

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

2008

*The next regular meeting will be held on
Tuesday, August 12 —7:30 p.m.
at the Lapeer County Central Dispatch Center (911)
2332 W. Genesee Street in the basement.*

The Pres Sez:

Thank you for all the help at Operation C.A.R.E. It is not a lot of work for the money and can be fun talking to those that stop by for drinks.

August is the next Operation C.A.R.E. I hope we can get enough help for it too. Before that, the Swap & Shop on the 17th.

There will be testing at the swap and on August 30th at the 911 center.

There will be a lot going on in August!
73 Bob, N8NE

The Treas Sez:

Greetings to one and all. First things first, the July treasurers report is uneventful as one would expect. Proceeds from Operation Care were somewhat reduced from other years, but under the circumstances, gas prices and all, there was a reasonable donation. Many thanks to one and all that helped out, and many more thanks to Tom KD8EBY for his time spent coordinating all the Op Care events.

Now it is time for me to give a plug for the up coming Swap and Shop, coming August 17, 2008. The good news is that the Vendors for the swap and shop have all sent in their reservations. Dentronics, Elmer's Ham

Shack, and Webster Communications are coming and hopefully there will be a lot of walk-in vendors because as of now there are hardly any signed up ahead of time. I have read of how many if not all of the swaps have been down in attendance dues to the costs. We will just have to see how it goes. The swap has always been a good time to see what's available, meet up with other hams, and just have a good time. And for some a chance to either get a new license or upgrade the one they have at the test session. Hope to see all of you there.

73 Bill Miller KD8VP treasurer

The Secretary Sez:

Meeting was called to order at 7:35P.M. with the Pledge of Allegiance to the flag and introduction of members and guest.

Minutes were read by Flo, kc8cab. Accepted by Tom, kd8eby.

Hans Jens, w8hfm is in Brians House. A card was sent to him. Break was from 8:00P.M. to 8:12P.M.

Trustees report was given by Bill, kd8vp. He bought a CTCSS board for the repeater. It was accepted by Tom, kd8eby.

The club will buy the books for the class Rob, n8psp will be giving in September.

Treasurers report was given by Bill, kd8vp. Accepted by Dick, kc8vha and seconded by Ed, kc8egr. It was bought up by Dave, kd8dlwm wanting to know if we are incorporated. The answer is no. Right now we don't need to.

New Business: Operation Care is August 29 through September 1. Workers are really needed. Please help out.

The Swap is August 17. A test session is at the swap. Hope to see everyone there.

Another test session is August 30th if needed.
September 6 is Family Preparedness Day from 9:00A.M.
to 1:00P.M.

50/50 was won by Bob, n8ne.
Meeting closed at 8:20P.M.

The Trustee Sez:

Well gang not a whole lot has happened since my last report. The on going effort to bring the new repeater controller on line is stalled as of right now and it is all my fault. Perry and Joe have had the controller interfaced to the backup Yaesu repeater for sometime now and I just haven't been able to get up to North Branch to bring it back down and hook it up to the old controller. Once that is done I will have to take the GE Master II repeater up, to have it interfaced to the CAT 1000B. When that is

accomplished it will be brought down and put back on line with the CAT 1000B as the main controller. There is then a learning curve to go through to program and become accustomed to it. But while that is happening it will be up and running.

Please be patient just a while longer, progress take time.

73 Bill Miller KD8VP trustee

The Emergency Services Div. Sez:

The 2009 Mock Disaster Exercise is scheduled for a Sunday (TBD) in April. It will begin around 9am in the Otter Lake, Columbiaville area. Don't say I didn't give you enough warning on this one! LOL

I hope everyone is having a great summer!
Mary Stikeleather

From ARES – the AEC/Op C.A.R.E Sez:

As of now we don't have ANYONE to help with Op. C.A.R.E. I really do appreciate all the help from "the regulars", but there are others in the club who can help (member the funds from op. care help to fund your "FREE Christmas Party").

Also Lapeer County Family Day is Saturday Sept. 6th; L.C.A.R.A; will have a table set-up on the Courthouse steps with myself and Kevin (kc8tar) operating an HF station. This only lasts a few hours and we would appreciate any help from "the old timers" who could spare some time to promote AMATEUR RADIO to come out and give us a hand.

73 everyone; Tom kd8eby

From the mailbag:

What's Wrong with the Sun? (Nothing)

07.11.2008

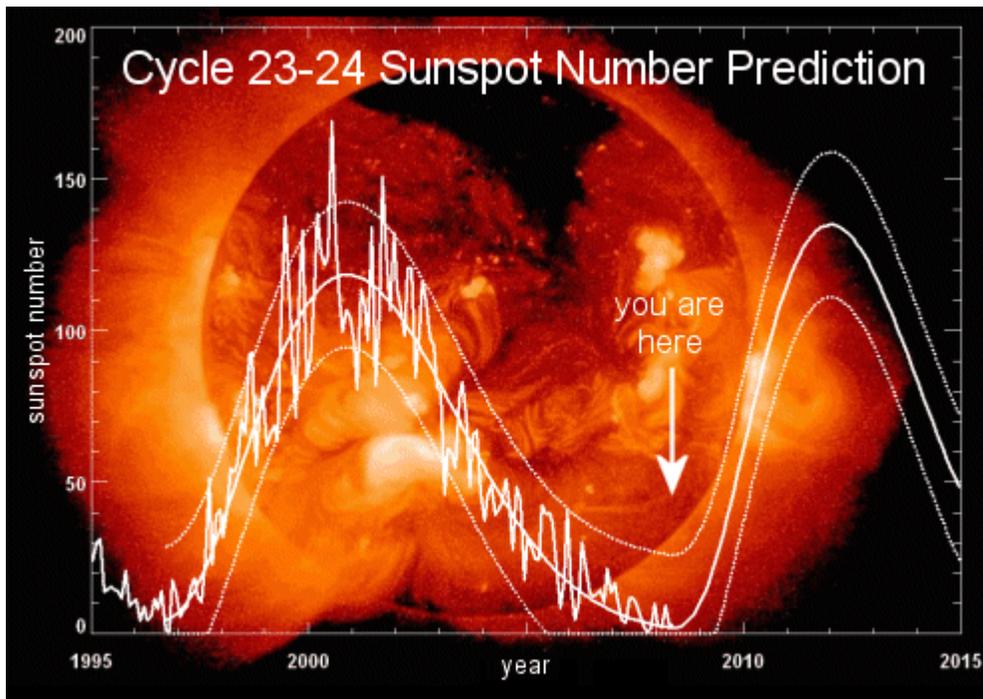
Full story is at: http://science.nasa.gov/headlines/y2008/11jul_solarcycleupdate.htm?friend

July 11, 2008: Stop the presses! The sun is behaving normally.

So says NASA solar physicist David Hathaway. "There have been some reports lately that Solar Minimum is lasting longer than it should. That's not true. The ongoing lull in sunspot number is well within historic norms for the solar cycle."

This report, that there's nothing to report, is newsworthy because of a growing buzz in lay and academic circles that something is wrong with the sun. *Sun Goes Longer Than Normal Without Producing Sunspots* declared one recent press release. A careful look at the data, however, suggests otherwise.

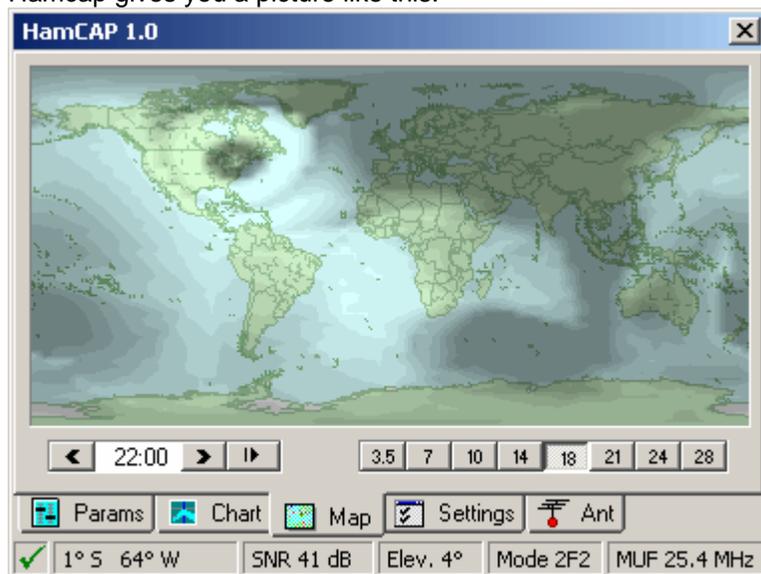
But first, a status report: "The sun is now near the low point of its 11-year activity cycle," says Hathaway. "We call this 'Solar Minimum.' It is the period of quiet that separates one Solar Max from another."



Above: The solar cycle, 1995-2015. The "noisy" curve traces measured sunspot numbers; the smoothed curves are predictions. Credit: D. Hathaway/NASA/MSFC.

So you want to see the effect of what the Sun is doing to radio propagation?

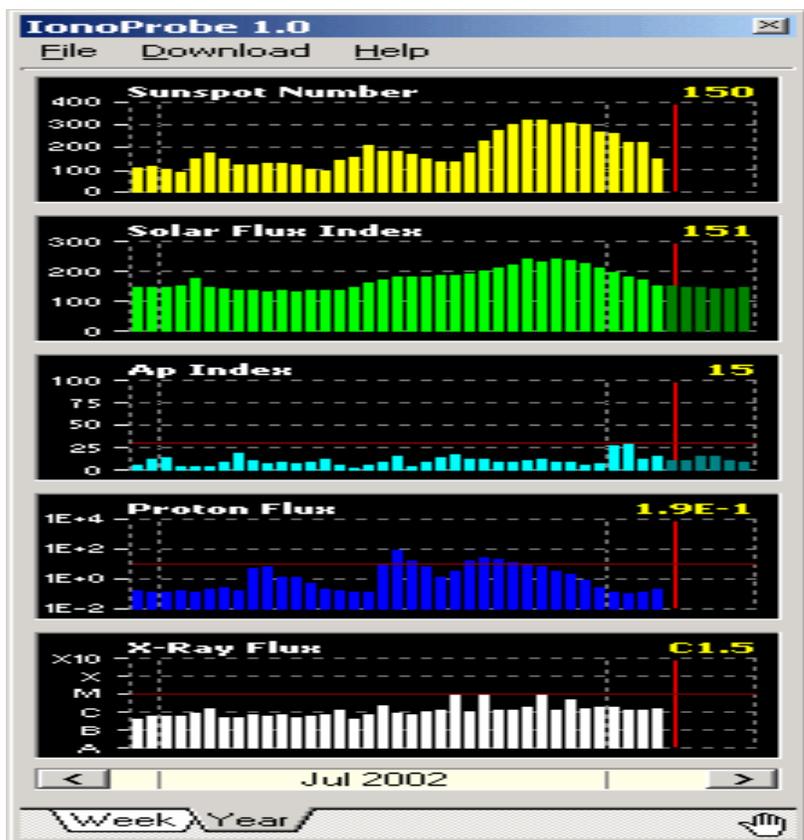
And you can do it at your house, in your shack – considering you have a PC and internet connection in the shack! One very good tool to watch what the Sun is doing to HF propagation is a pair of programs from VE3NEA at his web site - <http://www.dxatlas.com/> Hamcap and Ionprobe are the two in use here at the K8DD station, along with monitoring the local DX Spider spotting service at telnet:wa8dx.servebeer.com port 7300. Hamcap gives you a picture like this:



You can position your location using the 'Settings' tab so that you can 'see' where in the world you should be able to hear and work stations. Under the 'Ant' tab you can specify the antennas and their height, which will further refine what you can hear and most likely work. It will also give you the take-off angle for your antennas.

DX Atlas, not shown here is an Electronic World atlas for Radio Amateurs. Scrollable World map with smooth zoom, DXCC territories, province/state prefixes, Grid Squares, CQ and ITU Zones in the rectangular, azimuthal and Globe projections, 3D relief, Gray Line, city and island index, unique hierarchical prefix database, local time with DST for all cities, islands and call areas, unique [ionospheric maps](#).

The other program that works very well with Hamcap is Ionoprobe, which is available from the same web site. Here is what Ionoprobe looks like:



IonoProbe is a 32-bit Windows application that lives in the System Tray and monitors the space weather parameters essential for HF radio. The list of parameters includes SSN/SFI, Ap/Kp, X-ray/Proton flux, and Auroral activity. IonoProbe downloads near-real time satellite and ground station data, stores information for future use and displays it in a user-friendly way.

Time-critical parameters, such as X-ray flux, proton flux and auroral index, are updated every 15 minutes. An alarm can be set up to notify you of a storm within a few minutes after its start.

These days you will not see nearly as much activity from the Sun as you see in the July 2002 screenshot! Things are much flatter now, but there are periods of activity when you can work a lot of DX. Even on 10 meters!

The DX Atlas site also has some other neat programs. Like the program called DX Atlas, Morse Runner (a very good program to help increase your CW speed), Morse Midi (turns text files into midi files – you can make ringtones to download to your cell phone so that when KC8ZCF calls you it can play his call sign on your phone!) and Voice Shaper (It used our sound card to shape your audio so that you too can sound like KC8EGR!)

Using a Mac in the Shack

By Dan Romanchik, KB6NU

A couple of years ago, I decided to switch to the Mac for business use. (I am a freelance website developer.) I haven't regretted it for a second. The thing just seems to work better.

Last October, I decided to switch to a Mac in the shack and purchased a used, iBook G4 Mac laptop. Unfortunately, I can't say that I've never regretted this move. The reason I sometimes regret this choice is that there just aren't as many ham radio programs available for the Mac as there are for the PC, and those that are available are either more expensive than their PC counterparts or don't work as well.

For example, let's take a look at logging programs. When I first started looking, I found one that was kind of expensive (MacLoggerDX - www.dogparksoftware.com/MacLoggerDX.html); one that was free, but didn't want to work so well (RUMLog - <http://www.dl2rum.de/rumsoft/RUMLog.html>); and one that worked OK and cost somewhere in between the first two (Aether - www.aetherlog.com/). Considering that there are at least a dozen logging programs that run

on a PC, this was slim pickings.

I ended up purchasing Aether, but was never very happy with it. For one thing, it took forever to do any kind of sort or look up previous QSOs. Another pain was that it carried over none of the information from the previous contact, so you had to enter all of the information from scratch, even if you didn't change frequencies or bands. It also had an odd way of doing notes about a contact, and I was disappointed to find out that it didn't import the notes from the ADIF file I created from the N3FJP logging program I used previously.

For PSK, it's CocoaModem I had much the same experience when looking for a PSK31 program. Instead of a the wide variety of PC PSK programs, I only found a couple of Mac programs that decode PSK. Fortunately, I am much happier with my choice here (cocoaModem - homepage.mac.com/chen/index.html). It's a great program, with a polished user interface, and it's free, to boot.

The only problem with cocoaModem is that it doesn't

support the wide range of digital modes that some of the PC programs do. One I'm interested in is SSTV. Unfortunately, cocoaModem doesn't do SSTV.

A Happy Ending Well, a couple of weeks ago, I'd had enough of Aether and decided to start searching for logging software again. Since RUMLog was still free, I decided to give the new version (v 3.0, March 15, 2008) a go. I'm happy to report that this version likes my computer a lot better, and I like using it a lot!

One of the coolest things is that it did import the notes from my N3FJP ADIF file properly. So, now, when I type in a callsign, the program searches the database, finds all the previous contacts I've had with that station, and then displays them in spreadsheet style WITH the notes. If I've taken notes about a previous conversation, I can pick up right where I left off. Very cool.

It also has a very nice way of showing you what countries you've worked, on what bands you've worked them, and whether or not you've QSLed that country or not. Not only that, it shows what type of QSL you have, either a paper QSL or a Logbook of the World (LOTW) QSL. And, after

you supply your user ID and password, it will download your LOTW QSLs and update the appropriate QSO records. Very cool!

Still unresolved is what to use for contesting. None of the programs I've seen so far are useful for contesting, and I think that what I will end up doing is using my old PC laptop running N3FJP or N1MM software. I'm not a big contester, so I think I can live with that.

One thing is for sure--I'm not going back to the PC aside from some niche applications like contesting. The Mac's ease of use and ease of setup has won me over. For information on even more ham radio software for the Mac, go to www.machamradio.com.

When not trying to convince his friends and family to convert to the Mac, Dan works a lot of CW and PSK, and even a little SSB, on 20, 30, and 40m. You can read more about his adventures in amateur radio by pointing your Web browser to www.kb6nu.com.

Upcoming Swaps...And Events...

Aug 17 2008

Lapeer County Amateur Radio Association Swap & Shop

Sep 7 2008 Findlay Hamfest 7:30 am Hancock County Fairgrounds, Fishlock Street, Findlay OH
147.15+ 444.15+ <http://www.findlayradioclub.org>

Sep 14 2008 Adrian Amateur Radio Swap 8:00 am Lenawee County Fairgrounds 602 Dean St. Adrian MI
145.370- 85.4 Hz. PL <http://www.w8tqe.com>

Sept 19-20 W9DXCC DX Convention Holiday Inn Chicago - 1000 Busse Road (Rt. 83), Elk Grove, Illinois, 60008

Dec 7 2008 L'Anse Creuse Hamfest 8:00 am L'Anse Creuse High School 38495 L'Anse Creuse Road, Mt. Clemens MI
147.080+ 146.52 <http://www.n8lc.org>

Volunteer Exam Session

Lapeer, MI: The next ARRL Volunteer Exam (VE) session will be August 17 at the Lapeer Swap and then again on August 30 at the Lapeer County Central Dispatch Center (911) 2332 W. Genesee Street in the basement.
Contact Bob N8NE 810-653-3856

LCARA Volunteer Exams are held on the 5th Saturday in months that have 5 Saturdays.

Port Huron, MI: The next ARRL Volunteer Exam (VE) session will be August 9, 2008 at 10:00 a.m. in the 2nd floor meeting room at the Port Huron Branch of the St. Clair County Library, 210 McMorrin Blvd, Port Huron, MI.

Pre-registration NOT NECESSARY for all sessions during 2008!

Bring picture ID, the original and a copy of your present license and the original of any Certificate of Successful Completion (CSC) you may hold. The current fee is \$14.00. For further information call Bob Herbert, K8WMW, at 982-1561

Dates for 2008 include:

Aug 9, Sep 13, Oct 11, Nov 08, Dec 13

For further information call Bob Herbert, K8WMW, at 982-1561

Lapeer County Amateur Radio Association

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

Officers

President, Bob Beswetherick, N8NE . 810-653-3856
Secretary, Flo Haack KC8CAB 810-793-2606

Vice-Pres., Chris Azelton, KC8TWL..810-245-0073
Treasurer, Bill Miller, KD8VP.....810-797-5329

Committees & Appointees.

Club Founder.....Hollis Hayes, W8ACD
Club Historian.....Charlie Whipp, KC8JBK
Skywarn Coordinator.....Pete Headrick KB8RSG
Field Day Chairman.....Bill Miller, KD8VP
Two Meter Net Mgr.....Charlie Whipp, KC8JBK
Public Information Officer.....**It could be you!**

Club Call TrusteeW8LAP.....Bill Miller, KD8VP
VE Coordinator.....Al Wilson, N8NPR
Swap & Shop Chairperson.....Bill Miller, KD8VP
Meeting Refreshments.....Bill Miller, KD8VP
Newsletter Editor.....Hank Kohl, K8DD

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.

We have a request for some help!!!

Please let Bill KD8VP or Hank K8DD if you can help.

Hello my name is Kip Kammer N8KIP and I recently moved to Goodrich, Michigan. Due to a long running disability, I am unable to get my 2 dipoles back into the air so that I can resume being a ham on the airwaves. I was hoping that maybe you could assist in helping me. I have an approximately 50 foot tower that was here when I bought the house, and have trees nearby that the dipole can be run to. I was hoping to get them up before summer is over, for as you know once winter hits in Michigan, it is difficult to do any antenna work. Can you please let me know if you will be able to assist in any way. I was looking at Saturday August 23,2008 to get this done. That date is adjustable if it doesn't work for everyone. Please let me know if you will be able to help me at all.

Thank You and 73's

Kip Kammer
N8KIP
n8kip@charter.net

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

West Mountain Rig Blaster Plus – NEW -- \$100

HW-8 Handbook—covers HW-7, 8 & 9 \$15

COM port boards, ISA, 2 ports \$3.00 ea

Icom IC-746 (not PRO), all accessories, 1st & 2nd IF 400 Hz CW filters, orig. box & manuals \$850

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 k8dd@k8dd.com or 810-721-0708

Generators – Honda Generator **Special deal for clubs.**

I came across this deal in an email from the Northern California Contest Club that was forwarded to the Mad River Radio Club. This looks like an excellent offer! I have used an EU1000i in Port Huron powering an Icom IC 765, IC 706MKIIG and a couple of laptops and there was very little, if any, generator noise. The EU2000i generators have been used of quite a few DXpeditions all over the world with no known problems. And its output is a pure sine wave!

The EU2000i lists for \$1080. There is a supplier in Grand Rapids, MI who is willing to work with amateur radio groups on a lower price if we can get at least 10 units ordered. A minimum purchase of 10 generators: \$880 per generator (includes Fedex Ground shipping). And, I believe a generator cover will be included!

Take a look at http://www.steadypower.com/catalog/honda_eu2000.php

If you are interested contact Hank K8DD [k8dd at arrl.net](mailto:k8dd@arrl.net) or see me at the next LCARA meeting!



EU2000i

- 2000 watts (16.7 A) of Honda inverter 120V AC power
- Super quiet - 53 to 59 dB(A)
- Lightweight (less than 47 lbs.)
- Eco-Throttle - Runs up to 15 hr on 1 gal. of fuel

MSRP \$1,079.95*

***Manufacturer's suggested retail price. Price excludes applicable taxes. Dealer sets actual selling price.**

Features Specifications Options

- 2000 watts (16.7 A) of Honda Inverter 120V AC Power
- Super quiet - 53 to 59 dB(A)
- Lightweight (less than 47 lbs.)
- Eco-Throttle - runs up to 15 hr on 1 gal. of fuel
- Advanced inverter technology provides reliable power to computers and other sensitive equipment
- 12v - 8.0A DC output
- Parallel with another EU2000i for additional power
- Protected by Oil Alert®
- Power for microwave, refrigerators, hair dryer, and small AC units
- USDA-qualified spark arrestor/muffler

HONDA

GENERATORS & PUMPS

EU2000i

Specifications

| | |
|------------------------|---|
| Engine | Honda GX100 |
| Displacement | 98.5cc |
| AC Output | 120V 2000W max. (16.7A) 1600W rated (13.3A) |
| Receptacles | 20A 125V Duplex |
| DC Output | 12V, 96W (8A) |
| Starting System | Recoil |
| Fuel Tank Capacity | 1.1 gal. |
| Run Time per Tankful | 4hrs. @ rated load, 15 hrs. @ 1/4 load |
| Dimensions (L x W x H) | 20.1" x 11.4" x 16.7" |
| Noise Level | 59 dB @ rated load 53dB @ 1/4 load |
| Dry Weight | 46.3 lbs. |

**Be Radio-Active
Participate**

And now One way to find where the DX is operating!

Dx Packet Cluster

The **WA8DX** Spider Packet Cluster node is available on **144.970**. At present **WA8DX** is receiving DX info via K8SMC in Jackson 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.

Use your TNC to connect in the command mode and use **C WA8DX** as the command. Once connected you will get a welcome screen that asks for info. You should start to see DX spots right away.

You can also connect via the internet. Telnet to **wa8dx.servebeer.com** port **7300**

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

Remember...DX Is!

N2CQ QRP CONTEST CALENDAR

~~~~~  
SKCC Weekend Sprintathon (Straight Key CW) ... QRP Category

Aug 10, 0000z to 2359z

Rules: <http://www.skccgroup.com/sprint/wes/>

~~~~~  
NAQCC Straight Key/Bug Sprint (CW) *** QRP Contest ***

EDT: Aug 12, 8:30 PM to 10:30 PM

UTC: Aug 13, 0030Z to 0230Z

Rules: <http://www.arm-tek.net/~yoel/contests.html>

~~~~~  
Summer FOX Hunt - QRP 20M CW  
EDT: Tue Aug 12, 9 PM to 1029 PM  
UTC: Wed Aug 13, 0100z to 0229z  
Info: <http://www.qrpfoxhunt.org/>  
~~~~~

SARTG WW RTTY Contest ... Low Power Category
Aug 16, 0000z to 0800z
Aug 16, 1600z to 2400z
Aug 17, 0800z to 1600z
Rules: <http://www.sartg.com/contest/wwrules.htm>
~~~~~

QRP ARCI Silent Key Memorial Contest (CW) \*\*\* QRP CONTEST! \*\*\*  
Aug 16, 1500z to 1800z  
Rules: <http://www.qrparci.org>  
~~~~~

North American QSO Party (SSB) ... 100W Max. (/QRP noted on entry)
Aug 16, 1800z to Aug 17, 0600z
Rules: <http://www.ncjweb.com/naqprules.php>
~~~~~

NJ QSO Party (CW/SSB)  
Aug 16, 2000z to Aug 17, 0700z  
Aug 17, 1300z to Aug 18, 0200z  
Rules: <http://www.gsl.net/w2rj/>  
~~~~~

RUN FOR THE BACON (CW) *** QRP CONTEST ***
EDT: Aug 17, 9 PM to 11 PM
UTC: Aug 18, 0100z 0300z
Rules: <http://fpqrp.net:80/fpqrpun.php>
~~~~~

Summer FOX Hunt - QRP 20M CW  
EDT: Tue Aug 19, 9 PM to 1029 PM  
UTC: Wed Aug 20, 0100z to 0229z  
Info: <http://www.qrpfoxhunt.org/>  
~~~~~

Hawaii QSO Party (CW/SSB/Digital) ... QRP Category
Aug 23, 0700z to Aug 24, 2200z
Rules: http://www.karc.us/hi_qso_party.html
~~~~~

Ohio QSO Party (CW/SSB) ... QRP Category  
Aug 23, 1600z to Aug 24, 0400z  
Rules: <http://www.oqp.us/>  
~~~~~

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Thanks to SM3CER, WA7BNM, N0AX (ARRL), N2APB, WB3AAL 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 in order to 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 - N2CQ** [n2cq@arri.net](mailto:n2cq@arri.net)

# 3rd Annual Family

FREE Stuff  
for pre-registering



Lots of  
helpful  
material



# Preparedness Day

When: **Saturday, Sept. 6, 2008**

**9:00am until 1:00pm**

Rain or Shine!

Where: **The Old Court House Lawn in Lapeer**

Hands on  
demonstrations



Lots of  
Door Prizes



Learn to:

- Make a family preparedness plan
- Building an Emergency Supply Kit
- Have fun and play games!

FREE Readiness Starter Kits for those that pre-register  
*(quantities limited)*

## Emergency Vehicles



Specialty  
Teams



Items to start  
your own  
Disaster Kit



Pet Preparedness



Fun Stuff  
for Kids



Hosted by:

Lapeer County Office of Emergency Management  
and

Lapeer County CERT Team  
2332 W. Genesee Street, Lapeer, MI 48446  
810-667-0242

[www.lapeercountyemd.org](http://www.lapeercountyemd.org)

**PLEASE NOTE:**

Pre-registration does not start until August 2008.

**2007-2008 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