New Bern Amateur Radio Club

foto by W2RLG & WA0ZGL

Volume 32, Issue 1, January, 2009

Logo tnx to Eve, XYL of W2HVX

W4EWN/R

146.610 / 146.010 PL 100 Hz.
444.900 / 449.900 PL 100 Hz.

Website: http://www.nbarc.org

No Meeting This Month (January '09)

FINANCIAL REPORT

It is dues time again. My address is 1508 Kimberly Rd, New Bern, 28560, if some wish to send checks. I will have receipts and a list of those that have prepaid, which I will bring to the next meeting.
73,
Ray, **W7OPH**, Treasurer

President's Corner

Merry Christmas to all! I hope everyone had a safe holiday. As the first Thursday falls on Jan 1 2009, I decided the best thing to do is cancel the January meeting. We have some club business to discuss and I did not think we would have very many members show up for a meeting on New Years Day.

I would like to remind everyone to try to check in on an ARES and/or Skywarn net once a week. For those who do not use their radios often it is a good way to exercise your equipment and operating skills. When an emergency arises, is too late to discover that a squirrel has chewed through your coax or the ropes that hold your dipole up. I used that example because a squirrel has chewed a rope that holds one corner of my 272 foot loop antenna up. Although I have not noticed any decrease in communication capability, I plan to climb up the tree and fix it sometime when I am off work during the holidays.

The repeater site had some more vandalism. They lifted the gate off the hinges. As before, we were lucky and nothing was taken. Pete, **KA4SXX**, said there were some other break-ins in the area. Things like this are a good wake up call. We should all be on the look out for suspicious persons and vehicles in our neighborhood and take simple precautions like making sure our house doors are locked at night. Motion activated floodlights are a good deterrent and may scare off a burglar seeking around your house. Also, for those of us who live in the county and have long driveways, wireless driveway alerts tell you when someone enters your driveway. My house is situated in a way that I cannot see the driveway from inside the house. So I installed a security video camera under the eve of my garage that looks down the driveway. The monitor is in the kitchen. When my driveway alert goes off, I watch the monitor to see if I recognize the vehicle. If I recognize the vehicle (and they are friendly forces) I greet them in the driveway with a smile. If I do not recognize the vehicle, I greet them in the driveway with a smile (and my .357 Magnum Revolver). Either way, friend or foe, it is nice to know when someone is on your property, before they are standing on your porch ringing the doorbell.

Again, I would like to wish everyone safe and happy holidays!

73's Dave, **K4DJW**

Minutes of Meeting

There were no minutes taken at the Dec. "Eatin Meetin"

HAMFESTS

Jan. 10, 2009 **Winston-Salem FirstFest** Summit School Parking Lot, 2100 Reynolda Road http://www.w4nc.com
Email: firstfest09@w4nc.org

Jan. 10, 2009 **Greenwood (SC) Hamfest** Greenwood Civic Center, 1610 Highway 72/221 East http://www.w4gwd.org
Email: dbmanning@wctel.net

ARES ANGLE

A reminder, the Tarheel Emergency Net has moved to 1.945 Mhz at its usual time, 7:30pm EST, on every night except Monday night. On Monday's we'll attempt to use the "old standard" 80m frequency of 3.923Mhz. I hope more of us will check into this net this coming year.

Many of you don't think you're set up for 160 meters. Please give it a try... you may be able to load up what you have adequately for the Tarheel Net, and you'll have one more tool available for the next emergency. See Andy's article on page 3 for more antenna ideas.

The Skywarn Appreciation Day was attended by hams from several clubs, including ours. Most important, of course, was the "banquet" of hamburgers and hot dogs prepared by our own Bill Sanford, **K4VHO**.

This afternoon I received the following email from our SEC, Bernie Nobles:

"Ladies & Gentlemen, I would like to say Thank You for all the hard work all of you have done this year. It really makes a difference when people work together to accomplish a very important goal. Please continue your hard work for the new year, and continue to have meetings, training sessions with your ARES members. Having meetings, and training with your ARES members assures that we will be ready for whatever communications emergency comes our way. Take the time this winter (pending no winter storms) to check all equipment at all of the EOC's, and Evacuation Centers to assure that the equipment will work when needed. I know in some areas that the ICS's courses are a sore subject, but please try your best to get all ARES members trained and certified in the ICS courses that are specified by your county, or branch office.
Thanks again,
Bernard Nobles, **WA4MOK**, NC SEC"

That's it for December, 2008.
73,
Jim, **KS4O**, Craven County EC

HELP NEEDED ON CW NETS!

Even after almost 100 years of technological advancement, CW is still one of the most efficient, reliable and effective modes for sending messages. But activity has been dropping over the years and our CW nets need your help! Check-ins and net control stations are needed. A list of our section CW traffic nets is below. The Carolina Slow Net is a great place for beginners, but if the other nets are running a little fast, the net control station will be happy to slow down to whatever speed you're sending. The CSN web page, http://bellsouthpwp2.net/r/g/rg_burns/index.htm has a good introduction to CW net operating. Please check into one of these nets and support CW traffic handling. If you'd like to volunteer as an NCS, contact our Section Traffic.
73,
Manager, Dave Roy, **W4DNA**, at w4dna@nc.rr.com

Carolinas Slow Net: 8:00pm local time at 3.571MHz
Carolinas Net - Early: 7:00pm local time at 3.573MHz
Carolinas Net - Late: 10:00pm local time at 3.573MHz

CHU time beacon changes frequency

After seventy years of broadcasting Canada's official time, NRC's shortwave station **CHU** will move the transmission frequency for the 7335 KHz transmitter to 7850 KHz. The change goes into effect on 01 January 2009 at 00:00 UTC.

In April 2007, the International Telecommunications Union re-allocated the 7300-7350 KHz band from a fixed service to a broadcasting service. Since then, interference on the 7335 KHz frequency has come from many information broadcasters around the world.

CHU listeners in Canada and around the world who have for so long considered the 7335 KHz frequency exclusively for time signals, are very vocal about this interference. We have heard from amateur radio operators, watchmakers, astronomers, and navigators who use the tones and voice signals. As well, comments were received from those who use the carrier as a calibration source at a distance for their equipment.

Many hams have in the past used CHU 7335 as a freq. standard check for the upper edge of the 40m band. An expected benefit to hams of this change to the SW Broadcasting service should be less (or no) foreign BC stations in the 40m amateur band. For more info go to: http://inms-ienm.nrc-cnrc.gc.ca/main_e.html

Practice Ham exams online

KD0FNR, Hamilton Carter, has created a set of free online exam practice tests that he hopes hams will find useful.

Online study resources are provided for many of the questions. You can see all the practice tests at: http://copaseticflow.blogspot.com/ Please let him know if you find it handy, or if you think of any ways to make it better. hcarter333@gmail.com

GETTING ON 160 METERS

ANDY GRIFFITH, **W4ULD**
12-11-08

The December issue of the NBARC newsletter mentioned that the Tarheel Net plans to move from 75 M to 1.945 MHz. I wish them luck. 160 M is a rough band and not many hams have the where-with-all to put out a decent signal on 160M. In addition to being noisy it takes a lot of real estate to erect an efficient antenna. An effective antenna would be a half-wavelength dipole. A dipole for 1.9 MHz. should be mounted at a ¼ wavelength high or about 125 feet and would be 250 ft. long. As with a 75M dipole, the maximum gain is straight up; so I calculated the gain at 45 degrees elevation as 5.97 dBi. After 175 ft. of RG-213 the gain is reduced to 5.47 dBi.

To get on 160 quickly the tendency is to simply tune a 75M dipole to 1.9 MHz. The antenna tuner may or may not do this. Some of the super tuners with a 500 pf output capacitor may work. In any event the gain will be only –18.6 dBi when fed with 70 ft. of RG-213 or about 4.5 S units down from the 1.9 MHz. dipole. This is definitely not satisfactory.

Another quick conversion of a 3.9 MHz. dipole to a 1.9 MHz. antenna is shown in Figure 1. Here the 3.9 MHz. antenna is 35 ft. high. The coax is shorted at the end and grounded. As many radials as possible will be required. The antenna is fed between the end of the coax and ground. The antenna is like a top loaded vertical. and is essentially equivalent to Figure 2. With 12 radials which have a ground resistance of about 30 ohms. The input impedance is about 34.39 – j118.2 ohms which is well within the range of the typical antenna tuner. The maximum gain is –5.95 at 26 degrees elevation or about 2 S units less than the 1.9 MHz. dipole. The input impedance and the gain are highly dependent on the number of radials as with any vertical antenna. About 100 radials equal in length to ½ the length of the flat top are required to approach 0 ohms ground resistance.

The last popular way of getting on 160 is to place an inductive load in each leg of a 3.9 MHz. antenna as shown in Figure 3. An inductance of 134.8 uH was placed midway of each leg of a 121.28 long antenna at 35 ft. tuned to 3.9 MHz. With a Q of 200 the resistance of each inductance was 8.05 ohms. The input impedance after 60 ft. of RG-213 was 58.5 + j52.6 or well within the range of a typical tuner. The net gain at 45 degrees elevation is -.06 dBi or about 1 S unit less than a good 1.9 MHz. dipole. If one builds this antenna, they should use 134.8 uH inductance in each leg and adjust the end wires to achieve resonance.

An advertisement by MFJ for a 160 through 6 M vertical in the January issue of World Radio Magazine caught my attention. Usually, I find MFJ products are pretty good, but this advertisement is close to overkill. The antenna is a 43 ft. ground mounted vertical apparently designed to be used with an antenna tuner. Also there does not appear to be any traps or loading coils. What they call a balun provides an interface between the antenna and 50 ohm coax. They claim 1/3 dB loss in good quality coax. They specify that at least one radial is required. One radial will give a ground resistance of 45 to 100 ohms. Since the antenna is so short on 160M, the ground resistance is the input impedance. The maximum gain of the antenna is about –26 dBi at 25 degrees elevation. This is 5 to 6 S units below a 160 M dipole. Even with 32 radials, the gain is only –18.4 dBi. So this is a sorry antenna for 160M.

The *Arrl Antenna Book* covers many short antennas for 160M. I have only touched on the obvious.

The conclusion is that one must have a full ½ wavelength dipole or a ¼ wavelength vertical with 100 radials for an effective signal on 160M. There are many compromises but they are 1 to 4.5 S units down from an effective antenna. Beware of all short grounded vertical type antennas and all verticals unless one plans to install 100 radials having a length at least as tall as the antenna and at least as ½ as long as the flattop. The inductively loaded antenna of Figure 3 is a good compromise. I have never used an inductively loaded antenna on 160M but I did use one on 75M with good results. The antenna was only 50 ft. long and 20 ft. high and loaded in the center of each leg. The members of the CCEN on 3.907 Mhz. had no trouble hearing me and I talked to my son in Memphis, TN regularly without difficulty. My inductances were close wound with #12 insulated housewire on a 1-1/4 in. PVC form.

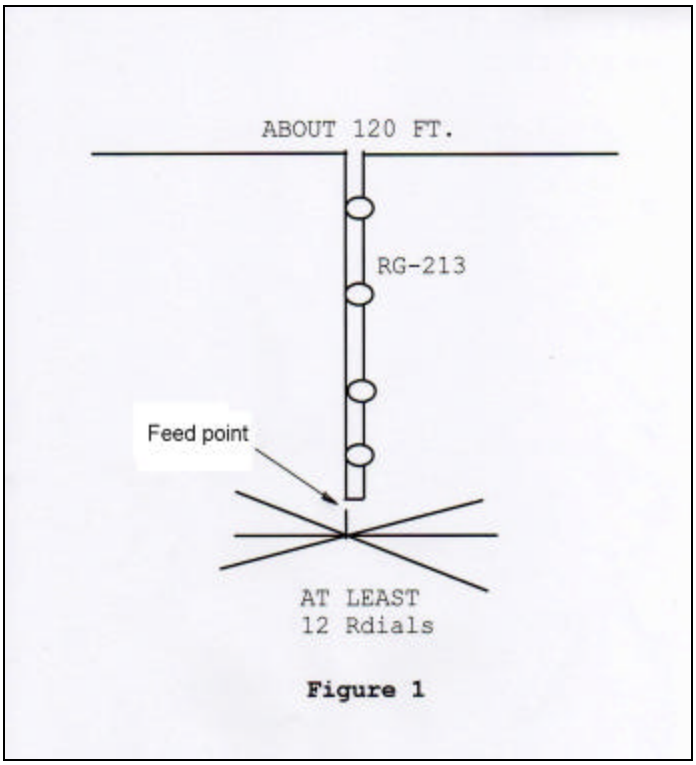

Figure 1

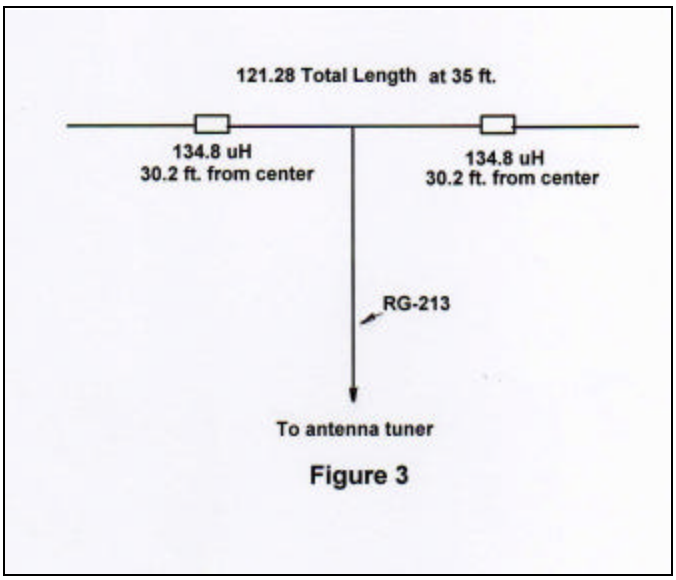

Figure 3

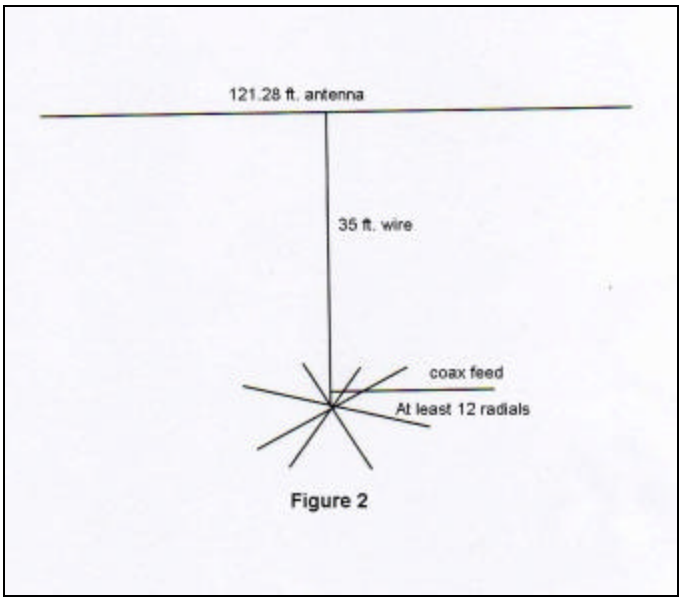

Figure 2

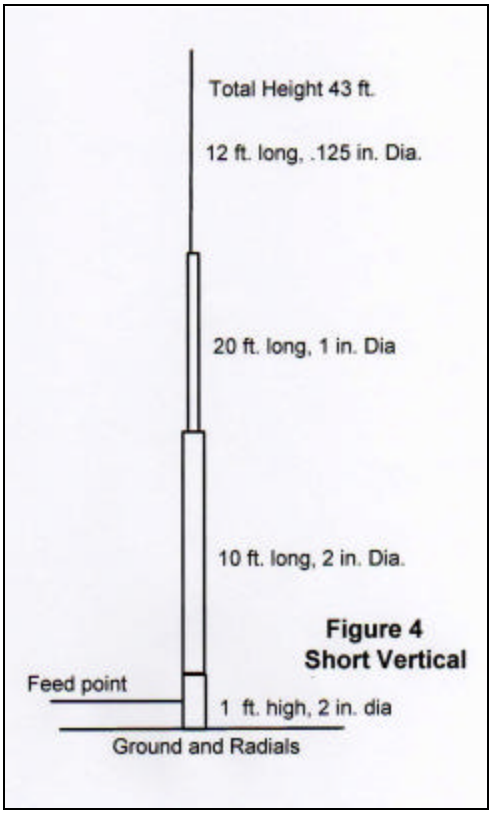

Figure 4
Short Vertical

Cast of Characters:
President: Dave Warwick, K4DJW
Vice President: Pete Koonce, KA4SXX
Secretary: Bob Melle, KJ4HJH
Treasurer: Ray Hemphill, W7OPH
Emergency Communications: Jim Wright, KS4O
Assistant Em. Comm.: Dave Warwick, K4DJW
Public Svc/Special Events/VEC: Bruce Arnold, N8UTY
Trustee: Billy Morton, KE4YMA
Program Committee Chairman:
Photography: Mac Eutsler, WA0ZGL

Selected Local Nets Times are local time, unless otherwise stated
Club Net Manager: position open
Craven County ARES: 146.61 MHz, 2000 before threatening wx; monitor during ARES activations
NC ARES Net, 3.923 MHz, 19:30 daily
Waterway Radio Cruising Club: 7268 kHz, 0745 daily
Fairfield Harbor Cruising Net, 7224, 0730 M-F
NC Morning Net: 3926 kHz, 0745 daily
Carolina Slow Net (CW): 3571 kHz, at 8PM ET (5wpm) daily
Coastal Carolina Emergency Net: 3908 kHz, 1900 daily
Tarheel Emergency Net: 1945 kHz, 1930 daily, exc. Mon. on 3923kHz
Carolinas Net (CW): 3573 kHz, 1900 (25 WPM), 2200 (12-15 WPM) daily
Carteret County ARS/ARES: 145.45 mHz, 1930 Tues./ Emerg Traffic handling 1st Tues. after 4th Sat., monthly Skywarn: 145.21 mHz, 2100 Tuesdays
Pamlico County ARES: 147.210 MHz, tone 151.4, 1930 Wed.
ENC Emergency: 146.685 mHz, 2100 Thursdays
ENC Traffic: 146.685 mHz, 2030 daily
NBARC Ragchew: 146.61 mHz, 2000 daily

New Bern Amateur Radio Club
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The Newsletter Team:
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The NBARC Newsletter is the newsletter of the New Bern Amateur Radio Club, Inc., 802 Bluebird Dr., New Bern, NC 28560. NBARC is an affiliated club with the ARRL and ARES.

Any inquiries, comments, items for Swap Shop, suggestions, contributions, and letters for inclusion should be sent to the Editor, W8UT, at e-mail: anchor@EC.RR.COM