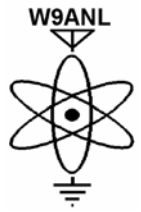


RADIOACTIVITIES

NEWSLETTER OF THE ARGONNE AMATEUR RADIO CLUB



Volume XLVII, Number 4

April 2006

Club Meeting

Nothing received.

The Treasurer's Report

by Jack Albert, WA9FVP

Members: East 12; Associate 32; Newsletter 6; Retired 12

Balances: Checking \$5259.78; Cash \$0.00; ANL fund \$30.00

Distributed as: Club \$3008.20; Repeater \$2196.58; Newline \$55.00

For the period Mar 1, 2006 thru Mar 29, 2006:

Income: Dues \$16.00; Club \$17.33; Rptr \$25.96; Newline \$5.00; ANL \$0.00

Expenses: Club \$0.00; Rptr \$0.00; Newline \$0.00

REMINDERS

CLUB BREAKFAST: Always the 2nd Saturday of each month, 8:30 AM at:

Old♦Country Buffet♦

59th Street and LaGrange Road in LaGrange

CLUB NETS: Thru our Club Repeater 145.19.

SKYWARN NET: Mondays in season at 7 PM with Deni, W9DS.

THE CLUB'S 9PM NET: every Monday with Jack WA9FVP.

THE NIGHT PATROL: every night at 10:30 PM with Paul, W9FNM.

THE BREAKFAST CLUB: every morning at 8 AM.

THE NOONTIME NET: every weekday at noon.

Mil's Corner for February

Nothing received.

THE "TWERK" Net

by Jack Albert, WA9FVP

The "Twerk" (To Work) net is back on the air. If you remember back in the 80's and 90's the AARC repeater was busy during the morning drive to work. You would hear Rich N8DKO, Dale AG9H, Tom KA9QGT, Jim W9GBL, Denny W9DS, Rudy W9ZEW, Dick W9SKD and me Jack WA9FVP. It's back with a few new voices, like Tim WD9FFT, Bruce K9ILX, Larry K9QPM, but a few old timers still hang around!

If you are up in the morning, please join us. The more the merrier! Hopefully we can get the 2 Ohm (to Home) back on the air too.

N6LM Discovers the Parastat Aerial

by Deni, W9DS

In 1983, Fred E. Bolduan, N6LM wrote an article in 73 Magazine, May issue. The aerial can be visualized as one ½ wave element, center fed in the shape of a big U. This is the driven element and the parasitic director is placed inside the U and is installed as an upside down U, length is by director formula, and its ends are cut to frequency. This one is cut for 21.100MHz for the driven element. The light X frame was made of ¼ inch wooden stock of 6 foot lengths and the wire was supported by plywood. One inch finishing nails were tacked every 2 inches on the far ends of the X frame, and #18 wire was used.

You need at least a grid dip meter and sensitive field strength meter for pruning and testing. Polarization is vertical. Radiation is broadside with a deep null, impedance is 38 ohms caused by the near distance of the director ends of 6 inches and a very close spaced radiator / director beam aerial. This makes the Parastat (named for a parasitic element and the stator of a capacitor). Unique with end fire directivity, it is opposite in phase from the driven element and electrostatically in parasitic mode. Now let's make one.

Cut wires for driven and parasitic elements from wire and by the usual ½ wave formula's in the ARRL Handbook. The driven element is grid-dipped to 21.100MHz by a single turn in the center. Same for the parasitic element. Prune the ends of each element for desired frequency. The elements are so close together that an inductive / capacitive relationship causes pulling.

You adjust each element, pruning each wire end to their respective frequencies you have computed. Slide them together in frequency. The aerial has shrunk in length. Continue pruning to maximum increases in directivity and a broadside major null-noise pick-up is reduced. Then N6LM tried horizontal spacing between the horizontal elements of ¼ wavelength and this worked best. Use 20 feet of wire to start with for each element before pruning.

The parastat element was reduced 18 percent shorter than the formula for a ½ wave dipole. N6LM used 300 ohm line to excite the aerial using a transmatch. The aerial radiation pattern has a definite elongated figure 8 indicating with a sharp bidirectional pattern. N6LM also says that signals formerly hidden by noise are unmasked. He claims he worked all continents with the aerial one foot above ground. The aerial could be hidden and stealthy. Dimensions for 15 meters: the driven element is six feet between legs pointing up, these legs are six feet four inches long with eighteen feet eight inches of wire totally. The parasitic element (upside down U): five feet spacing between legs. Leg length found by pruning.

This aerial would be easy for six meters and makes a fine fox hunting aerial for 2 meters. Stack them for more gain.

The Broadband Conical

by Deni, W9DS

Here is an all band wire aerial that operates 80 meters through 10 meters and beyond from an article by W5VOH and WA5DEL of Midland, TX appearing in a 1963 73 Magazine.

The aerial is two horizontal vee's back to back with 20 to 30 degree angle between each of the 2 legs meeting at angle center being fed by 450 ohm line. This makes for wide tuning ranges on each band with low SWR and, of course, an antenna coupler is required like the Johnson Match Box (the authors favorite). Today there are many to choose from. Balanced feed coax can be used, but limits you to one band.

Each vee wire length depends upon the cone apex angle and this varies the load resistance. As the cone angle increases, the wire length must increase to keep the resonant frequency desired. 30 degrees is best with the wire length being 75% of the electrical length of a single wire. The recommended length at 3.9 MHz is overall 105 feet. Now that is each wire length from the center insulator is 52 ½ feet long. The end distance between each two wire sections is 25 feet and the higher the better. It can be run horizontal and then drop the ends down for short home lots.

Radio Log of W9DS

by Deni, W9DS

Dated December 31, 1990, German Radio radio station contacted DK9KV, Ziegfeld of Clone, Germany. As the story was told to me, Ziegfeld discussed his service for

Germany during World War II. He worked as an engineer and at the time I spoke to him he was still employed in a plant where brown coal is turned into liquid gas to heat boilers still standing since 1937. Yes, the plant was bombed during the war, but it has been rebuilt. Ziegfeld said the old system used hydrogen from water under pressure to crack down the coal by this process and turn it into fuel oil that ran the industry of Germany and all of the war machines too.

DX9KV said the South American countries today are using German patents to turn coal into fuel oil with modern methods. Our state of Illinois is loaded with coal just about everywhere. It can be extracted by strip mining. We have deposits right here in the Chicago area. Once the town of Lemont, IL supplied coal to Chicago by polish labor. The people of Lemont are descendents of that coal industry workers. Many mines can be found a little farther south. Braidwood and Coal City come to mind.

Technology today does make it feasible to drill into the ground using modern strip mining methods such as the coal site at the Museum of Science and Industry in Chicago.

The question: why are we not using this technology for fuel today? We have had the plans since the end of WWII!

Stack Beams Means More Gain

by Deni, W9DS

Our cousins to the north of the border have tinkered with stacking a pair of bidirectional 2-element W8JK arrays. Seems the best stacking gain is around one wavelength. This job of joy was done by VE1TG, Nova Scotia, Canada, and appeared in the December 1967 73 Magazine. VE1TG, George Cousins, says if you want to catch lots of DX you must have high gain aerials and the lowest angle of radiation as possible. As the bands begin to open a low angle of radiation will get you there just ahead of your competition.

Verticals low angle of radiation is useful using ½ wave or ⅝ wave working against ground. The drawback in using them is that the QRM is terrific from 360 degrees and the DX can't hear you, and you have trouble pulling DX out of the pileup too.

Getting back to our stacked beams, the second high beam will add to the overall gain and lower angle of radiation. Feed both similar beams in phase and gain rises 3db. The old adage says the higher the better. Oh! 73's.

<p>ARGONNE AMATEUR RADIO CLUB P.O. Box 741 Lemont, IL 60439</p> <p>Officers</p> <p>PRESIDENT George Moshko KB9YYW VICE PRESIDENT Bruce Epperson KA9H SECRETARY Jack Albert WA9FVP TREASURER Jack Albert WA9FVP DIRECTOR Dick Konecny K9IB DIRECTOR Torben Lauritsen KF9MI DIRECTOR Charles Doose KB9UMF DIRECTOR Jim Jorgensen K9RJ DIRECTOR Tim Smith N9UEB DIRECTOR Dale Travis AG9H</p> <p>e-mail: w9anl@bigfoot.com www.bigfoot.com/~w9anl</p>	<p>MEMBERSHIP is open to all who are interested in amateur radio. This club is sponsored by Argonne National Laboratory. Employees of ANL or DOE-Chicago are eligible for full membership. Auxiliary membership is available to non-employees.</p> <p>W9ANL/R is an open repeater, coordinated on 145.19 MHz (-600 input). The AARC repeater has been in operation on this frequency pair continuously since February 5, 1982.</p> <p>CLUB NETS: 2 meter fm 1) Regular, every Monday evening at 9:00 and 2) the Night Patrol every night at 10:30, both on W9ANL/R. The Peanut Whistle Net (PWN) every Sunday at 1:30 p.m., and many evenings at 8:30 p.m. on 1932 kHz (cw/am/ssb), QRP.</p>	<p>RADIOACTIVITIES is published monthly by the Argonne Amateur Radio Club as a nonprofit newsletter intended only for the use of its membership. Material appearing here does not represent the official position of Argonne National Laboratory or the U. S. Department of Energy. Please give credit to the author and to Radioactivities or the Argonne Amateur Radio Club, when using original material published here. Deadline for submissions normally is the 20th of the preceding month.</p> <p>EDITOR Dale Travis AG9H EVENTS SKYWARN ACTIVITIES Deni Lamoreaux W9DS</p> <p>Please send club and editorial correspondence to the club address, or to travisdj@bigfoot.com Please include "AARC" in the subject.</p>
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