



# MARS News

## The Prez Says..... April 2012

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Hello Everyone,

Welcome to the April edition of the Mars News letter; if you've read to this point you may have noticed that the presentation has changed. This is due to the enthusiasm of our newish newsletter editor Sandy Jones -KK4DAW. She needs some help in the article's department to keep the newsletter interesting and vibrant. If you have anything that you think might interest your fellow Hams, please do not hesitate to submit them to the editor.

We had a well attended meeting last month, ably presented by Earl Fortner-K4KAY and Bryan Fernand-K4NET who went over the new repeater controllers that are being installed on our new repeaters. This project has been in the pipeline for quite a while, and is now bearing fruition. The new controllers will allow us to do a lot more with the repeaters than was possible before; keep your radios tuned for more information.

We are currently planning for the W4BFB -ARRL Field Day operations. We are hoping for a better turnout this year with some preparations made in advance. We are planning to have the Beam Antennas tuned up and ready



Andy Hawkins

to go. The Generator situation has been taken in hand and we should not have any problems this year. The logging of the on air stations will be carried out using the Laptops that we have supplied for each of the Four new VHF/UHF Go Boxes. The laptops will be talking to each other via a wired LAN.

This year we plan on operating 4 stations throughout the 24 hour period plus a GOTA (Get On The Air) station for visitors, Scouts etc. The stations we plan on setting up are: HF SSB, VHF 6meters, CW, and Digital. The HF SSB will be located in the Club RV, the CW will have its own tent and the VHF 6meters and Digital station will share a tent. The GOTA station will be close to the picnic shelter.

One of the reasons why I'm harping on about field day is to ask for as much participation as possible. We need help in setting up the site on Friday 22nd June after 2pm and help in operating all the stations from 2pm on Saturday June 23rd at 2pm thru Sunday 23rd June at 2pm. Then we need to take it all down and return it all to storage on Sunday afternoon. Operating will be on a roster basis, we will publish a list for signups for the 4 stations.

I hope you all think about helping us out this year, we need everyone to pull off a good turnout and also to get as many points as possible.

This month's club meeting should be a very interesting one with a presentation by Brad Panovich from WCNC. He will be spreading his knowledge of the weather to one and all. This is one meeting that deserves your attendance.

Have a wonderful month and I look forward to seeing you all at the April Meeting

73

Andy K4GKK

## Public Service Committee News from Mary Hunt, N4MH, Chairperson

The MS Challenge Walk was held on March 2-4 in Charleston, SC. We had support from the local Charleston Amateur Radio Club and several of the MARS Members. A special thank you to the following members who supported the event. They are: Tom Hunt, KA3VVJ; Kevin Keyes, K4YYD; Dave Holbrook, KC4YPB; Elena Maya-Scott, KS4OX; and Charles Odgen; KB9WCD. We had 250 walkers in the event and they have raised to date a total of \$540,000. We had to close the route on Saturday afternoon due to rain, thunder and lightning. All of the SAG vehicles did a tremendous job of getting the walkers to bus pick up locations.

Wednesday, April 11 was our first CCTTA Event. IT was a little chilly for the event. We had 250 cyclists participating in the event. Thanks to the following volunteers: Tom Hunt, KA3VVJ; Sandra Jones, KK4DAW; Dave Holbrook, KC4YPB; Perry Garris, KF4UV; Auford Neal, KU4PF; John Eigenbrode, W3SA; Stan Bagwell, KJ4ZL; and Barry May, KC4SSS. If you participated in the event last year and may not be able to work every event this year and still have your Marshall's shirt, please return it to me. We are short some of the Marshall shirts. Our next CCTTA event is May 9. If you are interested in working an event and have never worked one before, you are required to work one training event and another ham.



Tom Hunt at the CCTTA keeps cyclists safe and honest

Our next Multiple Sclerosis Event will be the MS Walk on Saturday, May 19. We have two rest stops for the event. We also will have some bicycle mobiles as well as SAGS on this event.

## REPEATER TIME-OUT

Last month Arcom 210 repeater controllers and Kenwood TKR-750 and TKR-850 repeaters were discussed. This is a continuation of how our repeater signals get to and from the Decibel Products antenna. The Kenwood TKR-750 is a VHF (2 Meter) repeater rated at 50 watts output with a 50% duty cycle. This means that for every 1 minute of transmission it needs to be in the receive mode for 1 minute. This is not practical for our type of use during nets and long winded transmissions so we set the VHF repeaters for 30 watts output. The TKR-850 is a 40 watt UHF (70cm) repeater with the same duty cycle limitation so it has been set for 25 watts output. Plans are to use power amplifiers to boost the output power to approximately three times what we are now using and this will allow the mobile stations to receive a stronger signal in the fringe area of our coverage.

Each of the W4BFB repeaters use a single antenna for receive and transmission. This is done with a duplexer. A duplexer is nothing more than a set of tuned circuits connected to the input and output of the repeater that separate the signals going up and down the transmission line to the antenna. It is made out of large diameter copper tubing cut to a specific wave length called a cavity. Usually three to four on the receive and transmit side. This tubing has another tube inside which is usually a quarter wavelength with still another tube that moves up and down to tune the cavity. This is usually done with a long brass screw that goes through the end cap and turned with a screw driver. The end cap has an input and output connection, usually a type N female or SO-239 female connector. Inside the cavity a single coupling loop on each connector couples the receive or transmit signal to the quarter wave length resonator inside the cavity. On our 146.94 repeater we have three cavities on receive and three on transmit. These are connected in series with a specific length of coax cable to make one side of the duplexer. The Input of the duplexer is connected with T connector feeding the transmission line going to the antenna. The other ends of the duplexer feeds the output and input of the repeater. Three of the cavities going to receive input of the repeater are tuned to pass the receive signal (146.34 MHz) and the other side tuned to pass the repeater output signal (146.94MHz). All at the same time (duplex). Our duplexers are Band-pass, Bandreject (BpBr). That means there is a tuning capacitor on each cavity that lets you tune the 146.94 side to reject the 146.34 signal even more. If you would like a more technical explanation of how they work, Google "repeater builders" and select duplexers. You can find information on theory and how to build and tune a duplexer.

There is some loss in the duplexer and this is made up with a preamp between the receiver input and the duplexer and also a power amplifier between the output of the repeater and duplexer.

The signals now travel up the feedline to the antenna. The feedline also attenuates the signals. Some of this loss is made up with gain in the antenna. The 146.94 repeater antenna has a gain of around 9 db. Bear in mind a gain of 3 db is the same as doubling the power of your transmitter and works the same on the received signal.

So now you know all about duplexers.

If you have any questions, Ask Dr Bill. He needs questions to answer same as Sandy needs input for the newsletter.

Earl Fortner, K4KAY  
Repeater Committee Chairman

# MARS CLUB MEETING 3/27/2012

The meeting was called to order by Andy – K4GKK at 7:30PM.

License Upgrades:

Congratulations to George Ho-has, W4GEH and Ron Ellis, K14YDQ on passing their Extra Class exams.

### Meeting Topic:

The topic for the March meeting was repeaters and Repeater Committee co-chairs Earl Fortner, K4KAY and Bryan Ferdinand, K4NET put on an informative presentation. The recently replaced 146.94 repeater and a 450 MHz duplexer

were also on display. Donations from CCTTA over the past several years along with money allocated by the Board have created an \$8,000 repeater fund which provides for repeater maintenance and replacement.



Earl and Bryan discuss the technical aspects of the repeaters.

### The club maintains five repeaters:

145.23 located on Spencer Mountain .

145.29, 224.400 and 444.600 are located on top of the Wells Fargo building in uptown Charlotte.

146.94 is located in Northeast Charlotte, along with 224.400 (relocated November 2011 .

For more information on the club's repeaters, visit the Repeater section of the club's website:

The original 146.94 repeater is at least 30 years old and was recently replaced with a new Kenwood repeater. With an output of 28 watts, this new repeater allows for 100% duty cycle with little drop.

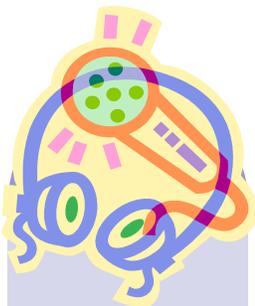
All repeaters have back-up emergency power in the event of a power failure.

With the new repeater, the club has the ability to link the

224.400 and 146.94 repeaters to allow non-220 users to use this repeater. Bryan and Earl are also exploring the use of Echolink on the repeaters.



Repeater duplexer



Come join us on Tuesday at the next club meeting on April 24th!

## MARS CLUB MEETING 3/27/2012 CONT.

### Public Service:

Mary Hunt, N4MH discussed volunteer opportunities with the Carolina Cycling Time Trial Association (CCTTA). CCTTA events are held on April 11, May 9, June 6, July 11, August 15 and September 12 evenings at Lowes Motor Speedway in Concord. All that is needed is an HT. Hams are used as marshalls for the

event looking out for cyclist safety and reporting rule violations such as drafting.

Email Mary Hunt at [n4mh@w4bfb.org](mailto:n4mh@w4bfb.org) if you are interested in volunteering.



Mary Hunt gives Bryan instructions

Mary also discussed the upcoming MS-Walk on May 19<sup>th</sup> at Symphony Park at Southpark Mall. Two rest stop volunteers and three bicycle mobiles are needed.



“See Barry May - KC4SSS make everyone at the club meeting happier...”

Cool FREE Film from NOVA about tornadoes in 2011

<http://www.pbs.org/wgbh/nova/earth/deadliest-tornadoes.html>

### Hamfest:

The club made a total of \$400 on the raffle of the Kenwood TM-V71 donated to the club by Kenwood. Congratulations to *Mitch Barbato, KM4AMB* for winning the TM-V71.



The meeting was adjourned at approximately 9:00PM

Submitted by *Kevin Keyes – K4YYD*

Secretary MARS



George and Bill have a refreshment while chastising Mitch for not listening to John Boy and Billy in the morning on FOX.

## MARS BOARD MEETING 4/03/2012

The meeting was called to order 6:40PM.

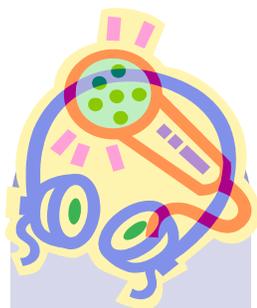
Attendees included Andy Hawkins – K4GKK; John White – WB2NHQ; Tom Hunt – KA3VVJ; Kevin Keyes – K4YYD; Dave Holbrook – KC4YPB; Bryan Ferdinand – K4NET; George Hohas - W4GEH; Barry May – KC4SSS; Shelley Eaves – KJ4ATK

Visitors: Sandra Jones, KK4DAW and Perry Garris, KF4UVL

Minutes for the Board Meeting of March 6, 2012 were accepted as presented.

### Treasurer's Report:

Tom presented the treasurer's report. Barry proposed to accept, seconded by Bryan and approved by the Board. Tom stated all Hamfest related bills have not come in so final numbers are not available. However, Tom stated that foregoing the Hamfest mailing this year will lead to a more profitable Hamfest over last year.



Join us as a guest  
at the next Board  
meeting on Tuesday,  
May 1, 2012!

### Vice President's Report:

Topics for upcoming meetings:

**April:** Basic Skywarn

**May:** Packet Radio and Field Day

**June:** Advanced Skywarn

**August:** Donated primarily to MS-150 Bike Tour



Vice-President Shelly Eaves KJ4ATK

### Secretary's Report:

115 total current paid members including 4 life members. 34 non-current members.

Follow-up with non-current members for renewals

### Committee Reports:

#### Repeater Committee:

Bryan is liaison to the repeater committee. Bryan is working with Earl, and fine-tuning the 146.94, 145.290, 444.600 repeater controllers. 224.400 is working well and reaching as far north as North Wilkesboro and Asheboro. Report any

problems with repeaters to Bryan and/or [w4bfbrepeaters@w4bfb.org](mailto:w4bfbrepeaters@w4bfb.org)

#### Public Service Committee:

First CCTA is 4/11/12 at Lowe's Motor Speedway. Charlotte MS-Walk is 5/19/12. Rest stop and bike

mobiles needed. Cystic Fibrosis bike ride scheduled for July. Representative from Cystic Fibrosis organization to speak at upcoming club meeting regarding volunteer opportunities with the bike event.

## MARS BOARD MEETING 4/203/2012 CONT.

### **Equipment Committee:**

Bryan has obtained fiber converters for club room packet station. Bryan and Seth O’Neal are working together to upgrade club room packet station. Bryan has obtained 4 used Dell netbook computers and is selling to the club at cost. Bryan has updated and optimized the computers. Computers will be used for logging contacts at Field Day and for programming Go Box packet stations. Andy contin-

ues to work on reorganizing equipment in club room as well as cataloging equipment serial numbers for ARRL insurance.

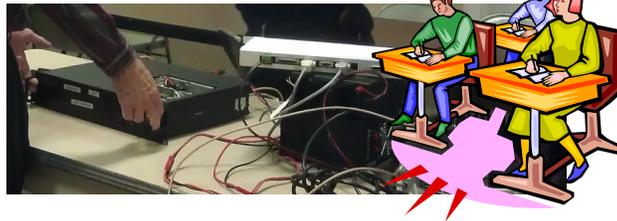
In addition to 4 netbook computers, club has purchased 2 Kenwood TM-V71A radios, a new PowerWerx power supply and 4 mobile mag mount antennas for Go Boxes.

John reported that the American Red Cross is willing to

sell to the club a nearly new Honda 6500 watt gasoline generator for \$1,200. George made a motion to purchase the generator and Barry seconded, provided generator passes inspection by John and Mitch Barbato. The Honda Generator will replace the old Onan generator in the generator trailer.

### **Old Business:**

Perry Garris has secured a room behind the main sanctuary at Woodlawn Baptist Church to hold licensing classes. John Eigenbrode has agreed to teach licensing classes.



### **New Business:**

George mentioned that CDXA has an equipment boneyard on its website. George has approached CDXA about putting a link to its boneyard on the club’s website in exchange for the ability of club mem-

bers to list their items on the CDXA site. CDXA has approved this plan. Bryan motioned and Barry seconded.

The club is looking for a new 2013 Hamfest chair or co-chair. *The meeting was adjourned at approximately 9:00PM*



*Submitted by Kevin Keyes – K4YYD Secretary MARS*



**“Come see the amazing Board Member Shelly look into the future...!”**

# MECKLENBURG AMATEUR RADIO SOCIETY

**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**

| Send   | Receive | Offset (KHz) | Autopatch |
|--------|---------|--------------|-----------|
| 146.34 | 146.94  | -600         | No        |
| 144.69 | 145.29  | -600         | No        |
| 144.63 | 145.23  | -600         | No        |
| 222.8  | 224.4   | -1600        | No        |
| 449.6  | 444.6   | +5000        | No        |

**Club Officers and Board of Directors**

**President**

Andy Hawkins, K4GKK, k4gkk@w4bfb.org

**Vice President**

Shelley Eaves, KJ4ATK, kj4atk@w4bfb.org

**Secretary**

Kevin Keyes, K4YYD, k4yyd@w4bfb.org

**Treasurer**

Tom Hunt, KA3VVJ, ka3vvj@w4bfb.org

**Directors**

Bryan Ferdinand,, K4NET, k4net@w4bfb.org

George Hohas, W4GEH, w4geh@w4bfb.org

Dave Holbrook,, KC4YPB, kc4ypb@w4bfb.org

Barry May KC4SSS, kc4sss@w4bfb.org

John White, WB2NHQ, wb2nhq@w4bfb.org

**Newsletter Editor**

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[www.w4bfb.org](http://www.w4bfb.org)

*Mecklenburg 2m Emergency Net  
 9:00 PM local time, daily on 146.94 (-600)  
 Alternate frequencies announced*

MECKLENBURG AMATEUR RADIO SOCIETY, INC



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