

THE EAGLE

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Scouting hams and hamming Scouters --

Otschodela Council Amateur Radio Group (OCARG) is dedicated to the enhancement of the Scouting program through amateur radio and to the advancement of amateur radio in Scouting. Membership is open to any and all Scouters, amateur radio operators, Scouting and ham clubs and organizations, and all individuals, each with an interest in the Boy Scouts of America, World Of Scouting Movement, Girl Scouts of the USA, World Association of Girl Guides and Girl Scouts, and other youth organizations as they relate to amateur radio. While originally intended for Otschodela Council, Oneonta, New York, OCARG has expanded into a worldwide organization with members in more than twenty states and provinces, and seven nations. There are no membership dues, no officers, no constitution, no newsletter charges, no commercial advertisements, and no organized meetings. All communications are via email or ham radio. All that's required to join is an interest in ham-Scouting and an email to k2frd@arrl.net requesting membership. OCARG is an FCC-licensed Amateur Radio Club Station with the callsign KZ2BSA. The *EAGLE* in PDF format is best read with the latest version of Adobe Reader v.7 (activates hyperlinks) available at <http://www.adobe.com/products/acrobat/readstep2.html>.

Copies of the *OCARG EAGLE* are sent to many interested persons in addition to OCARG members. If you feel that you have received this newsletter in error or no longer wish to receive it, kindly sent a message so stating to the above address.

The online edition of the *OCARG EAGLE* may be found at: <http://homepage.mac.com/k2frd/ocarg.htm>.

BUDDIPOLE ANTENNA AND SCOUTING: A 1:1 MATCH

Picture this scenario: your Troop is on an overnight hike, just setting up camp. The Scoutmaster, a ham operator, digs out a mobile HF rig and small gel-cell battery from his pack and unstraps a small round tube from behind his rolled tent and sleeping back. You watch him screw together a bunch of rod-like objects and a couple slightly larger round things with wire wrapped around them, plugs in a cable, puts the whole thing on top of a collapsible pole, and within fifteen minutes, he's talking to a ham in eastern Europe. How can this be possible, you wonder? Well, you have just been introduced to the hottest new antenna on the market, the Buddipole™ antenna system.

Ham-Scouts and -Scouters love to lug along their radios during outdoor Scouting activities, especially campouts, hikes, camporees, Jamborees, and of course, JOTA. Operators who take ham radio equipment on these trips have carried about every antenna type ever devised from wire dipoles to homebrew verticals to trap vees and even masts, yagis, and quads. A lot of this stuff is heavy, almost all of it is bulky, takes up a lot of room in the backpack or car trunk or has to be strapped on top of a vehicle, and invariably the wires or antenna parts get caught on, and wrapped up with other stuff, notably sleeping bags, tents, clothes, food packages, cooking gear, and the packs and trunks themselves. Once on site, a wire dipole has to go up at least one tree or a vertical has to be set up, guyed to the ground, and radials spread out, all time-consuming and awkward processes, often with Laurel and Hardy comedy

results. Maybe it's just timing and location, but most camporees and campouts across the country (except Arizona) seem to have some sort of adverse weather: rain, snow, sleet, cold, heat, or wind or a combination of all, making antenna erection an arduous, painful, and depressing chore. And too often, they don't work so well.

There's a new antenna on the block which solves all these problems: the Buddipole™. For those not familiar with the Buddipole antenna system concept, it was developed by Budd Drummond W3FF of Redding, CA over a period of a couple years in 2000 and 2001 as part of his retirement activities. A little history here: A ham radio enthusiast all his life (a native of Pennsylvania, Budd's W3FF is a legacy callsign which belonged to his father), Budd began puttering with an idea for an antenna which could be carried while operating "pedestrian mobile". He likes to walk, hike, and camp a lot and takes his radio with him wherever he goes. He suffered the same problem all ham-Scouters have with antennas while hiking or camping: lack of portability, too much weight, bulkiness, and slow set-up time. Budd started with a simple rigid monoband rotatable dipole mounted on a pole in early 2000 which, with innovative thinking quickly evolved into a homebrew portable rigid five-band resonant induction-loaded HF dipole by the end of the year. A lot of this early history can be followed in the 2000 - 2001 messages of the Live-Wire <http://groups.yahoo.com/group/Live-Wire/> and HFPack Groups <http://groups.yahoo.com/group/hfpack/> in which Budd was [and still is] an active member who gave and sought advice and feedback from the other members, many of whom were looking for the "perfect" portable antenna. At this point in mid-2001, the antenna didn't even have a name except "Budd's fly-fishing rod dipole" although officially it was the "W3FF 5-Band HF Portable Dipole" but Budd did a lot of walking and hiking with it, making contacts all over the world from a vacant lot down the block or from California mountaintops. He also had one other criteria for his antenna: it had to be collapsible enough to fit in carry-on luggage in an airplane, an innovation which proved to be the antenna's key element. By April 2001, interest in Budd's antenna was building, people were asking him for construction directions, a couple websites posted instructions and information including on Budd's own personal qsl.net site, and dozens or hundreds were building homebrew versions of Budd's antenna. In May 2001, a lively debate over the antenna's name raged on HFPack and ideas ranging from "BuddJPole" to "BPole" and "Buddpole" were forwarded as replacements for the admittedly cumbersome name W3FF 5BHFPDP. The moniker "Buddipole" was suggested by Sharyl W3VET in recognition of Budd as the developer in combination with "dipole" which merged nicely with Budd's name and it became an immediate hit. Somewhere along here, Budd officially adopted "Buddipole" and, due to the popularity of the antenna, Budd's son Chris W6HFP suggested they go into business manufacturing a commercial version. Over the next few months, Budd and Chris planned, designed, and worked on the commercial version of the Buddipole (CBP) and prepared for its manufacture.

The Buddipole's first big public boost came via the September 2001 QST in which a picture of Budd with his "T-walking" dipole antenna attracted the eyes of thousands of hams world-wide. Budd introduced the world to the CBP at the Dayton Hamvention in May 2002 and at the Pacifcon hamvention in October of the same year. Production and shipping officially commenced in July 2002 and the rest, they say, is history. Chris now runs the business while Budd handles research, development, customer service, and public relations (after all, Budd IS "retired"!).



LEFT: Chris Drummond W6HFP with the standard Commercial Buddipole™ on the collapsible 8' mast above Lake Tahoe. {Used with permission from Buddipole™ Inc.}

From the onset, the Buddipole has all the advantages for portability, weight, flexibility, ease of set-up, and effectiveness. It is a component system and breaks down into sections no longer than 22 inches with the basic system weighing only 2.2 pounds, packed into a kit which will fit on the backpack of any Tenderfoot or Eagle Scout. With the loading coils, it works as an inductively loaded dipole on seven bands from 40 meters up through 10 meters including the WARC bands; without the coils, it can be used for two and six meters. Assembly in order from the center feedpoint (see photos) on each side of the dipole's center Tee: an anodized aluminum arm

extends from the center "T" followed by the loading coil which has adjustable taps for each band, and ending with a telescoping whip, each threaded into each other. At full extension, the dipole stretches 16 feet end to end. The center plastic Tee screws into an 8-foot or 16-foot collapsible mast (available separately) or homebrewed to any height with any mast material. More details, specifications, and many accessories are available at the Commercial Buddipole Site <http://www.buddipole.com/> . For those who wish to make their own, all the details are at the homebrew Buddipole site <http://www.qsl.net/w3ff/> .

Since it's a component system with interchangeable parts including the supplied Versatee™, a three-way interface and connection between the two sides of the dipole and rotating arm connections (optional accessories) it can be configured in many ways from a vertical dipole to an "EII" to an inverted or upright "Vee" to an end-fed vertical (now sold as a separate Buddistick™). The 2400 members of the Buddipole Users Group ("BUG")

<http://groups.yahoo.com/group/Buddipole/> have devised dozens of configurations from the basic Buddipole and Buddistick™ packages, with accessories purchased from Buddipole Inc, or with homebrewed parts to tailor the Buddipole to almost any pattern imaginable.

RIGHT: The heart of the Buddipole system is the adjustable tapped coil permitting electronic length changes for each side of the antenna.

How does it work? The key is in the two 1.75" diameter loading coils, both of which serve as inductors to electronically "lengthen" the dipole arms to match the physical length of an equivalent wire dipole. Each coil has pre-marked settings for the band selected for use and a tap from the "hot" end to connect to the coil at a certain number of turns to match the selected band. A chart, included with the Buddipole kit describes the numbers of turns needed for each band. The telescoping whips are adjusted in or out, depending upon the band selected for use. Because the diameter of the arms, coils, and whips are larger than a normal wire dipole, tuning is broad-banded on each band with adjustment of the Buddipole from one end of the band to the other unnecessary. Usually, the pre-sets alone on any particular band have an SWR at or below 1:1.5. With an antenna analyzer or SWR meter, the whips and/or coils can be fine-tuned to bring the band down to 1:1 SWR. Alternatively, an antenna tuner (internal or external to a radio) can match impedance to the Buddipole or, if desired, permit band-hopping one or two bands up or down from the initial band setting, say, with an initial setting for 20 meters, matches can be made for both 30m and 17m (sometimes 15m depending on height and ground conditions) without readjusting the whips and coils.



LEFT: K2FRD's Buddipole "kit" with extra parts added over the years. There are several components not in the picture including mast materials (aluminum tentpoles) and the N1GXC guy kit. Large coil in upper center is an experimental 80m coil for a vertical Buddistick™. Versatee™ is in lower center with red and blue plugs. To the right and left of the Versatee are the optional rotating arm connections. The standard Buddipole system includes the 25' coax with zero-loss balun.

In comparison tests, the Buddipole is almost as effective as its band-equivalent dipole made of wire except the Buddipole doesn't need to have both ends held up by trees or masts and isn't restricted to one or two bands. Height above ground has a lot to do with effectiveness of any antenna and with the optional 8' mast,

the Buddipole functions more as a NVIS (near vertical incidence skywave) antenna meaning it radiates at a higher takeoff angle permitting closer contacts, a factor not lost on emergency communications (e.g., ARES/RACES) personnel who would rather contact the next state over than the other side of the world. With the 16' mast, it radiates at a lower angle; at heights 1/2 wavelength or higher above ground (say 30 feet for 20m), the Buddipole is as effective as any standard wire dipole, a fact testified by the numerous recent contacts with 3Y0X Peter I Island off Antarctica using Buddipoles.

The Buddipole has grown to such popularity that several variations on the basic system are now offered. In addition to the Buddistick mentioned above, a Mini-Buddipole™ is now available that collapses down to 11" along with deluxe packages of the Buddipole and Buddistick permitting even more system flexibility.

Perhaps even more important to the Buddipole's success is the customer and technical support provided by Budd and Chris. Break a whip? Phone or send an email and they'll send you a new one. Problem getting the SWR down? Send an email and Budd will personally work with you until you've got it down. Got a new idea to improve the Buddipole system? Budd will talk it over with you. Above all else, Budd and Chris have set new standards in the industry for customer support, a standard they will not relax.

Buddipole Inc. has very few dealers stocking its antennas. In order to produce enough to meet dealer demands, the Buddipole manufacture would have to move to China or elsewhere to produce in quantity, thus sacrificing its quality, a compromise which Budd and Chris will not consider. Most Buddipoles are ordered directly online at the website <http://www.buddipole.com/> . They have been sold and shipped all over the world.

For ham-Scouts and Scouters, a Buddipole on a campout is as necessary and convenient as a cook kit.

de K2FRD

2005 JAMBOREE HAM RADIO ARTICLE IN MARCH QST

In the instance anyone missed it, there's a feature article on ham radio at the 2005 National Jamboree at Ft. A.P. Hill, VA in the March **QST** (page 44). It's written by Larry Wolfgang WR1B, a very active ham-Scouter and ARRL Senior Assistant Technical Editor and **QEX** magazine Managing Editor. With his wife Jean WB3IOS, also an ARRL staffer in the Education Division (Certified Continuing Education), they are the parents of two Eagle Scouts. They are also long-term OCARG EAGLE subscribers and contributors.

Unfortunately, the article is not available online at this time.

THREE WINNERS TO FEBRUARY BRAINTEASER

There were three winners in last month's "Brainteaser". The winners will be receiving a shoulder patch from Circle Ten Council, BSA as an award.

Who won? Well, the first answer came from the Editor himself, Fred Stevens, K2FRD. The second correct response was from Mike Leger, W8PQ, of Naperville, IL. And, the third correct answer was from an international reader and EAGLE contributor, Paul Joosten, PA5UL, of Zoetermeer, The Netherlands. Congratulations to all. Everyone who submitted a response was a winner -- I'm surprised so few gave it a try.

The challenge was to figure out the mystery behind the spooky "mind reader" at <http://trunks.secondfoundation.org/files/psychic.swf>. Did you try it? Well, if you didn't, give it a go and then continue reading below for the solution.

Here's the solution: Random symbols are used for all numbers on the chart EXCEPT results divisible by 9 (nine). The trick is based on the fact that any correctly calculated result a multiple of "9" (i.e., 9, 18, 27, 35, etc.). The nines all have the same symbol. Everything else is just random. The only time the trick doesn't work is when the participant can't do math or doesn't follow the instructions.

For those of you who like "proofs", consider a two digit number as having the form "ab". The actual value is $10a + b$, because the a's position is the ten's digit. The calculation asks you to add the two digits and subtract from the original number. So, $(10a + b) - (a + b) = 10a + b - a - b = 9a$. And, that's the solution. All results are multiples of 9. 90 and 99 will never occur, so their symbols are purposely not made the same as the other nines. And, to confuse the participant even more, the program may insert the "nines" symbol in any other position it wants to.

The way I originally solved it was to set up a spreadsheet with the formula for the calculations and have the computer do the work of computer the answer for 10 to 99. I noted that all answers were a multiple of 9. Aren't computer tools wonderful? Then, I chose to do the algebra to prove the method.

Now that you know the answer you can try this on your friends and amaze them with your knowledge.

73, Frank Krizan KR1ZAN
Garland, Texas

GOOGLE EARTH FOR YOUR NEXT HAM-CAMPING SITE

The ever-growing Google has come up with a new tool to look at almost any location on Earth. Called "Google Earth", it's a streaming download program which permits a user to zoom into any site from any altitude. Different from a map or aerial photo site, it is interactive and flowing, meaning a user simply moves his/her mouse to change locations. Zooming is down with the scroll wheel. It starts with an image of the whole earth, then zooms in from there to wherever the user wants to go without changing webpages. Depending upon the resolution of any particular location as made by satellite photoimagery, one can see detail as small as individual trees and vehicles although more rural areas tend to have less resolution. The program is usable by any operating system including Windows and Macintosh. Most of the images appear to be from LANDSAT satellite scans which make the smooth transition from one location to another possible. Find it here: <http://earth.google.com/>. Click boxes permit a user to add or remove place names, roads, and other features. Elevation is given for any point under the cursor and the perspective is given in altitude in feet or miles above a location.

The utility for planning for a trip, campout, or ham-Scout activity is that it permits the user to learn the landscape before adventuring into the unknown.



LEFT: Screenshot from Google Earth of Crumhorn Lake, Otsego Co, NY from an altitude of about 21,000 feet, the highest resolution available for this location. Henderson Scout Reservation is on the left side of the lake and buildings are just visible together with the clearing in front of the dining hall just below the left-most bend in the road. The Council owns most all land in the left half of this image as part of Henderson.

WATCHING FOR A NEW LICENSE? HERE'S THE BEST WAY

The following URL takes one directly to the FCC's license lists. If one knows a new or upgraded license is due to be issued, one may check in frequently at this site and beat the standard license databases by anywhere from eight to 24 hours: <http://gulfoss2.fcc.gov/cgi-bin/ws.exe/genmen/licensee.hts>

Enter: last name; Scroll down to `HA` (Amateur Radio); NO `Wildcard`

Then (next page): click on ULS Database. Look for name(s), new callsign.

Canadian new licenses are searched in a different manner since specific callsigns may be requested upon examination. Use the Royal Amateurs of Canada homepage <http://www.rac.ca/> and <http://www.rac.ca/acl/> (search by Province).

UPCOMING VE SESSIONS

Knowledge of dates and locations of VE sessions is important to those ham-Scouts and Scouters who wish to earn their amateur radio license or upgrade their present license. For persons in the United States, this information is available at <http://www2.arrl.org/arrivec/examsearch.phtml> .

SCOUTMASTER'S MINUTE

"The sport in Scouting is to find the good in every boy and develop it."

- Lord Robert Baden-Powell

Editor's note: These Baden-Powell quotes are available from the following sites:

<http://twc-woodbadge.freesevers.com/bpsays.htm>

http://en.thinkexist.com/quotes/sir_robert_baden-powell/

The OCARG EAGLE is published monthly on or about the 15th except publication is suspended for the summer months. If you feel you have received this newsletter in error, please send an email to K2FRD@arrl.net.

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Further information regarding Otschodela Council Amateur Radio Group may be found at:

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