



W8LAP/r

146.620 - 100Hz
442.750 + 123Hz

www.w8lap.com

Waveguide

Lapeer County Amateur Radio Association

August

Published Monthly by the Lapeer County Amateur Radio Association

2009

*The next regular meeting will be held on
Tuesday, September 8th —7:30 p.m.
at the Lapeer County Central Dispatch Center (911)
2332 W. Genesee Street in the basement.*

The Treas Sez:

Boy what a busy summer. That said, the treasury is doing well. Thanks in a big way to the volunteer efforts of you our members. If it were not for Operation Care and the Swap and Shop we would not be the club that we are. This past month we were able to successfully put on the Swap and Shop, and in so doing, add to our coffers. The number of tables sold at the swap was about the same despite the fact that two of our commercial vendors were unable to attend. The number of buyers attending was down a little,

The Trustee Sez:

Hello to everyone. The under utilized W8LAP repeaters are there and working fine. I did notice that with preparation for school to start, the noise on the 440 Mhz repeater is back. As long as the PL is on it does not cause a problem. There must be something in the school causing the noise, because it wasn't there for most of the summer.

I have also stumbled onto a new phenomenon. The

The Secy Sez:

The meeting was called to order at 7:30 by Bob, n8ne with the Pledge of Allegiance to the flag and introduction of members and guest.

The minutes was read by Flo, kc8cab. Accepted by Bud, kc1bud and seconded by Tom, kd8eoa.

Treasurers report was given by Bill, kd8vp. Accepted by Bud, kc1bud.

Trustees report was given by Bill, kd8vp. The repeater is working fine. Please use the repeater. 325 overrides the CTCSS Tones; 400 is time; and 375 is key pad test.

Will, kb8yga from Deerfield Township said they want to start regulating tower height. There would be no

with a little less than 200 in attendance.

I heard talk while there, that other swaps were not able to do so well.

We not only provided a chance for Hams to get together, but we were able to add to the treasury by a little. Thanks to all that helped out.

The only non swap related expense this month, was the payment for the W8LAP.COM web hosting account.

Until next month, 73

Bill Miller KD8VP Treasurer

PL on the 146 Mhz repeater is mysteriously getting turned off somehow. I have had to turn it back on twice in the last month. I noticed the problem when the repeater started reacting to interference, and I didn't know why it should be. Hitting a few touch tone keys fixed the problem, but the mystery is still there.

See you at the meeting. 73

Bill Miller KD8VP Trustee

regulations on towers 80 feet or less. Anything over 80 feet they want to regulate. The Deerfield Township meetings are the third Tuesday at 6 P.M..

Swaps are down all over this year.

Break was from 8:00 to 8:15.

Operation Care is September 4-7. Please help. This is the last one for the year. Operation Care helps keep our dues down.

50/50 was won by Hank,k8dd. The meeting closed at 8:20

The EC Sez:

EC Says- Op. Care is Sept. 4-7th on "the hill". As usual we can still use more ops. Please signup on-line or contact me on the repeater to help. Saturday Sept. 12 is the annual Lapeer County Family Day. Amateur Radio usually has a table right in front of the Old Courthouse. Myself and Kevin Boxey(kb8tar) will be on the air from 8AM to approx 1pm. If you'd like to come out and set up a station to show off your skills please contact me. And last, the annual Statewide Emergency Test is Oct. 3-4. One possible scenario is a complete shut down of the power grid. Suggestions/comments are welcome and if anyone is planning to participate I need to know A.S.A.P. 73 All, TOM

**Be Radio-Active
Participate**

From the Mailbag:

Passing the Tech Test

By Dan Romanchik, KB6NU

I teach One-Day Tech classes. At the start of each class, I go over the following to help focus students on what to keep in mind when taking the test. It occurs to me that these are good tips no matter who is taking the test, so if you know someone who will be testing soon, please feel free to pass along this advice.

Technical Topics

The Tech test is not very technical, but there are three technical topics that you need to know:

- * Ohm's Law,
- * how to calculate power, and
- * the relationship between frequency and wavelength.

Ohm's Law

The basic formula for Ohm's Law is voltage (E) equals current (I) times resistance (R), or $E = I \times R$. On the test, there are several questions where they give you two of the values and ask you to calculate the third. If you're asked to calculate the current, you use the formula, $I = E / R$. If you need to calculate the resistance, use the formula $R = E / I$.

How to Calculate Power

The formula for calculating power is power (P) = voltage (E) times current (I), or $P = E \times I$. To calculate the current drawn, when given the power being consumed and the voltage applied to the circuit, use the formula $I = P / E$.

Relationship Between Frequency and Wavelength

There are several questions that require you to calculate the wavelength of a signal or some fraction of the wavelength. The reason for this is that antennas are often a fraction of a wavelength.

The formula that describes the relationship between frequency and wavelength is wavelength in meters = $300 / \text{frequency in MHz}$. One question asks for the approximate length of a quarter-wavelength vertical antenna for 146 MHz. To figure that out, you first calculate the wavelength:

wavelength = $300/146 = 2.05$ m or about 80 inches

One quarter of 80 inches is 20 inches, and the antenna will actually be a little bit shorter than that because radio travels more slowly in wire than it does in free space. The correct answer to this question is 19 inches.

That's all there is to the technical part of the test!

Safety

There are lots of questions on the test about operating safely and being safe when working on antennas. My advice when answering these questions is to always choose the most conservative answer. The two exceptions are when asked what is the lowest voltage and current that can hurt you. For these questions, the correct answer is the second lowest choices.

Emergencies

There are lots of questions about what to do in emergencies. There are two things to keep in mind when answering these questions:

- * You should do whatever you can to help someone who is in an emergency situation.
- * You can even break the rules to help someone in an emergency situation. This includes operating on frequencies you are normally not allowed to operate on and communicating with other stations in other radio services.

Miscellaneous Tips

Here are a couple of other miscellaneous tips:

* The answer is 'D.' If one of the answers to a question is, "D. All of these answers are correct," chances are that is the correct answer. There are 18 questions with this option, and of those 18 questions, there are only two questions--T3B06 and T5B03--where that is not the correct answer.

* Long-Answer Rule. Where one answer is a lot longer

than the other options, chances are that this is the correct answer. I haven't done an exhaustive study of this, but when one answer is very long, take a good, hard look at it.

That's all I have. Good luck on the test!

When not helping people pass the Tech test and become good amateur radio operators, Dan likes to work CW on the HF bands and collect QSL cards from stations whose callsigns spell words. To see what else he's up to, go to www.kb6nu.com

From the August Michigan Section News **Hey! It's Not Always the Repeater!**

By Ray Abraczinskas, W8HVG

There are new ham radio amateurs entering the hobby every week, and that's good! Many of them got their license by observing someone who operates on repeaters, so they are prone to become repeater operators too, and that's good! They will either buy a dual-band handie-talkie or a mobile radio as their first rig, sometimes a used one, and that's good! They are anxious to get on the air and use their new privilege, and that's good! Now let's talk about what typically happens with some real situations recently heard on repeaters. The names are fictitious but the situations are true.

New ham Joe sets his newly acquired dual-band radio on the front seat of his car and plugs it into the cigarette lighter using a dual adapter (he's got a GPS too). He runs the RG-58 coax from his dual band mag-mount antenna in through the rear car door where it won't be pinched (???) but he forgets that his wife always loads the groceries through that door. Now Joe is happy hamming on the repeater as he drives to and from work, and that's good! But oh, oh! About a month or so later someone tells Joe that his signal is noisy into the repeater. He doesn't know why so he says, "There must be something wrong with the repeater." But in reality, Joe's cigarette lighter connections have oxidized and burned from the overdrawn current, which is now lowering the voltage to the radio reducing its power output considerably, and the mag-mount antenna coax cable is shorted from being continually slammed in the door by Joe's wife getting groceries. If Joe's radio is putting out any power, it's only heat, and that's not good, but it's not the repeater!

Al lives across the state and has a terrific base station, several radios, a big tower with beam antennas, and even an amplifier that will run over 100 watts. He likes to talk to a friend on the other side of the state using the link repeater system run by the Independent Repeater Association. His signal is always impeccable but one time, he had trouble getting into the link system from his base station. He said that he was running over 100 watts with his beam pointed right at the repeater, and he still could not make the trip. There must be something wrong with the repeater! Well now, that link repeater had three different input receivers and Al tried all of them, but his signal was noisy and broken into all three. He took offense to the suggestion that it might be something in his station. In his mind, it was the repeater! The three receivers were checked for sensitivity and verified as working correctly.

Eventually Al's signal was heard clearly once again on the link repeater system, and that's good, but nothing was ever changed or fixed on the repeater system that improved Al's signal. It's not always the repeater! Bob worked hard to get his ham license taking the test over and over for several years. Finally he passed his Technician Test and that's good! He acquired a used HT with an old stubby-duck antenna and an extra battery but the seller was not sure if both batteries were good. They didn't seem to hold the charge very long or the radio just used lots of power and rapidly depleted them. Bob was excited to talk on the repeater from his basement apartment in the city using his new (old) HT. He was only about 12 miles from the repeater so it should work well, so he thought. In just about every QSO Bob's signal was noisy, wavering, and dropping out of the repeater (12 miles away). He says that it must be a repeater problem because he has absolutely no problem getting into the downtown repeater (with its antenna on the next building from him). Also, Bob has been monitoring the repeater all day and his battery has run down almost to the cutoff voltage. When he keys his HT, it blinks at him and there is no output. He tries the other battery but it doesn't hold a charge very well and the high power HT sucks the voltage down making Bob's signal weaker, even though he is operating on a rubber duck from his basement 12 miles from the repeater. Using the second battery, Bob making it in just barely says, "See I told you it was the repeater!" Recently, a new ham visiting the area north of Grand Rapids from across the state was having trouble getting into the Big Rapids link repeater with his mobile radio. He was located approximately midway between Grand Rapids and Big Rapids, 40 miles away from either repeater, but using the Big Rapids link repeater. During his transmission, his signal would get noisy (like it drifted off frequency) and his audio became distorted (like it was drifting off frequency). Each time he transmitted, it would do the same thing. The friend that he was talking with commented that it must be a repeater problem. Just then another station checked in on the Big Rapids link repeater and he sounded normal, no problem, but the comments went on, it must be a repeater problem! No one figured that the visiting ham's radio could have been programmed for the wrong frequency 5-kHz off, or decreasing in power output due to a bad power connection, or drifting off frequency, or had an antenna problem, or a loose

connection, or was in a poor location relative to the repeater. No, it had to be a repeater problem! Charlie is somewhat confined to his home and he operates a base station from his bedroom. His antenna is mounted on a pole outside his bedroom window. He likes to talk on the link repeater system because he can speak with many different people around the state. One day his signal was very noisy. People were saying that it was hard to understand what he was saying. Charlie said that there must be a problem with the repeater because he had no such report using the "local repeater." Then, later that day, Charlie found that his antenna coax cable was very loose on the back of the radio. He had moved the radio and forgot to tighten it back up. He tested after tightening it and everything was fine, his signal sounded excellent once again, and that's good! It wasn't a repeater problem! The following example is the pinnacle of all "repeater problem stories," the epitome of "it's the repeater," the crescendo in the expertise of analyzing problems with repeaters. Tom got a vanity ham call having passed his Extra Test and his mobile installation was excellent. He was a fussy budget with his radio equipment. His radio was mounted under the dash with power leads run thru the firewall to the battery, the speaker was mounted along side the driver's head so that passengers wouldn't be bombarded with loud audio, and Tom even used a permanent hanger for the microphone to avoid someone sitting on the microphone and keying the rig inadvertently. Tom's antenna was a removable mag-mount, again with the coax cable coming in thru the rear car door. One day when Tom was talking on the repeater, his signal was very

weak and it was fluttering in and out of the noise level. People were telling him that they were having problems with the repeater, so it must be the repeater. When Tom got to his work place, he came back on the air and called in with a full-quieting signal commenting that he found the problem. He forgot to put the antenna on the car roof, it was lying on the back seat of the car when he was talking before. He said that he removes it to drive into his garage and forgot to set it up that morning. That's not good, but then it wasn't a repeater problem! Think about if you ever had an "it's a repeater problem" like those described here. Maybe these examples can help you with your "repeater problems" or at least give you a laugh because it's not always a problem with the repeater! It could be a problem with, or in your station equipment, i.e., the frequency, tone, and offset are not set correctly, the squelch is set too tight, the microphone gain is set too high, there's a poor power connection (too many splices, too light a wire, loose fuse clip, cheap cigarette lighter adapter), there's a poor antenna connection (corroded, loose connector, pinched-shortened-open coax, or water in the coax or in the antenna base), a weak or low HT battery (needs to be charged), intermittent radio problem (low power output, high SWR shutdown), and last but not least, make sure that your mag-mount antenna is on the vehicle roof and not inside on the back seat (or in the trunk). I hope that you enjoy the intended humor and the simple helpful technical suggestions provided in this article. Comments? Send them to abra@i2k.com – W8HVG.

For Sale For Sale For Sale For Sale:

For Sale

Icom 756 Pro III for sale if you know anyone interested. \$1900 and as you can imagine it is in great condition. Contact Doug Kaheri dougk73@gmail.com

Wanted

And I am looking for a Channel Master Antenna rotator control box right now. Working or not. Anyone have either of these sitting around your shack that you would like to get rid of?
Todd KD8HBX 810-721-0103 (after 5 PM)

For Sale

Yaesu FT-920 \$800 OBO
Astron 35M P/S \$100
Bob W8RAE
Phone 248-628-3401

For Sale

HW-8 Handbook—covers HW-7, 8 & 9 \$15
COM port boards, ISA, 2 ports \$3.00 ea
Rigblaster Plus for Digital Communications – new, never used! \$100 obo
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 , with schematic \$15
All offers will be listened to!
Contact Hank K8DD at k8dd@k8dd.com or 810-721-0708

For Sale

A nice older Kenwood station (TS830S with vfo), a Dentron Super Tuner, an MC50 mike and a Shure mike. I also have a Daiwa CN-720B SWR/power meter. Call Fred WD8DKK at 810-327-6405 or e-mail me at frdzeller@yahoo.com

Lapeer County Amateur Radio Association

P.O. Box 12
Hadley, MI 48440-0012

Officers

President, Bob Beswetherick, N8NE . 810-653-3856 Vice-Pres., Chris Azelton, KC8TWL..810-245-0073
Secretary, Flo Haack KC8CAB 810-793-2606 Treasurer, Bill Miller, KD8VP.....810-797-5329

Committees & Appointees.

Club Founder.....Hollis Hayes, W8ACD Club Call TrusteeW8LAP.....Bill Miller, KD8VP
Club Historian.....Charlie Whipp, KC8JBK VE Coordinator.....Al Wilson, N8NPR
Skywarn Coordinator.....Pete Headrick KB8RSG Swap & Shop Chairperson.....Bill Miller, KD8VP
Field Day Chairman.....Bill Miller, KD8VP Meeting Refreshments.....Bill Miller, KD8VP
Two Meter Net Mgr.....Charlie Whipp, KC8JBK Newsletter Editor.....Hank Kohl, K8DD
Public Information Officer.....**It could be you!**

ARES Repeater Nets

Monday at 9:00 PM on 146.620-
Thursday at 9:00 PM on 442.750+
Mon—Sat at 9:30 PM on 147.300+

Meetings

LCARA meetings are held on the second Tuesday of each month in the Lapeer County Central Dispatch Center (911), 2332 W. Genesee St, Lapeer MI at 7:30 p.m. local time.

Board of Directors' monthly meetings are held on the first Tuesday of each month at Tim Horton's at 7:30PM (Check on the W8LAP repeaters).

Newsletter

Items for the newsletter may be called to the Editor at 810-721-0708, sent by Mail (Box 88, Attica, MI 48412), or as an ASCII or Word file to k8dd@arrl.net The deadline for submissions is the 20th of each month.

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

Coming Events...

September 12 -- GRAHamfest 2009, Kent County Fairgrounds Lowell, MI - Grand Rapids ARA

September 13 -- The Findlay Radio Club <http://findlayradioclub.org/>

September 20 -- Adrian ARC Amateur Radio Swap, Lenawee County Fairgrounds, Adrian, MI

October 17 -- Holland, MI Hamfest, at The West Ottawa South Campus, 3600 152nd Ave. Holland, Mi.
http://www.hollandarc.org/?page_id=22

October 18 -- Kalamazoo, MI Hamfest, Kalamazoo County Expo Center & Fairgrounds 2900 Lake Street, Kalamazoo Mi

December 6 -- L'Anse Creuse Amateur Radio Club, Mt. Clemens, MI <http://www.n8lc.org> L'Anse Creuse High School, 38495 L'Anse Creuse Street

Remember...DX Is!

N2CQ QRP CONTEST CALENDAR

Worked All ARCI Challenge (CW/Dig/Ph) QRP Event!
thru Dec 31

Info: <http://www.qrparci.org/waac>

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Summer FOX Hunt - QRP 20M CW

EDT: Tue Sep 1, 9 PM to 1029 PM

UTC: Wed Sep 2, 0100z to 0229z

Info: <http://www.qrpfoxhunt.org/>

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Colorado QSO Party (SSB/CW/Digital) ... QRP Category

Sep 05, 1200z to Sep 6, 0400z

Rules: <http://www.ppraa.org/coqp/>

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IARU Region 1 Fieldday (SSB)... QRP Category

Sep 05, 1300z to Sep 06, 1259z

Rules: <http://www.sk3bg.se/contest/iarur1fd.htm>

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AGCW Straight Key Party (CW - 40 Meters) ... QRP Category

Sep 06, 1300z to 1600z

Rules:

[http://www.agcw.org/en/?Contests:Straight\\_Key\\_Party](http://www.agcw.org/en/?Contests:Straight_Key_Party)

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Tennessee QSO Party (SSB/CW/Dig) ... QRP Category

Sep 6, 1800z to Sep 7, 0300z

Rules: <http://www.tnqp.org/>

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Brazil Independence Day (PSK31) ... QRP Category

Sep 7, 000z to 2350z

Rules: <http://www.cantareiradx.com/portal/>

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Michigan QRP Labor Day Sprint (CW) \*\*\* QRP CONTEST! \*\*\*

Sep 07, 2300z to Sep 08, 0300z

Rules: <http://www.qsl.net/miqrpclub/contest.html>

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Adventure Radio Spartan Sprint (CW) \*\*\* QRP EVENT \*\*\*

Sep 08, 0100z to 0300z (First Monday 9 PM EDT)

Info:

[http://adventure-radio.org/wiki/index.php?title=Spartan\\_Sprints](http://adventure-radio.org/wiki/index.php?title=Spartan_Sprints)

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JAY HUDAK MEMORIAL 80M SPRINT (PSK31) ... QRP Category

Sep 11, 2000 Local to 0200 Local

Rules:

[http://www.podxs070.com/contests/80m\\_sprint\\_rules09.htm](http://www.podxs070.com/contests/80m_sprint_rules09.htm)

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Ohio State Parks On The Air (All) ... QRP Category

Sep 12, 1600z to 2400z

Rules: <http://parks.portcars.org/>

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Worked All Europe DX Contest (SSB) 100W Power Category

Sep 12, 0000z to Sep 13, 2400z

Rules: <http://www.darc.de/referate/dx/xedcwr.htm>

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Swiss HTC QRP Sprint (CW) \*\*\* QRP Contest \*\*\*

Sep 12, 1300z to 1859z

Rules: [http://www.htc.ch/de/htc\\_sprint\\_contest.htm](http://www.htc.ch/de/htc_sprint_contest.htm)  
or: <http://www.sk3bg.se/contest/htcqrpsp.htm>



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Arkansas QSO Party (CW/SSB/PSK31) ... QRP Category  
Sep 12, 1400z to Sep 13, 0600z and  
Sep 13, 1500z to Sep 13, 2400z  
Rules: <http://www.arkan.us/>

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ARRL September VHF QSO Party (All) Low Power  
Category  
Sep 12, 1800z to Sep 14, 0300z  
Rules: <http://www.arrl.org/contests/rules/2009/sepvhf.html>

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Second Class Operator Club Marathon (CW) \*\*\* QRP  
Contest \*\*\*  
Sep 12, 1800z to 2400z  
Rules: <http://www.qsl.net/soc/contests.htm#top>

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QRP ARCI VHF Contest \*\*\* QRP Contest \*\*\*  
Sep 12, 1900z to Sep 13, 0400z  
Rules: <http://www.qrparci.org>

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NA Sprint (CW)... QRP Category  
Sep 13, 0000z to 0400z  
Rules: <http://www.ncjweb.com/sprintrules.php>

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SKCC Weekend Sprintathon (Straight Key CW) ... QRP  
Category  
Sep 13, 0000z to 2359z  
Rules: <http://www.skccgroup.com/sprint/wes/>

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NAQCC Straight Key/Bug Sprint \*\*\* QRP CONTEST! \*\*\*  
EDT: Sep 16, 8:30 PM to 10:30 PM  
UTC: Sep 17, 0030z to 0230z  
Rules: <http://www.arm-tek.net/~yoel/contests.html>

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Scandinavian Activity Contest (CW) ... QRP Category  
Sep 19, 1200z to Sep 20, 1200z  
Rules: <http://www.sk3bg.se/contest/sacnsc.htm>

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South Carolina QSO Party (ALL) ... QRP Category  
Sep 19, 1300z to Sep 20, 2100z  
Rules: <http://carc.ham-radio-op.net/scqp/scqsoweb2009.shtml>

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QRP Afield (All) \*\*\* QRP Contest \*\*\*  
Sep 19, 1500z to Sep 20, 0300z  
Rules: <http://newenglandqrp.org/afield>

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Washington State Salmon Run (CW/SSB) ... QRP  
Category  
Sep 19, 1600z to Sep 20, 0700z  
Sep 20, 1600z to Sep 20, 2400z  
Rules: <http://www.wwdx.org/>

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NA Sprint (SSB)... QRP Category  
Sep 20, 0000z to 0400z  
Rules: <http://www.ncjweb.com/sprintrules.php>

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RUN FOR THE BACON (CW) \*\*\* QRP CONTEST \*\*\*  
EDT: Sep 20, 9 PM to 11 PM  
UTC: Sep 21, 0100z 0300z  
Rules: <http://www.fpqrp.com/>

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SKCC Sprint (Straight Key CW) ... QRP Awards  
Sep, 22, 0000z to 0200z  
Rules: <http://www.skccgroup.com/sprint/sks/>

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CQWW RTTY DX Contest ... <150w Category  
Sep 26, 0000z to Sep 27, 2400z  
Rules: <http://www.cq-amateur-radio.com/RTTYDXContest.html>

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Scandinavian Activity Contest (SSB) ... QRP Category  
Sep 26, 1200z to Sep 27, 1200z  
Rules: <http://www.sk3bg.se/contest/sacnsc.htm>

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Texas QSO Party (All) ... QRP Category  
Sep 26, 1400z to Sep 27, 0200z  
Sep 27, 1400z to Sep 27, 2000z  
Rules: <http://www.txqp.org/>

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AGCW VHF/UHF CW Contest ... QRP Category  
Sep 26, 1600z to 2100z  
Rules: [http://www.agcw.org/en/?Contests:VHF-UHF\\_Contest](http://www.agcw.org/en/?Contests:VHF-UHF_Contest)

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MQFD Monthly Sprint (CW/PH/Digital) \*\*\* QRP Contest  
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Sep 27, 1800z to 2200z  
Rules: <http://w2agn.net/mqfdsprint.html>

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Fall QRP Homebrewer Sprint (CW/PSK31) \*\*\*QRP  
CONTEST\*\*\*  
Sep 28, 0000z to 0400z  
Rules:  
<http://www.njqrp.org/data/qrphomebrewersprint.html>

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Thanks to SM3CER, WA7BNM, N0AX(ARRL), VA3JFF &  
G4GXL (QRPARCI)  
N2APB (AmQRP), WB3AAL (EPAQRP) and others  
for assistance in compiling this calendar.

If you wish to subscribe to the Calendar,  
send an e-mail to [N2CQ@ARRL.Net](mailto:N2CQ@ARRL.Net)

Please forward the contest info you sponsor to  
[N2CQ@ARRL.NET](mailto:N2CQ@ARRL.NET) and  
we will post it and give it more publicity.  
Anyone may use this "N2CQ QRP Contest Calendar" for  
your website,  
newsletter, e-mail list or other media as you choose.  
(Include a credit to the source of this material of course.)  
72 de  
Ken Newman - N2CQ

N2CQ QRP Contest Calendar Links:  
<http://www.n3epa.org/Pages/Contest/contest.htm>  
<http://www.amqrp.org/contesting/contesting.html>  
<http://www.qrparci.org/content/view/6134/130/lang,en/>

## 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.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