WAVEGUIDE

W8LAP/r
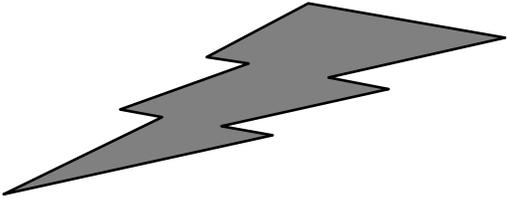146.620 - 100Hz
442.750 + 123Hz
www.w8lap.com

Lapeer County Amateur Radio Association

January	Published Monthly by the Lapeer County Amateur Radio Association	2009

The next regular meeting will be held on
Tuesday, January 13 —7:30 p.m.
at the Lapeer County Central Dispatch Center (911)
2332 W. Genesee Street in the basement.

The Prez Sez:

Christmas dinner was very good. Have a good Christmas and a happy new year. See everyone at the club meeting.
Bob n8ne

The Treas Sez:

Greetings to everyone in this new year 2009. I hope everyone got everything they wanted for Christmas.

Due to the unexpected low level of the checking account, our other accounts have been rearranged to bolster the checking account. Our expensive months, due to the insurance policy's coming due, are still ahead of us. They usually come due in February so we get a little breathing room until then. There are no expenses expected for now. So set back enjoy yourself with what ever amateur radio pleasures that you enjoy. There are several swap and shops coming up in January so get out and go see some of your buddies and buy something for your shack.

73 Bill Miller kd8vp

The Trustee Sez:

Happy New Year to everyone. All is well that ends well. The year did end well indeed. Our repeaters are doing well with all the changes that were made this past year. The new controller and the link to W8ECG in North Branch has given us an extended coverage that in times of bad weather should help us give much better coverage to the North. I know that are a few that are using the link and that is good. My only hope is that many more will experience how well it works and begin to use the repeaters more.

A little note to those that have not have been using the 2 meter repeater because their radios do not have PL encode capabilities. There is now a way for you to override the PL if you have a touch tone pad. Just push your transmit button and key in the number"325". This overrides the PL or as some may know it CTCSS (Continuous Tone Coded
Squelch System). Once the system is brought up you can continue a conversation back and forth with someone as long as the repeater does not totally drop out.

You can also Test your keypad by pushing the transmit button and keying in the number "375" immediately push the buttons on your key pad and then un key the transmitter. The controller will respond with Key Pad Test, 1234567890 signifying that the tones were received OK. If one or more of the numbers do not read back you may have a problem in your keypad.

Try it out and see if our controller works for you.
73 Bill Miller trustee

The Secy Sez:

The **November** meeting was called to order at 7:30 p.m. with the Pledge of Allegiance to the flag and introduction of members and guest.
Minutes was read by Flo, kc8cab.
The minutes were accepted by Tom, kd8eoa.

The treasurer's report was given by Bill, kd8vp. It was accepted by Dave. kd8dlw and seconded by Tom, kd8eoa.
The trustees report was given by Bill, kd8vp. He asked the Club what should do with the original repeater. He

was told to do what he wanted to do with it. He asked Ed, w8ncj to contact the family of the original owner. If they do not want it Bill might with ARRL to see if they might want it.

The codes for the repeater are 400 current time; 375 key pad test; 325 override of the PL tones. The repeater goes back to PL tones in 10 minutes after the last transmission.

* [star] up and # [pound] down for the autopatch.

Bill had the G.E. Master 2 repaired and is back in the repeater.

Chris, kc8twl has the forms for call signs license from the Secretary of State.

The dinner is December 9, 2008. Let Bill or Chris know about the dinner. They need a good head count.

Break was from 7:55p.m. till 8:15p.m.

The next test session is November 29, 2008.

50/50 was won by Dan,kc1bud.

A motion was made to adjourn at 8:40p.m. by Hank, k8dd.

Merry Christmas

The **December** meeting was a Christmas Dinner at Country Side Banquet Hall in Imlay City. A good time was had by all. We had a real good turn out. Sorry that the rest of the members and their guest did not show up.

The EC Sez:

Howdy everyone, a belated Merry Christmas and Happy New Year! Hope Santa was good to you. The events for 2009 are starting to roll in. Here are a few…

1. March 29th (yes Sunday) – **Lapeer County Mock Disaster Exercise**. A minimum of 12 operators will be needed to deploy during the exercise. A few mobile units with mag mount antennas will be a big help.
2. April 2nd – **2009 Skywarn Training** – 7:00 PM at North Branch High School. A new and revised training this year! On-line registration will begin very soon.
3. April 25th – **March of Dimes Walk for Babies in Lapeer**. We have been asked to provide communications at the rest stops and on the course. More information to come, but last year we were out from about 8 AM till Noon when we came in for a fine lunch.
4. June 27th – **Ride for Hope charity bicycle ride**. Yes, field day weekend, but a fine to spend a few hours before going out and jumping on the HF bands. This is a pretty big event and we need a lot of people to keep things running smoothly. Look for more information in the very near future.

There is still room for additional Net Control Operators for the Monday night nets. If interested, please see Charlie (KC8JBK) or myself.

Well, that's it for now. Till next month…

73, Doug Jr., KC8ZCF

From ARES / RACES:

New FEMA Training Course Essential: ESF #2 Communications

An apparently new FEMA on-line course covers the Emergency Support Function (ESF) #2 "Communications" of the National Response Framework (NRF). It is essential that all amateur emcomm operators understand all ESFs, but particularly ESF #2. All ESFs are central to the operations of any EOC. See <http://training.fema.gov/EMIWeb/IS/IS802.asp>.

The NRF presents the guiding principles that enable all response partners to prepare for and provide a unified national response to disasters and emergencies. It establishes a comprehensive, national, all-hazards approach to domestic incident response. The Framework defines the principles, roles, and structures that organize how we respond as a nation. It builds upon the National Incident Management System (NIMS)<http://www.fema.gov/emergency/nims/index.shtm>, which provides a consistent template for managing incidents. Information on the National Response Framework including Documents, Annexes, References and Briefings/Trainings can be accessed from the resource center <http://www.fema.gov/emergency/nrf/> -- Thanks to Eagle-Eye David Coursey, N5FDL, EC San Joaquin County, California

Upcoming Swap & Shops:

January 17 ARAY/GCARES Swap & Shop   Bentley Middle School, 1180 N. Belsay Rd. Burton MI. . I-69 to Exit 141 (Belsay Rd) North 1/4 mile, school is located on the east side of the road. TI: 147.100 Repeater (100 Hz PL) . Adm: $5 / children under 12 FREE! Info: Bob Byler (K8RWB) at bbyler66@comcast.net. Or WWW.GCARESINC.ORG

January 18 Hazel Park...43rd Annual Hamfest, Hazel Park ARC, Hazel Park H.S., 23400 Hughes, 8 a.m.—noon Adm: $5, tables $15 T.I. 146.640 (100 hz PL) Info: www.hparc.org

February 15—Livonia...2009 Swap-N-Shop, Livonia ARC, Livonia Civic Park Seniors Center, 15218 Farmington Rd.,8 a.m.—noon. Adm: $5, tables $16 in advance T.I.: 145.350(-) Info: (734) 513-8784 or email w8gkh@arrl.net

March 14—Marshall...49th Annual MI Crossroads Hamfest & Radio Swap. Marshall H.S., 701 N. Marshall Ave. Adm: $5, tables $8, Chairs $1. T.I. 146.660(-) or 146.52 Info: www.w8df.com or (269) 966-0770

From the mailbag:

Upcoming DX trip **– Two LCARA members are going to Nicaragua on February 17, 2009 for a one week mini DXpediton. Lee, N8LJ and Hank, K8DD are being joined by Stan, AC8W and Jim, KB8TXZ. All four are also members of the SouthEastern Michigan DX Association (SEMDXA). They will be operating from the shack of YN2N (http://www.yn2n.com) before and after the ARRL DX CW Contest.**
Two ways to find them on the air would be to watch the DX PacketCluster – information on page 6 – or watch your email – there could be a bulletin sent out from the W8LAP.LCARA address as to when they will be on SSB – most likely on 20 or 17 meters.

More about the link between W8LAP (146.620) and W8ECG (443.450)

Not one to gripe but:
I always monitor the net and the North Branch repeater for the most part, I understand good help is hard to come by for any organization and the Lapeer County Amateur Radio Club is no exception, I appreciate all the participation by those that make things happen and with that I must state a fact - if a station transmits on the Lapeer repeater with a poor signal which produces poor audio, the link will make this situation worse, as I observed on the net tonight, *[I believe this was the December 22, 2008 net – ed]* there were stations on the North Branch side and I was one of those and what we heard was almost unreadable from net control. The link will degrade a bad input signal even more as it comes in on W8LAP's input to the link, it is not magic and this needs to be understood by all users.   Perry/KG8ID
Comment: While it is true that we should use only the amount of power to maintain good communications – The key here is "good communications'. If there is any chance that you might have a noisy signal, and you can run a little more power – do it! A signal with no noise is a lot more enjoyable to copy than a noisy choppy signal!

All I Want for Christmas Is....
Dan Romanchik KB6NU

When I was a kid, we had an album (remember records on vinyl?) that had a bunch of Christmas songs for kids. The song I remember most goes:

All I want for Christmas is my two front teeth,
My two front teeth, my two front teeth.

Gee, if I could only have my two front teeth,
Then I could wish you Merry Chrith-math (sang with a lisp).

Seeing as how I've had my two front teeth for nearly 50 years now, and I pretty much have everything I want, I got to thinking about what I want for ham radio for Christmas this year. Here's what I've come up with so far. In no particular order, I want:

 - MORE SUNSPOTS!

 - the median age for ham radio operators to actually decrease this year. This means not only recruiting kids, but also younger adults.

 - the pessimists who are continually talking down ham radio to find new joy in the hobby and begin working to make it great.

 - the FCC to appoint someone as effective as Riley Hollingsworth to take over as the enforcer of the amateur radio service regulations.

 - the FCC to pay a little more attention to amateur radio regulations and not treat them as an afterthought.

 - the silliness on 75m phone and 14.275 MHz to go QRT.

 - the ARRL to work harder on making itself truly the "national association for amateur radio" and on increasing the percentage of licensed hams that are ARRL members.

 - to be able to brag about all of ham radio's "purposes," not only providing emergency and public service communications. According to Part 97, these are:
   * advancing the state of the radio art;
   * improving our technical and operating skills;
   * expanding the number of trained operators, technicians, and electronics experts; and
   * enhancing international goodwill.

 - ham radio clubs to grow and thrive even in these tough economic times.

When I asked this question on Twitter, I got a couple of answers that were versions of a couple of wishes above, but I also got a few more:
 - WORMT wants "all of us to get on the air more and act as good ambassadors for the hobby," and
 - NT7S wants the hearts of ham grinches to grow a couple of sizes.
 - N!WBV wants redesigns for most ham radio websites.

I pretty much agree with all three. Happy New Year!

 When not waiting for Santa to decided if he's been naughty or nice, Dan, KB6NU, teaches ham classes and blogs about ham radio (www.kb6nu.com)

This area is for the article that you were going to write!

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10 NEW YEAR RESOLUTIONS FOR EMCOMM OPERATORS

 1. I RESOLVE to PREPARE for and PROVIDE public service communications during emergencies, disasters, or failure or overload of normal means of communication.
 2. I RESOLVE to LEARN, PRACTICE, and DEMONSTRATE -- PROPER and STANDARDIZED OPERATING PROCEDURES and NET DISCIPLINE at all times.*
 3. I RESOLVE to identify by saying my FCC call sign at the end of every transmission unless I expect to transmit again within ten minutes. (FCC Part 97.119a)
 4. I RESOLVE to always clearly state the FCC or tactical call sign of the station that I am turning the frequency over to.
 5. I RESOLVE to use the proword OVER to prevent doubling.
 6. I RESOLVE to allow a 1-2 second pause before transmitting.
 7. I RESOLVE to only use ITU phonetics.*
 8. I RESOLVE to avoid excessive wordiness and repetitious verbiage, and not say ROGER when answering a question in the AFFIRMATIVE.
 9. I RESOLVE to learn, practice, and improve my CW operating skills.
10. I RESOLVE to always set a good example for new operators and others who demonstrate poor or sloppy operating habits.
[from the EMCOMM Monthly WORLDWIDE eDISPATCH - 1 JANUARY 2009 - 0125Z]

For Sale For Sale For Sale For Sale:

I want to buy your old ham/electronic/tube gear. I'm particularly looking for the Heathkit Mohawk that I built and sold to Dave Burch four decades ago.
Contact Mike, AA8K, at: stepsisters@comcast.net or 810-987-8873
_____--

For Sale
HW-8 Handbook—covers HW-7, 8 & 9 $15
COM port boards, ISA, 2 ports $3.00 ea

From the estate of N8CQA:
Central Electronics 10B $130
Central Electronics 20A $130
One VFO's for above $75 ea
30M two transistor transmitter in a Hershey cocoa can $15
All offers will be listened to!

Contact Hank K8DD at hank@k8dd.com or 810-721-0708

And now ….. One way to find where the DX is operating!
Or …. Where are K8DD and N8LJ in February?

Dx Packet Cluster

The **WA8DX** Spider Packet Cluster node in suburban Lum, MI is available via the internet. Presently **WA8DX** is receiving DX info via K1XX in Florida or N8NM in Waterford.

This is a tool you can use to build your DXCC total, see where people are working stations on both HF and VHF, and even pass messages.

You can also connect via the internet. Telnet to   **wa8dx.servebeer.com**   port **7300**   When you get the logon prompt, enter your callsign.

Although you can stay connected indefinitely, if you decide to disconnect, type **b** or **bye** and you will be logged out.

You can view an online version of a users manual at: www.wd1l.net/DXSpider/usermanual_en.html

If you are unable to use telnet to access the DX Packet Cluster, point your browser to the OH2AQ DX Summit, located on the internet at   http://www.dxsummit.fi/   It will update every minute and you can see what DX is on the air and on what frequency they are operating.

Remember...DX Is!

Found on that thing called the internet:
A lot of information about the smaller Coaxial Cables

Many consumers, when they think of "coaxial cable," tend to think it refers only to the cabling used by cable and satellite companies for cable TV. However, this is only one example of coaxial cable. In this article we will breakdown what makes up a typical coaxial cable as well as go over a few common types.

Coax cable is defined as any cable with the following properties:
A center conductor
Insulation covering the center conductor, called a "dieletric"
A braided shield surrounding the dieletric
An optional foil shield
An outer jacket
Each of these components plays a specific role. Let's take a look at each in more detail:
Center Conductor:
At the heart of a coaxial cable is a center conductor. Typically constructed of either pure copper (in higher-end cables) or copper-coated steel or aluminum (in less-expensive cables), the center conductor is responsible for transmitting the cable's signal. As such, it must meet certain electrical properties (such as wire resistance). The rest of the cable construction is primarily designed to help the center conductor maintain its electrical integrity.
Dielectric Insulator:
The dielectric insulator's purpose is two-fold; first, it acts as an insulator between the center conductor and the outer braided / foil shielding. Second, it helps physically hold the center conductor in the center of the cable. This is important, as signal loss can occur if the center conductor strays too close to the outer area of the cable. Various materials are commonly used for the dielectric. A few of the more common materials, in order of quality (from best to worst), are below:
Foamed Polyethylene (FPE)
Teflon
Polyethylene (PE)
Polypropylene (PP)
Polyvinylchloride (PVC)
When reading specifications on coaxial cables, you may see references to the dialetric constant. The closer this number is to 1.0, the better. Foamed Polyethylene (FPE), for example, generally has a dielectric constant somewhere around 1.5, while PVC's dialetric constant is around 3.0 to 4.0. (Foamed PE basically uses gas, often nitrogen, to create gas bubbles in the

material to lower the dielectric constant. Marketing literature that refers to "gas-injected dielectric" usually indicates the use of FPE. It is one of the best dielectric materials in common use.)

Braided Shield:

Long copper cables have a tendency to act like antennas, picking up stray signals from the environment. These unwanted signals, known as "interference", disrupt the signal that the cable is supposed to be carrying. Interference tends to come in two different flavors: electromagnetic interference (known as EMI) and radio frequency interference (RFI). EMI interference is often caused by heavy power lines, cell phone signals, etc. A braided shield protects the signal from EMI interference. When looking at cable specs, the braided shield will often be expressed in a percent coverage, which often ranges anywhere from 30% to 95% coverage. The higher the coverage, the better the protection.

Foil Shield:

Although not always present on coaxial cables, the foil shield serves to protect from RFI interference. Foil shields are almost always made out of aluminum foil, and simply wrap around the inner parts of the cable. Unlike braided shields, which have a percent coverage, foil shields always cover 100%.

Outer Jacket:

The outer jacket is generally made out of flexible PVC (polyvinyl chloride) and serves primarily to hold the cable together and protect it from the elements.

Connectors

There are many different connectors that can terminate a coaxial cable. We will now go over a few of the more common connectors.

RCA

The RCA connector was developed in the early '40s by the Radio Corporation of America to connect record players to amplifiers. The same basic connector is still in wide use today, and it represents a large portion of the connectors used for home theater cables. The fact that they are so easy to connect and disconnect makes RCA connectors a popular choice for home theater applications. RCA cables can be used for audio, video and digital audio.

The biggest drawback with RCA devices is that each signal is sent on a different cable. For example, a single RCA-terminated coax cable only carries the left audio channel, or only the right, etc. Three RCA cables are needed for high-def video, along with two more for the audio. This makes for a mess of cables behind your equipment. This is one reason that has made HDMI cables so popular.

Attaching RCA connectors can be a bit more time-consuming as, with some types of RCA connectors, the coaxial cable's wires need to be soldered to the connector after stripping the cable with a stripping tool. RCA connectors come in solder-on, weatherproof and compression styles. A special tool is required for compression connectors, and a soldering iron is needed for solder-on connectors.

BNC

The BNC connector has two bumps on the female side that slide into corresponding grooves on the male side. The connector is then rotated a quarter turn to lock into place. BNC connectors are widely used in commercial applications such as closed circuit television systems, where its ability to lock in place (unlike the slip-on RCA) makes BNC cables a perfect fit. BNC connectors come in a wide variety as well, including twist-on and weatherproof connectors.

F-Pin

The F-pin connector is probably the most recognized of the coaxial connectors as it's been in use with televisions and VCRs for decades. The familiar threaded connector makes for a secure connection that will not easily slip out of a device. This connector is also one of the easiest to attach to a coax cable as it does not require any soldering. Many different types are available including twist-on, crimp-on and compression. For outdoor use, weatherproof connectors are also available to create an F-Pin cable with a secure connection and loss-less signal transfer.

Many manufacturers are doing away with the F-pin connector on their TVs. This is because that little F-pin connector is actually part of a device called a tuner. The tuner is what sifts through the signal coming through the cable and separates all of the TV channels. Since so many people change channels using a cable box or satellite receiver, these tuners are becoming obsolete. This can pose a problem for folks who have standard cable TV that still requires the TV to have an F-pin connector. Unfortunately, a small adapter or special cable won't do the trick. A tuner is required. There are a couple ways to do this. One way is to use an old VCR. VCRs have built in tuners. The other way is to use a device called an RF demodulator. A demodulator is essentially a TV tuner that will let you change the channels.

Crimp-on, solder or twist-on?

There are 3 main styles of each connector available on the market. With each of these styles the coaxial cable must be stripped in such a way that a portion of each component of the cable is exposed:

Crimp: This encompasses compression as well as crimping connectors. Crimping connectors slide onto the cable and then pinche the base of the connector onto the outer jacket. The compression connectors require a special tool to press the cable into the connector and pinch it all at the same time. Weatherproof connectors are most often compression style, where the connector seals to keep water out.

Solder: This style, like its name implies, requires the center conductor and the braided shield to be soldered to parts of the connector. These offer the best connection, but are more labor-intensive to install.

Twist-on: These are for the consumer that just wants a quick and easy solution. Especially handy if you are only trying to fix a single broken cable, these don't require any solder or tools. Simply twist the connector onto the cable and you're done. They're not the best for durability, but they get the job done.

Types of Coaxial Cable
RG58

Largely used in the commercial security camera industry, RG58 cable is a low profile, inexpensive choice for large projects where a high-bandwidth cable is not needed. Most often terminated with BNC connectors, this type of cable can also be found attached to testing equipment and 2-way radio systems.

RG59

Once the standard for cable TV, RG59 cables are still found packaged with VCRs and televisions. RG59 was a good low-cost option for cable TV for years until the cable industry recently began its move into digital cable television, which needs a thicker cable. Modern satellite television also requires a higher-bandwidth-capable cable and so RG6 coaxial cable is becoming much more popular, making RG59 no longer the industry standard.

RG6

RG6 cable is differentiated from RG59 cable by having a thicker copper center conductor. RG6 is primarily being used today for satellite and digital cable TV, where higher frequencies are required that RG59 cable cannot support. RG6 cable is most often sold with F-pin connectors for cable or satellite applications.

Thanks for joining us for this month's discussion. If you're interested in any of the above products, here's a 10% promotion code valid for any purchase at CableWholesale.com:

   TA2272

Next month, we'll talk about home theater.
Sincerely yours,
Your CableWholesale.com Technical Support Team
articles@cablewholesale.com

N2CQ QRP CONTEST CALENDAR

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              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
              80 METER FOXHUNT (CW) *** QRP Contest ***
        Each Tuesday to Mar 24 9 PM to 10:29 PM Eastern Time USA
                   Info: http://www.qrpfoxhunt.org/
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              40 METER FOXHUNT (CW) *** QRP Contest ***
                    Each Thursday to March 26
                  9 PM to 10:29 PM Eastern Time USA
                   Info: http://www.qrpfoxhunt.org/
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              070 Club PSKFEST Contest  ... QRP Category
                     Jan 10, 0000z to 2400z
        Rules: http://www.podxs070.com//contests/pskfest_rules.htm
     ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
              Michigan QRP Club Contest (CW) ... QRP Contest!
   Jan 10, 1200z to Jan 11, 2359z Rules: http://www.qsl.net/miqrpclub/contest.html
     ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
            North American QSO Party (CW) (100w max. QRP Entries Noted)
                     Jan 10, 1800z to Jan 11, 0600z
                   Rules: http://www.ncjweb.com/naqprules.php
     ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
            SKCC Weekend Sprintathon (Straight Key CW) ... QRP Category
                     Jan 11, 0000z to 2359z
                   Rules: http://www.skccgroup.com/sprint/wes/
     ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
              DARC 10-Meter Contest (CW/SSB)... <=100 W category
                     Jan 11, 0900Z to 1059Z
                   Rules: http://www.darc.de/referate/dx/xedczr.htm
     ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
              LZ OPEN CONTEST (CW 80M/40M) ...QRP Category
                     Jan 17, 0000z to 0600z
        Rules: http://www.lzopen.com/lz-open-contest/rules/rules.htm
     ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
            North American QSO Party (SSB) (100w max. QRP Entries Noted)
                     Jan 17, 1800z to Jan 18, 0600z
                   Rules: http://www.ncjweb.com/naqprules.php
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                ARRL January VHF Sweepstakes ... Low Power Category
                          Jan 17, 1900z to Jan 19, 0400z
              Rules: http://www.arrl.org/contests/rules/2009/jan-vhf-ss.html
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   Run For The Bacon (CW) *** QRP Contest ***
                          EST: Jan 18, 9:00 PM to 11:00 PM
                           UTC: Jan 19, 0200z to 0400z
                            Rules: http://www.fpqrp.com/
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
               NAQCC Straight Key/Bug 160m Sprint *** QRP CONTEST! ***
                          EST: Jan 22, 8:30 PM to 10:30 PM
                           UTC: Jan 23, 0130z to 0330z
                    Rules: http://www.arm-tek.net/~yoel/contests.html
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   CQ WW 160-Meter DX Contest (CW) ... QRP Category
                           Jan 23, 2200z to Jan 25, 2200z
                   Rules: http://cq-amateur-radio.com/160_Rules_2009.pdf
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   REF (French) CW Contest Jan 24, 0600z to Jan 25, 1800z
         Rules: http://concours.ref-union.org/reglements/actuels/reg_cdfhf_fr_0610.pdf
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   BARTG RTTY Sprint Contest Jan 24, 1200z to Jan 25, 1200z
                 Rules: http://www.bartg.org.uk/contests/SprintRules2009.pdf
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   UBA DX Contest (Belgian) (SSB) ... QRP Category
                           Jan 24, 1300z to Jan 25, 1300z
                   Rules: http://www.uba.be/hf_contests/rules/ubatest_dx.pdf
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                         SPAR Winter Field Day (Any Mode)
                           Jan 24, 1700z to Jan 25, 1700z
               Rules: http://www.spar-hams.org/contests/winterfd/index.php?pg=2
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   MQFD Monthly Sprint (CW/PH/Digital) *** QRP Contest ***
                              Jan 24, 1800z to 2200z
                       Rules: http://w2agn.net/mqfdsprint.html
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   SKCC Sprint (Straight Key CW)  ... QRP Awards
                              Jan 28, 0000z to 0200z
                      Rules: http://www.skccgroup.com/sprint/sks/
              ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
                   Thanks to SM3CER, WA7BNM, N0AX(ARRL), VA3JFF & G4GXL (QRPARCI)
         N2APB (AmQRP), WB3AAL (EPAQRP) and others for assistance in compiling this calendar.
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L.C.A.R.A. MEMBERSHIP APPLICATION

PLEASE PRINT:

CALL SIGN: _____ NAME: _____

ADDRESS:_____

CITY ,STATE, AND ZIP: _____

PHONE : _____ LICENSE CLASS: _____

SKYWARN NO.:_____ RACES NO: _____

ARES MEMBER YES___ NO____ E-MAIL ADD.:_____

ARE YOU AN A.R.R.L. MEMBER: YES__ NO__

L.CA.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