Nikola Tesla, Forgotten American Scientist
By John W. Wagner, W8AHB

In the history of man there have been scores of discoveries and inventions, many of which served to advanced the human condition in some large or small way. But only three such inventions were pivotal, thus opening the door for others to follow.

The wheel was the first great invention - created by an unknown inventor 5000 years ago, and is still an indispensable part of our mechanized world. The movable type printing press - invented in 1450 by Johann Gutenberg was second, making possible the exchange of ideas through books to the masses, thus triggering the First Industrial Revolution. The rise of electric power in the 19th century was third - it triggered a Second Industrial Revolution of unprecedented progress still continuing today.

Electricity did not come into being from the efforts of just one man; its history dates back some 2000 years. Many men added to its understanding, each building upon the discoveries of others. But in the end it was only one man, the American scientist, Nikola Tesla, who put together the accumulated knowledge of all the others and made electricity the servant of man. It is Tesla’s polyphase AC current that powers the world, and it is Tesla’s radio that allows the world to communicate by invisible electromagnetic waves.

These two seemingly impossible ‘breakthrough’ inventions in the latter part of the 19th century launched the world into a whirlwind of technological progress, heretofore never seen in the history of mankind.

Ever since Tesla’s childhood when first seeing a photograph of Niagara Falls, his fondest desire was to become an American citizen and harness the energy of the might Niagara. After immigrating to America in 1884, he fulfilled that dream.

Tesla secured US patents for his ‘rotating magnetic field’ invention in 1888 and used it to harness the energy of the falls in 1896, thus ushering in an era of unprecedented human progress. Power from his generators was sent to Buffalo, NY. Today his high voltage transmission towers, dotting the countryside worldwide, serve as monuments to his genius, their wires delivering power to everyone, and his AC motors provide the muscle to do the work of the world.

(Continued on page 4)
President’s Corner

It is February and time for our celebration of BARC’s birthday. I hope to see all of you there for some cake and ice-cream. So please come out and join us for the evening.

I would like to take this time to thank the outgoing board members for their service to the club. Their service and support of the club helped us all to have a good year in 2010. The new board is here to serve the club and we would like to hear from all of you on anything we can do to help our club grow and thrive. Please feel free to contact any board member with your question or concerns.

With the New Year upon us it is time again to start planning for Field Day. This event allows us to test our equipment and practice and our emergency operating skills. Mr. Terry Monday, K4ZYD, has volunteered to act as co-chairman for the event. We need to have another member to assist Terry in planning and coordinating the event. If you would like to assist and help out please contact Terry or any of the board members to apply.

John Prokop, N8MPX

Next VE Session

The next Brightleaf Amateur Radio Club VE session will be held on February 11. Exams will be held at St. Peter’s School on 5th Street and will start promptly at 6:30 PM. Ted Bertrand, K14PWX, 756-3734. bbertrand@ecu.edu. Please bring the following required:

- Photo ID (drivers license)
- Original Amateur Radio License
- Copy of Amateur Radio License
- Original CSCE's
- Copy of CSCE
- Test fee is $15.00.
- Proof of Tech Plus if before 3/21/87 and doing paper upgrade to General.
- SS Number will be needed if you don’t have an FRN number.

Go to <http://www.w4amc.com/barcinfo.html#VE> for more information.

NC ARES Internet

http://www.ncarrl.org/ares/

Pitt County ARES

http://www.pittares.com/

Well Wishes

Thoughts and Prayers go out to the following:

Tim Nelson, WA4TMN
Charlie Wells, K4SKI
Tom Parsons, W4TEP
Bob Moore, N4USB
John Prokop, N8MPX

Happy Birthday

Brightleaf Amateur Radio Club members birthdays in February.

15 KE4JZU Gene Underwood
16 KG4WEZ Peter Van Houten
17 K4ROK Doug Ferris
20 WD4JAD George Dale
20 KE4UGG Michael Metcalf
22 K4HMW Dan Wallace
25 N4GVK Tom Forrest

Please bring the

Please let me know of any additions or corrections. - W4YDY

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Computer Chip Innovations

American scientists have developed a new type of computer memory that should allow a quicker start-up time and lead to more environmentally-friendly PCs. They have come up with a single 'unified' device that apparently combines the advantages of the two usual forms of memory. The system, developed by researchers at the North Carolina State University is still being tested. But it is thought it might be a step towards PCs that start immediately because they will not need to retrieve data from the hard drive.

Traditionally there are two types of computer memory devices. Slow memory devices are used for data storage such as flash drives and memory cards. These allow information to be saved for extended periods of time and are called non-volatile devices. Fast memory devices - such as random access memory (RAM) or the variation DRAM let the computer work more quickly but cannot save data once the computer is turned off. They need a constant source of power and are therefore known as volatile devices. Researchers claim to have combined the two into a 'double floating-gate field effect transistor', the FET. This combines DRAM's speed but also a longer-lasting storage mode.

Dr Paul Franzon, professor of electrical and computer engineering at the NC State, said: 'We've invented a new device that may revolutionize computer memory.' It could ultimately allow manufacturers to make machines that boot up instantly because the information it needs to start would be in its fast memory. Servers could also then be powered down when they are not in use. At the moment, most servers keep using up energy regardless because they cannot be turned off without affecting performance.

The device invented by NC State stores the date as a charge - like non-volatile memory - but a special control gate gives quick access to the stored data. Dr Franzon says his team investigated the FET’s reliability and believe it can have a ‘very long lifetime when it comes to storing data in the volatile mode’. Source: http://www.dailymail.co.uk/sciencetech/article-1350665/Computer-memory-breakthrough-lead-greener-PCs.html#ixzz1C9wBdYlD

Pitt County ARES News – February 2011

Skywarn Training Courses:
John Cole of the National Weather Service Newport office will be coming to Greenville to conduct an Advanced Skywarn course beginning at 10:00 am on Saturday, February 19, 2011. The location for this training will be the Greene Room of the Hampton Inn, located at 307 SW Greenville Blvd, next to the Greenville Convention Center.

This course is free. All people interested in learning about Skywarn are invited to attend.

Pitt County ARES Meeting:
The next Pitt County ARES meeting will be at 7:30 pm on Thursday, February 17, 2011 at the offices of East Carolina Retina Consultants, located at 2501 Stantonburg Road in Greenville. Anyone interested in ARES is invited to attend.

ARES Areas 1 and 2 Meeting:
There will be an ARES areas 1 and 2 meeting from 10:30 am until 12:00 pm on Saturday, February 12, 2011 at the Golden Skillet in Plymouth.

If you have any suggestions or questions regarding Pitt County ARES, please contact me at kg4czv@gmail.com.

Dave Pulver, KG4CZV

ARRL Outgoing QSL Service Announces New Rate Structure

Effective January 17, 2011, a new pricing structure will go into effect for the ARRL Outgoing QSL Service. With the new rate structure, amateurs will no longer need to count outgoing cards and then guess as to what to pay based upon a half-pound rate; a simple weighing of the cards is all that is necessary to determine what amount to send to the Bureau. This new structure also accommodates a small rate increase in response to recent postage, shipping and handling costs.

The last rate revision for the Outgoing QSL Service was in January 2007. Even though international shipping costs have remained flat over the last 4 years, domestic shipping costs have risen more than 16 percent since 2007, while material and handling costs continue to climb 1 to 2 percent each year.

The new rate will be:

* $2 for 10 or fewer cards in one envelope.
* $3 for 11-20 cards in one envelope, or
* 75 cents per ounce, for packages with 21 or more cards. For example, a package containing 1.5 pounds -- 24 ounces, or about 225 cards -- of cards will cost $18.

If you have any questions concerning the ARRL Outgoing QSL Service or the rates to use the service, please send them via e-mail to buro@arrl.org. - Via ARRL.ORG 01/10/2011
Nikola Tesla, Forgotten American Scientist - continued

(Continued from page 1)

But this is not the end of the story. Not being satisfied to the rest on his laurels, Tesla began experimenting on the frequencies much higher that his 60 cycles of alternating current. He had learned that Heinrich Hertz, a German scientist, had successfully transmitted an electromagnetic wave wirelessly a distance of three feet in 1888. This discovery fascinated Tesla greatly - - if the wave could somehow be transmitted over a much greater distance, he believed it offered a great improvement for the telegraph and telephone by eliminating the need for interconnecting wires.

Again, in typical Tesla fashion, he worked feverishly on his high frequency experiments. In 1891, he invented what is still called a Tesla coil. It contains three elements absolutely fundamental to all radios today. Two years later, Tesla made the breakthrough discovery of his ‘four-tuned circuits’ invention for which he received US patents #645,576 and 649,621 - - and radio was born!

America identifies Thomas Edison as the ‘King of Electricity’ - - even naming power companies in his honor, regardless of the fact that he made no scientific contributions to the alternating current or even direct current power. His invention of the light bulb, powered by direct current, a technology invented by others and in use for many years prior to his light bulb invention, created the mistaken belief by the public that he was also the ‘Father of Electricity’, a belief that persists today.

Guglielmo Marconi, an Italian, transmitted a wireless message across the Atlantic Ocean in 1901. News of his wireless feat spread quickly throughout the world, resulting in the media going wild with excitement and proclaiming him as the inventor of radio. Marconi’s patent using two-tuned circuits was incapable of long distance radio communication - - he had used Tesla’s four-tuned circuit patents for his transatlantic transmission.

Tesla filed a lawsuit for patent infringement, but lacked sufficient money to fight the case to an early conclusion. It was not until June 21, 1943, (Case No. 369), and six months after Tesla died, that the US Supreme Court struck down Marconi’s failed ‘two-tuned circuits’ patent and proclaimed Nikola Tesla as the real inventor of radio.

Today the world still celebrates Marconi for this invention, perhaps because in 1909 the Nobel Committee awarded him the Nobel Prize in Physics.

Regrettably, Tesla’s work - - although undisputed - - is not celebrated in the scientific, academic, and popular community. His name and inventions are never cited in schoolbooks, and he is little more that a footnote in scientific journals.

Encyclopedias list extensive accounts celebrating Thomas Edison’s work, yet Tesla’s entry is noticeably brief and incomplete.

The Smithsonian Institution’s website, while acknowledging but not necessarily celebrating Tesla’s invention of the AC motor, is reluctant to acknowledge and celebrate the principal and obvious result of that invention: ‘AC power’. (The AC generator in reverse is an AC motor.) Further, Tesla’s name and his work are omitted in the Smithsonian’s two major books: The Smithsonian Book of Invention, and The Smithsonian Visual Timeline of Inventions.

Instead the Smithsonian chooses to celebrate the invention of the light bulb as being the catalyst for a ‘Second Industrial Revolution’. Their website and publication, ‘Lighting a Revolution’ is testimony to this belief.

On January 7, 1943, Nikola Tesla died in a New York hotel room - - alone, poverty stricken, and all but forgotten.

Today, the world is awakening to Tesla’s greatness and the earthshaking scientific inventions he showered upon the world. His name is now elevated to stand alongside only four other immortals in electrical science - - names such as Volta, Watt, Ampere, Ohm, Faraday, and Hertz. A unit of electrical/magnetic measurement is name in Tesla’s honor; the ‘Tesla’ (T) is the unit of ‘magnetic flux density’ and is used in MRI machines throughout the world. But the real evidence of his work is electric power and radio is everywhere around us and affecting every part of our daily lives - - in our homes, factories, schools, all telling us that TESLA WAS HERE!

Bronze sculptures of Tesla’s bust were donated to Physics and Electrical Engineering Departments at Harvard, Yale, Princeton, MIT, Caltech, Michigan, Michigan State, Wisconsin, Purdue, Illinois, Maryland, Johns Hopkins, Cornell, Pennsylvania, Penn State, Georgia Tech, Duke, Carnegie Mellon, and Columbia University - - entirely through the efforts of schoolchildren in Michigan. The Henry Ford Museum and the Smithsonian’s National Museum of American History refused a bust of Tesla, choosing instead to pay tribute to Thomas Edison for the invention of the light bulb.

For the complete story of the author’s (W8AHB) quest to introduce Tesla to the academic community, go to the website http://www.ntesla.org. - W8AHB

Excerpts of this article is from Spark-Gap Times, The Old Old Timers Club (OTC) January 2011 newsletter. <http://www.oottc.us/>

More about Nikola Tesla

Nikola Tesla is being honored more as time goes on. On the Internet, there are many sites about Tesla and some that are not too reliable, but still say Marconi invented the radio and is the father of radio. Others that seem to have all the facts give credit to Tesla. The US Supreme Court did in 1943.

From the web site <http://www.neuronet.pitt.edu/~bogdan/tesla/> , there is the following; (Tesla) Inventions: a telephone repeater, rotating magnetic field principle, polyphase alternating-current system, induction motor, alternating-current power transmission, Tesla coil transformer, wireless communication, radio, fluorescent lights, and more than 700 other patents.

His biography can be found at <http://www.teslasociety.com/biography.htm>. That web site has a lot of information about him and his inventions and includes many pictures.

Videos on Tesla have been shown on some cable TV channels that are very informative and interesting. - W4YDY
**Ham Ads**

Ham Ads will be run, free of charge in Ham Chatter for three months for each renewal. Ads must be received by the last week of the month to be included in the following issue. Send ads to: Ham Chatter, PO Box 8387, Greenville, NC 27835, ATTN: Dave Langley or email to: barc @ w4amc.com (no spaces)

**FOR SALE:** ACER 19” LED flat screen computer monitor VGA, & DVI Inputs. Asking $75.00. Call either 756-0020 or 531-4112. Bernard Nobles WA4MOK

**FOR SALE:** Yaesu FT 990 160 thru 10 meter Base/Fixed Rig General Coverage Receiver 13.8 VDC, Excellent Condition Asking $500.00. Call either 756-0020 or 531 4112. Bernard Nobles WA4MOK

**WANTED:** Sony 2010 and a Kenwood RA-5 VHF/UHF Telescoping HT Antenna. Neal, NC4RR, Ph: 946-3840, Email; nscsxrr @ centurylink.net

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**Field Day Co-Chairman needed**

Terry Monday, K4ZYD, has volunteered to be a Field Day Co-chairman for 2011. He is looking for another co-chairman to assist. Please help.

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Walt Honea, W4HM, SK

When Walter Honea, W4HM, got his Amateur Radio license in Sept. 1936 fewer than half of all American households had a telephone.

Since that made dialing up his friends an impossibility, he wondered if there was a way to talk by radio. When he was in high school, Walter found an Amateur Radio handbook tucked away in the reference section of his hometown library in Kansas. Shortly thereafter in Sept. 1936 he became a licensed operator.

His new license came in handy less than two years later when a snowstorm hit his hometown, cutting off communications. He operated for nearly 24 hours, passing on mostly welfare messages for Western Union and even transcribing the news stories of the day for his local paper.

Walter also found his future career in the communications field and got a job for Braniff Airways in San Antonio working in communications. It was there he met his future wife, Letha. They later married and have since celebrated 64 years together.

After the Japanese bombed Pearl Harbor in 1941, the Army Air Corp expanded its San Antonio ground school and began looking for qualified people to teach the cadets communications and navigation. Walter took the job, which he held for the balance of the war.

Walter’s next stop was Louisiana where he worked for the Federal Aviation Administration. He later moved to Texas where he worked in navigation communications. At that time, only large airports had radar, but that changed in 1956 when two airplanes collided over the Grand Canyon. The crash prompted the FAA purchase many more radar systems and Walter’s job became traveling around the country installing them. He eventually landed in Fort Worth, Texas as a radar engineer and then later moved to Washington, D.C. where he lived for 12 years and...

(Continued on page 7)
Walt Honea, W4HM, SK

(Continued from page 6)

worked in research and development. He spent his last six working years working out of Norfolk International Airport as a sector manager.

When one of his daughters moved to Washington, N.C., Walter and his wife decided to follow, building a house near hers and moving in Sept. 2004. Unfortunately, Walter fell in the garage last year and spent much of the year at the hospital recovering from injuries. In December, he and his wife moved into Cypress Glen in Greenville.

Walter is still working to get his station set up in his new home, but thanks to the help of club members, has gotten a 40 meter antenna put up and hopes to get on the air soon. He has a Tentec Orion and a Yaesu 757 as backup. He enjoys contents, particularly sweeps where he operates mostly CW. He especially enjoys DX.

Walter will celebrate his 88th birthday on April 12. He has two daughters, two grandsons, two granddaughters and one great-grandson who is 15 months old.

He has had a number of call signs over the years, including W9YRS when he was in Kansas, W5MCT after the end of the war, W4YGY when he was in Washington, D.C. and finally W4HM when he got his extra class license in the early 1960s. - Amanda, KI4IWS (Reprint from March 2006 Ham Chatter)

Excerpts below from the Wilkerson Funeral Home obituary.

(Honea) was a member of the First United Methodist Church in Washington. He was a tree farmer in Virginia, a Mason and member of the Perfect Union Masonic Lodge #10 A.F.& A.M., and was also active in the Potomac Valley and Bright Leaf Amateur Radio Clubs.

He is survived by his: wife of 68 years, Letha Trimble Honea; daughters, Gwen H. Estep and husband, Charles, and Nancy H. Adams, all of Washington; grandchildren, Andrew R. Estep and wife, Emma, Rebecca L. Grike and husband, Matthew, Brady J. Adams and wife, Melissa, and Beth-Ann L. Knarreborg and husband, Paul; and five great-grandchildren.

2011 Membership Dues

It's that time of the year once again. Membership dues for BARC will be due January 1. Membership dues are as follows and are the same as 2009:

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular Member</td>
<td>$20.00</td>
</tr>
<tr>
<td>Family Member</td>
<td>$2.00</td>
</tr>
<tr>
<td>Associate Member (Non-Licensed)</td>
<td>$5.00</td>
</tr>
<tr>
<td>Life Member</td>
<td>$0.00</td>
</tr>
<tr>
<td>New Hams: 18 and younger (1st year)</td>
<td>$5.00</td>
</tr>
<tr>
<td>New Hams: 19 and older (1st year)</td>
<td>$10.00</td>
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</tbody>
</table>

We are requesting that you send the application form in, so that we can have your correct information on file. The form can be downloaded at http://www.w4amc.com/application.pdf.

Please mail your dues, along with the member application form to:
Brightleaf Amateur Radio Club
P.O. Box 8387
Greenville, NC 27835

Those who have not renewed their dues by March 1, 2009 will be removed from the roster and the Ham Chatter mailing list. Membership will be reinstated upon receipt of 2009 dues.

If there are any questions concerning membership status or dues, please contact Ted Bertrand, K14PWX, (2010 Treasurer) at <bertrandb@ecu.edu> or (252) 756-3734. Thank you for your continued support and participation in BARC.

Commercial Ad Rates
1/8 page, Business Card Size
$10 per Month - $100 per Year
Send ads to: Ham Chatter, PO Box 8387, Greenville, NC 27835
ATTN: Dave Langley, W4YDY or email barc@w4amc.com
Help support Ham Chatter and the club.
Donations accepted!

NETS

VHF
♦ BARC Net, Mondays, 2000 on 147.09 MHz, W4GDF Repeater.
♦ Pitt County Emergency Communications Net, Mondays, 2100 on 147.09 MHz. (131.8 Hz Tone)
♦ Kinston Amateur Radio Society Net, 1,3,4 Tuesdays, 2000 hrs. on 145.47 MHz., W4OIX repeater in Kinston.
♦ Eastern North Carolina Traffic Net, Every night, 2030 on 146.685 MHz.
♦ Piedmont Coastal Traffic Net, Nightly 2030 on 146.88 MHz.
♦ Newport WFO SKYWARN Net, Tuesday, 2100 on 145.21 MHz
♦ Carteret County ARS (CCARS) Emergency Net, Tuesdays, 1930 on the Newport 145.45 (-) MHz.
♦ Coastal Emergency Linking Net, Wednesday, 2100 ET on Ahoskie 145.13, Buxton 145.15, Columbia 146.83 & 443.30, Elizabeth City 146.655, Greenville, 145.35, Hertford 147.33, Williamston 145.41 & 444.25.

HF
♦ Tar Heel Emergency Communications Net on 3923 kHz Nightly 1930.

NTS CW Nets
♦ 3.571  2000 hours, slow speed (5-8 wpm) Carolinas Slow Net
♦ 3.573  1900 hours, high speed (20 wpm)
♦ 3.573  2200 hours, slow speed (12-14 wpm), South Carolina/North Carolina

Pitt County Repeater Association
http://www.pcra.us/
## BARC CALENDAR OF EVENTS

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Feb 5.</td>
<td>Richmond Frostfest</td>
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<tr>
<td>Feb 8.</td>
<td>Regular Meeting - Birthday</td>
</tr>
<tr>
<td>Feb 11.</td>
<td>BARC VE Session</td>
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<tr>
<td>Feb 12/13</td>
<td>CQ WPX RTTY Contest</td>
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<tr>
<td>Feb 19/20</td>
<td>ARRL CW DX Contest</td>
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<tr>
<td>Feb 22.</td>
<td>Board Meeting</td>
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<tr>
<td>Feb 24.</td>
<td>HAM CHATTER DEADLINE</td>
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<tr>
<td>Feb 25/27</td>
<td>CQ WW SSB 160M Contest</td>
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<tr>
<td>Feb 27/28</td>
<td>NC QSO Party</td>
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<tr>
<td>Mar 5/6</td>
<td>ARRL SSB DX Contest</td>
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<tr>
<td>Mar 8.</td>
<td>Regular Meeting</td>
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<tr>
<td>Mar 26/27</td>
<td>CQ WW SSB WPX Contest</td>
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<td>Mar 29.</td>
<td>Board Meeting</td>
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<tr>
<td>Mar 31.</td>
<td>HAM CHATTER DEADLINE</td>
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<tr>
<td>Apr 12.</td>
<td>Regular Meeting</td>
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<tr>
<td>Apr 15.</td>
<td>BARC VE Session</td>
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<tr>
<td>Apr 23.</td>
<td>RARSFest Raleigh</td>
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<tr>
<td>Apr 26.</td>
<td>Board Meeting</td>
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<tr>
<td>Apr 27.</td>
<td>HAM CHATTER DEADLINE</td>
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<tr>
<td>May 10.</td>
<td>Regular Meeting</td>
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<tr>
<td>May 28/29.</td>
<td>CQ WW CW WPX Contest</td>
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<tr>
<td>May 31.</td>
<td>Board Meeting</td>
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<tr>
<td>Jun 2.</td>
<td>HAM CHATTER DEADLINE</td>
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<tr>
<td>Jun 10.</td>
<td>BARC VE Session</td>
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<tr>
<td>Jun 18.</td>
<td>Down East Hamfest Kinston</td>
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<tr>
<td>Aug 10.</td>
<td>BARC VE Session</td>
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<tr>
<td>Oct 14.</td>
<td>BARC VE Session</td>
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<tr>
<td>Dec 16.</td>
<td>BARC VE Session</td>
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BARC 2 METER NET - MONDAY NIGHTS AT 8:00 PM - 147.09 W4GDF REPEATER - 131.8 Tone  
PCEC 2 METER NET - MONDAY NIGHTS AT 8:30 PM - 147.09 W4GDF REPEATER - 131.8 Tone  
BRIGHTLEAF AMATEUR RADIO CLUB STATIONS

W1VOA - W4AMC - W4UHS

**February 8**

Next Meeting

February 2011

TO:

Ham Chatter Club

GREENVILLE, NC 27835

P.O. Box 8379

Brightleaf Amateur Radio Club

BARC Amateur Radio Club