The Zero Beat

This Meeting

May 14, 2014
7:30 P.M.
(socializing begins at 7)
Hoover Elementary School
23720 Hoover Ave.
Hazel Park 48030

Contents

General Meeting

The regular HPARC meeting will be held on Wednesday, May 14, at 7:30 PM. Meeting location is the Hoover Elementary School gym, 23720 Hoover, Hazel Park, MI 48030. This is the last regular meeting before our summer break.

This month's business meeting is dedicated to the election of officers. The current slate of nominees is:

President: Bill Ketel N8QVS, Bernie Hildebrand W8NBC
1st Vice President: Jim Poehlman K8ABZ
2nd Vice President:
Secretary:
Treasurer: Bob Lauer KD8AMP
Director:
Parliamentarian: Ed Walton N8LBS

Nominations will also be taken from the floor during the meeting.

Come early and visit with fellow hams. Everyone is welcome to come to the meeting and bring a friend. Coffee and donuts will be provided during the break.

Anyone wishing to join the club, please go to the website www.hparc.org. Fill out the membership form and bring a printed copy to the meeting. Membership forms can also be filled out onsite before the meeting.

President's QRM

It is with heavy heart that I am informing you about the passing of a previous club member, Bill Riley K8DRV very recently. Bill was always interesting to talk with and active on the bands until health problems overtook him. Bill was a club member for quite a few years, up until a while ago. Some may recall his previous call, KC8DRV, and his nickname "Scratchy".

The visitation hours are Saturday 2 PM until 9PM, and Sunday, 4PM until 9PM, at the Bagnasco Calcaterra Funeral Home, 13650 15 Mile Road in Sterling Heights.

The funeral will be at 10AM on Monday at the Fellowship Chapel, located at 12875 East 14 Mile in Sterling heights.

It may be that this message is a bit after the fact, but I am repeating it here anyway. Bill is the youngest club member that we have lost in my recollection, and while he had not been at our meetings for a while I still regard him as a part of our club. I will miss him as will all of those who were fortunate enough to know him.

(Continued on page 2)

OFFICERS

- **President**: Bill Ketel N8QVS 248-544-2452 wketel2@wowway.com
- **1st VP**: Jim Poehlman K8ABZ 248-310-0086 k8abz1@gmail.com
- **2nd VP**: Larry Koziel K8MU 586-770-2545 k8mu@amsat.org
- **Secretary**: Walt Carter KD8LWC 248-548-4645 pidge4645@aol.com
- **Treasurer**: Bob Lauer KD8AMP 248 652-4211 rlau6@aol.com
- **Director**: Jerry Begel W9NPI w9npi@comcast.net
- **Parliamentarian**: Ed Walton N8LBS 248-649-5851 waltoned@sbcglobal.net

VOLUNTEERS

- **Technical Coordinator & W8HP Trustee** : Tony Gallucci N8VR@arrl.net
- **W8JXU Trustee:** Bill Ketel N8QVS
- **Education/VE Testing:** Jerry Begel W9NPI w9npi@comcast.net
- **Contest Mentors:** Mike WD8S wd8s@arrl.net Gerry K8GT k8gt@arrl.net
- **Public Information Officer:** Jerry Begel W9NPI w9npi@comcast.net
- **LoTW Manager:** Murray Scott KE8UM ke8um@arrl.net
- **Newsletter:** Wes Plouff AC8JF ac8jf@arrl.net
- **VUCC/WAS Awards Card Checker:** Sean Fleming K8KHZ k8khz@yahoo.com
- **Siren Tests:** Marsha Fleming N8FE 248-542-9573 Assist Ed Walton N8LBS
- **Meeting Coffee:** Bernie Hildebrand W8NBC
- **Donuts:** Rey Bora W8REY
- **Sunday Net:** Bill Ketel N8QVS 248-544-2452 wketel2@wowway.com
- **Banquet:** Rey Bora W8REY rey62@aol.com
- **Field Day Chair:** John Teagardin, AA8UU aa8uu@arrl.net
- **HPARC Official Cook:** Bill Ketel N8QVS
- **Swap**: Swap Chair Bernie Hildebrand W8NBC bernieah@hotmail.com
- **Holiday Party:** The Board
- **Webmaster:** Larry Koziel K8MU k8mu@amsat.org
- **Oak Apple Run Royal Oak:** Mike WD8S
- **MS Walk Chair:** Phil AA8KR 586-838-4139
- **Walk for Babies Chair:** Jim K8ABZ k8abz1@gmail.com

QRM, CONT'D.

(Continued from page 1)

Here we are in May, another year of club meetings remain as minutes in the log and memories of some memorable presentations and some excellent events. The big event that was new for our club was the ARISS contact from the school in Warren. I did not get to see the event, but the video recording shows the excitement quite well. Kids getting to talk to astronauts in the space station is really quite a testimony to the capabilities of amateur radio, and to the abilities of some of our club members to make big projects work well.

Special thanks to Larry, K8MU, for being the spark plug that got the project going and kept it moving. Also, thanks to Larry, our second vice-president, the one who got us all of those interesting presentations the past few years. That is the second VP's main responsibility, probably the hardest working office and officer, in the club. I certainly hope that whoever replaces Larry will keep up the good work.

I mentioned Larry's replacement because the May meeting is our election of officers meeting. So please be sure to attend and help select the folks who will be running the club functions for the following year. And consider being one of those folks who makes our club work.

Remember the Oak Apple Run coming up on May 31, which is presently our most visible public service project of the year. Contact Mike, WD8S for more details. The race is on a Saturday morning and most of the operators are done before noon.

Also coming up is the club banquet on June 11 at DeCarlo's Banquet Center. Contact Barb, KD8SAA, or Rey, W8REY, for your tickets and more detailed information.

The big fun event will be Field Day, June 28 and 29, once again being held at the Hazel Woods property, owned by the Hazel Park school district. The club provides the meals and the antennas, and John, AA8UU is arranging for the radios and many other details. We arrive there Saturday morning after a breakfast at the Big Boy Restaurant. Lunch and supper and snacks on Saturday, breakfast and lunch on Sunday are provided as well. If I persuade Bernie to do the food again this year, it will once again be excellent, otherwise it will only be "quite good".

On Wednesday August 13 we will have "the DART picnic"

(Continued on page 3)

Volunteer Wanted

By Jerry Begel W9NPI

Work with the Red Cross as a Volunteer Blood Driver! I have been doing this for about 7 years, and still get a "rush" from knowing that I'm contributing a bit of "Service to Humanity."

One current driver is leaving the state, opening an opportunity for a new volunteer to deliver needed blood between the Red Cross Processing Center, in the Medical Center area of Detroit, and several hospitals in Southfield, Royal Oak, and Madison Heights.

Days Open: Tuesdays, Wednesdays, Thursdays. Time: Usually 10:30 AM to 1:00 PM.

The work involves driving a Red Cross van from Berkley to the Processing Center, picking up foam-insulated boxes (up to a dozen), and delivering them to hospital blood banks. You would be lifting up to 30 pounds per box, and rolling a 2-wheeled delivery dolly into the hospitals.

Excellent driving record required. The Red Cross will conduct a background check at their expense. (The blood is "precious," and the responsibility is great!)

The van used for this route is a Ford Transit. It has an auxiliary power plug and easily accessible roof for a mag-mount…

Contact Jerry Begel, W9NPI for more details

President's QRM

(Continued from page 2)

at Green Acres Park, which is close to I-75 and Woodward Heights Blvd. More details on that event will be provided as the date approaches.

I am looking forward to seeing everybody at the meeting, and hoping that I get elected to a third term.

73, N8QVS

MI Section Outing

Michigan hams don't have a state ARRL convention. However, we do have a campout that combines ham radio with outdoor recreation, the Michigan Section Summer Family Outing. This summer the 16th annual Outing will be held, as usual, at the Woodlands Conference Center near Hale, MI. The event runs July 10 through 13.

Most attendees camp out in RVs, campers or tents. There are a few beds available at the Center's lodge for confirmed city-dwellers. Cost is low: $15 to $22 per night for lodging or campsite. The amateur radio program runs on donations and holds an auction to defray expenses. All meals are potluck except for Saturday dinner.

The Outing offers a fairly relaxed ham radio program that includes a fox hunt and seminars, with an emphasis on emergency communications. There will be campfires each night and evening hayrides around the 420-acre property. Temporary antennas are allowed, so participants can go on the air. For recreation, hiking, canoeing, a water slide, swimming, volleyball and softball will be available, so there will be plenty for spouses and kids (plus hams who just want to relax) to do throughout the long weekend.

The Woodlands Conference Center and Campground is located at 318 S. Sage Lake Road, Hale, MI 48739, about an hour north of Bay City, and 2-1/2 hours north of Hazel Park. For more information, and to make reservations, go to www.sectionouting.info, or contact Jay Nugent WB8TKL, 1316 Oak St, Ypsilanti, MI 48198.

Banquet Tickets

The annual banquet will be on Wednesday, June 11th, 2013 at 6:30pm at DeCarlo's Banquet and Convention Center in Warren, as it was last year. The cost will be $20 per person. Tickets will be available from Barb KD8SAA at the meeting and Saturday breakfasts, or a check can be sent to Rey Bora, 27269 Jean Road, Warren, MI 48093, and the tickets will be waiting for you at the door.

HPARC NETS

HPARC Official Sunday Night 2-meter Phone Net
Every Sunday at 9:00 PM local time on the DART repeater, 146.64 (PL 100), catch up on club news and information, and just to keep in touch. All amateurs are welcome to check in.

N8WYO CW net (Medium speed)
Named in memory of Al N8WYO. The net meets Tuesday night at 8:00 PM on **28.028 MHz** All amateurs are welcome. CW speed fluctuates between 20-25 WPM, but Joe will slow it down if necessary. Listen in at 8 PM sharp!

Wolverine Net
The 75 Meter Wolverine Net meets on 3935 KHz daily at 7:00 PM local time, with pre-net starting at 6:00 PM. You can get details from http://www.wssbn.com/

Oakland County ARPSC
Every Thursday @ 8 pm on 146.90 (PL 100). Hospital Radio Net on last Thursday of each month @7:30.
(W8OAK-3 will run packet on 147.56 MHz for those wanting to practice and test their equipment)
http://www.arpsc.com/

NTS Traffic Nets
The Southeast Michigan National Traffic System (NTS) net Normally held every night at 10:15 PM local time on the 146.76 (PL 100) repeater. New people are welcome.

AROUND TOWN

HPARC Buddy Breakfast every Saturday @ 9 AM (or so)
Jimi's Restaurant, 714 South Washington Ave, Royal Oak (across from OCC). Come for the socializing — we're in the back room. Parking: lots of spaces in Jimi's parking lot, and street parking is free until 11 AM.

Oakland Co. ARPSC Siren Testing, 1st Saturday @ 1 PM
Pre-net on the DART Repeater, 146.640, around 12:30 PM. April only — test moved to Wednesday, April 9. Contact Marsha N8FE for assignments.

Macomb Community College Electronic Lab
Now 4th Wednesday of each month from 7-10 PM.
12 Mile & Hayes Rd. (Bldg "S" - Room S135) Extensive collection of equipment to use/learn plus a ham radio station to use and a big 3 element HF Yagi antenna on the roof of the building. Hams are invited from all clubs.

Amateur Radio License Testing
HPARC and the City of Oak Park offer amateur radio license testing on the first Tuesday of even months at the Oak Park, Michigan Community Center (14300 Oak Park Blvd, Oak Park, MI 48237) beginning at 7:30 PM

WELCOME NEW MEMBER

Jerry LaPere AB8HI

W1AW PORTABLE SCHEDULE

W1AW is celebrating the ARRL Centennial year by operating portable in all 50 states and many US territories. QSL by LOTW is encouraged. Still no details on paper QSLs.

May 2014
7-13 Utah, Nebraska
14-20 South Dakota
21-27 New York, Colorado
28-3 Missouri, Wyoming

June 2014
4-10 Alabama, Louisiana
11-17 Arkansas, Minnesota
18-24 Alaska, Montana
23-29 Indiana, Rhode Island
30-6 Connecticut, Nevada

Evolution of My Portable Antenna

By John Pawlicki K8AG

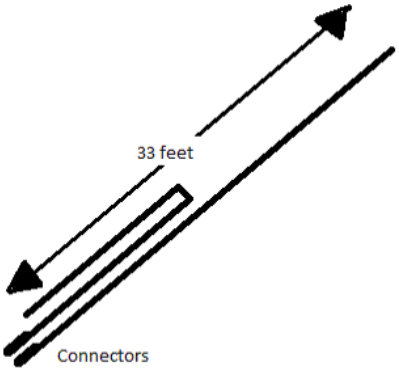
Portable antennas can be quite involved. Stacked beams or dozens of radials seem to be the norm for most portable antenna articles. Being a fairly lazy ham, I sought out an antenna that I could stuff in my go kit (knapsack), take with me anywhere, throw the antenna up into a tree and be on the air in a matter of minutes. Radials and masts don't lend themselves to this kind of operation.

But even the simple dipole has its issues. If you find two trees suitable for holding up the dipole, the center feed always cones down right in the middle thwarting any attempt at discretion.

Nearly every article on dipoles states that the feed line should leave the dipole at a right angle. This way the feed line will have minimal effect on the received and transmitted waves.

Still that feed line hanging down is sooooo inconvenient. But if we feed the antenna with twin lead, we have current going toward the antenna on the feed line, and the same current coming back. Wouldn't these cancel out as far as affecting the rest of the antenna? In fact, why not run the feed line along one leg of the antenna? The current imbalance would be still be present in the leg of the antenna. It should radiate and see RF. It sounds weird. But it was cheap to try.

I fashioned a 20M dipole out of some small gauge speaker zip wire I had. The center insulator was simply the knot in the ARRL antenna books that keeps the antenna from pulling apart. The still together zip cord served as my feed line running in parallel attached to one of the dipole legs with zip ties.



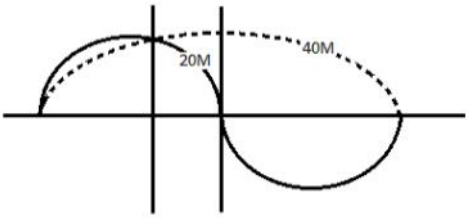
At the end of the leg the zip cord was cut and fashioned with two banana plugs to fit the tuner output of my Hendricks PFR-3 three band transceiver. I didn't measure the resonant frequency or tune the antenna. I have no idea what the impedance of the zip cord might be. But it was only 16 ½ feet long.

The antenna is diagrammed on the left as a sloper of some sort. Note that the dipole still exists, fed at the center by the zip cord.

The antenna not only tuned up well, but it actually made contacts. It's small and very easy to throw up into a tree as a vertical (or slanted or wherever) dipole.

But my new rig, a Hendricks PEF-3, has three bands. Of course I tried tuning it on the other bands (Come on. You know it won't work. But you have to try anyway.) I needed something better. There were 2 whole bands at stake.

Reading about off center fed dipoles intrigued me. This antenna is fed around the 1/3 point on the dipole rather than in the middle. Feeding say a 40M dipole at the center makes the antenna function very badly on 20M. What was fairly low impedance (70 ohms or so) on 40M now becomes thousands of ohms on 20M because of where the wave sets up on the wire.



Above I have illustrated a 40M sinusoid (more or less) and a 20M sinusoid representing the ease of match when fed at that point. The vertical line near the center of the dipole shows that the match is best when fed there at 40M.

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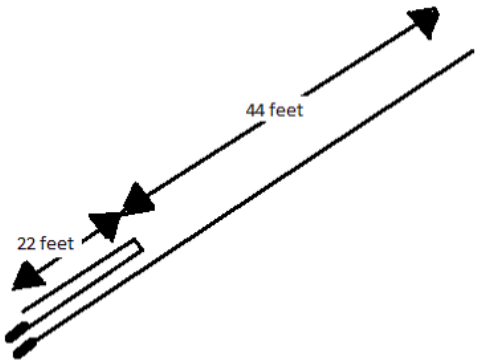
Antenna Evolution, cont'd

We see that the 40M dipole match drops near zero at the ends of the dipole. The impedance goes way up near the ends. The 20M wave does the same. But also notice that the 20M wave crosses zero in the center of the dipole. The impedance of a 40M half wave antenna fed at the center with 20M energy is very high. This is why a 40M dipole can make a lousy 20M antenna if fed the standard way, in the middle. Notice that this is a great example of an antenna that is resonant but a really bad match, at least on 20M.

But notice the other vertical line. It seems to be in a place where neither feed is great, but both seem better than bad. Could the feedpoint in this location be somewhat reasonable on both 40M and 20M? If I fed the antenna there and used an antenna tuner (and perhaps a balun), maybe I could get 2 bands. Since my PFR-3 has a built in tuner, this was promising.

Of course all of my half-baked theories about feed line currents balancing out and such let me still run the feed line attached to the lower part of the antenna.

The antenna on the right is the result. But have I violated too many rules for it to work? Apparently not. Not only could I tune 40M and 20M, but 30M seems to fall in nicely as well. Using the high and low impedance settings on the tuner I can match pretty much anywhere I like on those three bands. The PFR-3 seems to tune this well and I have made contacts on all 3 bands including Europe with the 5 watts from the PFR-3 and this antenna.



At 66 feet the antenna is a bit long at times. But I can separate the bottom section from the feed line allowing the 22 foot portion to serve as a counterpoise to the 44 foot section.

My next installment will describe my home antenna. This gem has been up for about 12 years with absolutely no maintenance on the antenna itself. Works very well too.

Stalking the Wild Moxon

By Wes Plouff AC8JF

In March 2012, Russell Dwarshuis KB8U came to the HPARC meeting to talk about his 50 MHz DXpedition to a "rare" California grid square, and his difficulties operating a 6 meter station literally on the side of a mountain. He showed his small portable station and his folding Moxon beam, key to getting on the air from the middle of a wilderness.

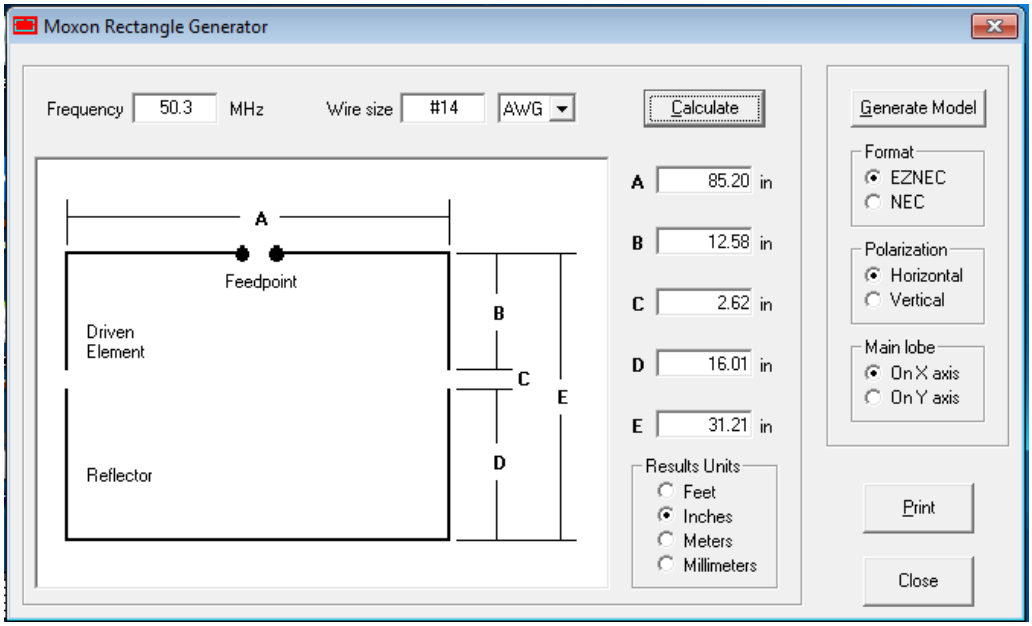
The question that drew the most enthusiasm from the audience was, "What are the exact dimensions of your antenna?" The club never did find out, but the question highlighted the Moxon's reputation as a desirable antenna, but one difficult to build.

How did this antenna come to be seen this way? The most likely answer is that it is not as familiar as the Yagi, quad or other beam antennas. An article in this April's *QST* talked about just how easy it is to put a Moxon beam on the air, though.

The antenna we know today as the Moxon Beam, or just "Moxon," started in the 1970s as something much different. Fred Caton VK2ABQ (SK) laid one element of a cubical quad on its side, split it into two elements using buttons for insulators, and fed one side at its center point. This gave his "square beam" a couple of dB gain and some F/B performance, but a 170 ohm impedance.

Les Moxon G6XN (SK) was a lifelong antenna experimenter. One of Moxon's tricks was using "critical coupling" between elements of an antenna. In a two-element antenna, if equal currents flowed in each element, phased properly, radiation from the two elements would reinforce in one direction and cancel in the reverse direction.

MOXON BEAM CONT'D



Later in the 1970s, Moxon experimented with VK2ABQ's design, finding that he could get higher gain and very high F/B by making the shape wider and increasing the spacing between the elements. Moxon used a separate feedline for each element, with a phasing box in his shack to tune the antenna and reverse its direction instantly.

Then in the 1990s, L.B. Cebik W4RNL (SK) modeled the Moxon beam extensively. He found the dimensions that gave low 50-ohm VSWR, good forward gain and small rear lobes in the antenna pattern. Relying on capacitive coupling to drive the second element.

Cebik created a mathematical model, then asked Dan Maguire AC6LA to create easy-to-use software using the model.

The result was the *Moxgen* antenna utility. The picture above shows the main (and only) screen. Moxgen will customize the Cebik design to your specifications. This is how successful Moxon builders design their homebrew beams.

A Moxon beam should deliver about 3.5 dB gain over a dipole at the same height, and a 10 dB F/B ratio, though much higher over a narrow range of frequencies. A 10 meter Moxon made from #14 copper wire, cut for 28.3 MHz, has an SWR of 1.05 at that frequency, 1.8 at 28.0 MHz and 1.5 at 28.8 MHz.

By itself, the software isn't enough. The Moxon Antenna Project website and numerous *QST* articles show many different ways to build a Moxon beam out of wire or tubing. Moxon beams have been built using bamboo and fiberglass spreaders, metal masts and even a frame built from PVC pipe.

In addition, here are some construction tips gleaned from the website and elsewhere around the Internet.

- Choose a center frequency a little lower the center of the desired range. The antenna's SWR rises faster below its center frequency than above it.
- If you have the inclination, model the antenna with a program like EZNEC, 4NEC2 or MMANA-GAL. Repeat the design and modeling steps to get the right center frequency and pattern.
- Build the antenna as close to the calculated dimensions as possible. The end-to-end element spacing (dimension "C") is the most critical dimension, so make it accurate within a small fraction of an inch.
- Use bare wire or tubing if possible. Insulated wire moves the center frequency 2-3% lower, leading to "cut and try" tuning.
- Do not "widen" the element ends into circular loops, etc., as this changes the capacitive coupling between elements. Use a thin insulator like a piece of plexiglass, so wire ends can be pulled back tightly away from each other.
- Keep the antenna away from other metal, and expect stacking distances between a Moxon and another antenna to be larger than with Yagis.

The resource list on the next page has several good sources of information. If you build a Moxon, let the Zero Beat know how it turns out!

Note: The author has not built these antennas, though he's read an awful lot about them.

Oak Apple Run

By Mike Van Buren WD8S

Oak Apple Run will be on May 31st this year. The Club has sponsored and helped with this run for over 25 years. It is a great way to help the community with public service.

Just a little history on the run. We started out this Race by giving radio communications for the nurses that were stationed along the route. At that time we only need 5 operators and a net control at the finish line with a Doctor that could be moved to an area that needed him. Well, as time has gone on our involvement has grown. We also help keep the course clear of traffic and work with the Royal Oak Police department in making this a very safe race.

I need at least 41 operators to fill all the spots that the race committee wants covered. This has been very hard to get this many Hams together at one time.

There is a pre-race meeting at the First United Methodist Church of Royal Oak on May 28th, 6:30 in the evening. The church is located downtown at Washington and 7th.

At this time to Police will be there to talk about how to handle problems. We will also give assign positions. Tee shirts will be given out and Pizza and Soda will be served.

On the 31st, the race starts at 7:30 AM and all hams need to be on their posts by 6:45 AM to 7:00 AM for roll call. After the 10k race most of the north end will be let go and the Fourth Street Hams will stay for the Fun Run and Kids races. We will be using 147.51 Simplex and a hand held or Mobile Rig will work just fine.

Any question, please Email me at WD8S@ Comcast.net. I will be glad to answer any question that you may have. I need help. As of this writing I only have a little over 30 ops signed up, so find some buddies and let me know who they are. All are welcomed.

Contests

For details visit the WA7BNM Contest Calendar or the ARRL Contest Roundup

May 2014

3-4 10-10 Int. Spring Contest, CW
3-4 ARI International DX Contest
3-4 7th Call Area QSO Party
3-4 New England QSO Party
3-4 Indiana QSO Party
10-11 VOLTA WW RTTY Contest
10-11 CQ-M International DX Contest
17-18 His Maj. King of Spain Contest, CW
17-18 EU PSK DX Contest
24-25 CQ WW WPX Contest, CW
24-25 Baltic Contest

June 2014

28-29 ARRL Field Day

Hamfests

05/03/2014 Cadillac Amateur Radio Swap 8-12
Cadillac Jr HS, 500 S. Chestnut St, Cadillac, MI
http://www.wexaukeearc.org/index.html
Talk-In: 149.98

05/16-18/2014 Dayton Hamvention
Hara Arena, Trotwood, OH http://hamvention.org
Talk-In: 146.94 (PL 123), 146.64 (PL 123)

Upcoming
6/1 — Chelsea Radio Swap 'n Shop
6/1 — Central Ontario Hamfest, Cambridge, ON

Moxon Antenna Resources

- The Moxon Antenna Project, www.moxonantennaproject.com. Its "Design" page has links to Moxgen software.
- Jay Slough K4ZLE, "A 10 Meter Moxon Antenna," *QST*, April 2014. Building a temporary Moxon.
- Allen Baker KG4JJH in *QST,* Moxons on several bands. See May 2003, April 2004, August 2005 and August 2009.
- L.B. Cebik W4RNL, "Having a Field Day with the Moxon Rectangle," *QST*, June 2000. Describes temporary wire Moxons, with dimensions, for five HF bands.
- www.cebik.com (paid subscription required) has several Moxon articles by the late L.B. Cebik W4RNL. Or search the

Meeting Minutes– March 2014

The meeting was called to order by the president, Bill N8QVS at 7:30 PM.

There were no license upgrades reported.

Welcome to new member Jerry LaPere AB8HI.

Introduction of all attendees were made.

Our Treasurer Bob Lauer is now call sign N8REL. Treasurer report: Bob N8REL went over the board approved FY 2015 budget. A motion was made by Bernie W8NBC and seconded by Mike WD8S to approve the proposed budget. Motion passed by voice vote.

Oak Apple Run will be 31 May 2014. Mike WD8S asked for more volunteers. The pre-race meeting will be held on May 28, 2014 at 6:30 PM at the Royal Oak United Methodist Church 320 W. Seventh St Royal Oak, MI. At the pre-race meeting, you will find out your location and receive your tee shirts and free pizza.

The club installation of new officers will be held 11 June 2014. Get your tickets early. Barbra KD8SAA is selling banquet tickets or you can mail a check to Rey Bora 27269 Jean Rd Warren, MI 48093 by June 7th 2014. Make check payable to HPARC and note the memo field to read 2014 Banquet and your call sign. Tickets are $20.00 each.

John AA8UU reported that the club repeater echo link project should be completed in about a month.

Steve K8SDK gave a presentation detailing his trip to Antarctica where he operated as K8SDK/C6A/MM. As always, Steve's presentation was very interesting and provided an excellent picture of the trials and tribulations of his trip.

Club officers present: President Bill N8QVS, 1st Vice President Jim K8ABZ, 2nd Vice President Larry K8MU, Treasurer Bob KD8AMP and Parliamentarian ED N8LBS.

Respectfully submitted,
Walt KD8LWC

Sunday Night Net Check-Ins

Here are cumulative 2 meter net checkins from June 2013 through April 2014.

KD8SAA	Barb	47
W8NBC	Bernie	47
KE8UM	Murray	45
N8QVS	Bill	42
KD8SPD	Dan	41
KF8UU	Les	40
N8LBS	Ed	39
N8REL	Bob	36
KD8NYB	Chuck	34
AA8OZ	Paul	31
KE8UD	Paul	32
KD8LWC	Walt	20
K8ABZ	Jim	20
KD8STM	Mike	10
AB8RH	Don	7
AA8UU	John	6
N8AE	Carl	5
N8ZU	Ray	5
KD8SBL	Ron	4
N8RLN	Brian	4
KB3EHW	Reuven	4
KD8QBA	Mike	3
KD8UMV	Sean	3
KD8UMZ	Tony	3
K8JRE	Joe	2
KD8COJ	Gordon	2
KD8ROQ	Frank	2
N8ZU	Ray	2
W1IK	Jim	2
W8VPC	Mike	2
AB8HI	Jerry	2

1 checkin:

K8HJU	Ed
K8KHZ	Sean
K8PEJ	Mike
KB8NJP	Lamar
KB8UMA	Mike
KB8WLU	Paul
KC8FZR	Mark
KD4BIO	Ken
KD8MFR	Bruce
KD8RCU	Doug
KD8SRQ	Tony
KD8THQ	Josh
KD8UMB	Ed
KD8UNJ	Robert
KD8VXZ	JD
KD8WAP	Jeff
KF8WR	Ted
KI8JL	Roy
KK4HIR	Mike
N8AAU	Mike
N8CPH	Josh
N8DHC	Jim
N8FE	Marsha
N8FM	Steve
N8ZZE	John
VA3TGN	Tim
W8HL	Lee
W8NN	Andy
W9NPI	Jerry

Dayton Stories Wanted

Going to the Dayton Hamvention? When you get back, send your stories to the editor at ac8jf@arrl.net. The *Zero Beat* will once again run a Dayton recap in the June issue. Share your Hamvention experiences, the good, bad, strange or really nifty. What was new? Who did you see? What was the super bargain you bought? What was the item that got away? Your report should be one sentence to a few paragraphs long. Photos are welcome, too!

Mark Your Calendar

2014 DATES
May 14

TIME
Socializing @ 7:00 PM
Meeting @ 7:30 PM

PLACE
Hoover Elementary School
23720 Hoover Ave.
Hazel Park 48030

Banquet
June 11

Field Day
June 28-29

NEXT MEETING

1 Meeting 2 Swap 3 Picnic

We're on the Web
www.hparc.org

Hazel Park Amateur Radio Club
P.O. Box 368
Hazel Park, MI 48030

SPECIAL SERVICE CLUB

Scan this QR code to visit the HPARC web site

Please check mailing label — is your membership about to expire?