



MECKLENBURG AMATEUR
RADIO SOCIETY, INC

MARS News

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A letter from the President

Hello Everyone,

I hope you all are having a great summer with your family and friends.

This month, I want to give my personal *Thanks!* to all who came out to support the MARS ARRL Field Day on June 23rd and 24th. This goes out to everyone who participated by oper-



ating stations or providing support for our effort. I especially do not want to forget to thank everyone who came out to help the club set up the Field Day site on Friday and then take down the site on Sunday. Even though it was very hot all weekend, we still had a great time; there was plenty of ice-cold soda and water to keep us cooled down. What a picnic we had. There were grilled hot dogs and plenty of side dishes and desserts. One thing is for sure; I don't think any of us went thirsty or hungry. Also, according to our Field Day Chairman Bill Fisher W4GRW, MARS scored a significant number of class 2A points in the contest portion of the event.

I want everyone to know how encouraging it is when I see our members getting involved, helping to make MARS successful in ham radio events and activities while also having some fun. I wish that every member would get involved with the club and please give us some feedback to let us know the things that you would like to see happening within the club. There is *something* for everyone in Ham Radio, and something for *everyone* in MARS. One fascinating thing I saw during Field Day was some of our youth getting involved making contacts on the radio. I think they were as excited as much as I was. Ham Radio is #1 on my list for fun and learning.

It's that time of year again - that time when I need to bring to everyone's attention that our next HamFest is coming up in March 2008. *BUT it will not just happen all by itself.* The club needs lots of help from you, the MARS membership, to help make it happen and make it a success. This is the only event that we conduct to make money to fund the club, other than membership dues and ARRL renewals. Your membership dues are important but the HamFest helps us maintain our clubroom, our repeaters, our radio equipment, and many other things that are important to you as a MARS member. At the July 31st club meeting, I will begin asking everyone in MARS to help with the 2008 Hamfest effort. If you have never helped with the HamFest in the past, or if you have just joined the club, and you are not sure where and how you can help out - just let me know you are interested in helping us. We will find you

Letter from the President (cont.)

something that you can help us with. Your help is vital and will be greatly appreciated.

Once again, Thanks for your support and 73,

Jodie Rowland

KI4CXO

President of MARS - W4BFB



Salvation Army Book Bags Program

W4BFB and the W4CQ club are joining together to support a book bag and school supplies drive for the Salvation Army's Shelter for Battered Women and Children. This is a wonderful project that could really help a child caught in a difficult situation.

Book bags and school supplies are readily available and also very reasonably priced at stores such as Walmart and Target and Office Depot.

Charlotte Mecklenburg schools have school supplies lists available on each individual school's web site. Here is a sample list of required supplies listed by a couple of high schools: Notebook/Binder(s) - 3 ring - Notebook subject dividers - Loose-leaf notebook filler paper - Pens (blue or black ink) - Pencils with erasers (#2) - Colored pencils - Highlighters - Glue stick or tape - Index Cards - Ruler - Markers.

These are just the basics. Those in middle school and higher and taking math usually will be required to have a certain model calculator. Individual teachers will often have additional supply requirements for their students. We probably can't do it all. But, just giving them the basics will be a great start.

Note: Many stores have the list of required school supplies for schools in their area. If you pack a book bag with supplies for a specific grade, please attach a note to the book bag stating for which grade level you bought supplies.

The club will be accepting supplies at the July meeting on Tuesday the 31st. Please participate in this wonderful program by purchasing school supplies and bringing them to the meeting.

73,

Jodie - KI4CXO

June and July Club Meetings

The featured speaker for the June club meeting was Steve Norman (KF4CXB) with Mecklenburg County Emergency Management. Steve gave an excellent presentation on Emergency Preparedness. Steve explained that it is critical that we are prepared as individuals and families for emergencies. The role of the amateur radio community in helping with local emergencies is an extremely important one. But unless we ourselves can make ourselves available by being prepared we have no role in helping others.

He went over some of the things we should have on hand in the event of an emergency like; copies of our medical records and important phone numbers including contacts outside of our area who would likely be unaffected by any local emergency. Battery operated devices like radios and small TVs and of course flash lights are critical. We also have to make sure we have plenty of fresh batteries. And, of course, in the case of those operators who want to help in these emergency situations a 'go kit' is essential.

He also talked about the need for an emergency response plan for your home. There should be planned spot where everyone in your home goes if you have to evacuate the building. This allows family members to be easily accounted for. The fire department should not be sending in people to rescue someone when they are not actually in the home.

Steve's presentation was excellent as it was informative as well as entertaining. The club thanks Steve for his hard work and also for taking the time to talk to us.

Also, at the June meeting the club was honored to present a lifetime membership award to Horace Hunter (W4AYA). Thanks Horace for your life of service to the W4BFB club.

For July, the North Carolina State Director for Navy-Marine Corps MARS Lee Mager will be giving our feature presentation.

73,

Jeff - KA4WYC

And

Richard - K4KRW



Field Day 2007



Greetings members! Field Day 2007 is now in the history books. This was a Field Day of several firsts. This was our first year at a new location; Back Creek Presbyterian Church. This was also the first year W4BFB manned a GOTA (Get On The Air) Station. This was also the first year we used Mecklenburg County Emergency Management's tower trailer.

Many wonderful things happened at the Field Day event, but the GOTA station, headed up by John (WB2NHQ) and Jodie (K14CXO), produced many of the top highlights. We had six visitors under the age of 18 make contacts on the GOTA station. Three of those visitors made 20 or more HF contacts. With Ben (WB2RHM) & John mentoring and supervising, as GOTA coaches, we earned many valuable bonus points with the station. But, the smiles on the faces of those experiencing the fun for the first time were the biggest bonus of all. This station produced 400 contacts under the NC4DP call sign.

The GOTA station was also the scene of several club members making their first HF contacts. Those members were presented with First Contact Certificates to commemorate their accomplishment. One technician class club member made 60 HF contacts and two made over 100 contacts.

W4BFB manned three stations for the event. A CW/Digital station and a SSB station were the work horses for the event. The CW/Digital station produced 147 CW contacts and 100 digital contacts. The majority of our W4BFB HF contacts (819) were SSB. So, the club's new Jupiter got a great workout. A third station for six meters was used to make 46 contacts. The club stations had 1112 contacts total. Our score without bonuses was 2718. With our 2050 bonus points our total score was 4768, This is the highest number of contacts we've had in the last ten years and the second highest score (in 2003 we had 5064 points).

The amateur radio service received some great publicity when The Charlotte Ob-



John (WB2NHQ) coaching aspiring hams at the 'Get on the Air' station as Jodie (K14CXO) observes.



What a great time to enjoy each other's company and eat a great meal!

Field Day (Cont.)

server, and Cable News 14, paid a visit. Randy (K4RKZ), Don (N4IZ) and John (WB2NHQ) were great ambassadors for our hobby.

Great food and fellowship were enjoyed by the 58 people who signed the guest log. This was a great attendance number. Only one year in the last ten years had more attendees (2005 had 65).

A most sincere thank you to all of you who participated in this years event. A special thanks goes to those of you who came out to help setup and break down the event site. Also, a special thank you goes to all of you who participated in Field day planning meetings and participated in the essential roles that made this event possible. None of this would have happened without a lot of hard work from many people.

73,

Bill Fisher (W4GRW)



Sunrise on Sunday Morning

The Magic of Radio

When I was a newly licensed teenager, I was fascinated with the idea that – with the tap of a code key (I was a Novice then) I could send signals to someone that was hundreds of miles away. But HOW did it work?

At a local club meeting, I cornered one of the “old timers” and asked him. He took a puff from his ever-present cigarette and answered in words like visual Morse Code. “It’s FM, son.”

“FM?” I replied. “But I don’t use Frequency Modulation,” I replied, proud that I knew the term. “I use CW.”

“Nope,” he replied. “FM means that it’s Freakin’ Magic!”

Today, after many engineering courses, after reading countless theory and practice books and articles, and with over 50 years experience as a Ham, it is STILL “FM!” I hope this short article may help us understand a little bit more about this magic.

We are taught that radio is a manifestation of Electromagnetic (EM) waves. But what does this mean?

Anyone that has ever drawn a spark from a doorknob on a wintry morning understands the “Electro” part. And anyone that has ever found North with a compass understands the “Magnetic” part. But how do they come together to form a radio signal?

In the 1860’s, a Scottish scientist -- James Clerk Maxwell – codified the experimental work of Gauss, Ampere, and Faraday. To make Ampere’s findings “work” for alternating as well as direct currents, he added an additional term that he named “Displacement Current.” The resulting set of equations that are now called “Maxwell’s Equations” in his honor.

From these equations, he and other mathematicians were able to deduce that Electromagnetic waves SHOULD exist. Heinrich Hertz

The Magic of Radio (cont.)

verified that they did exist, thus authenticating the equations. These equations now form the basis for all electromagnetic theory and practice.

Virtually all scientists and engineers have interpreted these equations to mean, among other things, that an Electric Field CAUSES a Magnetic Field, and that a Magnetic Field CAUSES an Electric Field. The existence of radio waves would seem to verify this premise.

Unfortunately, at least one small anomaly exists. When scientists have tried to measure a Magnetic Field in an area of intense Electric Fields – between the plates of a capacitor – they have found that the expected magnetic Field is mysteriously absent! This anomaly explains why the highly touted CFA, or Crossed Field Antenna has failed to live up to the inventor's claims.

Over the last 10+ years, Univ. of West Virginia Professor Oleg Jefimenko has been interested in this anomaly. He has gone back to the basic concepts of CAUSALITY – the method by which A causes B – and has determined that the modern interpretation of Maxwell's Equations is wrong. Specifically:

An Electric Field does not cause a Magnetic Field

A Magnetic Field does not cause an Electric Field

Instead, says Jefimenko, both the Electric and Magnetic Fields have a common physical cause. They are simultaneously caused by electrons and by electron flow.

He has developed a set of equations to describe this newly discovered relationship. Dubbed "Jefimenko's Equations," they can be viewed at:

http://en.wikipedia.org/wiki/Jefimenko%27s_equations

The equations are somewhat daunting – as are all differential equations. But for those who understand them, they explain why the CFA doesn't work. The equations also contain some hints as to how radio waves are generated. From these hints may come ideas for new and innovative compact antenna designs. Moreover, they contain some fascinating new ideas about induction.

His work is currently being studied by some of the brightest and imaginative minds in Electromagnetics as well as Gravitation. I wish I was one of them, but it's certainly fun to watch!

And we thought radio was "old-fashioned!"

73,

Bill - KT4YE

$$\vec{B}(\vec{r}, t) = \frac{\mu_0}{4\pi} \int \left(\frac{\vec{J}(\vec{r}', t_r) \times \vec{R}}{R^3} + \frac{1}{R^2 c} \frac{\partial \vec{J}(\vec{r}', t_r)}{\partial t} \times \vec{R} \right) d^3 r'$$

The Celery Stick Antenna

Envision a scenario in which you had been sent to an emergency area, such as one hit by an ice storm, without time to prepare and where power had been lost. Your only means of communication was your HT. Then you discovered that you were in and out of the repeater because your rubber duck antenna couldn't emit enough signal. Without soldering equipment or power what kind of antenna would you construct? I found a solution by modifying the "About As Cheap As You Can Get" antenna in the July issue of Popular Communications. Please remember that this is a "minimalist" antenna. All construction was done with only a multi-tool.

The 14 inch vertical element has a loop on top (you can attach a cord to suspend the antenna in the air) and is held to a fairly straight stick by two rubber bands. A stick such as this is usually easy to find. Heavy rubber bands such as those supermarkets use to bundle celery work well (hence the name of the antenna). The 90 degree bend at the bottom of the driven element keeps the stick from sliding down and separating from the vertical element. The third rubber band from the top holds the 36 inch ground plane in place. Yes, two elements are enough for the ground plane. Slope each side 45 degrees down from the horizontal. To connect the coax to the elements, I found some spring loaded clothes pins. Hold the coax to the stick with a fourth rubber band. You probably won't have a twist on connector for your radio's antenna jack. So, insert as many strands of the center conductor of the coax as possible into the center of the jack (cut off the excess to avoid a short). Then use a clothes pin or a rubber band to hold the shield to the outer part of the jack. Naturally you must keep the radio as steady as possible.



Clothes pins hold the coax center conductor to the vertical radiator and the coax shield to the two elements of the ground plane. Rubber bands hold elements and the coax in place.

After making this antenna I connected it to my analyzer and found that it had no worse than a 1.4:1 SWR throughout the two meter repeater frequencies. The impedance ran 35 to 45 ohms. That's good enough for emergency work. And 75 ohm coax will work just fine if the elements are sloped about down about 60 degrees. In this emergency situation you probably won't have 50 ohm coax. Assuming that you are in a populated area just look around. There is plenty of 75 ohm coax that isn't being used. And it should not be too hard to find wire to make the elements.

If you or the residents in the area don't have rubber bands or clothes pins consider twist ties, paper clips, cable ties, even string. Cable ties would be a perfect.

In closing, I raised the antenna up about 20 feet and made several contacts using local 2 meter repeaters and my 1/2 watt HT from my home close to the Merchandise Mart.

73,

Paul - AD4IE



Board Meeting Minutes

July 3, 2007

Jodie started @ 7:04 Present were Jodie (KI4CXO), Ben (WB2RHM), Andy (G4GKK), Paul (AD4IE), Kevin (KI4KFS), Greg (KG4IOE), Bill(W4GRW) & Jeff (KA4WYC). Don (N4IZ) was absent.

Jodie gave a summary on the Hamfest meeting and Field Day. Both seemed successful.

Greg gave a report on the Budget. He had a total from the Hamfest of 2007. The Budget was approved by the Membership at the June Club Meeting.

Repeater Committee: Ben stated an area near South Park was researched for a new repeater site. It was turned down by the owners and other sites are being considered.

Grants and Resources – Kevin states he hasn't heard anything from Food Lion.

Equipment and Inventory – Older equipment will need to be sold, possible at Shelby. Boxes in the Club Room are being considered for sale on Ebay. The rest are to be thrown away. Andy will be trying to paint the Club Room as time permits.

Holiday Party and Picnic – Jodie stated she found a place and the price well be determined. A Dee Jay was also discussed. Jodie had someone in mind too.

Events and Contests – Jeff gave a report on the MSI50, and Go For Blood.

Website – Ben gave a report on the Black Listing on the Reflector.

Old Business – Jodie asked about the new door lock. Bill will check on this.

New Business – The cost of multiple badges came up. There were a few badges being made where Members are changing Calls, but a cost was not decided on if a Member had multiple badges made.

Jodie asked if there were any other business, none made, Jodie asked for a motion to adjourn. The meeting was adjourned at 8:05PM.

Respectfully submitted By Jeff KA4WYC, Secretary W4BFB

Dits and Dahs

Do You Like FREE STUFF?

OK- so you think I am crazy for asking such a foolish question, of course you do. In this rant, I will show you some Internet sites where you *can* leave home without it (the checkbook that is).

First, do you like wallpaper? You can cover the holes in your walls with more than Contesting awards. Navigate your web browser to, www.vantyhq.com Here you can find the history of your call sign if it's not the one you have had for over 25 years. There is a lot to do on this site, But, we are looking for FREE stuff. Look on the left menu bar and you will see a License Certificate. Click on it and you can make a very nice callsign certificate that's downloadable and printable. Frame it and cover that hole in the wall. Also on this site there is a link to print your license. It's just like the FCC one, only better quality. Be sure (unlike me) to read all the instructions. You have to adjust some printer settings for the document to print correctly.

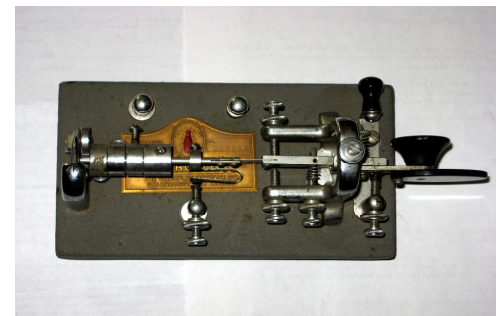
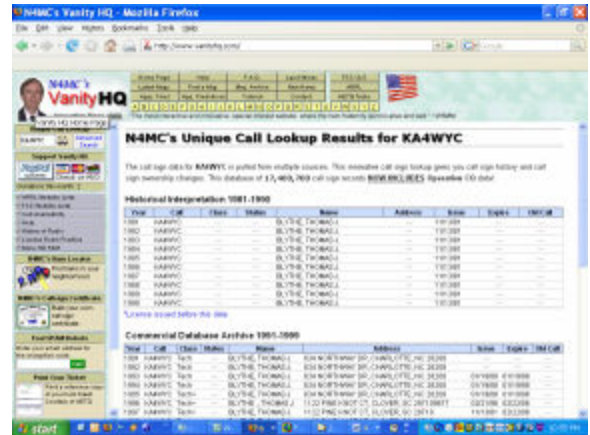
Free Software? Well, there are too many to name here. You could live a dozen lifetimes using a thousand computers and never see them all. But, if you are in the mood to surf then try; www.ac6v.com/opaid.htm. There are programs to set your computer clock, translate a language, print directions to your house or from your house or anywhere else. Do you have a FREE copy of the FCC Part 97? No? Well click the link to the ARRL Part 97 and you can read it. There is so much information available on this site it will definitely keep you busy!

Want some more surfing fun? Scroll down a little further on the AC6V home page and look for the word FREEBEEES. The link below that word is labeled '[map mash of ham licenses for the US](#).' Have you ever wondered: "are there any more hams in my neighborhood?" You can search by callsign, State or zip code, (I did this for 29710, and we have 138 hams in that one zip code. One lives on the street above my house! I didn't know that!)

Whew! If you are like me, I am tired of surfing. These are only a few, and you really didn't get anything 'free', but information. Thanks for reading and send in those articles so I won't have to:>) !

73,

Jeff - KA4WYC



This is a 1962 Vibroplex 'Original' that Mac K4PDY gave me. This one made me cry!!

Mecklenburg Amateur Radio Society— <http://www.w4bfb.org>

Club Meetings The Mecklenburg Amateur Radio Society meets on the last Tuesday of each month at 7:30 PM

We meet at:

East Baptist Church
6850 Monroe Rd
Charlotte, NC 28212

(Next to East Mecklenburg High School, near Conference Drive)

Clubroom Red Cross Building
2425 Park Rd, Room 023
Charlotte, NC 28203
(704) 334-3900

Club Repeaters 146.34/146.94 (w/autopatch)
146.63/145.23 (no autopatch)
144.69/145.29 (no autopatch)
222.80/224.40 (no autopatch)
449.600/444.600 (no autopatch) PL 100.00

Mecklenburg 2m Emergency Net

9:00 PM local time, daily on 146.34/146.94 featuring the ARRL Audio News feed on Sunday night.

Alternate frequencies announced

Club Officers and Board of Directors

President

Jodie Rowland, KI4CXO, ki4cxo@w4bfb.org

Vice President

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