Lanierland ARC Newsletter
W4ABP www.lanierlandarc.org

May 2007

President's Corner

By Doyle Gantt, W4DJG, LARC President

Hello all,
April was another banner month for activity. I'm sure The Runway Fish House was to blame for adding a few extra pounds for all that attended. Philip K4PDL spear headed the outstanding idea of getting together with other area clubs and having a meal together. This allowed an opportunity to put faces to the voices we often hear on the radio and get to know each other better. We appreciate your efforts Philip. In addition, a big thank you goes to Alfred KT4VP for kicking off our fox hunt project with getting together with several members and conducting an antenna build day. Alfred worked hard to pre cut and pre drill all the material in order to save time on the build day. The build day was not only fun, it was informative as well. I for one am a hands on person. I learn much more if I actually have my hands involved in the learning process. We didn't have an official contest but if we had, Roger WB4T would have taken first prize for being first to complete his antenna and for his antenna being easiest to tune. Way to go Roger. If you missed this event, not to worry, many more sessions are planned as we move to the actual hunts. We're working on coming up with a simple way to attenuate the hand held antenna as we get closer to the so called rabbit to pin point the signal. We may even learn how to build a simple transmitter to send out the hidden signal. This is an ongoing project. I encourage you to join in on the fun. Much thanks are also in order to Bob N9RLA for keeping such an outstanding newsletter going. He needs your input for content. Please consider submitting an article.

As we move into the hamfest season, I would like to remind everyone that the Atlanta Hamfest is scheduled for June 2 at Jim Miller Park in Cobb County. If you would like to buy indoor space or need more information on bone yard space contact:
John Talipsky, N3ACK
385 Madison Chase Drive
Lawrenceville, Ga. 30045
770-995-6446 or 678-618-2190
Email: johnn3ack@comcast.net

John has offered our club a FREE indoor table to use to promote our club and have things for sell as well. I have requested that he get LARC on the books for this offer. If you are planning to attend this event, please consider spending some time at the LARC table. Remember, you can sell your wares at the LARC table.

The grand-daddy of them all is of course Dayton Hamvention. I had planned to go but looks like my back has other ideas. It's scheduled for May 18, 19 and 20. NASA Space shuttle veteran and International Space Station Expedition 12 commander Bill McArthur, KC5ACR, will be the ARRL's guest at Dayton, the first astronaut to work all states from space, McArthur has been

**applauded for inspiring others through his ham radio activities from NA1SS. He'll be featured speaker during a closed ARRL reception Thursday, May 17,
and will be on hand all day Friday, May 18, to greet and talk with visitors
to ARRL EXPO 2007 at Hamvention. ARRL also anticipates that McArthur will be able to lead an Amateur Radio on the International Space Station (ARISS) forum at Dayton hamvention for first-day visitors. I had the honor of making contact with Bill on one of the ISS passes over Georgia back in December 2005.**

On a closing note, we have moved our meeting location to the United Community Bank in Oakwood. We had a trial run in April to see how it would work out. It is a very nice meeting room with no distractions from outside noise etc. A motion was made from the floor and all attending was in favor to make it our permanent meeting location (at least for now).

**I'm looking forward to seeing each of you at meetings and other activities.
Until then, 73 to you and you family
Doyle, W4DJG**

Your 2007 Officers and Committee Members

Vice President	Alfred Westbrook, KT4VP	Property Control Officer	Lamar Grier, K4JLG
Treasurer	John Brandon, KE4PCF	Field Day Committee	Terry Jones, W4TL
Secretary	Bob Aldrich, N9RLA		
Activities Manager	Phil Loggins, K4PDL		Bob Aldrich, N9RLA
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2 Year Director	Terry Jones, W4TL		Clyde Thomason, N4FCL
1 Year Director	Philip Loggins, K4PDL		
		Membership Committee	Philip Loggins, K4PDL
Newsletter Editor	Bob Aldrich, N9RLA		Gary Morgan, K4GRM
Hamfest Committee	John LeRoy, W4JKL		Don Collins, KA4BLS
	Fred Ariail. KD4T	Technical Director	Alfred Westbrook, KT4VP
		JOTA Committee	Alfred Westbrook, KT4VP
	David Hulsey, W4PSL		Gary Morgan, K4GRM

Repeater Committee	**Club Officers**	**Web Site Editors**	**Doyle Gantt, W4DJG** **Bob Aldrich, N9RLA**
Training Director	**Club Officers**	**Nominating Committee**	**TBA** **TBA** **TBA**

J-POLE ANTENNAS

Submitted by: Ed Cravey, KF4HPY

We have all heard of J-pole antennas, and we know all about them. Do we really know all that much about them? I built a few before I learned some of their history. The basic design originated with the radio equipment used on board early airships. The Zeppelins were using hydrogen gas as a lift agent and the least spark could destroy the great dirigible in a flash. The answer to a spark gap transmitter that arced and sparked was an antenna trailing behind the airship. This antenna was a halfwave wire with a companion quarterwave ladder line feeder separated by spacers; connected to the matching unit. The free halfwave wire was safely away from the airship and could spark at will. To this day some antennas have vertical quarterwave ladder line feeders to a single halfwave wire parallel to the earth; a Zepp antenna.

So what does what have to do with J-poles? Take a basic copper J-pole antenna and turn it upside down and we have a Zeppelin style antenna in copper tube. I like the copper J-pole antennas as they can be disguised as “Copper Cactus” and used as stealth equipment. I favor copper tubing as it is light, strong, easily obtainable, and cheaper than aluminum. All the tools needed are simple and easy to find. A propane torch, solder, cleaning brushes, tubing cutter, small vise, tape measure, and the other shop supplies used in copper plumbing. The torch is probably the single most expensive item of the tools. A safe work area is a must as flame, molten solder, fumes and sharp edges are involved. Dimensions are available almost everywhere. My first J-Pole dimensions came from the ARRL Antenna Book; later I switched to the Buck Rogers dimensions on his packet radio site (www.packetradio.com). The Buck Rogers figures allow making a J-pole for any frequency.

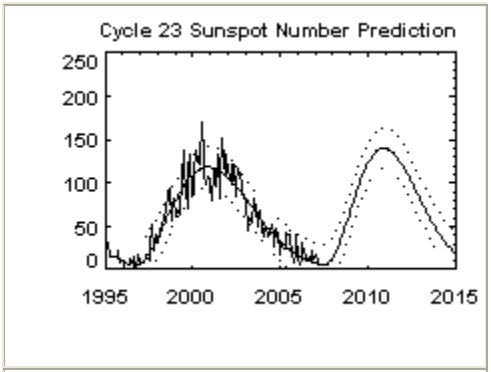
Start by cutting the tubing to the sizes given by the formula. If you have no torch experience, practice with scrap tubes. Using tube brush, sandpaper, etc.; clean tubes; flux the tubes and light the torch. Heat the joint and let the solder flow into the joint. Wipe the joint with a damp shop towel and set aside to cool. Repeat for all the rest of the joints. When the J-pole is finished it should look well and perform like a factory gain vertical. To connect the coax, I use ring terminals clamped under narrow hose clamps; you can also use screws, or solder to attach the coax. Start about 3 inches up from the “J” portion of the antenna to attach the coax. This should be close to 1:1 SWR; if not adjust up or down. If it doesn’t get close to 1.5 or 2:1; then check spacing between the stub and the antenna. Space too great; reduce it with a cable tie. Too little space; increase with a plastic tube notched on the ends, wedge and tape into place. Mount the J-pole to the mast with clamps, or as I do; screw the J-pole into a PVC tube and set the whole thing atop a TV mast. You will be surprised at the performance and stoutness of the J-pole and you will have saved a lot of money building your own vertical antenna. I have built several J-poles in 440, 2m and 6m. During one disaster, one of my J-poles was used upon the withdrawal of the GA14c trailer for maintenance. No one noticed a difference. At another deployment I was surrounded by dump trucks while using my Geo Metro with an HT. Solution: a drive on stand, 15 feet of TV mast topped by a 2m J-pole; no problem!

I have a thought about stealth. Make a trio of J-poles in 2m, 220, and 440; plant them in a pot on the balcony as a decorative copper cactus plant. Beauty and function combined. Gleaming copper and performance too, wonderful!! So try a J-pole as your next VHF project. For HF a “J” is tall, a 10m “J” would be 25 feet tall; a 6m J-pole is 13 feet high but 6m FM is astounding. I know, I built two for 6 meters, one a takedown model. I guess you know I like J-poles by now! Ed, KF4HPY

The Solar Cycle Prediction

Submitted by: Bob Aldrich, N9RLA, LARC Secretary

(Updated 2007/04/02)



Click on image for larger version.

Predicting the behavior of a sunspot cycle is fairly reliable once the cycle is well underway (about 3 years after the minimum in sunspot number occurs [see Hathaway, Wilson, and Reichmann *Solar Physics*; **151**, 177 (1994)]). Prior to that time the predictions are less reliable but nonetheless equally as important. Planning for satellite orbits and space missions often require knowledge of solar activity levels years in advance.

A number of techniques are used to predict the amplitude of a cycle during the time near and before sunspot minimum. Relationships have been found between the size of the next cycle maximum and the length of the previous cycle, the level of activity at sunspot minimum, and the size of the previous cycle.

Among the most reliable techniques are those that use the measurements of changes in the Earth's magnetic field at, and before, sunspot minimum. These changes in the Earth's magnetic field are known to be caused by solar storms but the precise connections between them and future solar activity levels is still uncertain.

Of these "geomagnetic precursor" techniques three stand out. The earliest is from Ohl and Ohl [*Solar-Terrestrial Predictions Proceedings*, Vol. II. 258 (1979)] They found that the value of the geomagnetic *a* index at its minimum was related to the sunspot number during the ensuing maximum. The primary disadvantage of this technique is that the minimum in the geomagnetic *aa* index often occurs slightly after sunspot minimum so the prediction isn't available until the sunspot cycle has started.

An alternative method is due to Joan Feynman. She separates the geomagnetic *aa* index into two components: one in phase with and proportional to the sunspot number, the other component is then the remaining signal. She found that this remaining signal faithfully represents the sunspot numbers several years in advance.

The maximum in this signal occurs at sunspot minimum and is proportional to the sunspot number during the following maximum. This method does allow for a prediction of the next sunspot maximum at the time of sunspot minimum.

A third method is due to Richard Thompson [*Solar Physics* **148**, 383 (1993)]. He found a relationship between the number of days during a sunspot cycle in which the geomagnetic field was "disturbed" and the amplitude of the next sunspot maximum. His method has the advantage of giving a prediction for the size of the next sunspot maximum well before sunspot minimum.

We have employed these methods along with several others to determine the size of the next sunspot cycle using a technique that weights the different predictions by their reliability. [See Hathaway, Wilson, and Reichmann *J. Geophys. Res.* **104**, 22,375 (1999)] This analysis indicated (by mid-1996) a maximum sunspot number of about 154 ± 21. We then use the shape of the sunspot cycle as described by Hathaway, Wilson, and Reichmann [*Solar Physics* **151**, 177 (1994)] and determine a starting time for the cycle by fitting the data to produce a prediction of the monthly sunspot numbers through the next cycle. We find a starting time of July 1996 with minimum occuring in October 1996. The predicted numbers are available in a text file, as a GIF image, and as a Postscript file. As the cycle progresses, the prediction process switches over to giving more weight to the fitting of the monthly values to the cycle shape function. At this phase of cycle 23 we now give full weight to the curve-fitting technique of Hathaway, Wilson, and Reichmann *Solar Physics* **151**, 177 (1994). The two parameters for this fit (cycle amplitude and cycle starting time) have remained unchanged since early 1999.

Note: These predictions are for "smoothed" International Sunspot Numbers. The smoothing is usually over time periods of about a year or more so both the daily and the monthly values for the International Sunspot Number should fluctuate about our predicted numbers. Also note that the "Boulder" numbers reported daily at www.spaceweather.com are typically about 35% higher than the International sunspot number.

Another indicator of the level of solar activity is the flux of radio emission from the Sun at a wavelength of 10.7 cm (2.8 GHz frequency). This flux has been measured daily since 1947. It is an important indicator of solar activity because it tends to follow the changes in the solar ultraviolet that influence the Earth's upper atmosphere and ionosphere. Many models of the upper atmosphere use the 10.7 cm flux (F10.7) as input to determine atmospheric densities and satellite drag. F10.7 has been shown to follow the sunspot number quite closely and similar prediction techniques can be used. Our predictions for F10.7 are available in a text file, as a GIF image, and as a Postscript file. Current values for F10.7 can be found at: http://www.drao.nrc.ca/icarus/www/sol_home.shtml.

Georgia ARRL Events

27-28 Apr 2007* Southeastern VHF Society Conference
Southeastern VHF Society
http://www.svhfs.org
Contact: Robin Cutshaw, AA4RC
773 Cumberland Road
Atlanta, GA 30306
Phone: 404-713-4000
Email: aa4rc@amsat.org
Atlanta, GA
Mariott Hotel Century Center
2000 Century Center Blvd.
Div: Southeastern
Sect: Georgia

28 Apr 2007+ Calhoun Hamfest
Cherokee Capital Amateur Radio Society
http://www.qsl.net/k4woc
Talk-In: 443.675+; 146.745-; 146.805+
Contact: Felton Floyd, AF4DN
1054 Mountain Loop Road NW
Sugar Valley, GA 30746
Phone: 706-629-0369
Email: af4dn@iwispr.net
Sugar Valley, GA
Sugar Valley Community Center
3295 Sugar Valley Road NW
Div: Southeastern
Sect: Georgia

5 May 2007+ Heart of Georgia Hamfest
5 Central Georgia Amateur Radio Clubs
http://members.cox.net/cgarc/
Talk-In: 146.850 (- 600)
Contact: Charles Armstrong, AE4VA
172 Old Hickory Road
Byron, Georgia 31008
Phone: 478-956-5030
Email: jejecha@aol.com
Byron, GA
Peach Shops at Byron
311 N Highway 49, Byron, Georgia 31008

Div: Southeastern
Sect: Georgia

2 Jun 2007* Georgia State Convention (Atlanta Hamfest)
Atlanta Radio Club
http://www.atlantahamfest.com
Talk-In: 146.820 (-) (PL 146.2)
Contact: Johh Talipsky, N3ACK
385 Madison Chase Drive
Lawrenceville, GA 30045
Phone: 678-618-2190
Fax: 678-985-2906
Email: johnn3ack@comcast.net
Marietta, GA
Jim Miller Park
2245 Callaway Road
Div: Southeastern
Sect: Georgia

11 Aug 2007+ Ellijay Ham Fest
Ellijay Amateur Radio Society
http://www.qsl.net/w4hhh/
Talk-In: 145.170 (-600) PL 100 Hz
Contact: Sam Underhill, K4SWU
446 SUTTON RD
ELLIJAY GA 30540
Phone: 706-276-4877
Email: k4swu@ellijay.com
Ellijay, GA
Ellijay Lions Club
1729 S. Main St (Old Hwy 5 South) , Ellijay, GA
Div: Southeastern
Sect: Georgia

15 Sep 2007+ Paulding Amateur Radio Club
http://www.pauldingarc.com
Talk-In: 146.895+ (PL 77)
Contact: AL Martin, KF4RPQ
409 Sleepy Hollow Road
Powder Springs, GA 30127-6751
Phone: 770-920-1309 (Home) or 404-281-6859 (Cell)
Email: KF4RPQ@yahoo.com

Dallas, GA
Paulding Meadows Park
Highway 61
Div: Southeastern
Sect: Georgia

Here's a word from your Newsletter Editor!

I bet now that you're at the end of this edition of the newsletter, you're thinking "Um, short newsletter and not much in this month's edition"…you're right and here's why. Our monthly newsletter is getting smaller because we are getting very little input from the membership and the input we do receive is always from the same dedicated members, and those are also the same members that want this club to prosper and move forward. Those of you that contribute to the newsletter…Thank You and Well Done! Members, you know who they are because it's the same names that appear month in and month out!

My Turn on the Soapbox!

READ and HEED! Monthly newsletter inputs from our members are scarce. I should expect this, right? I mean, haven't we all been raised to think that it's perfectly acceptable to EXPECT something for nothing? After all, that's what we've all been taught, right???? I know I wasn't taught that way and I don't live that way!

Check out these shameful numbers!

We have about 80 members in the LARC and isn't a shame we get input from the same 4 or 5 members every month that dedicate their time (however little they may have) and their effort. These dedicated club members expect nothing and get nothing in return for their efforts except the heart felt satisfaction that *you* may gain some knowledge from us and others and I some way improve the club. This is for a newsletter you ALL benefit from and hopefully enjoy.

Do the numbers…that's about ½ of 1%...yes, ½ of 1% of the total membership that contribute to this newsletter!

If you enjoy reading the newsletter and want it to continue…CONTRIBUTE!

Think about this. What would you do and how would you feel if *YOU* were the owner and editor of a newspaper where you had 80 reporters but only 4 or 5 reporters actually contributed a column every month to promote the business and increase your knowledge? That's 1/2 of 1% of your entire workforce cared enough to contributed and knew that in order to get something out of this newspaper, they would have to put something IN to it (sounds like life in general, doesn't it?). How long do you think those 4 or 5 reporters are going to carry the load for the other 75? Keep in mind, this has been happening for 7 months now, and probably longer.

Question to you. What would you do as the owner of this business? Quit? File for bankruptcy? (because that's where you're heading) or figure out how to motivate the other 75 reporters, and if you chose "motivate", how? I'd love to hear your ideas, because frankly, I'm out of ideas. If this made you angry or just think to yourself "Um…", I at least made you think, and consider the alternative.

Send newsletter inputs or feedback to Bob Aldrich, N9RLA, LARC Secretary and Newsletter Editor

For those of you that contribute, Thank You Very Much. Your hard work and dedication is appreciated and keeps this newsletter going…for now.

Bob Aldrich, N9RLA

LARC Secretary and Newsletter Editor.