

Q-FIVER

The Official Newsletter of the OH-KY-IN Amateur Radio Society



FOXHUNTING WITH OH-KY-IN

Monthly Mobile Hunts

For many years, Oh-Ky-In has held a mobile transmitter hunt, or 'foxhunt', on the second Saturday of each month. The rules are fairly simple—the 'fox' hides a 2m radio somewhere within the I-275 loop around Cincinnati, and the 'hounds' race to see who can find it first. The fox will make regular transmissions on a frequency announced at the start of the hunt to help the hounds get good location bearings. The fox also monitors the 146.670 repeater in case someone needs any assistance. Sounds easy, right?

It can be as simple or as complex as you wish to make it. I started out with a hand-held radio and a 3 element 2-meter beam, and I would stop the car and take a bearing. I never gave up and it sure was a lot of fun. Now I use a 4 element quad on a mount through the sunroof of my car, and I have my wife Marji, KJ4ZKC, drive so I can pay attention to radios. Anyone can participate in a hunt, you do not even need to have a ham license. We always have extra equipment for loan if you want to try it yourself, or there is usually an open seat if you want to ride along with someone and observe. If you do wish to try, the 'fox' will make appropriate adjustment for a new hunter.

The hunts start from MT. Storm park in Clifton, at 10:00 AM on the second Saturday of the month. We usually start setting up our equipment about 9:30 or so, because at 10AM when the hunt starts, we are 'outa there!'

Come join the fun!

On Foot ARDF Hunts

On foot transmitter hunting can be easier than mobile hunting, but also harder. The area is smaller, but you don't have a car to help you get there either. The sport of ARDF, or Amateur Radio Direction Finding, started in the 1950 and has grown in popularity and participation. It is amazingly popular in Europe and the Scandinavian countries, but is also growing here in the good old US. Here is how it works:

Competitors are given a very detailed topographic maps of the hunt area, and they may use a radio receiver with a directional antenna, and a compass. That's it—no mapping GPSs, no cell phones, nothing else to aid in navigation. There are 5 transmitters, each one transmitting for 1 minute in sequence, so during a 5 minute period, each transmitter takes its turn so that only one is transmitting at a time. The transmitters use morse code using MOE, MOI, MOS, MOh and MO5—so after the MO, you just count the 'dits' - E is one dit, I is two dits, etc.

You usually draw lines on your map for each one, and when you get a good idea where they are, you run there! Competitors are grouped by age and gender, so it is not as long/hard for 70 year olds.

Our hunts are more beginner hunts, again with loaner equipment available. We will hold the first one of 2015 at Mt. Airy Forest, by the big circle, at 10AM on Saturday Feb 21st.

I will try to hold a ARDF hunt on the third Saturday of every month.

2015 Board of Directors

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Fred Schneider K9OHE.....(513) 729-0945 fschneider@fuse.net

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OH-KY-IN Repeaters

146.670 (-) Clifton

146.625 (-) Edgewood, KY

146.925 (-) Colerain Twp

443.7625 (+5) Clifton

A CTCSS (PL) tone of 123.0 Hz is required for access to all OH-KY-IN repeaters. All repeaters also transmit a CTCSS (PL) tone of 123.0 Hz

APRS on 144.390 mHz

K8SCH-10 Edgewood WIDEn

K8SCH-9 Clifton WIDEn

For membership information, please contact Nathan Ciufo KA3MTT, 6323 Cinnamon Ridge Dr, Burlington KY 41005, (859) 586-2435 or Email membership@ohkyin.org. Renewals of Club Memberships are due by the end of March.



Permission is hereby granted to any amateur radio group to quote or reprint from this publication, if proper source credit is given, unless permission is otherwise reserved.

THE Q-FIVER is now mailed & e-mailed, it's hoped, a week before the club meeting.

Normally copy deadline is the weekend before that. Please send your submissions for THE Q-FIVER (including notice of upgrades & callsign changes) to Brian K4BRI

These may be: snail-mailed to or dropped off at 6901 Backus Drive, Alexandria KY 41001 or telephoned to (859) 635-3095 any time

The Elmer's Shack: Some Antenna Basics

Robert AK3Q

Email: ak3q@ak3q.com



Welcome to the first edition of a new column focused on the sharing of information, advice, and experiences between hams, particularly with the goal of helping one another enjoy this great hobby. While there will be a definite focus on helping newcomers to the hobby, what really happens is that all of us learn from one another. Regardless of the number of years one has been a ham there is always much more to learn. Amateur radio has a proud tradition of hams helping hams, and that is just what we intend to do here.

With those thoughts in mind let me say here that your ideas, suggestions, and experiences are welcome, nay *encouraged*, so that we can meet real needs within our group. If there are topics you would like covered, let me know. If you have helpful tips, ideas, or practical suggestions which might benefit other hams, let me know. Newcomer or old-timer, your experiences matter and I hope you will share them with us!

Antenna Efficiency: Loss And Directivity

For those who are new to radio antennas in general, and especially for those who want to use an Amateur Radio station, antenna efficiency is an important yet often misunderstood concept. Many antenna manufacturers make a lot of claims about their particular antenna, most of which are true, but some manufacturer claims stretch the truth just a wee bit. These manufacturers know many folks only look at a couple of efficiency statistics in evaluating an antenna, and so those numbers sometimes get inflated using theoretical numbers rather than real-world results.

Before I get to antenna “gain”, one of the most popular numbers in assessing an antenna, I want to talk a bit about antenna efficiency from two perspectives: first, as a measure of efficient loading/matching of the antenna system, and second, as a measure of its directionality.

Line Loss

Power coming out of a transmitter is determined by the capabilities of the radio itself: a 100 watt radio operating at peak power will send 100 watts out the coax (or “feed”) line and on to the antenna (or radiator). Immediately a bit of loss is introduced by the feed line and by the antenna fixture itself as the RF power encounters resistance from the materials used to conduct the RF signal. Assuming a quality feed line, a reasonably short run of that feed line, and a match between the antenna, feed line, and the radio, the loss will be minimal. Of course, as I have discussed in the past, antenna height, the surrounding terrain, and atmospheric conditions will all play a role in how far the signal travels and who is able to hear you.

By far the greatest cause of power loss is an inefficient or poorly matched feed line. RF lost at the feed line turns into heat, which is then dissipated out of the coax. A high SWR reading at the antenna does not mean power is not getting out to the antenna—it will eventually get radiated as long as there is minimal feed line loss. Watch out for poor solder connections, breaks in the shield braiding, or broken wires. Also make sure the coax line you are using is a good match for the frequencies you will be using it for—always try to use the highest grade coax you can afford so as to ensure minimal line loss.

A second and very important cause of power loss/low efficiency is ground effect, particularly at the radiation source. Near-field reactivity can greatly affect the amount of signal that gets radiated from the antenna. An antenna can act as an inductor or a capacitor depending on its interaction with ground. This means that the signal can either get a boost or suffer loss depending on ground conditions near the antenna and its height and orientation above ground.

Reflected RF energy from the ground can help or hurt the efficiency of an antenna depending on whether or not the reflected energy is in phase with the upward radiating signal. Therefore antenna efficiency is in some ways more than the sum of its parts; vari-

(Continued on page 6)

Oh-Ky-In Life Members

John Phelps N8JTP

Kenneth E Wolf N8WYC

John W Hughes AI4DA

Karl W Kaucher KJ4KWR

Minutes of the February 2015 Meeting

Meeting was called to order at 7:30 pm by Vice President Michael Sien, KD8SOH. After introductions and news, the meeting program was given by Michael. The meeting program was "Finding your way in amateur radio". The program outlined the various activities sponsored by the Club.

Business meeting was called to order at 8:17 pm, called to order by Vice President Michael Sien.

Previous minutes - Amendment to the previous minutes as published in the Q5er. Brian, K4BRI, noted the amount of the split the pot drawing was \$50 and was won by Bobby Revis, KD8TPU. Motion by Bobby Revis, KD8TPU and second by Pat Maley, KD8PAT to accept as amended. Motion carried.

Treasury report - Reports for November & December were presented by treasurer Brian DeYoung, K4BRI. Final December balance of \$15,238.90. Motion by Harry Riggs, KM4Cs and second by Lynn Ernst, WD8JRW to accept the reports as published. Motion carried.

Audit committee consisting of Michael Sien, KD8SOH, Ryan Williamson, W1RYN, and Lynn Ernst, WD8JAW, will conduct the annual audit of the books. They will work with the treasurer to schedule a date and time for the audit.

Fox Hunt - A good hunt was had in November. There will be no hunt in January. The next regular hunt will be in February. Also, beginning in February, hunts on foot will be scheduled.

QCEN Update - Pat, KD8PAT report QCEN held the Christmas party in December with an excellent presentation on the history of brewing in Cincinnati. The group is looking at future activities.

Old Business - Nothing to report

New Business - Bruce, N8BV, report this month's brunch bunch will at On The Pike Steaks & More on Delhi Pike. It will be on Saturday the 10th at 1:00pm. The brunch bunch is approaching it's 4 year anniversary.

Bruce, N8BV, announced that Chubby, KC8IMY, was currently hospitalized and was not doing well.

Split the pot / door prize drawing - Electronics theory book won by Bobby Revis, KD8TPU. Split the pot of \$37 was won by Bruce, N8BV.

Motion to adjourn by Brian, K4BRI and second by Ed Frambes, K8EAF. Meeting adjourned at 8:40pm.

Submitted by Gary, KB8MYC

The next Brunch Bunch will be held Saturday, February 14th, at 1pm. The location is Chili Time Restaurant located at 4727 Vine Street, in St. Bernard, 45217. Chili Time is located a short distance, across Vine Street, from the OH-KY-IN club meeting location.

For a look at their menu, as well as a map please go to: www.chilitime.net

Although the Brunch Bunch has visited Chili Time several times in the past, this meeting will mark the 4th anniversary of the Brunch Bunch. This is where the Brunch Bunch started 4 years ago.

Remember that the Brunch Bunch always meets the second Saturday of every month at 1pm at a location to be announced each month. If you can't join us this month, maybe you'll be available to join us in the months ahead.

I'm always looking for suggestions on what restaurant you think might be a good place for the Brunch Bunch to visit soon.

73,Bruce, N8BV

DX SPOTS - February 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>1 K1N-Navassa I thru 2-14 ----- H44MS-Solomon Isl Thru 2-28</p> 	<p>2 PJ2 - Curacao ----- 3G-Guadeloupe thru 3-30</p> 	<p>3 3D2AD-Fiji thru 2-8</p> 	<p>4 KH0-Mariana Isl Thru 2-7 ----- J8 - St Vincent Thru 2-5</p> 	<p>5 ZD8D-Ascension Thru 3-6 ----- XW8BM - Laos Thru 2-25</p> 	<p>6 J3 - Grenada Thru 2-9 ----- KG4-Guantanamo Thru 2-13 ----- ZF2UM-Cayman Is</p> 	7
<p>8 5W7A - Samoa Thru 2-11</p> 	<p>9 V5 - Namibia Thru 2-20</p> 	10	<p>11 KH8 - Am. Samoa Thru 2-12 ----- MJ5RIC - Jersey Thru 2-16</p> 	12	<p>13 FM - Martinique Thru 2-14</p> 	<p>14 P40JP - Aruba Thru 2-19</p> 
<p>15 FO - Fr. Polynesia Thru 2-24</p> 	<p>16 T19 - Cocos Isl Thru 2-23 ----- V63MJ - Micronesia Thru 2-23 ----- 5Z4 - Kenya thru 3-8</p> 	<p>17 HR5 - Honduras Thru 2-25</p> 	<p>18 JW - Svalbard Thru 2-25</p> 	19	<p>20 CE0Z - Juan Fernandez thru 3-8</p> 	<p>21 7Q7GIA - Malawi Thru 2-28</p> 
22	23	24	25	<p>26 FP - St Pierre & Miquelon thru 3-10</p> 	27	28

(Continued from page 3)

ous elements must be taken into account when determining what works best under what conditions, including the actual design of the antenna itself. This is where *directivity* comes into play.

Directivity

Antenna efficiency is also determined by how the power is distributed or directed through the antenna. An omni-directional antenna radiates the same in every direction (this is speaking theoretically of course; no antenna can be fully omni-directional). In this case if 100 watts of power is applied to the antenna, 100 watts goes out in an omni-directional pattern—that is, a total of 100 watts goes out equally in all directions.

By contrast, this same 100 watts when sent out by a beam antenna gets concentrated in one general direction over the others. Keep in mind, no antenna design is 100% efficient. While the power is significantly concentrated in one general direction with a beam, some power will still go out in other directions, and this is to be expected even with the most efficient beam on the market. For our purposes here, it is sufficient to say that a directional antenna is more efficient than an omni-directional antenna. However, both have their uses.

Another way of thinking about this issue is to think of a bare bulb casting light in all directions. The bare 100 watt bulb distributes light evenly as power is applied. When a reflector is placed around the bulb the same 100 watt bulb now becomes directional as the reflector directs light forward. A satellite dish is a good example of this concentration of energy—the dish is a large reflector focusing the RF energy into a relatively small area.

Antenna Gain

Antenna gain is a much misunderstood term because true gain only really occurs when power is added to a signal through some means, such as with an “Active” antenna. What most people refer to as gain is really a combination of directivity and efficiency. Antenna designers shoot for a desired radiation pattern for a given application (directivity), and then seek to minimize feed line and ground losses to use the power most efficiently. All gain figures are comparative—one antenna is compared to another, usually in theoretical terms, such as a 3-element Yagi in comparison to an isotropic antenna. Remember that an isotropic antenna is a perfectly efficient, lossless imaginary antenna in free space. When a dipole antenna is compared to an isotropic antenna, it is considered to have a gain of 2.15dBi, the “i” standing for isotropic.

This is where things get a little tricky, especially if you are a manufacturer wanting to make your antenna look better than it might really be! When gain is given in dBi people often forget this is referencing a “perfect” antenna, something that does not exist in the real world. As a general rule of thumb, one should get in the habit of subtracting 2 from the gain number given when it is in dBi, because what we really want to know is how this antenna compares to an omni-directional dipole antenna. Thus if the manufacturer says an antenna has a gain of 3dBi, it really means it only has a gain of about 1dB over a standard dipole (2.15dBi).

If a manufacturer lists gain in terms of dBd, then the comparison is being made to a dipole already, and this is a much better indicator of real-world gain (of course this assumes honesty on the part of the manufacturer—this is why there is no substitute for empirical testing!) A gain of 3dBd means an actual gain of 3dB over a dipole.

Wrap-Up

This is just a brief introduction to antenna efficiency, directivity, and gain, but I hope it spurs you on to further studies. Antennas are a fascinating subject, and learning about them can last a lifetime! 73, Robert

2015 Committee Chairs and Appointments

Newcomers/Elmers Net.....	Robert Gulley AK3Q	Q-Fiver Editor	Brian DeYoung, K4BRI
Technical Committee	Brian DeYoung, K4BRI	Field Day.....	Eric Neiheisel N8YC
ARPSC Representative.....	Jerry Shipp W1SCR	Historian	Dale Vanselow KC8HQS
Volunteer Examiners	Brian DeYoung K4BRI	Special Publications	Jo Haltermon KD4PYS
QCEN Representative	Pat Maley KD8PAT	Fox Hunters	Dick Arnett WB4SUV
Membership	Nathan Ciufo KA3MTT	Equipment Mgr	Brian Fulmer KC8FJN
Fundraising	Bruce Vanselow N8BV	WebGeezer	Russ Hines WB8ZCC
Education	Robert Gulley AK3Q	Silent Key	Bruce Vanselow N8BV
Repeater Control Ops Mgr	Bruce Vanselow N8BV	Tech Talk Net Mgr	Bruce Vanselow N8BV
PIO	Jerry Shipp W1SCR	K8SCH QSL Mgr	Gerry Weimer KD8ASL
Librarian	open	TV/RFI	Dick Arnett WB4SUV

It's with sorrow that we announce the passing of Mike Wagoner, KB4VKS (SK) and Melvin "Chubby" Grubbs, KC8IMY (SK).

February Calendar

Sun Feb 1 7:00PM Newcomers/Elmers Net, 146.67 146.67, Topic: SWR, Reflected Power, and Gain: What are They?—NCS Robert AK3Q

Tue Feb 3 7:30PM Club Meeting at Hamilton County Communications Center, 2377 Civic Center Drive
Program: Tour of the facility

Wed Feb 4 9:00PM Tech Talk, NCS Robert AK3Q

Sun Feb 8 7:00PM Newcomers/Elmers Net, 146.67 146.67, Topic: Tuners/Matching Networks—NCS Robert AK3Q

Tue Feb 10 6:00 PM Technical Committee meeting—location TBA

Wed Feb 11 9:00PM Tech Talk, NCS Brian K4BRI

Sat Feb 14 10:00AM Fox Hunt starting at Mt. Storm park in Clifton—talk in on 146.670
1:00PM Brunch Bunch at On the Pike Steaks n' More—4960 Delhi Pike—45238

Sun Feb 15 7:00PM Newcomers/Elmers Net, 146.67, Topic: Transmission Lines Myths and Misconceptions 1—NCS Robert AK3Q

Wed Feb 18 9:00PM Tech Talk, NCS Dale KC8HQS

Sat Feb 21 10:00AM ARDF style fox hunt at Mt. Airy forest—meet at the big circle. Talk in on 146.670

Sun Feb 22 7:00PM Newcomers/Elmers Net, 146.67, Topic: Transmission Lines Myths and Misconceptions 2—NCS Robert AK3Q

Tue Feb 24 7:00 PM Board of Directors meeting

Wed Feb 25 9:00PM Tech Talk, NCS Brian KC8FJN

February Oh-Ky-In Meeting to be held at the Hamilton County Communications Center

OH-KY-IN Amateur Radio Society

Regular monthly meetings are held the first Tuesday of each month at 7:30PM local time at the St Bernard Recreation Hall, 120 Washington Avenue (corner Washington & Tower Aves) in St Bernard, just east of Vine St. Please come in the doors at street level, facing the high school. Visitors are ALWAYS welcome!

The February meeting will be held at the Hamilton County Communications Center, so no regular meeting will be held in St. Bernard this month.

The February 3rd, 2015 meeting of the Oh-Ky-In Amateur Radio Society will be held at the Hamilton County Communications Center, located at 2377 Civic Center Drive. The meeting will take place at the usual time of 7:30, and will offer a tour of the facility. Parking will be across the street in the HCCC lot—no parking at the communications center itself.

Pre-registration is required if you wish to take part in this great opportunity, please contact Micheal Sien at kd8soh@yahoo.com. Please do not show up at the center without registering!

There will be no regular meeting in St. Bernard, so please do not show up there in February. The regular meeting in March will be back in St. Bernard.

OH-KY-IN Amateur Radio Society

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