret Peters	KD8YUK											
Vice President	Kevin Boxey	KB8TAR											
Treasurer	William (Bill) Miller	KD8VP											
Secretary	Lee Dziekan	N8LJ											

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Editorials

The President's Corner

It's April, and winter may (almost) be behind us. Michigan usually has a blow or two left as we head into the transition month for spring. Still, the birds are starting to sing, and that means warmer times aren't far off.

Speaking of warmer times, later in this issue of the Waveguide is the news that LCARA is 'sponsoring' two Lapeer County parks in support of the Michigan State Parks on the Air (MSPOTA) event. This is an excellent opportunity for the club to develop stronger relationships with the DNR officers at our two local state parks. The MSPOTA event is just getting under way in April, so the May Waveguide will have more information about how you can get involved, either as a park activator, chaser, or member of the hosting committee.

73,

Gerret, KD8YUK

Notes From the Desk of the Secretary

Lapeer County Amateur Radio Association
Meeting Minutes
March 7, 2017

The meeting was called to order at 7:29 pm by president Gerret, KD8YUK. There were 20 members and guests present.

The presentation of the evening was EZNEC antenna modeling by Gordon, KD8TXW. He demonstrated some of the EZNEC basics and presented some models of dipole antennas at different heights above ground. The modeling determined that the optimal performance to obtain NVIS for a dipole antenna is at a height of 1/8 wavelength.

New Business: President Gerret requested that LCARA sponsor the two Michigan State Parks that are in Lapeer County. We will be responsible for scheduling radio activities and act as liaison with the Park's management. We may also schedule an event to "activate" the parks for the ham radio event Michigan Parks on the Air.

Hospital Report: Mike Bowman, KC8OTZ is under the weather.

Treasurer's Report: Bill, KD8VP presented the state of the Association's financials. A motion to accept was made by Ed, W8CNJ, seconded by Kevin, KB8TAR. mcu*

Secretary's Report as published in the WaveGuide was accepted by the membership present.

Repeater Report: All functioning fine as reported by Mike, KN8Z.

ARES Report: Kevin reported the next meeting will cover some nifty tricks usable with GPS files, and a communication exercise Saturday March 11.

Old Business: Still looking for an Operation Care coordinator.

50/50 was won by Scott, AE8RN. The back row streak has ended!

Respectfully submitted

Lee, N8LJ

*mcu: motion carried unanimously

Emergency Coordinator Report

Hello fellow LCARA members.

The ARES calendar was busy this past February:

- We conducted 3 Tuesday night nets on the 2m repeater.
- At our monthly meeting on the 15th we learned about how to "easily" program and communicate with our GPS units.
- We conducted a "stay at home" message handling exercise on the 11th.
- I attended a Public Officials Conference in Bay City on the 31st. It was sponsored by all of the county Emergency Managers in District 3. A lot of good information was presented by all of them concerning emergency events and how and when the various branches of government could be involved.

March will be even more busy:

- I am taking a COML class in Lansing on the 5th, 6th, and 7th.
- There is the spring National Weather Service MICON meeting in April.
- There is a District 3 EC meeting this month.
- There is a Lapeer County EMAC meeting that I need to attend.
- Lapeer County is running the yearly SET this month (ARES will be participating).
- Lapeer County Skywarn training will be held on the 20th.
- Not to mention our monthly ARES meeting and a pre-exercise in preparation for the county SET.

And then there are non-ARES events this month such as the MI QSO party on the 15th and the MI SEOC is activating on the 22nd and 23rd so stop by and say hello (WS8EOC on 3.560, 3.930, 7.230, 14.230).

For you non-ARES members there is plenty of activity this month if you would care to stop by and observe the proceedings.

The ARES team meets on the 3rd Wednesday of every month at 7:00 pm in the EOC - same place as the club meetings. We could really use your particular expertise in whatever area it lies.

73 for now.

Kevin KB8TAR

EC / RO Lapeer County

Club Items

Heard on the Wire

Dale's Tales

Reprinted with Permission

On March 31, Mich Section Manager Larry Camp WB8R and I had the honor of attending a Press Conference in Southfield, MI where Jim Santilli of the Transportation Improvement Association, State Representative Martin Howrylak, and Southfield Police Chief Eric Hawkins announced that Michigan House Bill 4466 was introduced in the legislature to curb distracted driving. MI hams are fortunate that SGL Ed Hude WA8QJE insured that the interests of Amateur Radio were brought into the writing of the bill early on and licensed ham operators are completely exempt from the restrictions of the legislation. Mr and Mrs James Freybler of Grand Rapids were present to support the effort. They lost their 17 year old son to the tragedy of distracted driving.

The Bill must go through the complete legislative process, be reviewed by committee before the House passes it and then move to the MI Senate for its approval before the Governor signs it into law.

Thanks for taking the time to read another edition of Dale's Tales. Fortunately, this missive is distributed by ARRL's e-mail system, is reprinted in many of the Great Lakes Division's club newsletters (Thanks editors!) and is also posted on the Division web site. ARRL

members have the option of receiving it directly by selecting "edit your profile" on the ARRL web pages. While you are checking out that page, you can also select a number of other useful ARRL subscriptions and services, like getting a notice of your license expiration or our publication The ARRL Letter.

You may not be aware, but we frequently survey many of our members who may be late in renewing. As you might expect, the survey results vary over a wide range, but each response is reviewed as we are always concerned about how our membership views the League. A significant number of membership lapses are simply "Whoops I forgot" and the renewal is on the way. We are thankful for that. Most interesting to me were several who commented that QST was too technical for them, followed by a similar number of responders who stated that it was not technical enough! Then follows comments that there are too many articles on DX followed by others who said there is not enough DX coverage. Several other popular aspects of our hobby had similar results. This all proves our membership likes ham radio and each person views facets of the hobby that are more important to them than others.

Our editors and the staff at Headquarters all work diligently to provide features and articles that cover the gamut of this great hobby. Obviously, with 12 issues a year, each of our specialty areas cannot be covered in a single year or even two. Still, Steve Ford and his team make every attempt to serve us well.

Like you, there are some parts of ham radio that I really like and some that don't fascinate me at all. Still, I read QST from cover-to-cover each month, including the ads. That reminds me of one neat thing about QST, all of the articles are complete within the same series of pages. There is no need to search for the remainder of an article that has been relegated to the back pages of the magazine. Surprisingly to me, I do manage to find something interesting in each issue and often in an article outside my normal areas of interest.

Without doubt, this helps me gain a better understanding of that is happening in Amateur Radio as a whole, and I can have a better grasp on those things that affect us all. Oh, and the ads are important too, because that is where I seem to find all those neat toys I need to add to the ham shack!

ARRL Great Lakes Division Convention in conjunction with Great Lakes HamCon will be held at Michigan International Speedway (MIS) on October 7 & 8, 2017. Check GLHamCon.org for information on tickets, flea market spaces and booths. As it becomes available, up-to-the-minute information will be posted on the web page.

TOM'S COMMENTS: Comments from our Vice Director Tom Delaney W8WTD "The future of ham radio is...." We're all concerned about the future. And many predict that the future of ham radio is here or there, in this program or that. Well, it's probably in a lot of things.

It's in technology. That keeps us relevant. There are software defined radios, new advances in communications techniques. And lots and lots of experiments. Did you read about the two brothers, both in their 20's, out in California, experimenting with long distance

communications on the 33 cm band? And new techniques in digital. I'll never be one to invent anything, but I'm grateful for the advances in both voice and data digital technology, and try to make use of them as new things come out.

It's in recruiting. One thing I've learned from being on the Entry Level License committee is that there are paths into ham radio for everyone, from the youngest to the "more-than-middle aged" people. And clubs are working to help those people find their way. Lots of good programs are underway for mentoring and making sure that new hams understand and use these new technologies, as well as just the basics for getting on the air and communicating.

And speaking of youth, I have been amazed to see what happens to young people when they get turned on to ham radio. Not only do they learn to be hams, but their ambitions to do things in technology fields become really great. There's an impressive group doing a net once a week on Echolink, through the W8PIF repeater in Michigan. And there are many other youth nets going on around the country.

We need to be concerned about the future of ham radio. But not too concerned. Do your part. Help a new ham. Make friends with a school group or a scout group. That will keep ham radio alive.

73, Tom W8WTD Vice Director, Great Lakes Division

History of the Car Radio

Contributed by Dave Williamson, K8DLW

One evening, in 1929, two young men named William Lear and Elmer Wavering drove their girlfriends to a lookout point high above the Mississippi River town of Quincy, Illinois, to watch the sunset.

It was a romantic night to be sure, but one of the women observed that it would be

even nicer if they could listen to music in the car.

Lear and Wavering liked the idea. Both men had tinkered with radios (Lear served as a radio operator in the U.S. Navy during World War I) and it wasn't long before they

were taking apart a home radio and trying to get it to work in a car.

But it wasn't easy: automobiles have ignition switches, generators, spark plugs, and other electrical equipment that generate noisy static interference, making it nearly impossible to listen to the radio when the engine was running.

One by one, Lear and Wavering identified and eliminated each source of electrical interference. When they finally got their radio to work, they took it to a radio convention in Chicago.

There they met Paul Galvin, owner of Galvin Manufacturing Corporation. He made a product called a "battery eliminator", a device that allowed battery-powered radios to run on household AC current.

But as more homes were wired for electricity, more radio manufacturers made AC-powered radios. Galvin needed a new product to manufacture. When he met Lear and Wavering at the radio convention, he found it. He believed that mass-produced, affordable car radios had the potential to become a huge business.

Lear and Wavering set up shop in Galvin's factory, and when they perfected their first radio, they installed it in his Studebaker.

Then Galvin went to a local banker to apply for a loan. Thinking it might sweeten the deal, he had his men install a radio in the banker's Packard. Good idea, but it didn't work. Half an hour after the installation, the

banker's Packard caught on fire. (They didn't get the loan.)

Galvin didn't give up. He drove his Studebaker nearly 800 miles to Atlantic City to show off the radio at the 1930 Radio Manufacturers Association convention.

Too broke to afford a booth, he parked the car outside the convention hall and cranked up the radio so that passing conventioners could hear it.

That idea worked -- He got enough orders to put the radio into production.

WHAT'S IN A NAME

That first production model was called the 5T71.

Galvin decided he needed to come up with something a little catchier. In those days many companies in the phonograph and radio businesses used the suffix "ola" for their names -

Radiola, Columbiola, and Victrola were three of the biggest.

Galvin decided to do the same thing, and since his radio was intended for use in a motor vehicle, he decided to call it the Motorola.

But even with the name change, the radio still had problems: When Motorola went on sale in 1930, it cost about \$110 uninstalled, at a time when you could buy a brand-new car for \$650, and the country was sliding into the Great Depression. (By that measure,

a radio for a new car would cost about \$3,000 today.)

In 1930, it took two men several days to put in a car radio -- The dashboard had to be taken apart so that the receiver and a single speaker could be installed, and the ceiling had to be cut open to install the antenna.

These early radios ran on their own batteries, not on the car battery, so holes had to be cut into the floorboard to accommodate them.

The installation manual had eight complete diagrams and 28 pages of instructions. Selling complicated car radios that cost 20 percent of the price of a brand-new car wouldn't have been easy in the best of times, let alone during the Great Depression.

Galvin lost money in 1930 and struggled for a couple of years after that. But things picked up in 1933 when Henry Ford began offering Motorola's pre-installed at the factory.

In 1934 they got another boost when Galvin struck a deal with B.F. Goodrich tire company to sell and install them in its chain of tire stores.

By then the price of the radio, with installation included, had dropped to \$55. The Motorola car radio was off and running. The name of the company would be officially changed from Galvin Manufacturing to "Motorola" in 1947.

In the meantime, Galvin continued to develop new uses for car radios.

In 1936, the same year that it introduced push-button tuning, it also introduced the Motorola Police Cruiser, a standard car radio that was factory preset to a single frequency for police cars to pick up one-way police broadcasts.

In 1940 he developed the first handheld two-way radio -- The Handy-Talkie for the U. S. Army.

A lot of the communications technologies that we take for granted today were born in Motorola labs in the years that followed World War II.

In 1947 they came out with the first television for under \$200.

In 1956 the company introduced the world's first pager; in 1969 came the radio and television equipment that was used to televise Neil Armstrong's first steps on the Moon.

In 1973 it invented the world's first handheld cellular phone.

Today Motorola is one of the largest cell phone manufacturers in the world.

And it all started with the car radio.

WHATEVER HAPPENED TO the two men who installed the first radio in Paul Galvin's car?

Elmer Wavering and William Lear, ended up taking very different paths in life.

Wavering stayed with Motorola. In the 1950's he helped change the automobile experience again when he developed the first automotive alternator, replacing

inefficient and unreliable generators. The invention lead to such luxuries as power windows, power seats, and, eventually, air-conditioning.

Lear also continued inventing. He holds more than 150 patents. Remember eight-track tape players? Lear invented that.

But what he's really famous for are his contributions to the field of aviation. He invented radio direction finders for planes,

aided in the invention of the autopilot, designed the first fully automatic aircraft landing system, and in 1963 introduced his most famous invention of all, the Lear Jet, the world's first mass-produced, affordable business jet. Not bad for a guy who dropped out of school after the eighth grade.)

Sometimes it is fun to find out how some of the many things that we take for granted actually came into being.

Michigan QSO Party

On April 15, 2017, the Great State of Michigan will once again host its annual Michigan QSO Party from Noon to Midnight local time. MIQP is sponsored by the Mad River Radio Club.

This is a great club activity as well as a good way to spend some time in your shack honing your skills in a pileup. Invite a buddy over and have some fun together. Better yet, invite a buddy with a Technician license over and get him or her on the HF bands!

Rules and full details are available at www.miqp.org Michigan State Parks on the Air (MSPOTA) MSPOTA started up on April 1 with several activations at State Parks around the state, Propagation was not particularly helpful in that Michigan chasers and activators alike had significant difficulty hearing each other. There were several reports of contacts from afar and even some DX contacts were made. Hams are a resilient bunch and we will adapt and overcome. One thing for Activators and Chasers to remember is that VHF and UHF FM simplex contacts count as valid contacts. If you are going out on an activation and when you spot yourself on the MSPOTA Facebook page, give your HF frequency and a 2M or 70 cm simplex frequency that you will monitor as well. Maybe a single VHF and a UHF frequency could be used statewide to avoid confusion. Hmmm.... The weather should be breaking soon and it will be a lot more comfortable to be out and about. Full MSPOTA information is available on www.mspota.org and on the MSPOTA Facebook page. Now is the time to get out there and have some fun. Can't make it to a park? Get on the air to see if you can help by making contacts with those that are at the parks! Both events are YOUR events – Get on the air and have fun! See you on the bands!

Larry, WB8R

Announcing a New Net in Town

Beginning on Friday, April 14th at 12 noon EDT, or 1600 Z, a new net will be hitting the airwaves on the W8IRA Independent Repeater Association Link system. It will be called the IRA Link System Michigan Noon-time Roundup Net. The net will be held on Monday, Wednesday, and Friday each week, with the possibility of expanding to a five-day schedule if interest and participation are sufficient. So, find a link near you, and please join us! The purpose of the net is to promote activity on the IRA Link System, and also to help identify and troubleshoot any problems that might be occurring with system repeaters. The net also will be a great way for Michigan hams to communicate with each other during the midday hours while mobile, or just looking for conversations with fellow hams. If you have any questions, or would like more information, please contact Tom Behler, KB8TYJ, the Net Manager. He can be reached at: tombehler@gmail.com

If you would like more information on the Independent Repeater Association (IRA) Link System, go to: www.w8ira.org

We look forward to your participation in this new and exciting ham radio activity!

Spring Flooding Tips

Contributed by Mary Piorunek, Lapeer County Emergency Manager

When spring hits, whether it's "official" or feels like spring, many of us are eager to get out of the office and into the fresh air. However, too much rain or thawing snow after a long winter from mountains can bring severe flooding. Floods are the most common and costly natural disaster in the United States. Here are some things to keep in mind as the spring flood season draws near.

- Never drive or walk through flooded streets. It only takes six inches of moving water to sweep a person off their feet (and not in the romantic way) and 12 inches to move a car. Remember, if a street is flooded, Turn Around; Don't Drown.
- Floods are expensive. A few inches of water in a 1,000-square foot home could cost more than \$10,000 in repairs and replacement of personal possessions. Visit [FEMA's data visualization website](#) to learn more about the costs and impacts of floods in your state
- Most insurance does not cover flood damage. Only flood insurance will cover the damage from floods. Speak with your insurance agent to learn more and remember flood insurance takes 30 days to take effect, so purchase now to protect your family!
- Talk with your family and make an emergency plan for you and your pets. No matter the disaster, it's always a good idea to have emergency supplies ready at home, at work, and in the car.

You can learn more about the dangers of flooding and find information about flood insurance at Ready.gov/floods and Floodsmart.gov. We also have prepared a Flood Safety Social Media Toolkit so you can share tips with your friends and family prepare at www.ready.gov/flood-toolkit.

LCARA and Michigan State Parks on the Air

Begins April 2017. Two parks in Lapeer County are on the list for 2017 - Ortonville and Metamora-Hadley.

- 100+ Michigan State Parks & Associated Areas for 3 years of fun
- Parks activated in steps; approx 1/3 in each of 3 years
- One featured park in each region of the state will be active on a continuous basis throughout the event. The remainder will be active on a rotational basis over the 3 years
- Park access primarily in temperate months
- Winter access available in select parks
- Many parks to have Activator Kits staged to help promote the connection on-site between the park and amateur radio
- Most parks to provide park-specific QSL cards for chasers by SASE
- Opportunities exist for club sponsorship of parks
- Website available for information (<http://www.mspota.org>)
- Activator Log Uploads, Chaser Leader Board, Awards Program, Honor Roll



Michigan State Parks On The Air

On April 1st, Michigan hams will embark on the most ambitious on the air project ever. Of course, I am talking about Michigan State Parks on the Air or MSPOTA as we refer to it.

Previous State Park activations on the air around the country have focused on a single weekend.

The Michigan State Parks system as a whole will be 100 years old in 2019. Some of our parks actually began operation in 1917. Hence, the celebration will begin in 2017 and continue through 2019. That is three years of State Parks on the Air! Lots of time for activators and chasers alike!

This event includes 117 MDNR Parks & Recreation sites including State Parks, Recreation Areas, Scenic Sites and State Trails rotated over the 3 years. That adds up to about 50 parks across the state active in each event year.

One park in each of the 4 Lower Peninsula regions will be active in allevent years as well as all 24 of the Upper Peninsula parks. The schedule is such that regardless of what region of the state you are in there will always be parks to activate during the event.

One of the most important takeaways from the event rules is that self supporting antennas are required and that NO antennas can be affixed to trees in any of our parks. Cross contamination from tree to tree and from park to park is a serious issue. Be sure to be an asset as opposed to being a liability to the parks system during your activations.

The primary source of information is www.mspota.org and contains everything you need to get out in the great outdoors and activate some parks as well as information for the chasers from around the state, the country and the world! Information is available on the website for QSO content requirements, log submission, and QSL process. QSL's will be available via SASE. For chasers, working the parks early will have an additional benefit.

The DNR Parks and Recreation Department will be printing park-specific QSL cards for each park. It is expected that these park-specific cards will have a picture of that park on the face of the card. Once those 500 cards are gone, then QSL's will revert to a generic MSPOTA card.

Who can contact all of the Michigan Parks early enough to obtain park-specific QSL Cards? Who knows, there may even some sort of an award for the first ones to complete this achievement!

We all remember the fun of the ARRL Centennial QSO Party and the ARRL National Parks on the Air events. Now it is time for the Michigan ARRL section to showcase our beautiful state parks and get radioactive!

Have fun, follow the rules, and stay safe.

73,

Larry, WB8R

LCARA New Business: MSPOTA 2017-2019

Local clubs are asked to consider "hosting" a park or two nearby to support the program, and build stronger relationships with the DNR. For us in Lapeer County, the two parks are **Ortonville Recreation Area** and **Hadley-Metamora Recreation Area**. The host duties are pretty light, mostly keeping supplies in stock (QSL cards, etc.) and liaising with the DNR staff at the park to be sure activations are going smoothly.

LCARA is sponsoring these two parks, and it's a great opportunity to get out into the park and be a bit more visible - and most importantly, to get 'radio-active'.

Thanks,

Gerret, *KD8YUK*

Calendar of Events

- External Event (not LCARA-sponsored)

A - ARES Team Event

Also see schedule of weekly nets on page 1.

April 2017

- # Michigan State Parks on the Air begins
 - See information in this Waveguide for more details
- 04/11, 7:30pm - Club Meeting, Lapeer EOC
 - Presentation TBD
- 04/15 Michigan QSO Party
 - See information in this Waveguide for more details
- A 04/19, 7:00pm - ARES Training, Lapeer EOC
- # 04/20, 7pm-8:30pm - Lapeer County SkyWarn / Tornado Class
 - Lapeer Pix Theater (downtown) No registration necessary.
 - Additional Information about the SkyWarn class here:
https://www.meted.ucar.edu/training_course.php?id=23
- # 04/22-23, Michigan State Police 100th Anniversary Special Event

May 2017

- 05/09, 7:30pm - Club Meeting, Lapeer EOC
 - Presentation TBD
- 05/20, Hamvention
 - ARROW Bus Trip
- 05/19-21, Hamvention, Xenia OH
- 05/26-29, 8am-8pm, **Operation C.A.R.E.**
 - Rest Area I-69E, just past Wilder Road
 - 4-hour shift

June 2017

- 06/13, 7:30pm - Club Meeting, Lapeer EOC
 - Presentation TBD
- 06/24-25, ARRL Field Day - LCARA will participate
 - Much more to come!

July 2017

- 07/xx - Dates TBD, 8am-8pm, **Operation C.A.R.E.**
 - Rest Area I-69E, just past Wilder Road

- 4-hour shifts
- 07/11, 7:30pm - Club Meeting, Lapeer EOC
 - Presentation TBD

August 2017

- 08/08, 6:30pm - Club Picnic, Cramton Park, Lapeer MI
 - Presentation TBD
 - Officer Nominations Due

September 2017

- 09/01-04, 8am-8pm, Operation C.A.R.E.
 - Rest Area I-69E, just past Wilder Road
 - 4-hour shifts
- 09/12, 7:30pm - Club Meeting, Lapeer EOC
 - Presentation TBD

October 2017

- # 10/7-10/8, Great Lakes Hamcon, Michigan International Speedway, Brooklyn,MI
 - [Link to flyer](#)
- 10/10, 7:30pm - Club Meeting, Lapeer EOC
 - Presentation TBD

November 2017

- 11/14, 7:30pm - Club Meeting, Lapeer EOC
 - Presentation TBD

December 2017

- 12/12, 6:30pm - Club Holiday Dinner
 - Date + Location Tentative (same as club meeting)

Upcoming Hamfests

A tip of the microphone to Kevin, KB8TAR for passing this list along.

4/29/17 Jackson County Jackson, OH
 4/30/17 Athens Athens, OH
 5/6/17 Cadillac Cadillac, MI
 4/22/17 Chassell Hamfest Chassell, MI

Annual Tornado Spotter Class

Learn how to accurately observe such weather phenomena such as tornadoes, floods, hail, wind, cloud features, etc.

[Link to PDF](#) for more information

ARROW Hamvention Bus Trip

- Tickets are \$55 before April 1st and tickets go up in price to \$65 after April 1st
- Saturday April 20th, 2017
- depart from the park-and-ride lot beside Ann Arbor Pioneer High School
- 4:00 a.m. arriving in Xenia around 8:00 a.m.

[Link to website](#) for more information

LCARA Membership Application

Lapeer County Amateur Radio Association

Call Sign: License Class:	Name:
Address:	
City:	
State:	Postal Code:
Email Address:	
ARRL Member (Y/N):	ARES Member (Y/N):
RACES Member (Y/N) and Card #:	SKYWARN Member (Y/N) and Number:
Social Media Handles:	

L.C.A.R.A. Memberships are due annually on October 1st.

- **\$12** - Individual Membership
- **\$20** - Family Membership
- **\$4** - Associate Membership

Membership forms may be turned in to the Treasurer at a monthly meeting, or mailed to the club address:

Lapeer County Amateur Radio Association
P.O. Box 12
Hadley, MI 48440-0012