

Waveguide

Lapeer County Amateur Radio Association

P.O. Box 12 | Hadley, MI 48440-0012 | <http://www.w8lap.com>

Club Founder: Hollis Hayes W8ACD, SK

The President Says

Greetings fellow hams,

I hope you're enjoying the summer. Our club participated in several activities during June, and have more coming up so check out the schedule and announcements in the rest of the Waveguide.

I'd like to thank **Bill Demaray** for his excellent presentation on vehicle EMC testing. In an hour we only scratched the surface of the topic. I think we could have discussed this into the wee hours.

In our July meeting we'll have a overview of Field Day Activities that many participated in down at Gerret's place. In August we'll have our annual picnic. I'm putting together a little setup to measure harmonic content of generators so if you have a *small* generator, like the Honda 2000, bring it to the picnic and we'll see how clean the AC signal looks. And maybe we can try powering a few go-boxes at the same time.

September is just around the corner and we'll have our annual election of officers. I know there'll be at least one vacancy as I'll be stepping aside as President. My wife and I are moving out the county in the next few years and



July 2016

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W8LAP / r Repeaters

146.620 - 100 Hz

442.750 + 123 Hz

Next Club Meeting

Tuesday, July 12

7:30pm

Lapeer County EOC

2332 W. Genesee Street

Lapeer, MI 48442

ARES Net

Every Tuesday 8:00pm

146.620 - 100 Hz PL

Thursday Night Net

See calendar for schedules;
some phone, some digital.

442.750 + 123 Hz PL



The President Says, continued:

need to focus on getting ready for the move. The to-do list grows daily. Please consider serving as a club officer. It is a rewarding activity and essential for the club's ongoing growth.

I look forward to seeing everyone at the meeting on July 12th.

73

Gordon, KD8TXW

View from the Veep Seats

June blew past, with Memorial Day Operation CARE at the beginning, Independence Day Operation CARE at the end, and ARRL Field Day wedged in between.

THANK YOU to the volunteers who helped make these three events so successful. From hauling trailers to coiling antenna wires, LCARA members showed up and had fun doing it. **You** are an important part of what makes Amateur Radio enjoyable as a hobby, and it was great to talk with you, break bread with you, and enjoy our hobby together.

I'd be remiss if I didn't offer a **special thanks** to a new member who did yeoman's work at the Independence Day Operation CARE—**Kevin, KD8ZXT**, who volunteered for **every time slot available**, for the whole weekend. Kevin is a new member who joined LCARA in June of 2016. I tip my hat to you, sir.

There are many, many names to add to the rolls of recognition, and I suspect that I know only a portion of them, because there is much work that goes on behind the scenes, quietly and without fanfare. We are fortunate to have a talented and self-sacrificing group of hams in this club, and I am honored to know you.

Gerret Peters

KD8YUK

Officers

President

Gordon Miller
KD8TXW

Vice President

Gerret Peters
KD8YUK

Treasurer

Bill Miller
KD8VP

Secretary

Lee Dziekan
N8LJ

Committees and Appointees

Club Call Trustee W8LAP

Mike Zedan, KN8Z

Repeater Technical Team

Lee Dziekan, N8LJ

Will Stanton, KB8YGA

Meeting Refreshments

Bill Miller, KD8VP

Newsletter Editor

Gerret Peters, KD8YUK

Webmaster

David Erskine, KD8GXW

County EC

Kevin Boxey, KB8TAR

810-728-1481

County AEC—SkyWarn

Tom Oliver, KD8EBY

Operation Care

Tom Oliver, KD8EBY

The Secretary Says

LAPEER COUNTY AMATEUR RADIO ASSOCIATION

Meeting Minutes—June 14, 2016

Meeting was called to order and 7:30 pm by Vice President Gerret KD8YUK. There were 16 members and guests present.

The meeting started with the evenings' technical program of Electromagnetic compatibility. It was presented by Bill Demaray, the EMC laboratory supervisor at Nexteer Automotive.

The business meeting began after the break at 8:35 pm.

There will be an attempt to resurrect "Tea and Crumpets" at McDonalds, watch the Waveguide for details.

Our President ,Gordon KD8TXW is recovering nicely from gall bladder surgery.

W8LAP Field Day informational hand out was passed around.

W8LAP website is under re-construction. Watch out for orange barrels when navigating the site.

The May meeting minutes as published in the Waveguide were approved by the membership present.

The Treasurer's report was presented and approved by the membership present. Operation CARE (Memorial Day Weekend) netted the Association \$276 & change.

The Repeater Trustee reported the team looked at the systems after some comments of performance issues during the Triathlon event. More information to follow in next month's trustee report.

EC Report: There will be an upcoming balloon launch in Midland county. Volunteers needed to help track the high school balloon launch.

Independence Day Operation Care is almost here. Go to the W8LAP website to sign up. Remember, this is our fundraiser and definitely keeps our yearly dues low.

Since our association continues to thrive on the fine presentations we have been viewing at our meetings, the purchase of a projector has been raised again. Mike KD8OTZ and others have been very generous in allowing us to use their video equipment. There is a proposal on the floor to allow the Association to spend up to \$600 for our own projector. This also includes the necessary cables for SVGA, HDMI and if necessary, other common video interface connections.

AMSAST News: Keith KB1SF presented LCARA a thank you letter and an AMSAT Medallion for our contribution. He also reported two upcoming launches

Club Meetings

LCARA meetings are held the second Tuesday of each month at 7:30pm in the :

Lapeer County Central Dispatch Center (911)

2332 West Genesee Street

Lapeer, MI 48446

All are welcome.

The Waveguide

The Waveguide is a monthly publication of the Lapeer County Amateur Radio Association. **Publication is free to all interested members of the public.**

Free Waveguide Subscription

Email your name, call sign (if licensed), city of residence and email address to KD8YUK@KD8YUK.ORG

Feedback Welcome

Feedback positive and constructive is welcome and may also be directed to KD8YUK@KD8YUK.ORG

FOX 1C and FOX 1D sometime after July. A proposed hi-altitude satellite based off an existing available platform and flight did not materialize. However there is a program proposal with Virginia Tech to build a new satellite with amateur radio capability to piggyback on a future flight.

A motion was made and seconded to appropriate \$100 for food and beverages for our upcoming Field Day event.

Meeting adjourned 9:24 pm.

Respectfully submitted...

Lee, N8LJ

The Trustee Says

Hello W8LAP Supporters:

There were no technical problems with the repeater this month, or any matters concerning use of the W8LAP club call.

Repeater Shack Roof: Replacing the roof of the repeater shack, mentioned in detail last month, is on hold until cooler weather sets in.

Repeater Coverage: Also, as mentioned last month in detail, the Tech Team measured repeater transceiver parameters to begin the overall evaluation process. The results indicate no problems with sensitivity.

June 9, 2016 - Two Meter sensitivity tests (See table on following page)

Lightning

As mentioned in previous reports, lightning can strike as many as 40 miles distant from a thunder storm. A good source of real-time tracking lightning strikes, both at home, and on mobile devices is: <http://www.lightningmaps.org>

The subject of lightning is also contained in the commercial General Radio Operator's License (GROL) examination. The FCC doesn't seem to require GROL licensees to have a deep knowledge of lightning protection, since there are only three mentions of the subject in the entire question pool (correct answers are asterisked):

595. 3-100Q1 | What device can protect a transmitting station from a direct lightning hit?

LCARA Packet BBS

At the Repeater Site:

Frequency: 145.030 MHz

Node Name: LCARA

PBBS: W8LAP-4

At the Lapeer County EOC

Node Name: EOC44

PBBS: W8LAP-3

At KB8YGA's QTH in North Branch

Node Name: NORTHB

PBBS: KB8YGA-3



Credit: Bing Open Commons Image Search

Configuration	Frequency	SWR	R	j	
Direct to antenna	146.02	1.3	38	+7	MFJ analyzer
	146.62	1.3	48	??	MFJ analyzer
Thru xmit duplex	146.62	1.3	39	+7	MFJ analyzer
High Side (2:1 SWR)	146.85				MFJ analyzer
Low Side (2:1 SWR)	146.53				MFJ analyzer
System RX Sensitivity Measurement	-33 dBm 5 millivolts	-73 dBm 50 microvolts	-107 dBm 1 microvolt	0 signal	Elecraft XG3 RF Signal Source
Receiver Antenna Input	Full Quieting	Full Quieting	Some Noise	Full Noise	
Duplexer Input	Full Quieting	Full Quieting	Some Noise	Full Noise	

- A. Lightning protector.
- B. Grounded cabinet.
- C. Short lead in.
- D. *There is no device to protect a station from a direct hit from lightning.**

596. 3-100Q2 | What is the purpose of not putting sharp corners on the ground leads within a building?

- A. No reason.
- B. It is easier to install.
- C. *Lightning will jump off of the ground lead because it is not able to make sharp bends.**
- D. Ground leads should always be made to look good in an installation, including the use of sharp bends in the corners.

599. 3-100Q5 | Do shorted-stub lightning protectors work at all frequencies?

- A. Yes.
- B. No, the short also kills the radio signals.
- C. No, the short enhances the radio signal at the tuned band.
- D. *No, only at the tuned frequency band.**

If you have any questions about the above material, feel free to contact me at the below address.

See you at the next meeting,
Mike, KN8Z (kn8z at arrl.net)

July Voting Item

At the July 12 meeting, club members will vote on funding the purchase of a projector suitable for use at monthly club meetings. For the past several months (longer, if truth be told), Mike Bowman, KD8OTZ has generously loaned the club the use of his personal projector.

With the many successful presentations over the past year, a proposal has been made to research and purchase a computer projector for a cost not to exceed \$600.

This item will be voted on at the July meeting.

Lapeer County Emergency Coordinator / Radio Officer Report

Here are a few teaser photos from Field Day—see the August Waveguide for a full article!



Daniel, KE8CFI; Gerret, KD8YUK; Kevin, KB8TAR—Field Day 2016



Mark, KE8BYG; Bill, KD8VP; Mike KN8Z—Field Day 2016.

Yaesu FT-817 on AGM battery with an end-fed sloper antenna. Sitting under a shady tree making contacts on a comfortable summer afternoon.



ARES Training Program

No July Meeting
August 17, Field Exercise

Interested in ARES?

If you're interested in **emergency communications** and the Amateur Radio Emergency Service, you are welcome to:

- ◆ come by the team meetings (schedule above), or
- ◆ contact EC/RO Kevin Boxey, KB8TAR directly, or
- ◆ Join one of the club's VHF/UHF ARES nets on Tuesdays or Thursdays.

Find contact and net information on the front page of the Waveguide.



AES—Amateur Electronic Supply to Close after 59 Years

Contributed by Will Stanton, KB8YGA

The ARRL reports that AES will close after 59 years in business. No word yet from AES to confirm or explain the decision. You can read the full ARRL article here: <http://www.arrl.org/news/amateur-electronic-supply-closing-after-59-years-in-business>

A Battery Power Pack for your Radio Go Box

Contributed by Gordon Miller, KD8TXW

Gordon reports having one of these portable power packs and that it does a good job.



- 26,000 mAh
- Li-Polymer battery
- Aluminum body enclosure
- At press time, on sale for \$99 (from \$199)

https://www.amazon.com/Intocircuit-26000mAh-Capacity-Portable-External/dp/BooBB5VQCE/ref=sr_1_2?ie=UTF8&qid=1466088704&sr=8-2&keywords=PC+external+battery

When Thunder Roars, Go Indoors!

Contributed by Mary Piorunek,
Lapeer County Emergency Management

According to the National Weather Service (NWS), lightning strikes the United States about 25 million times each year. While lightning mostly occurs during the summer months, it can happen at any time of the year.

Talk with your family about staying safe during thunderstorms. Here are just a few lightning safety tips that the NWS offers if you are indoors:

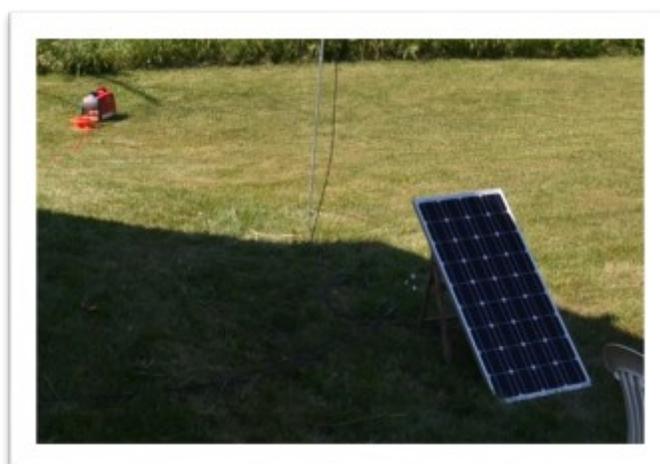
- Stay off corded phones. You can use cellular or

cordless phones;

- Don't touch electrical equipment such as computers, TVs, or cords. You can use the remote control safely; and
- Stay away from windows and doors that might have small leaks around the sides to let in lightning, and stay off porches.

According to the NWS, if you are outside during a storm it is important to get inside a safe building or vehicle. You are NOT safe outdoors, but if you absolutely cannot get to safety, follow these tips to slightly lessen the threat of being struck by lightning:

- Avoid open fields, the top of a hill, or a ridge top;
- Stay away from tall, isolated trees or other tall objects. If you're in a forest, stay near a lower stand of trees; and
- If you're in a group, spread out to avoid the current traveling between group members.



What's wrong with this Field Day picture? Send your captions and answers to qso@w8lap.com.

Upcoming Club Meetings & Events

Monthly: Tea & Crumpets

On the **3rd Saturday** morning of the month (8am) offers an opportunity to gather with your fellow hams. Join the crowd at the McDonald's on M-24 in Lapeer, just south of the bridge. (Also referred to as McDonalds West) Contact Chris Azelton, KC8TWL for more information at (810) 338-0020.

July

Solar Power Systems—A presentation on solar power systems for austere environments.

Club Field Day wrap-up—share your stories, your photographs, what went well, and see what you missed if you couldn't make it.

August

Annual club Picnic in the Park. More to come as we get closer to the picnic. (Cramton Park, specific pavilion TBD)

Officer Nominations

September

Tentative—Adventures in Hawaii

Officer Elections

October

Tentative—Member Projects Show & Tell

2017 Officers assume duties

November

Currently Open

Have a topic you'd like to present? You might be in luck—September, October, and November are still open, and of course December is the club Christmas party.

December

The LCARA Annual Christmas Party

And then we'll be off and running for 2017!

Electrical Circuits Explained

Electricity originates inside clouds. There, it forms into lightning, which is attracted to the Earth by golfers. After entering the ground, the electricity hardens into coal, which, when dug up by power companies and burned in big ovens called 'generators,' turns back into electricity...where it is transformed by TV sets into commercials for beer, which passes through the consumers and back into the ground, thus completing what is known as a "circuit."

—Dave Barry

July 2016

SUN	MO	TUE	WE	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

July Events

- 1-4—Operation CARE. See w8lap.com for details
- 3—Sunday Nets
- 4—Independence Day
- 5—Tuesday ARES Net 8pm
- 10—Sunday Nets (see sidebar)
- 12—Club Meeting 7:30pm EOC
- 16—Tea & Crumpets 8am (see sidebar)
- 17—Sunday Nets (see sidebar)
- 19—**NO NET**
- 21—**NO DIGITAL NET**
- 24—Sunday Nets (see sidebar)
- 26—Tuesday ARES Net 8pm
- 31—Sunday Nets (see sidebar)

LCARA Nets - on W8LAP Repeater

Tuesdays, 8pm

146.620- with 100 Hz PL

1st & 3rd Thursdays, 8pm

Digital Training Net (Olivia 8/500)

145.070 Simplex

Thursdays, 8pm

On 442.750+ with 123 Hz PL

Sunday Nets

ARPSC - 5pm

3.932 LSB

District 3 Net - 6:30pm

145.31+ 131.8 Hz PL

District 3 Digital Training Net - 8pm

3.583 USB

Tea and Crumpets



3rd Saturday of each month
8am

Lapeer McDonalds on M24
Just south of the bridge

August 2016

SUN	MO	TUE	WE	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

August Events

- 2—Tuesday ARES Net 8pm
- 4—Thursday **FL-Digi (Digital) Training Net** (see sidebar)
- 7—Sunday Nets (see sidebar)
- 9—**Club Picnic—Cramton Park**
- 11—Thursday **FL-Digi (Digital) Training Net** (see sidebar)
- 14—Sunday Nets (see sidebar)
- 16—Tuesday ARES Net 8pm
- 17—**ARES Team Field Exercise**
- 20—Tea & Crumpets 8am (see sidebar)
- 21—Sunday Nets (see sidebar)
- 23—Tuesday ARES Net 8pm
- 25—Thursday **FL-Digi (Digital) Training Net** (see sidebar)
- 27—**Saturday—Crim Festival of Races (ARES Support)**
- 28—Sunday Nets (see sidebar)
- 30—Tuesday ARES Net 8pm

LCARA Nets - on W8LAP Repeater

Tuesdays, 8pm

146.620- with 100 Hz PL

1st & 3rd Thursdays, 8pm

Digital Training Net (Olivia 8/500)

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145.31+ 131.8 Hz PL

District 3 Digital Training Net - 8pm

3.583 USB

Tea and Crumpets



3rd Saturday of each month

8am

Lapeer McDonalds on M24

Just south of the bridge

Lapeer County Tornado Siren Testing Schedule

Contributed by Mary Piorunek,
Lapeer County Emergency Manager

This information will run monthly throughout the testing season.

If your community has a tornado siren, it will be tested on the following dates:

Saturday, August 6th

Saturday, September 3rd

Saturday, October 1st

All Tests will be held at 1:00PM

Should inclement weather be present at the time of testing, the test will be cancelled. If you have any questions, please contact your local fire department.



64th Annual W9DXCC DX Convention and Banquet

September 16-17, 2016, Schaumburg, Illinois

Sponsored by the Northern Illinois DX Association, the event is the premier DX gathering in the region and is an ARRL-approved operating specialty convention. Contest University and DX University programs will be held Friday, with presentations for new and veteran DXers and contest operators. Saturday's daylong session will feature speakers, exhibits, QSL card checking, a CW pileup contest and many prizes, including a Yaesu FT DX 3000.

The evening banquet is a time to relax with keynote speaker Tom Gallagher, NY2RF, the new ARRL CEO. For family members, Woodfield Mall, which offers a wide array of shopping, is one traffic light south of the convention site at the Hyatt Regency Schaumburg, 1800 East Golf Road.

Main Convention – Saturday (as of now, with more being added)

- VP8STI/SGI Sandwich Island/South Georgia Island by K3LP
- VK0EK Heard Island by KK6EK
- K5P Palmyra Island by K9CT

- Cycle 24 Update by K9LA
- DX'ing During Declining Conditions by K9ZO
- Flex 6000 for Contesting & DX'ing by N5AC

Registration: Go to <http://w9dxcc.com/> for more information and registration, as well as updates

For more information: John McCormick,
NoFCD@yahoo.com

Seaway Trunk Swap

August 7, 2016, 8:00 A.M. to Noon

Presented by: The Eastern Michigan Amateur Radio Club

Vantage Point—Great Lakes Maritime Center in Port Huron
5 Water Street

Downtown at the foot of Water Street where the Black River joins the Saint Clair River

Free Admission & Free Parking

- Trunk Sales Only
- Refreshments available at the Waterfront Deli
- Talk In 146.800, 100 Hz P.L.
- Admission – Free
- Trunk Space – Free
- ARRL DXCC Card Checker available (no 160M)

Information email Bob K8WMW at k8wmw@sbcglobal.net

or Stan AC8W at ac8w@arrl.net

This is an ARRL approved Hamfest



Upcoming Hamfests, Swaps, and other Events

GMARC July Trunk Swap

Start Date: 07/16/2016
End Date: 07/16/2016
Location: Packard Proving Grounds
49965 Van Dyke Avenue
Shelby Township, MI
Website: <http://www.gmarc.org>
Sponsor: General Motors Amateur Radio Club
Type: ARRL Hamfest
Talk-In: 443.075+ (PL 123)
Public Contact: Bobby Corr , N8CY
45601 Fox Lane West, Apt. 106 Shelby Township,
MI 48317
Phone: 248-346-2733
Email: BobbyCorr@att.net

2016 CMARC OUTDOOR HAMFEST

Start Date: 07/30/2016
End Date: 07/30/2016
Location: Holt Christian Church
2424 South Washington Road
Lansing, MI 48901
Website: <http://www.centralmiarc.com>
Sponsor: Central Michigan Amateur Radio Club
Type: ARRL Hamfest
Talk-In: 145.39 (PL 100)
Public Contact: Donald McLain , KB8RAD
4444 Sycamore Street Holt, MI 48842
Phone: 517-694-0812
Email: KB8RAD@arrl.net

Seaway Trunk Swap

Start Date: 08/07/2016
End Date: 08/07/2016
Location: Vantage Point - Great Lakes Maritime
Center
5 Water Street
Port Huron, MI 48060
Sponsor: Eastern Michigan Amateur Radio Club
Type: ARRL Hamfest
Talk-In: 146.800 (PL 100)
Public Contact: Stan Arnett II , AC8W
801 Range Road Marysville, MI 48040
Phone: 810-364-6674
Email: ac8w@arrl.net

Technician Class Study Seminar Fall 2016

Class Fee: \$40.00 (does not include study manual)
Mondays: Oct 3, 10, 17, 24, Nov 7 & 14
Time: 6:30 p.m. to 8:30 pm
Location: Davison Community Enrichment & Rec-
reation Building - Rm 106
Instructor: Amy Pender, WA8MY
Registration Information:
Davison Community Enrichment & Recreation
Class Name: "Get Your Ham Radio License"
By Phone: (810) 591-0177
Online: <http://davisonschools.org/dcer.cfm>
Note: Instructor uses Gordon West Technician
Class Study Manual during seminar. Students who
do not wish to purchase a manual may choose to
use free online study materials.
Where To Buy The Study Manual:
Dentronics in Flushing, MI: 810-659-1776
Gordon West Online: www.W5YI.org

General Class Study Seminar – Winter 2017

Class Fee: \$40.00 (does not include study manual)
Mondays: Jan 23, 30, February 6, 13, 20, 27
Time: 6:30 p.m. to 8:30 pm
Location: Davison Community Enrichment
& Recreation Building - Rm 106
Instructor: Amy Pender, WA8MY
Registration Information:
Davison Community Enrichment & Recreation
Class Name: "Upgrade to Ham General Class Li-
cense"
By Phone: (810) 591-0177
Online: <http://davisonschools.org/dcer.cfm>
Note: Instructor uses Gordon West Technician
Class Study Manual during seminar. Students who
do not wish to purchase a manual may choose to use
free online study materials.
Where To Buy The Study Manual:
Dentronics in Flushing, MI: 810-659-1776
Gordon West Online: www.W5YI.org

Hosted by Genesee County Radio Club:
Highly Recommended!

Upcoming Testing Sessions—Is it time to get that upgrade?

Port Huron MI 48060-4014

Sponsor: Eastern Michigan ARC
Date: Jul 09 2016
Time: 10:00 AM (Walk-ins allowed)
Contact: Martin Smith
(810) 385-5584
Email: pioneer-2@att.net
VEC: ARRL/VEC
Location: St Clair County Library
210 McMorran Blvd
2nd Floor Meeting Room
Port Huron MI 48060-4014

South Lyon MI 48178

Sponsor: South Lyon Area ARC
Date: Jul 23 2016
Time: 9:00 AM (Walk-ins allowed)
Contact: Edward W. Roney
(248) 719-4643
Email: kd8osm@tir.com
VEC: ARRL/VEC
Location: Witch's Hat Depot
South Lyon Historical Society
McHattie Park Walk-Ins Welcome
200 Dorothy Street
South Lyon MI 48178

Port Huron MI 48060-4014

Sponsor: Eastern Michigan ARC
Date: Aug 13 2016
Time: 10:00 AM (Walk-ins allowed)
Contact: Martin Smith
(810) 385-5584
Email: pioneer-2@att.net
VEC: ARRL/VEC
Location: St Clair County Library
210 McMorran Blvd
2nd Floor Meeting Room
Port Huron MI 48060-4014

Harrison Township MI 48045-650

Sponsor: L'Anse Creuse ARC
Date: Aug 17 2016
Time: 6:30 PM (Walk-ins allowed)
Contact: Clifford W. Ibbs
(586) 567-0436
Email: ab8xq@arrl.net
VEC: W5YI VEC
Location: Tucker Senior Center
26980 Ballard St
Harrison Township MI 48045-6506

Flint MI 48507

Sponsor: The KT8Q & W8ACW VE Teams
Date: Aug 20 2016
Time: 9:30 AM (Walk-ins allowed)
Contact: Jeffrey R. Pender
(810) 895-1408
Email: jeff@w8acw.org
VEC: ARRL/VEC
Location: Baker College of Flint-Tech Center
1050 W Bristol Road
Room S-103, Pre-reg preferred
Flint MI 48507

Owosso MI 48867-9999

Sponsor: Corunna VE Team
Date: Aug 25 2016
Time: 7:00 PM (Walk-ins allowed)
Contact: Thomas E. Carpenter
(989) 277-2262
Email: ki8as@charter.net
VEC: ARRL/VEC
Location: Baker College Welcome Center
1020 Shiawassee St
Candidates 6:30 registration
Bldg 16
Owosso MI 48867-9999

L.C.A.R.A. Membership Application

Please Print	
CALL SIGN: _____	NAME: _____
ADDRESS: _____	
CITY, STATE, ZIP: _____	
TELEPHONE: _____	EMAIL: _____
LICENSE CLASS: _____	A.R.R.L. MEMBER? (YES) (NO)
SKYWARN NO: _____	RACES NO: _____
ARES MEMBER? (YES) (NO)	L.C.A.R.A membership is \$12.00 per year, renewable each year on October 1st. Family Membership \$20.00. Associate Membership \$4.00. If you wish an autodial number for the repeater there is an additional \$3.00 charge. (Financing available)

Lapeer County Amateur

Radio Association

P.O. Box 12

Hadley, MI 48440-0012

PLEASE
PLACE
STAMP
HERE