



BACKSCATTER

Newsletter of The Lakeland (FL) Amateur Radio Club



Editor: Joe Pirkle

January 2005, Vol. 29 - No. 1

Pub: Becky Pirkle

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The LARC MEMBERSHIP MEETING is held on the first Monday of each month at The Fellowship Hall of the Westminster Presbyterian Church on S. Florida Ave between Riggins Street and Mosswood, Lakeland FL. at 7:00 PM, Talk in on 146.685 MHz, PL Tone 127.3 Hz.

THE PREZ SEZ

Pat Pirkle - WD4BEK



Welcome to the New Year! I am so glad that you are still here! Our first meeting of the new year will involve some planning, so come with some ideas of what you want the club to do. The Board has come up with a few ideas. Yours' are welcome, also. For the February meeting we are planning a QLF contest. Puzzled? Interested? Come with clean socks and be prepared to take home a prize.

I wish to extend a special "Thanks!" to Sparky for leading us in Christmas carols at the Christmas party. Also to all those that prepared and brought all the lovely dishes of food which we consumed!!

Happy New Year!

VERTICAL ANTENNA RADIAL SYSTEMS

Jack Falkenhof - K4BYF

My trusty 4BTV vertical antenna was knocked to the ground and bent by a tree during hurricane Charlie and after a couple of weeks devoted to chain sawing and hauling, I finally found time to get it straightened out; although it was now more in the shape of the letter C rather than straight up and down. It took another hit during hurricane Francis when something blew into it damaging a trap. Being frugal, I reformed the metal shield, made a new base insulator, retuned the trap and continued to squirt RF with it. Along came hurricane Jeanne, knocking it to the ground once more. This time the support for the antenna, a 5 ft steel fence post, which was pounded into the ground about 3 ft, was bent and the lower section of the vertical, a piece of 1 1/4 in x 6 ft tubing was

pretty well decimated. I had about decided to junk the whole thing, but in the process of removing all the stainless steel hardware from what was left of my TH3 beam, I found a straight piece of 1-1/4 inch tubing that was long enough to replace the damaged section of the vertical. All of this is leading up to why I wrote this in the first place.

I use a ground system of 36 radials at the base of the vertical that are each 1/4 wave long in the 40-meter band. This system has been used for about 8 years at this QTH and for about 16 years at my former QTH. I arrived at that particular number by measuring the base impedance of the antenna, which started at 50 ohms with no ground system and then adding radials until the impedance dropped to 30 ohms and didn't change with the addition of more radials. Thirty ohms is what should be expected at the feed point of a quarter wave vertical antenna. I wanted to try decoupling the radial system from the antenna support, the steel pipe, and see if it made any difference in the input impedance. It didn't, but I found something else that was unexpected. I measured the antenna resonance at 7.04 MHz, but the radials were resonating at 7.3 MHz. I had cut the radials for 7.0 MHz using the formula 234 divided by the frequency in MHz. The Radio Amateur's Handbook uses the same formula for calculating both radiators and radials. I realize that the formula can't be 100 percent accurate since it doesn't specifically address the velocity factor of the wire used and the effect of the soil on the overall radial system, but I didn't expect it to vary that much. Another interesting thing is that the radial system seems to have a high Q; the resonant frequency is very sharp and I would expect it to be pretty broad. Most of the articles I have read about radials tell you to put out as many as you can and not worry about the exact lengths, but my experiment doesn't seem to bear that out. As I moved the input frequency from the resonant point of the radials toward the resonant frequency of the radiator, the feed point impedance began to rise, going from 30 ohms to about 40 ohms. This leads me to believe that in order to have an efficient vertical antenna, the radial system has to be tuned to the desired



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operating frequency.

Hopefully, someone who knows more about antennas than I do can straighten me out. In the meantime I'll just wonder!

EDUCATION

Joe Pirkle – AD4IH

There has been no education activity during this report period and there are no plans for the near future



January

Falkenhof, Anne	-----	Jan 03
Sugden, Brian	KR4SP	Jan 07
Robinson, David	KG4KQC	Jan 11
Robinson, Robyn	-----	Jan 16
Johnson, Carl	N3TJ	Jan 31
Morrell, Opal	KE4LOZ	Jan 24

Belated Birthday Wishes

McGraw, Terry	WA2UDG	Sep 05
McGraw, Maureen	WA2YSH	Dec 21

If your birthday was omitted, please contact the editor at ad4ih@arrl.net to correct your database profile.

WEB Links I Like

Joe Pirkle – AD4IH

Many of us have lost a manual for a piece of equipment at one time or another; or maybe even acquired gear without a manual. If so, you might be able to find that much-needed document on the Internet, at no cost!

One such Internet site can be found at URL <http://www.mods.dk/>. With 3,077 articles in the database, you can find modifications and manuals for many types of amateur radio gear,

including receivers, transmitters, transceivers, power supplies, modems, and other equipment.

You can find how to modify a radio to receive and transmit out of range, you can find how to modify a radio to use high-speed packet modems, and how to modify the radio/modem to get better performance.

You can use the navigation bar or the very fast search engine to find what you need. You can select pictures, manuals, or modifications for the following brands: ADI, Alinco, AOR, Bosch, Drake, Icom, Kantronics, Kenwood, Motorola, Radio Shack, Ramsey, Regency, Standard, Storno, Uniden, Yaesu, and more.

The next time you need a manual you might find it on-line without opening your wallet.

Editor's Note: If you have a favorite ham-related site that might be of interest to others, please submit a short article.

OUR WEB PAGE

<http://lakelandarc.homestead.com>

Your web servant has completed the upgrade to the web pages. If you have ideas, photos, etc. that you would like to have posted, send them to ad4ih@arrl.net for consideration.

Joe, AD4IH

QLF?

Ron Smith – KF4JED

To find out if you can QLF make sure to attend the February 7, 2005 meeting. A QLF contest is planned for entertainment with three categories of entries based on the entrant's license class: Novice/Technician, General/Advanced or Extra. A certificate will be given for participation and a chintzy prize will be awarded to the winner of each category.

Please wear clean socks!

Contact Kevin, KI4EFN, the Net Manager, to get on the Net Control schedule. Help keep the net on the air. You can sign up during the net or at the membership meeting.



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CONGRATULATIONS!

Several LARC members have up-graded their licenses this past year. The latest to do so is Patrick O'Neil, KI4CDY. Patrick passed his General class Element 3 this past winter and was staring at that 1-year deadline when he decided to get it done!

Patrick used a variety of tools to get ready for the Element 1. I am sure he would be willing to share his experience with others.

FLORIDA HAMFESTS

For more detailed information consult
the ARRL Web Site or QST.

MO/DA/YR	EVENT	CITY
01/08/05	S'west Fla Ham Fest & Computer Show	Fort Myers
01/29/09	DeSoto County Hamfest	Arcadia
02/05/05 02/06/05	Dade Radio Club of Miami	Miami Fair Expo Cntr
02/11/05 thru 02/13/05	Northern Florida Section Convention	Orlando

Fred Kalt, W2XN, submitted the following for publication in the **Backscatter:**

The 2000 Florida Statutes

Title XLVI - CRIMES
Chapter 843 - Obstructing Justice

843.16 Unlawful to install radio equipment using assigned frequency of state or law enforcement officers; definitions; exceptions; penalties.--

(1) No person, firm, or corporation shall install in any motor vehicle or business establishment, except an emergency vehicle or crime watch vehicle as herein defined or a place established by municipal, county, state, or federal authority

for governmental purposes, any frequency modulation radio receiving equipment so adjusted or tuned as to receive messages or signals on frequencies assigned by the Federal Communications Commission to police or law enforcement officers of any city or county of the state or to the state or any of its agencies. Provided, nothing herein shall be construed to affect any radio station licensed by the Federal Communications System or to affect any recognized newspaper or news publication engaged in covering the news on a full-time basis or any alarm system contractor certified pursuant to part II of chapter 489, operating a central monitoring system.

(2) As used in this section, the term:

(a) "Emergency vehicle" shall specifically mean:

1. Any motor vehicle used by any law enforcement officer or employee of any city, any county, the state, the Federal Bureau of Investigation, or the Armed Forces of the United States while on official business;

2. Any fire department vehicle of any city or county of the state or any state fire department vehicle;

3. Any motor vehicle designated as an emergency vehicle by the Department of Highway Safety and Motor Vehicles when said vehicle is to be assigned the use of frequencies assigned to the state;

4. Any motor vehicle designated as an emergency vehicle by the sheriff of any county in the state when said vehicle is to be assigned the use of frequencies assigned to the said county;

5. Any motor vehicle designated as an emergency vehicle by the chief of police of any city in the state when said vehicle is to be assigned the use of frequencies assigned to the said city.

(b) "Crime watch vehicle" means any motor vehicle used by any person participating in a citizen crime watch or neighborhood watch program when such program and use are approved in writing by the appropriate sheriff or chief of police where the vehicle will be used and the vehicle is assigned the use of frequencies



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assigned to the county or city. Such approval shall be renewed annually.

(3) **This section shall not apply to any holder of a valid amateur radio operator or station license issued by the Federal Communications Commission** or to any recognized newspaper or news publication engaged in covering the news on a full-time basis or any alarm system contractor certified pursuant to part II of chapter 489, operating a central monitoring system.

(4) Any person, firm, or corporation violating any of the provisions of this section shall be deemed guilty of a misdemeanor of the second degree, punishable as provided in s. 775.082 or s. 775.083.

VE FEE UPDATE

Extracted from The ARRL Letter
Vol. 23, No. 49

ARRL VEC exam session application fee to change: Starting January 1, the fee charged all applicants at ARRL VEC-coordinated Amateur Radio examination sessions will rise from \$12 to \$14. ARRL Volunteer Examiner (VE) teams may retain up to \$6 of this fee to reimburse the VE team's out-of-pocket test session-related expenses. The fee is charged to anyone applying for a new amateur license or an upgrade. It also applies to ARRL VEC-session applicants retesting on the same element after being unsuccessful (where examiners permit), or applicants seeking grandfather-credit upgrades and not taking an exam. ARRL VEC Manager Bart Jahnke, W9JJ, says that while the number of examinees has dropped in the past year--possibly due in part to the uncertainty regarding pending licensing proposals--the cost of business and expenses incurred by ARRL VEs and the ARRL VEC continues to rise. "Cost-saving measures already have included staff reduction, reduced printing and distribution charges for VE training material and exam software--both now only available via the Web--and elimination of lesser-used services," he said. The ARRL provides free FCC license renewals, address changes and other license modification services to current members. Nonmembers pay \$14 for those services.

THE REPEATER

Richard Sharp, KQ4KX

Many of you that monitor the LARC repeater have noticed since it was moved to the City's tower the various noises created by IMD (intermodulation distortion or commonly known as "intermod"). After determining that the problem was being created somewhere at the top of the tower it was looking like the best idea was to move our antenna away from the top. The City's tower has three 800MHz system transmit antennas located at the top of their tower. With a total of 30 channels and a combined ERP (effective radiated power) of 12kW it doesn't take too much to create intermod. On Thursday August 26th the antenna was relocated to the 350' level. Usable range doesn't seem to be reduced at the new height. In fact, inbound coverage may be slightly improved since there's no interference from intermod .

The high winds during hurricane Jeanne severely damaged our backup repeater site's antenna & tower. The Decibel DB264 antenna fell from the top of the 40' Rohn 25 tower due to the top section of the tower welds failing. The antenna is still properly clamped to the top of the tower. However, the antenna is quite mangled from the fall. After further inspection of the tower & meeting with LRMC maintenance personnel it was determined the tower needs to be removed. The tower is in bad shape. There's severe rusting on most of the sections. Also, the sections are able to move due to wearing of the holes where the sections are bolted together. Another reason is the building renovations are taking place. The inside wall where the tower is bolted to is going to be a main corridor. At present, the mounting bolts protrude through the wall. LRMC has agreed to accommodate LARC in providing floor space in another location and allow an antenna to be mounted to the top of the new stairwell, which will be almost the same height as the tower.

This site is currently being used for the K4LKL-10 APRS digipeater. It also serves as a backup site for the 146.685 repeater should we need it.

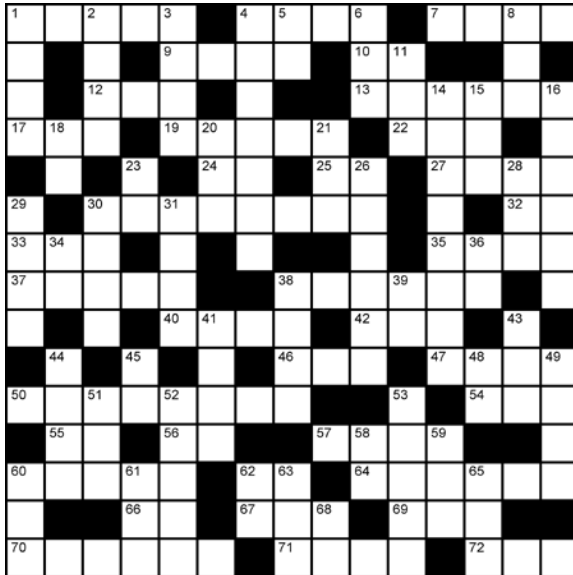


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DO YOU MOBILE?

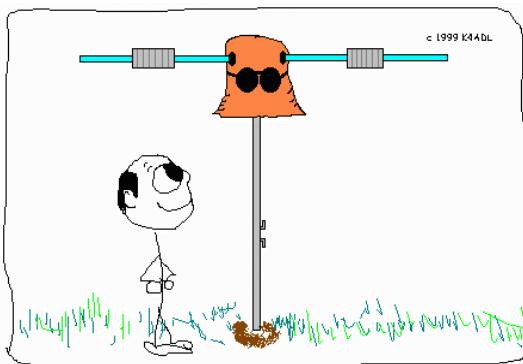


Across

1. An antenna driver
4. Mishandle or mess up
7. Used to fill the tank
9. A poor spot for radio
10. Stalling for time
12. A French friend
13. Where the vehicle stays
17. An attenuator
19. Repair
22. Slang for a million
24. Light (abbr.)
25. Coax connector prefix
27. Positive
30. Combines two bands
32. Assists the teacher (abbr.)
33. Assigns prefixes
35. Account (abbr.)
37. Insulating material
38. Desirable lines
40. Round antenna
42. Add to Viking and get a _____ tuner
46. Independent (abbr.)
47. Best spot for a mobile antenna
50. Separates the passenger and engine compartments
54. Impedance matcher (abbr.)
55. ARES team leader (abbr.)
56. Gain antenna manufacturer
57. Runs the alternator
60. Causes interference from paths
62. Computer (abbr.)
64. Hit a bump
66. Powered
67. On the floor of the vehicle
69. Grow older
70. At each end of the vehicle
71. Oxidization of steel
72. No meters like these meters

Down

1. Propagation hop
2. Where mobiles operate
3. Long, flexible antenna
4. Rapid volume or strength variation
5. Add these two letters to change "crack" into a noise
6. On the windshield
8. Type of mount
11. What we are
14. Signal relay
15. Height in the air
16. Fake or substitute
18. While or in the manner of
20. Every bit
21. Color
23. Original country of S5, 9A, T9, and Z3 (prefix)
26. Common
28. World time (abbr.)
29. Opposite of 9 Across, best spot for radio
30. Two-band antenna
31. If the engine won't run
34. Central African Republic (prefix)
36. Small Canadian DX entity prefix
38. Loads the antenna
39. Abbreviation for both city and state
41. To leave or go
43. Energized
44. In the absence of
45. From (CW abbr.)
48. Country of Macchu Piccu (prefix)
49. Protective component
51. Three basic types of components (abbr.)
52. Caused by the alternator
53. Charge to maintain voltage
58. Separated by San Francisco Bay from SF section
59. Pull
60. Large unruly group
61. The peak
62. Afternoon (abbr.)
63. Passenger vehicle
65. Organized on-the-air group
68. Thanks! (CW abbr.)



WARREN REALLY DIDN'T UNDERSTAND THE CONCEPT OF A "DISGUISED FLAGPOLE ANTENNA."

www.qsl.net/k4adl

THAT'S ALL FOLKS!



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(Backscatter is the monthly Newsletter of the Lakeland Amateur Radio Club)

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