



The Feedline

“W9JZ – SERVING AMATEUR RADIO SINCE 1933”

Volume 26, Number 4

Club Information

2005 FLARC Officers

Frederick Baguhn W9GOC - President
John Steffi KOZYA - Vice President
Gary Muskat KA9SRM - Secretary
Don Michalski W9IXG - Treasurer

Board Members at Large

Phil Carlson WBOCLI
Steven Elliott W9RAL
Thomas Komsi KC9EUC

CALENDAR OF CLUB EVENTS, etc.

Our club meetings are usually held the third Tuesday of the month at the Red Cross building in Madison, 4860 Sheboygan Avenue. Regular meetings start with the business meeting at 7:30 PM, followed by the program unless otherwise noted. They are subject to change.

Saturday morning “Zilch” locations

The Eastside Zilch (ham breakfasts) are at 7:30 AM at the Green Lantern on the west end of Siggelkow Road in McFarland. The Westside Zilch is at 10:00 AM at Village Green at 7508 Hubbard Ave. in Middleton. See you there.

Madison Area InfoNet

Thursday evenings on 147.15 at 8 PM; 146.76 is the backup frequency. Traffic and check-ins are welcome.

Madison Ham Web Page

Website is at <http://www.gsl.net/flarc>. Keep checking the links page for new goodies!

Meeting dates and programs

April meeting is to be held on April 19.

Program Topic is Direction Finding.

May Fox Hunt, May 14, Village Green @ 12noon.

May meeting is to be held on May 17.

Program Topic is the N1MM logging program.

June meeting is to be held on June 21.

Program will be at Badger Prairie Park, Field Day preparations.

Field Day is weekend of June 25-26.

The Prez Says

Greetings to all!

Thank you to all who participated in the March show-and-tell meeting! John/ KOZYA reports that new faces were seen at the meeting, and Don/W9IXG tells me that FLARC has crossed the 100 member threshold! Thank you also to John for presiding at the March meeting in my absence.

This month's featured presentation will be our own KOZYA, the trophy-winning champion Direction Finder. John will be sharing some of his secrets for hardware selection, antenna manipulation and perhaps even a bit of strategy (??) on direction finding / fox hunting. [John will be participating in the Spring foxhunt, but in the role of the Fox - - learn his methods, and see if you can find him while the sun is still visible!] The Spring foxhunt will be only 26 days from our April general meeting, so it is time to check your antennas, reacquaint yourself with their peak and null patterns, and decide if you'll need an attenuator or some other magic direction-finding aid.

Upcoming events:

- MARA Hamfest in Stoughton, 17 April.
- VE Testing session at Space Place, 8:00 - 10:00 AM, 7 May.
- Spring Foxhunt - - 14 May, following Zilch in Middleton <details elsewhere in the Feedline>
- DAYTON Hamvention, 20-22 May
- General Class at Space Place, 21-22 May
- Field Day, Badger Prairie Park - Verona, 25-26 June

Looking forward to seeing you at the meeting - -

73, Frederick

FLARC Treasurer's Report

From the March 15th meeting, at the end.

Balance in the treasury is \$4,081.12.

There are **100** members.

Don, W9IXG

The 2005 Madison Hamfest & Computer Fair

Sunday April 17, 2005; 8:00am until 1:00pm
(Dealer Set-Up Saturday Night and Sunday Morning.)

Talk-in Frequency: 147.75/15 MHz.

Featured vendors of new and used equipment for Amateur Radio, Electronics and Computer enthusiasts as well as computer software in the Mandt Community Center's spacious 25,000 sq. ft. main hall! **SEE THE FLYER AND MAP NEAR THE END OF THIS NEWSLETTER.**

FLARC will have a booth at the Hamfest and will be showing the following items of interest.

- EchoLink[®] information and demonstrations.
- PSK31 using an HF radio link and software.
- Keyer Demo, A blast from the past keyer and one of the newest kits, the PICO keyer.

As a FLARC member, stop by and lend your support to the program.

BPL Report

ARRL Bulletin 9 ARLB009

From ARRL Headquarters

Newington CT March 24, 2005

To all radio amateurs

ARRLB009 League files opposition to BPL reconsideration petitions.

The ARRL has filed an Opposition to three petitions for reconsideration in the broadband over power line (BPL) proceeding, ET Docket 04-37. The League's filing targets points raised in reconsideration petitions from Current Technologies LLC, the United Power Line Council

(UPLC) and Amperion Inc. Each seeks reconsideration of certain aspects of the Report and Order (R&O) the FCC adopted last October, spelling out new Part 15 rules to govern BPL deployment. In its Opposition, the ARRL says the FCC should not eliminate its requirement that BPL providers give 30 days' advance notice of service initiation, as Current, UPLC and Amperion have requested.

"Grant of the petitioners' request to eliminate the 30-day advance notice requirement would not only be antithetical to the Commission's goal of providing competitive, affordable and efficient broadband access;" the ARRL said, "it would also eliminate even the most minimal means for Amateur Radio licensees to be able to identify and contact the source of harmful BPL interference when it occurs."

Keeping the 30-day notification period in place, the ARRL argued, offers radio amateurs a chance to determine baseline ambient noise levels ahead of a BPL deployment and to be able to identify interference when it occurs and the extent to which the HF and low-VHF operating environment is degraded.

The ARRL also took issue with requests by Current and UPLC either to extend the transition period for certification of BPL equipment made, marketed or installed on or after July 7, 2006, or to drop it altogether. Either approach, the League contended, "is tantamount to an abdication of any requirement to implement any of the admittedly inadequate interference mitigation requirements in the Report and Order at all."

As the rule is written, the League's Opposition points out, "no BPL system placed in operation ever has to come into compliance with the interference requirements." The ARRL maintains that the FCC erred in its R&O by permitting the installation and operation of non-compliant equipment after the R&O's effective date.

The League Opposition also commented that the FCC "has not adopted any rules that will protect licensees in the Amateur Service from interference from BPL systems."

In its own Petition for Reconsideration in

February, the ARRL asked the FCC to "reconsider, rescind and restudy" the October BPL R&O, calling the FCC's action to permit BPL "a gross policy mistake."

More BPL Information

BPL INHERENTLY FLAWED, LEAGUE CEO TELLS BROADBAND ALTERNATIVES CONFERENCE

ARRL Chief Executive Officer David Sumner, K1ZZ, told a New York City conference on "Alternative Broadband Platforms" March 18 that broadband over power line (BPL) has "an inherent technical flaw"—interference potential--that cannot be completely nor inexpensively eliminated. He also told the gathering that no BPL system operator can guarantee that its system will always work or that it will be allowed to operate. Sumner said the problem is simple: Power lines were not designed to carry broadband signals, so they can't do it very well.

"BPL is not a radio spectrum user. It is a radio spectrum polluter," Sumner told the Columbia Institute for Tele-Information (CITI) workshop, "Alternative Broadband Platforms: Can They Compete With Fiber Optics? Where?" at Columbia University. "And if the pollution causes harmful interference to an authorized radio station, the BPL system operator has the absolute burden of fixing it--even if that means shutting off the system."

Sumner asked his audience to keep this unique shortcoming of BPL in mind as they compare and consider the alternative broadband platforms discussed. The 70 conference participants included BPL manufacturers and proponents as well as individuals involved in some aspect of broadband telecommunications, members of the academic community and students.

Directed by Eli Noam, KE2PN, CITI held its first workshop on BPL—then called PLC--in February 2002 and has held several more since. This month's event was the first in which ARRL was invited to participate. The conference's entire morning session was devoted to BPL.

In addition to the question of interference,

Sumner also raised the legal obstacles confronting BPL. "I think you can see--or hear--why we radio amateurs are concerned," he said after showing the audience a video clip of BPL interference recorded in Briarcliff Manor, New York, last December. "But anyone who is thinking about investing in BPL should also be concerned, because the interference you just heard is illegal," he continued. "It is prohibited by the international radio regulations of the International Telecommunication Union, which the United States must observe as a treaty obligation. It is prohibited by the Communications Act. It is prohibited by the FCC's own rules."

Sumner also spoke about BPL interference complaints involving pilot projects in Iowa and Texas.

The emission limits the FCC has applied to BPL originally were established with intermittent, narrowband, point-source radiators in mind, Sumner explained. "Applying them to a high duty cycle, broadband emitter that is attached to a long conductor such as a power line is like saying that there's no difference between the noise of a helicopter that goes over your house once a day and one that hovers over your back yard all the time," Sumner said. "You wouldn't complain about the first, but you'd raise quite a fuss about the second."

Most workshop participants, Sumner said, appeared to believe that fiber optic cable close by or to the home--or a combination of fiber and coaxial cable--would be most likely to provide a broadband pipeline in 10 years. "They also liked wireless because of mobility and portability," he added. When asked at the end of the day who would invest in BPL, "only two or three hands went up."

Sumner's prepared remarks plus additional material relating to his CITI presentation are available on the ARRL Web site <http://www.arrl.org/tis/info/HTML/plc/presentations.html>.

The Big Project Update

The Big Project has had equipment installed at the Mt. Horeb Middle School. The ARRL radio equipment package, along with equipment from the Mas Iyama Family, has been setup in the "Ham Radio Shack" at the school. The thing missing right now is the antenna, which has been on backorder from the supplier. Tom, KC9EUC, is purchasing additional parts for the Feedline run and shall be ready for installation assistance when the antenna arrives.

Don, W9IXG, has been in contact with a ham interested in the Iyama antenna and tower. Updates will be forthcoming once an on-site review by the ham can be made.

Remember, each month, updates on The Big Project can be found in this section of *The Feedline*.

Amateur Radio Emergency Communications Courses

The grants that sponsor and pay for the tuition to the Amateur Radio Emergency Communications Courses is in its third and final year. Those radio Amateurs who have not taken the on-line training yet, are encouraged to do so. Registration information may be found at <http://www.arrl.org/cce/>.

Don, W9IXG, Wisconsin Section Manager, ARRL

FLARC receives SSC renewal

March 2, 2005

Four Lakes Amateur Radio Club
Donald Michalski, W9IXG
4214 Mohawk Dr.
Madison, WI 53711-3723

Dear Don:

We are pleased to report that the Four Lakes Amateur Radio Club has been officially renewed as a Special Service Club. The next renewal for the club will be in two years. Through the work

of its members, this club is recognized for its continued efforts on behalf of Amateur Radio and services to its community.

You are to be commended for your work with the club in helping it realize and maintain its potential. Because you have been so closely associated with the club during the development of its SSC commitment, we want to give you the opportunity of informing the club directly of its success. The club will continue to receive periodic mails of materials and information from Headquarters. Please be sure to keep your contact information up to date and current.

Congratulations, and thanks for your good work! If we can be of further assistance, please do not hesitate to contact us.

^ 73, Margie Bourgojn, KB1DCO, ARRL HQ

W1AW 2005 Spring/Summer Operating Schedule

Congratulations once again to everyone who passed the technician exam and got your new amateur radio license. Now that the first step has been completed, you are probably thinking about the General test, and of course, the Morse code. And that is great, because the ARRL has a regular schedule for you so you can learn to copy and translate Morse code better.

The ARRL has a regular schedule of transmissions which are used to bring information and training to amateur radio operators, and below is the summer schedule for 2005.

From ARRL Headquarters, ARRL Bulletin 11
Newington CT April 4, 2005
W1AW 2005 Spring/Summer Operating Schedule

Morning Schedule:

Time	Mode	Days
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1300 UTC (9 AM ET)	CWs	Wed, Fri
1300 UTC (9 AM ET)	CWf	Tue, Thu

Daily Visitor Operating Hours:

1400 UTC to 1600 UTC - (10 AM to 12 PM ET)
1700 UTC to 1945 UTC - (1 PM to 3:45 PM ET)
(Station closed 1600 to 1700 UTC (12 PM to 1 PM ET))

Afternoon/Evening Schedule:

2000 UTC (4 PM ET)	CWf	Mon, Wed, Fri
2000 " "	CWs	Tue, Thu
2100 " (5 PM ET)	CWb	Daily
2200 " (6 PM ET)	RTTY	Daily
2300 " (7 PM ET)	CWs	Mon, Wed, Fri
2300 " "	CWf	Tue, Thu
0000 " (8 PM ET)	CWb	Daily
0100 " (9 PM ET)	RTTY	Daily
0145 " (9:45 PM ET)	VOICE	Daily
0200 " (10 PM ET)	CWf	Mon, Wed, Fri
0200 " "	CWs	Tue, Thu
0300 " (11 PM ET)	CWb	Daily

Frequencies (MHz)

CW: 1.8175 3.5815 7.0475 14.0475 18.0975
21.0675 28.0675 147.555
RTTY: 3.625 7.095 14.095 18.1025 21.095
28.095 147.555
VOICE: 1.855 3.990 7.290 14.290 18.160
21.390 28.590 147.555

Notes:

CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 and 15 WPM
CWf = Morse Code practice (fast) = 35, 30, 25, 20, 15, 13 and 10 WPM
CWb = Morse Code Bulletins = 18 WPM
CW frequencies include code practices, Qualifying Runs and CW bulletins.

RTTY = Teleprinter Bulletins = BAUDOT (45.45 baud) and AMTOR-FEC (100 Baud). ASCII (110 Baud) is sent only as time allows.

Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and at the beginning of alternate speeds.

On Tuesdays and Fridays at 2230 UTC (6:30 PM ET), Keplerian Elements for active amateur satellites are sent on the regular teleprinter frequencies.

A DX bulletin replaces or is added to the regular bulletins between 0000 UTC (8 PM ET) Thursdays and 0000 UTC (8 PM ET) Fridays.

In a communications emergency, monitor W1AW for special bulletins as follows: Voice on the hour, Teleprinter at 15 minutes past the hour, and CW on the half hour.

FCC licensed amateurs may operate the station from 1400 UTC to 1600 UTC (10 AM to 12 PM ET), and then from 1700 UTC to 1945 UTC (1 PM to 3:45 PM ET) Monday through Friday. Be sure to bring your current FCC amateur license or a photocopy.

The complete W1AW Operating Schedule may be found on page 97 in the April 2004 issue of QST or on the web at, <http://www.arrl.org/w1aw.html>.

BARS at Engineering EXPO

The Badger Amateur Radio Society (BARS), W9YT, will be participating at the UW Engineering EXPO, being held April 14 - 16, 2005 in the Engineering Buildings on the University of Wisconsin, Madison campus. The event is open to the public, and if you are a member of BARS, their President, Jacob, KC9CJW, would like to encourage you to become involved for a couple of hours during the festivities. Hours are 8am to 4pm on Thursday and Friday, and 9am to 4pm on Saturday. Contact Jacob at jaela@wisc.edu. And come have fun!

MDXC Scholarship Announcement

The Madison DX Club has a program to provide local students enrolled in an institution of higher learning with financial assistance. The structure of the program is in place and a number of contributions have been received. The program is off to a good start. Any financial contribution you might make to the program will make more and larger scholarships available. A donation form is attached. Complete details of the program are available at <http://www.madisondxclub.org>. If you know of a ham who will be (or is) "attending

college", please pass on the information about this program.

Programs for FLARC Meetings

We need lots more ideas and topics for programs to present at our meetings. So let us hear from you.

Send your ideas to Frederick, W9GOC, or to one of the FLARC Board Members. Thanks for your support.

FLARC Web Site

The FLARC URL is <http://www.gsl.net/flarc>
If you see any errors, please let us know.

Elmers

If you are interested in being an Elmer, one who helps newcomers get started in ham radio, contact Gary Dennis, KG9FL.

VE Testing Program

Sam Rowe, KG9NG, is the acting VE Team Chairman.

The VE directed amateur radio license exams are given at SPACE PLACE on South Park Street on the FIRST SATURDAY OF THE MONTH.

Wisconsin Section News

Keep in touch with the ham action in Wisconsin by going to the Wisconsin section website:
<http://www.arri.org/sections/?sect=Wl>.

73, Don, W9IXG, Wisconsin Section Manager

Buck Nite Winner at FLARC

Frank Holliday, WB9NOV, was the winner.

Awards Checkers

Checker for the WAS Award is Gari, NG9V. When you are ready, just contact him; he'll be glad to do it, 608-221-2022 or gberliot@ameritech.net.

Checker for the VUCC awards is Richard, K9APW. Contact him at 608-833-0011 or k9apw@arri.net.

BUY — SELL — TRADE

ATTENTION FLARC MEMBERS: If you have amateur radio or computer items that you would like to BUY, SELL, or TRADE, you can do it in the *Feedline*. There is no charge for non-commercial advertising.

Your Ham Shack Using Linux Computers

Harv Nelson, AI9NL, has put together a great opportunity for shack operators looking at using the Linux computer operating system. Visit his site at the following link to learn more.

<http://hamshack-hack.sourceforge.net/>

Please remember, FLARC does not endorse or recommend any products, and users of items presented in *The Feedline* should use appropriate caution when making changes to electrical systems.

Mission Statement

The Four Lakes Amateur Radio Club

The Four Lakes Amateur Radio Club (F.L.A.R.C.) is a non-profit, general interest club that exists to promote the growth and enjoyment of Amateur Radio in South-Central Wisconsin. The club's mission is to encourage new operators, enhance the skills and interests of those already licensed

and to provide communications in the event of disasters or other emergencies. To accomplish this mission, F.L.A.R.C. will:

- Schedule regular meetings with informational programs and the opportunity for informal fellowship.
- Publish a monthly newsletter for the membership.
- Sponsor training classes.
- Sponsor Volunteer Examinations.

The Feedline is the regular monthly newsletter of the Four Lakes Amateur Radio Club (FLARC). The editor for *The Feedline* is Steve Elliott, W9RAL, and can be contacted at (608) 345-2286 or e-mail: w9ral@aol.com.

Member Birthdays

April:

- 2 KB9LYM - Jackie Jeardeau
- 3 WBOCLI - Phil Carlson
- 4 W9RNF - Sharon Toal
- 6 K9APW - Richard Lust
- 9 KC9BFD - Emily Baguhn
KA9BYD - John Hicks
- 18 KB9UOL - Michelle Godfrey
- 23 KC9FNF - Carter Wegner
- 26 KC9AJN - Dorothy Sorge

May:

- 2 W9IXG - Don Michalski
- 3 WOROT - Peter Fribley
- 4 W9DGI - Daniel Gomez-Ibanez
N9HNN - John Pellett, MD
- 5 KA9SSI - James F. Hill
- 7 DL7AOW - Jens Freybank
KC9EUC - Thomas Koms
- 20 N9GTB - William Steaffens
- 22 K9KVA - Joseph Turner

And Another Hamfest

Dear Radio Enthusiasts,

Please pardon my intrusion, but I would like to remind you that on Saturday April 16th, 2005 is the North Shore Radio Club Hamfest at Grayslake.

For more information about the event or to

purchase advance tickets and tables, see the club website at <http://www.ns9rc.org/>

Jacob Fishman, NE0NS
Hamfest Chairman

Information About J-pole Type Antennas

Here is a website which may help you find information about J-pole antennas.

www.dxzone.com/catalog/Antennas/J-Pole/

FCC and Morse Code, restructuring proposals could be out by mid-year

ARRL Bulletin 8, ARLB008
From ARRL Headquarters
Newington, CT, March 1, 2005
To all radio amateurs:

The FCC continues to work toward developing a Notice of Proposed Rule Making (NPRM) that will spell out what the Commission has in mind with respect to possible changes in the current Morse code requirement and Amateur Radio licensing.

A total of 18 petitions have been filed, including one from the ARRL, seeking Part 97 rule changes addressing the future of the 5 WPM Morse requirement (Element 1) and revisions to the overall Amateur Radio licensing structure. The FCC plans to tackle all 18 in a single proceeding.

On the code issue, petitions--and comments in response to them--run the gamut from retaining or even beefing up the Morse requirement to eliminating it altogether. (The ARRL's proposal would retain the 5 WPM Morse examination for Amateur Extra class applicants only.)

The League and others have also put forth proposals for a new entry-level Amateur Radio license class. At this point, personnel in the FCC Wireless Telecommunications Bureau are continuing to review the thousands of comments filed on the 18 petitions.

While the FCC appears unlikely to release an NPRM any sooner than mid-year, the issue still may be a major discussion topic during the FCC Forum at Dayton Hamvention, May 20-22.

Once public, the NPRM would initiate another round of public comments on what the FCC has proposed. An FCC Report and Order implementing any new rules is unlikely before the second half of 2006, although it's possible the Commission could wrap up the proceeding before then.

Amateur Radio Spectrum Protection Act of 2005 Introduced

ARRL Bulletin 7, ARLB007
From: ARRL Headquarters
Newington, CT, March 1, 2005
To all radio amateurs.

At the urging of the ARRL, Rep Michael Bilirakis (R-FL) has introduced The Amateur Radio Spectrum Protection Act of 2005 into the US House of Representatives. The bill, designated HR 691, has been referred to the House Energy and Commerce Committee where Bilirakis serves as vice chairman. Like previous versions of the proposal, the current measure would require the FCC to provide "equivalent replacement spectrum" to Amateur Radio if the FCC reallocates primary amateur frequencies, reduces any secondary amateur allocations, or makes additional allocations within such bands that would substantially reduce their utility to amateurs.

ARRL President Jim Haynie, W5JBP, says the legislation "is vital for ensuring that the Amateur Radio Service, the only 100-percent fail safe emergency communication capability, remains a viable public safety option."

HR 691 references Amateur Radio's role in providing "voluntary, noncommercial radio service, particularly emergency communications," and it points out that hams have "consistently and reliably" provided communication support in the event of emergencies and disasters including tornadoes and hurricanes, chemical spills, forest fires and rail accidents. As the measure notes,

FCC actions already have led to the loss of at least 107 MHz of spectrum to radio amateurs.

Rep Roscoe Bartlett (R-MD) has signed on as the bill's first co-sponsor.

Efforts now will focus on attracting additional cosponsors for the legislation. The League is encouraging members to urge their congressional representatives to sign aboard HR 691. More than 100 lawmakers agreed to cosponsor similar legislation in the 108th Congress, where it was designated HR 713. Work is proceeding to have identical legislation introduced in the US Senate.

The text of HR 691 is available on the Government Printing Office Web site
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:h691ih.txt.pdf

Spring Into Wisconsin 2005

Attention All Interested HAMS

On Saturday May 7 2005 the third annual Spring Into Wisconsin Bike Ride will be held.

The 15, 30, or 65 mile ride will begin and end at Sheehan Park in Sun Prairie, WI. It will start at 10:30 a.m. The ride is sponsored by Cyclist Against Cancer and Trek Bikes. The ride is a fund raiser for the Lance Armstrong Cancer Foundation. All proceeds from the ride are going to the Lance Armstrong Cancer Foundation.

We will need SAG vehicles, operators for the Bicycle Repair Vans, Operators at Rest Stops, A Shadow for the coordinator, and 2 Net Control Stations.

A free T-shirt and post-event dinner will be provided to everyone who volunteers.

Remember, not having any equipment is not an excuse! Radio equipment can be provided to you for the event.

This is a great training exercise in communications for a worthy cause and we hope you can participate.

If you are interested in helping with this ride contact Dave Deiler, Kb9jqv@arrl.net

For more information check out this link, <http://www.springintowisconsin.com/>

Thanks!! Hope to hear from you soon!!!

Dave Deiler - KB9JQV

FLARC Is Having A Fox Hunt!

Yes, you heard that right, a Fox Hunt. May 1, 2005, FLARC will be having a Spring Fox Hunt. The Hunt will begin at the Village Green Restaurant in Middleton, Wisconsin, at 12 noon. The Village Green is located at 7508 Hubbard Ave. in Middleton. Come early if you want and join the Saturday Morning Zilch crowd to be nourished prior to the start of the Hunt. This Spring's Fox will be John Steffl, KOZYA.

FLARC will be having a talk on building and using Direction Finding (DF) antennas at the April meeting, also being presented by John, KOZYA.

Fox Hunting is a wonderful sport for amateur radio operator's and is a chance to practice those skills which have dormant for the winter. **Come on out and have some FUN!**

Amateur Radio Web Sites

MARA	www.qsl.net/mara
WAR	www.wi-repeaters.org
MDXC	http://www.madisondxclub.org
N9MW	http://www.n9mw.com (DX-Cluster)
SMC	http://www.w9smc.com

Dane County ARES/RACES
http://groups.yahoo.com/group/dane_co_ares-races/
(has a current listing of Public Service Events)

Note: The Wisconsin Association of Repeaters (WAR) site, <http://www.wi-repeaters.org/>, will provide a current list of all repeaters in the state of Wisconsin. You can get the list sorted by frequency, by city or by region. The list has the offset, tone frequency, availability of auto patch, emergency power, owner, if open and if it's associated with emergency nets.

MDXC works with Internet Explorer and not with some versions of Netscape.

Other interesting sites are www.qsl.net and www.qrz.com. There are many, many links to other sites, which promote things from antennas, antenna construction to software. Also www.ac6v.com and www.cpcug.org/user/wfeidt/index.htm are full of links about ham radio. The latter is NG3K Amateur Radio Contest/DX page with the link ADXO, Announced DX Operations.

If you click on some of these URLs, they may not work and you will get an error message. They are OK if you type them into your browser.

Also, the ARRL Letter is a weekly update of amateur radio news, which can be found at: <http://www.arrl.org/arrlletter/>.

General License Class Coming

Space Place Amateur Radio Center (N9UW)
1605 South Park Street
Madison, WI 53715

presents another Amateur Radio General Class Workshop-- May 21, 22 !!

You need, of course, a Technician or Novice license as a pre-requisite.

Here is a weekend workshop to help you upgrade your Novice or Technician Class ham radio license to General Class. Earn new privileges that will enable you to explore all the ham bands, try out new modes, and get into worldwide communications. A license examination session on Sunday afternoon concludes the workshop, so can upgrade your license to General Class in only two days. (The workshop covers the written element but does not cover 5 wpm Morse Code, which is required to earn the General Class license.)

The workshop is free-even refreshments are provided! (There is, however, an exam fee of \$14.00 to cover administrative costs.) To prepare you must get a copy of the ARRL General Class License Manual (5th ed., \$16.95), which is available via web or mail order from the American Radio Relay League: www.arrl.org/catalog. (Check the ARRL web site for lots of information about ham radio.) You will receive suggestions for studying after you register. AES in Milwaukee sells the book, also. www.aesham.com.

Go to <http://www.spaceplace.wisc.edu/SPARC.shtml> for additional information.

Please tell us your age if you are a high school student or younger. Register soon! Class size is limited to 25. Email Don Michalski at w9ixg@arrl.org or call 608-274-1886.

If you already have your General, please pass this information around. I have included a flyer for you to post at your place of employment, also!

AMATEUR RADIO EARNS KUDOS FOR TOPOFF 3 PERFORMANCE

The ARRL Letter
Vol. 24, No. 14
April 8, 2005

The role of Amateur Radio Emergency Service (ARES) volunteers in Connecticut in this week's massive TOPOFF 3 exercise has drawn praise from the American Red Cross, for which ARES provided virtually all radio communication. Sponsored by the US Department of Homeland Security and intended as a realistic test of the nation's homeland security system, TOPOFF 3's goal was to push the system of first responders beyond its limits to find the weak spots. American Red Cross emergency services director Mario J. Bruno extolled ARES' performance.

"Operators were there when we needed them, and messages got to where they were needed," he said in a note to ARRL Connecticut Section leadership. "We have learned a lot about what ARES can really do when things get messy, and TOPOFF 3 has been a clear example of how complicated a disaster can get."

Bruno said the Red Cross doesn't have to worry if today's fancy telecommunications devices fail, because ARES will always be there to provide the needed support. "Thank you ARES for helping us respond to the largest disaster exercise in the history of the United States," Bruno concluded. "We will not forget."

Connecticut's phase of TOPOFF 3 began April 4

with a bang--an explosion in New London meant to simulate a terrorist attack. "Loud enough that the organizers passed out earplugs for the media gathered on the bluffs above," recounted ARRL Media and Public Relations Manager Allen Pitts, W1AGP—a former Connecticut Section Emergency Coordinator and current ARES member.

Visual realism was very much a part of the \$16 million exercise, and prospective ARES volunteers were cautioned in advance. "As the mushroom cloud of smoke drifted away," Pitts said, describing the explosion's immediate aftermath, "hundreds of gory victims processed into the site to assume positions of death and agony." Pitts says Amateur Radio's real work only began in earnest after the media also drifted away, once the smoke and simulated blood were gone.

After ARES stood down from the drill late on April 6, ARRL Connecticut Section Manager Betsey Doane, K1EIC, and SEC Chuck Rexroad, AB1CR, said they felt Amateur Radio acquitted itself very well during the drill.

"The energy, enthusiasm and absolute dedication of all the volunteers for this event are a testament to the real dedication and teamwork in the Connecticut Section," Doane said in a statement thanking all who took part.

Rexroad agreed. "It's just been amazing," he said. "People came into this drill prepared and ready to stay. It was a very positive experience."

Under the National Disaster Plan, the Red Cross has primary responsibility for mass care. ARES provided communication among all of the Red Cross emergency response vehicles (ERVs), mobile canteens, kitchen, headquarters and other sites the organization needed stay in touch with.

In all, as many as 40 of the 150 ARES volunteers from Connecticut and other states in the Northeast were deployed to the field at any given time, and everyone got to take part at some point. "Everybody had a job to do," Rexroad said. "Everyone had at least one shift when they were able to get on the radio and provide communications support."

Doane also credited the ARRL Amateur Radio

Emergency Communications courses and other training with raising the overall level of operating skill—even among newer operators.

"There were a few new people that were assigned to be observers, and before the end of the drill ended up trained well enough to be an operator on an ERV," she said. "I have to tell you, I was impressed."

TOPOFF 3 required participants to be ready for unexpected events, and the ARES operation was no exception. "The only big curveball we got thrown was when one of the judges decided they were going to take one of our repeaters down," Rexroad explained. Connecticut ARES was able to promptly switch to a backup. Ironically, a genuine repeater breakdown occurred just before the exercise got under way.

Rexroad and Doane agreed that TOPOFF 3 not only was a success but a helpful learning experience for ARES. "We learned a fair number of lessons, and most of them were organizational, not technical, in nature," Rexroad remarked.

Rexroad says Connecticut ARES also prepared to assist the Connecticut Office of Emergency Management and actually activated several of its stations to show the state officials that it had the back-up coverage in case they needed it.

A bioterrorism incident was the scenario in New Jersey--the only other TOPOFF 3 site. Emergency officials there not only were key to the exercise, they had real problems owing to flooding in the northern part of the state. ARES teams in New Jersey, New York and Pennsylvania participated in the flood emergency response and relief effort.

Brian Fernandez, K1BRF, a Connecticut Assistant SM and ARES liaison to the Red Cross said Amateur Radio's performance in TOPOFF 3 did not go unnoticed within the Department of Homeland Security. "Amateur Radio made a major contribution to the nation," he said, "and those who contribute to making it safer and stronger and folks in the right places know it."

Badger Amateur Radio Society (BARS)

For those of you who utilize the 146.685 MHz, p123.0 Hz (W9YT), repeater in the Madison area, the Badger Amateur Radio Society (BARS) is the group which operates this equipment. The BARS group is the student based organization of the University of Wisconsin, and is open to amateur radio operators who are students, alumni, or just involved in amateur radio. BARS meetings are the first and third Thursday of the month, at 5:00 pm, in the Engineering Centers Building, ECB1055, on the UW campus (just north of Camp Randall Stadium). Meetings are held during the school year, so summers are free for other activities.

The BARS president, Jacob Ela, KC9CJW, would like to encourage you to come to a BARS meeting and find out the types of things BARS is doing in our amateur radio community. BARS has setup the EchoLink® simplex station here in Madison, on 147.510 MHz, p1 123.0 Hz. Please visit the BARS website for more information about BARS and the activities they are doing,
<http://w9yt.engr.wisc.edu/> .

FOR SALE ITEMS

FOR SALE

- Azden PCS-6000 6 meter FM, 50 watt mobile rig. \$200.00
 - Cushcraft R7, hf vertical \$30
 - Alinco DR-MO3 10 meter fm mobile. \$50.00
- If interested call Kevin KF9AQ at 608-273-0956

EQUIPMENT FOR SALE

ALL ITEMS WORK ACCORDING TO SPECIFICATIONS AND ARE IN MINT CONDITION

- MH-C777 Universal battery charger: \$45.
- Astron 35M PS: \$95.
- Astron 20A PS: \$55.
- Kenwood KPS 15 PS: \$65.
- MFJ 1275B TNC: \$55.
- MFJ 1275 SC Interface: \$55.
- MFJ 969 antenna tuner: \$59.
- Yaesu 2600M 2-meter transceiver: \$85.

If interested, contact Jim Lackore, AD9X, at 608-233-3902 (home), 608-770-3902 (cell).

For Sale

- Tektronix Type 535 Oscilloscope
 - Plug-in unit # 53/54K
- Contact KC9GDI, Woody Pfeffer, 608-592-5313.

For Sale

A former ham has some gear to sell. His email explains:

From: Dr Mason <amason@aipathology.com>
To: <w9ixg@arrl.org>
Sent: Sunday, January 02, 2005 1:18 PM
Subject: equipment for sale

I am a former ham (WA9IQY) and I have a relative who passed away a couple of years ago who exported amateur radio equipment. I have a number of HAM-IV rotors for 220v 50-60hrz as well a[s] one sidewinder rotor. I have bench tested all of them and they are in perfect working order. I also have several Mosley multi band beams which

were in a basement and the boxes got wet, but the antennas are like new. Do you have a suggestion as to how I might try to sell these items? I live in Wausau, WI.

Thanks for your assistance,
Al Mason

For Sale

- PL 259 connectors are \$1.25 each.
- 100MFD/450VDC electrolytic capacitors (NOS) \$1.50 ea or 4 for \$5.00.

Contact the FLARC President for more information.

Advertisers

The club is always looking for advertisers for our club. This helps defray the cost of the news letter some. If you have a candidate(s) in mind; see Don or any board member for details. It is a good way for some business to get exposure and help the club out. It isn't very expensive at all. Contact Don, W9IXG or Frederick Baguhn, W9GOC.

Tom's Auto Clinic

2652 E. Washington Avenue
Madison, WI 53704
608-241-3391

Steve - N9CK Marylynn - K9SAM

Phasor Labs

cforster@phasorlabs.com

Contest Calendar

Another source of contest dates has been suggested instead of the one below. The source is <http://home.online.no/~janalme/hammain.html/>. They overlap quite a bit and each has contests that the other does not have. Furthermore, they disagree on some dates and times. The above site has the advantage of having links to the rules. The following is excerpted from:

WA7BNM 13-Month Contest Calendar Last updated January 26, 2005

Please note that you may not be able to operate during all of the total hours of the contests listed below. Total operating time may also vary by entry category. See individual contest rules for allowed operating hours. <http://www.hornucopia.com/contestcal/contestcal.html>

April, 2005	
SP DX Contest	1500Z, Apr 2 to 1500Z, Apr 3
EA RTTY Contest	1600Z, Apr 2 to 1600Z, Apr 3
Missouri QSO Party	1800Z, Apr 2 to 0500Z, Apr 3 and
	1800Z-2400Z, Apr 3
QCWA Spring QSO Party	1800Z, Apr 2 to 1800Z, Apr 3
144 MHz Spring Sprint	1900 local - 2300 local, Apr 4
RSGB 80m Club Championship, CW (Apr)	2000Z-2130Z, Apr 4
ARS Spartan Sprint (Apr)	0200Z-0400Z, Apr 5
YLRL DX-YL to NA-YL Contest, CW	1400Z, Apr 6 to 0200Z, Apr 8
SARL 80-Meter QSO Party	1700Z-2000Z, April 7
JIDX CW Contest	0700Z, Apr 9 to 1300Z, Apr 10
ARCI Spring QSO Party	1200Z, Apr 9 to 2400Z, Apr 10
EU Spring Sprint, SSB	1500Z-1859Z, Apr 9
Georgia QSO Party	1800Z, Apr 9 to 0359Z, Apr 10 and
	1400Z-2359Z, Apr 10
UBA Spring Contest, SSB	0600Z-1000Z, Apr 10
SARL Hamnet 40m Simulated Emerg Contest	1200Z-1400Z, Apr 10
222 MHz Spring Sprint	1900 local - 2300 local, Apr 12
YLRL DX-YL to NA-YL Contest, SSB	1400Z, Apr 13 to 0200Z, Apr 15
RSGB 80m Club Championship, SSB (Apr)	2000Z-2130Z, Apr 13
Holyland DX Contest	0000Z-2359Z, Apr 16
TARA Skirmish Digital Prefix Contest	0000Z-2400Z, Apr 16
ES Open HF Championship	0500Z-0859Z, Apr 16
YU DX Contest	1200Z, Apr 16 to 1200Z, Apr 17
EU Spring Sprint, CW	1500Z-1859Z, Apr 16
Michigan QSO Party	1600Z, Apr 16 to 0400Z, Apr 17
Ontario QSO Party	1800Z, Apr 16 to 1800Z, Apr 17
432 MHz Spring Sprint	1900 local - 2300 local, Apr 20

RSGB 80m Club Championship, Data (Apr)	2000Z-2130Z, Apr 21
DX Colombia International Contest	0000Z, Apr 23 to 2400Z, Apr 24
SP DX RTTY Contest	1200Z, Apr 23 to 1200Z, Apr 24
Helvetia Contest	1300Z, Apr 23 to 1300Z, Apr 24
Florida QSO Party	1600Z, Apr 23 to 0159Z, Apr 24 and
	1200Z-2159Z, Apr 24
Nebraska QSO Party	1700Z, Apr 23 to 1700Z, Apr 24
EUCW/FISTS QRS Party	0001Z, Apr 24 to 2359Z, Apr 30
SBMS 2 GHz and Up WW Club Contest	0600 local, Apr 30 to 2400 local, May 1

May, 2005	
May CW Sprint	0000Z-0400Z, May 1
AGCW QRP/QRP Party	1300Z-1900Z, May 1
RSGB 80m Club Championship, SSB	2000Z-2130Z, May 2
MARAC County Hunter Contest, CW	0000Z, May 7 to 2400Z, May 8
Nevada QSO Party	0000Z, May 7 to 0600Z, May 8
US IPARC Annual Contest, CW	0000Z-2400Z, May 7
10-10 Int. Spring Contest, CW	0001Z, May 7 to 2400Z, May 8
Microwave Spring Sprint	0600-1300 local, May 7
Oregon QSO Party	1400Z, May 7 to 0200Z, May 8
Indiana QSO Party	1600Z, May 7 to 0400Z, May 8
ARI International DX Contest	2000Z, May 7 to 1959Z, May 8
New England QSO Party	2000Z, May 7 to 0500Z, May 8 and
	1300Z-2400Z, May 8
US IPARC Annual Contest, SSB	0000Z-2400Z, May 8
RSGB 80m Club Championship, Data	2000Z-2130Z, May 11
US Counties QSO Party, SSB	0000Z, May 14 to 2400Z, May 15
Portuguese Navy Day Contest, CW/SSB	0800Z, May 14 to 2300Z, May 15
CQ-M International DX Contest	1200Z, May 14 to 1200Z, May 15
VOLTA WW RTTY Contest	1200Z, May 14 to 1200Z, May 15
Mid-Atlantic QSO Party	1600Z, May 14 to 0400Z, May 15 and
	1100Z-2400Z, May 15
FISTS Spring Sprint	1700Z-2100Z, May 14
50 MHz Spring Sprint	2300Z, May 14 to 0300Z, May 15
RSGB 80m Club Championship, CW	2000Z-2130Z, May 19
VK/Trans-Tasman 80m Contest, Phone	0800Z-1400Z, May 21
EU PSK DX Contest	1200Z, May 21 to 1200Z, May 22
Portuguese Navy Day Contest, PSK31	1300Z, May 21 to 1300Z, May 22
Manchester Mineira CW Contest	1500Z, May 21 to 2400Z, May 22
His Maj. King of Spain Contest, CW	1800Z, May 21 to 1800Z, May 22
CQ WW WPX Contest, CW	0000Z, May 28 to 2359Z, May 29
ARCI Hootowl Sprint	2000Z-2400Z, May 29
MI QRP Memorial Day CW Sprint	2300Z, May 29 to 0300Z, May 30

*Send comments and corrections about this page to Bruce Horn, WA7BNM
Revision Date: January 26, 2005
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Information is also available from the ARRL contest web site <http://www.arrl.org/contests/calendar.html> and the ARRL Contest Rate Sheet at <http://www.arrl.org/contests/rate-sheet/>. You can also get the Rate Sheet emailed to you once a week. You may have to copy these URL's into your browser to make them work.

Protecting Your Equipment Against Lightning¹

By Ken Meyer, K9KJM, EC Door County

A direct lightning strike to your antenna mast can be safely handled. It is not simple or easy to install a system to take direct strikes, but with some time and effort it can be done. I wish to dispel the old wives' tales about "Nothing can prevent a direct lightning strike from destroying your radio equipment."

Tall buildings, like the Empire State building, take direct lightning strikes most every thunderstorm. These buildings are full of people and contain radio transmitter antennas on tall masts. Commercial radio and TV transmitter towers, public safety towers and cell phone towers are required to be on the air 24 hours, 365 days a year and do not shut down when storms approach. When properly installed, they do not suffer lightning damage. Years ago when some poorly protected stations had lightning damage, they were grounded with No. 6 copper wire, which was then state-of-the-art. Power companies did significant research and found No. 6 copper wire is heavy enough to handle over 97 percent of all lightning strikes. For the most powerful three percent of strikes No. 6 copper vaporizes. It was found to be cheaper for power companies to replace and repair the damage than to install heavier ground wires on all of its equipment. If a power company substation wants nearly guaranteed protection, it uses heavy 2/0 copper wire grounding on everything and connected it to an underground grid of bonded ground wires to many ground rods.

Modern radio stations use flat copper sheet, the wider the better, run from a single-point ground panel where all coax and other wires are grounded, to the ground system. Copper sheeting can sometimes be found for a reasonable price from upscale roofing companies, which use it for roof flashing. True silver solder is the material required to make connections and bond it together. Silver solder is available at welding supply shops for about a dollar a stick. One stick will make quite a few joints. MAPP gas in a small hand held torch will supply enough heat to flow true silver solder. Do not use lead/tin solder! It turns to a white powder underground!

Once the copper sheeting is in the ground, use heavy copper wire to your closest ground rods. Ground rods should be 8 long, copper-clad 5/8" rods, which are only about \$8 new at home supply stores. Space the ground rods twice the distance apart as the depth, meaning 8-foot rods should be spaced 16 feet apart, 4-foot rods, 8 feet apart.

Consider the ground wires connecting the ground rods similar to the roots of a tree. The closest wires to the shack, like the closest roots to a tree, should be of large diameter. As the roots go away from the building, smaller and smaller gauge wire can be used. The first wire to the ground rods should be 2/0 copper, then No. 6 copper to the next rods, then No. 10 copper wire out further. Rods and radial ground wires are effective up to about 75 feet away from the tower building.

For underground use, there is no need to use new wire. Used copper wire salvaged from an old building, and stripped of all insulation will work as well as new wire and much cheaper. Ground enhancement systems can also be homemade. Old copper pipe, drilled full of holes and filled with rock salt can save significant money. Old copper automotive radiators, or anything else, which applies a lot of mass in the ground to dissipate lightning energy can be used. Installing such a system is more than a single year project for most of us. Start with a few rods, and add more as time and funds permit.

Indoors, near the point where the coax enters the building, should be your single point ground plate where all lightning arrestors and coax switches are mounted. Polyphaser and I.C.E. (Industrial Communications Engineers) have some of the best arrestors. Polyphasers are sometimes found on eBay for far less than full retail price. Any radio equipment you intend to use during a thunderstorm should have such an arrestor inline. The cheap way to protect any equipment not used during a storm is to have a coax switch that

directs all antennas to ground. I use the old B&W (Barker & Williamson) Protect series for HF use, and the Alpha-Delta strip line for VHF/UHF.

Whatever you do, do not disconnect the coax and just leave it lay! If you insist on disconnecting, which in itself is very dangerous, at least install an old SO-239 connector to a good ground connection and connect the coax to that! Leaving coax unconnected, or just as bad, inside an old glass jar, is like leaving a stick of dynamite on your floor!

There was a great series of three articles on proper lightning protection in QST magazine a few years ago. Good information on Polyphasers can be found at http://www.polyphaser.com/ppc_ptd_home.aspx . The best site I have found about lightning protection in general is <http://members.cox.net/pc-usa/station/ground0.htm> .

For those of you who wish to use your radios with full safety during a severe thunderstorm, cross-band repeat is a good solution. Set up your base VHF/UHF radio to cross-band mode and use your HT to talk directly to your repeater of choice. Always also monitor your output frequency by scanning with the hand held radio to make sure all is working properly. But, save yourself and your equipment and install a proper ground system!

¹ Article reprinted with permission from author.

Additional web materials can be found at these locations:

PolyPhaser Document Number TD1016: An overview of Lightning Protection for Ham Radio Stations,
<http://www.polyphaser.com/datasheets/PEN1016.pdf>

PolyPhaser Document Number TD1019: What is Lightning? How does it affect a struck object?
<http://www.polyphaser.com/datasheets/PEN1020.pdf>

There are also a number of articles available on the ARRL website, located in the Members Area. Go to the QST Index and search for Keywords: "lightning protection" and a list of articles will be shown. Also, look at the webpage: <http://www.arrl.org/tis/info/lightning.html> which has additional information.

Four Lakes Amateur Radio Club Fox Hunting Rules

PURPOSE STATEMENT: The purpose of the FLARC Fox Hunt is to provide a regular opportunity for members to develop and test techniques for locating unknown sources of radio signals.

GENERAL RULES:

- The hunt will be held the 3rd Tuesday of August each year. Additional dates may be added if interest warrants.
- The simplex frequency to be used will be announced by the fox promptly at the starting time on the repeater designated preceding the hunt. The participants will then QSY to the announced frequency to begin the event.
- The starting location and time will be announced at the previous FLARC meeting, published in the Calendar of Club Events in The Feedline, and listed on the Madison Ham Home Page (<http://members.aol.com/staskc2ak>).
- The event will last for a duration of up to 2 hours.
- The first FLARC member(s) to locate the fox will be declared the winner(s) and will be the fox for the next fox hunt.
- The traveling trophy will be presented to the winner(s) at a subsequent FLARC meeting.

RULES FOR THE FOX:

- The location of the fox shall be:
 - a) Within a distance of 8 miles of the announced starting point.
 - b) In a public location.
 - c) In a location that is in no way offensive to the participants or the public.
 - d) Accessible by all who may choose to participate.
- Clues may be given after a period of 30 minutes. Clues should be helpful but not give the location away by clues alone.
- A transmission should be made for a period of 60 seconds every 5 minutes to provide an adequate signal for the participants to track.
- The fox will announce the frequency to be used at the announced starting time on the previously announced repeater.
- The first transmissions should give general information, such as our rules for the event, information about FLARC, club related events, and any announcements which would be of interest to the participants.

RULES FOR THE HOUNDS:

- The participants shall all begin the hunt from the same location, which will be announced at previous FLARC meetings, in The Feedline and on the Madison Ham Web Page.
- The participants may not trespass on private property.
- The participants may not enter areas that would in any way be considered obtrusive or inappropriate by participants or the public.
- Participants shall act responsibly and safely at all times. Actions taken during club events reflect on our organization.

* * *

These rules may change in order to accommodate this Spring's Fox Hunt.

**Four Lakes Amateur Radio Club Membership
Mail-In Application**

Date: _____ Callsign: _____

Name: _____

Address: _____

City, State, Zip: _____

Telephone: _____

Month & Day of Birth: (optional) _____

E-mail address: _____

ARRL Member: Yes _____ No _____

Newsletter delivery:

Email: _____ Standard Mail: _____

Dues: \$20 regular, \$17 Senior (65 plus), \$10 Student, \$14 additional family members.
(one newsletter per family)

Mail check and completed application form to:

**FLARC c/o Don Michalski
4214 Mohawk Dr.
Madison, WI 53711**

MDXC Scholarship Contribution Form

Mail to: Gari Berliot - NG9V; 5326 Knightsbridge Road; Madison, WI 53714

I wish to contribute \$_____ to the MDXC Scholarship Fund.

- Payment is included with this form.
Make checks payable to the MDXC Scholarship Fund
- Payment will be made on or before _____ 20____
Please note that MDXC expects to award scholarships annually in May and make payouts at the end of each year.

NAME (please print)

ADDRESS

CITY STATE ZIP CODE

SIGNATURE DATE

For complete details of the program you may go to <http://www.madisondxclub.org>. You may contact us at scholarship@madisondxclub.org.

The MDXC (Madison DX Club) thanks you for your contribution to this important project.

.....

MADISON AREA REPEATER ASSOCIATION

2005 Madison Hamfest and Computer Show

Sponsored by the Madison Area Repeater Association – W9HSY

The date will be Sunday, April 17, 2005

Doors Open to the public at 8 AM – Dealer setup Saturday night

HUGE FLEA MARKET! – INDIVIDUALS & DEALERS

MANDT COMMUNITY CENTER – STOUGHTON, WISCONSIN

**TALK-IN ON 147.150 (123 Hz) REPEATER

ADMISSION PER PERSON - \$4.00 ADVANCD - \$5.00 AT THE DOOR

(Children 14 and under free)

VENDOR TABLES – 8 FT TABLES \$24 EACH

Questions? For More Information, see the MARA Web site at:www.gsl.net/mara

Or write to: MARA, Box 8890, Madison, WI 53708-8890 – Call 608.245.8890

E-mail: w9hsy@execpc.com

AMATEUR RADIO – NEW – USED – COMPUTERS – PARTS – TOOLS

PRIZES- BUY-SELL-BARGAINS – SHORT WAVE – ELECTRONICS -VE EXAMS

MARA 2005 Hamfest and Computer Show TICKET ORDER FORM

Please send me _____ Admission Tickets @ \$4.00 each \$ _____

Plus flea market table reservations (shown below) Table TOTAL \$ _____
(All vendors must have admission ticket in addition to table reservation)

GRAND TOTAL \$ _____

Name: _____

Business Name, if any: _____

Address: _____

City, State, Zip: _____

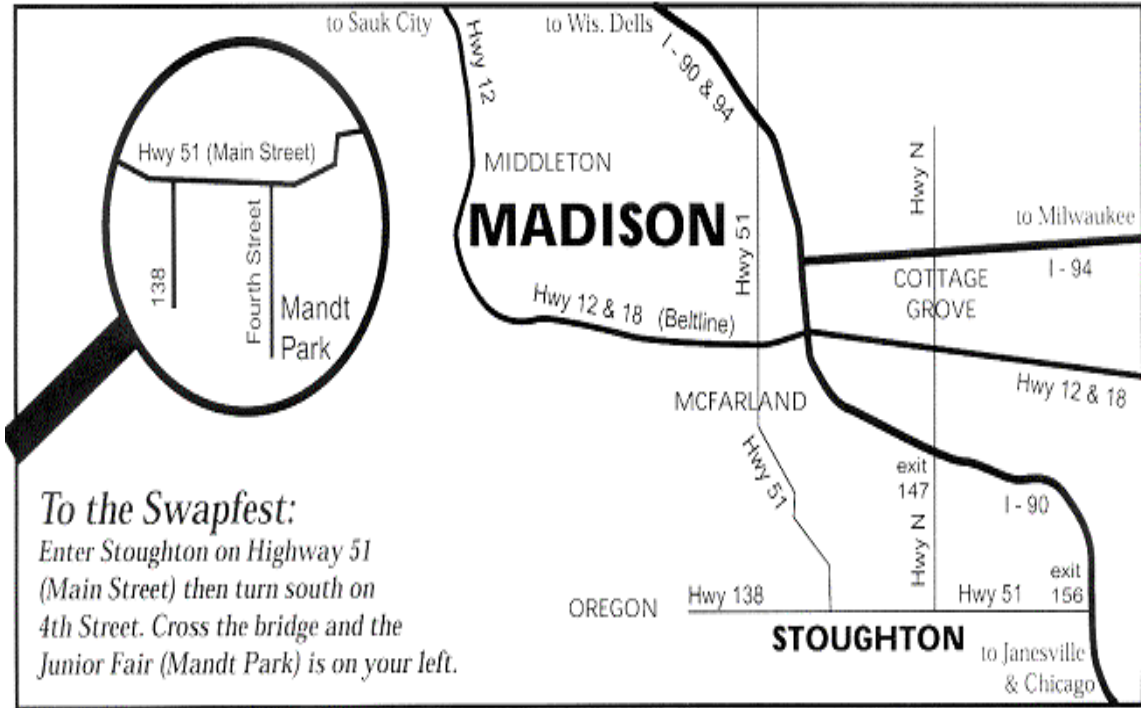
Telephone: _____ E-mail: _____

Table reservations postmarked by March 25, 2005 after March 25, 2005
Eight foot tables (for AC power add \$18) _____@ \$15 _____@ \$18

Indoor only – No outdoor sales! (\$25 on day of swapfest, if available)

Mail completed form with check to: MARA, PO Box 8890, Madison, WI 53708-8890

Include a self addressed stamped #9 or #10 business sized envelope for your tickets



Down Town Stoughton Map

