



MARS News



Andy Hawkins

Prez Sez for
March 2013

Hi fellow members!

Wow what a month! It has been a rather busy first couple of weeks with the Sandblast Rally kicking off the events down in Cheraw, SC with Brad Morris-WB4MMG, one of our MARS Members, coming away with a couple of trophies! He was ably assisted by his Crew Chief and Communications Operator Mitch Barbato-KX4MB. We had a light volunteer presence there as the event clashed with the MS Challenge Walk in Charleston SC. This was headed up by Mary and Tom Hunt, N4MH and KA3VVI, respectively, with a contingent of MARS volunteers to guide about 200 walkers around Charleston.

The BIG event of the month was the 2013 Charlotte Hamfest, held at the Cabarrus Arena in Concord, NC. This event was our biggest fund raiser of the year and was headed by Bryan Ferdinand-K4NET. As committee chairman, he did a great job of keeping the Hamfest committee on their toes and gleaning a lot of new ideas from the group to give us one of the best hamfests in the Southeast. Al-

though we did not have all the vendors we would have liked, those that did attend seemed to have had a good couple of days, and I received many compliments from the vendors on our organization and hospitality.

Personally, I wish to express my utmost thanks to Bryan and the Hamfest Committee and ALL the VOLUNTEERS that helped make this event a success! Without all of your help, this event simply would not happen. We have already started on next year's Hamfest by applying to the ARRL NC Section Hamfest for 2014, which will be a Friday and Saturday evenings, the 7th & 8th in March 2014. With the Section Hamfest we can request HQ personnel to visit and present a forum. I have requested Steven Ford, WB8IMY to give us a forum on HF Digital.

During the Hamfest some members of the W4BFB board had a meeting with reps from ARRL. Section Manager Bill Morine-N2COP, and Vice Director Dr. Jim Boehner-N2ZZ, discussed issues with Mitch Barbato-KX4MB, Bryan Ferdinand-K4NET, Charles Comerford-KK4HOK, myself, and two guests, John Covington-W4CC and Tim Slay-N4IB. The topic of discussion was to reestablish

a friendly working relationship with ARRL. Over the last two years, this had become somewhat strained and it was affecting our standing within the NC Amateur Radio community. We began by airing our concerns and asking what we could do to correct any miscommunications. Bill Morine replied that he had been informed that MARS was undergoing some changes and had been busy rebuilding some of our infrastructure. His concern was that on one occasion, we (as a club) had not turned out for a crucial public hearing on the proposed zoning of amateur radio antennas by the Charlotte Building Zoning Board. This topic was discussed further and MARS will share information and strategy when the time comes with Bill and the ARRL and vice versa.

The next topic of discussion was the ARRL Hamfest designations. We felt, as a club, that we had been ignored by ARRL, but in fact, that was how ARRL felt too - we did not do a stellar job with ARRL representation at the 2012 Hamfest which re-

flected on us negatively. We have, however, started to rebuild our relationship with ARRL by applying for, and being granted, an ARRL sanctioned Section Hamfest for 2014.

The meeting touched on a few other topics, such as public service (at which we excel), club meetings, and emergency communications and preparedness. (We have now completed our updated VHF/UHF Digital/Phone Go Boxes.) We also explained that The Red Cross home of our Club station is still undergoing some tweaking to bring it up to its full potential. And we discussed Amateur radio license training and how the ARRL can help with materials.

In conclusion, we had a very productive meeting and the response from Bill Morine and Jim Boehner was very encouraging and positive. The lesson learned was that we have to be more communicative - a strange conclusion coming from a bunch of amateur radio enthusiasts.

I hope you all had a good time at the Hamfest, and I hope you will all volunteer to participate in the preparations and running of next year's event.

Best 73

Andy K4GKK

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

On March 1 – 3, 2013 our Club supported the MS Challenge Walk in Charleston, SC. This is a three day event with the participants walking 20 miles on Friday & Saturday and 10 miles on Sunday.

It was a cold weekend but we had a great event with no major incidents. There were 240 walkers who raised approximately \$568,000 for MS.

I would like to say a special THANK YOU to the following hams from Charlotte and the area who supported this event – Tom Hunt-KA3VVJ, Kevin Keyes-K4YYD; Elena Maya-Scott-KS4OX; Dave Holbrook-KC4YPD; Jeff Viscount-KK4ONM; Stephanie Comerford-KK4LZR; Charles Comerford-KK4HOK; Otis Pruitt-KB4UFO; and Sparky Ramey-KE4TES. We also had hams from Charleston and Gaffney, SC, and Pennsylvania that supported the event.

Listed below are the upcoming Public Services Events for 2013 that we are aware of.

We will again be supporting the Carolina Cycling Time Trial Association out at Lowe's Motor Speedway starting in April. The ham radio operators are the Track Marshalls. We use a simplex frequency for this event. The event starts at 6:30 PM each month so we are in place and set up by 6:00 PM. If you are interested in participating in this event, please let me know.

The dates are:

Thursday, April 18,
Wednesday, May 8,
Wednesday, June 5,
Wednesday, July 24,
Wednesday, August 14, and
Tuesday, September 10.

On May 18, we will be supporting the MS Charlotte Walk, a five mile walk leaving from Southpark. The event starts at 9:00 AM and we are in position by 8:30 AM. The walk normally finishes up by noon that day.

On Saturday, July 13, the Red Cross Lake Norman Excursion will be held with the start point in Mooresville. John White-WB2NHQ coordinates the volunteers for this event.

September 21 and 22, 2013 will be the MS Breakaway to the Beach. This is the largest Public Service event that we support each year. We leave from Monroe, NC on Saturday morning and the finish point on Saturday is Francis Marion University in Florence, SC. On Sunday we have two start sites from Florence, SC and Green Seas, SC finishing up at Sunset Beach, SC. We also have a start line on Saturday in Columbia, SC that is supported by the Columbia Amateur Radio Club. So mark your calendars early and plan to join us for this great event.

October 26, 2013 – Cystic Fibrosis Cycling Event in Waxhaw, NC. Tim Slay-N4IB coordinates the volunteers for this event.

HAMFEST 2013 - SUCCESS

By Paul Jones, K4VCF

Well over one-thousand ham enthusiasts brought cash and credit cards to the Cabarrus Arena & Events Center for the Charlotte Hamfest. By all accounts, the day and a half event was well received by attendees, dealers, and those who sold, traded, and bought at the flea market.

While the final numbers of attendees and ticket sales are still be tabulated as of this writing, George Hohas, W4GEH, who chaired ticket sales said that there was a drop-off in admission tickets sold at the door on Friday and Saturday. However, the good news may be in the increased number of pre-sales admission tickets sold that may offset sales at the door. We used Pay-Pal for the first time this year and it seems to have been a success to the overall sales. George said the "will call" window was very busy on Friday and Saturday. There was a substantial increase in the number of extra prize tickets sold, which is a testimony to the effort that went into promoting the extra prize tickets. That financial fact brought an ear-to-ear smile to George as the money was being counted.

From the opening setup at 6:00 a.m. Friday, to the closing up shop on Saturday afternoon, there were no glitches that affected the overall success of the Hamfest. Response to opening on Friday afternoon was very good and will factor into discussions about the Hamfest for 2014.

The Hamfest Committee was very pleased with the number of volunteers who showed up shortly after

sunrise to set up tables for the flea market. The flea market traffic control and set up went smoothly and took less time than expected. The smooth setup of the dealer booths and flea market could move the time to open doors earlier in the day if we stay with the Friday afternoon and evening schedule. This is one of the items that will be discussed in the debriefing of the event. MARS members input will be welcome.

While no one was polling attendees, we know there were hams that traveled considerable distances to be at the Charlotte Hamfest. One couple was from Pittsburgh, PA. They were passing through Charlotte and knew about the Hamfest from information on the Internet. There were hams from West Virginia, Virginia, Tennessee, South Carolina, Georgia, and of course North Carolina at the Charlotte Hamfest, so the word gets around that we put on a good show.

Hams, who are noted for reaching out to help their brother and sister hams, were out in full force from surrounding counties to help with everything from Friday's early setup to handling security and traffic at the doors. We want to thank hams from Cabarrus (CCARS) who handled talk-in traffic from their emergency communications trailer that was parked in the dealer area of the Center. In addition to Cabarrus, the MARS Hamfest Committee was helped by volunteers from clubs in Union, Iredell, Stanly, Rowan, Gaston, and Cleveland counties.



MARS CLUB NEW MEMBERS

In the interest of getting to know new members, we are asking new members to share a little information about themselves for the monthly newsletter. Because monthly meetings or public service events we support do not always provide enough time for members to interact socially, we hope a few nuggets about new or re-activating members will spur more interaction between the new and seasoned hams.

Will Dolan, KK4OGZ, describes himself as a “corporate brat” who grew up “all over”. He earned his Technician license this year in Charlotte.

Will is a small business owner in the chair and equipment business. He specializes complex rehabilitation. His company provides equipment, products, and services designed to meet the needs of individuals with chronic medical, unique or specialized mobility needs. This includes personalized wheel chairs, ramps, patient lifts, and home modifications.

He says he has not been in amateur radio long enough to pick up a focus, but he understands the importance of the hobby as a vehicle to maintain contact with people and help, or be helped, in a time of need or emergency.

Golf is one of his hobbies, “trumped” he says by raising two children, a boy age 9 and a girl age 7. Fishing, hunting, camping, and tinkering (don’t most hams tinker?).

No one other than Will in his family has a ham license, yet. His children think it would be “very cool” if they could talk to a space station. Will says he’s “shining a light down a path other than video games.”

Will was asked what people might find interesting about him that is not general knowledge. His response:

“Last year I had some bumper stickers made: ‘Relax....I can fix it’. 2 years ago the project was a 78 Chevy K5 tearing down and rebuilding the body and engine (small block 400, 3 speed with Granny gear). Had a ton of fun doing it and met a lot of new friends. Still have the truck and drive it to Greenwood SC for annual hunting / camping trips after Christmas. This year HAM radio struck me for a number of reasons.

Our customers come to us with ‘lightning strikes’ kind of problems. There is no single solution that applies to everyone. Trial and error to find solutions that work rule the day. And usually there is no ‘final/perfect’ solution. That only lasts until the next ‘defined problem’ or ‘good idea’ surfaces. HAM radio seems similar.”

MARS congratulates Will on getting his license and welcomes him to the MARS and amateur family.

“Rush” Johnson, W4QA, is a third generation Charlottean, considered a rarity these days. He is not new to amateur radio, nor is he new to W4BFB. He has been licensed since 1976, the Bicentennial year, at the age of 14. His previous call signs were WD4AEI and NR4M. At age 15, Rush was second in the nation in an ARRL sponsored CW contest.

Rush is an electrical engineer with Cicso Systems and runs wireless practices for the company in North Carolina and Tennessee. His primary amateur radio interests are DX’ing and antenna building. He monitors 2-Meters at home and in his vehicle.

Amateur radio is his only passion outside of his total engagement with his family. He said his interest in the hobby set him off on his career. He and his wife have four children (19, 18, 16, and 10) and the VE’s should soon see a couple of Rush’s young offspring showing up to take their Technician exam.

In the 70’s when he was a teenager, he was active in contesting with W4BFB. Rush operated as W4QA/VP9 in Bermuda during August/September 1998 and frequently as NR4M/4 or W4QA/4 from Isle of

Palms, SC throughout the 1990's. WD4AEI was QRV from Charlotte in the 70s and 80s, while NR4M operated in Charlotte, and various Virginia locations, including his Alma Mater, Virginia Tech, in Blacksburg, (he would give you a "Go Hokies" at this point) and both Silver Spring/Germantown, MD through the 90's.

Welcome back to MARS, Rush.

Marshall Lail, KK4OHF, lives in Charlotte, but grew up in the home of one of the most popular ham-fests – Shelby, in Cleveland County.

Marshall is one of MARS newest licensees, having earned his Technician in 2013. He says his interests in amateur radio run the gamut from DX, HF, and UHF to homebrew, and antenna building. Of special note is Marshall's interest in preparedness and the role that ARES plays in local community preparedness.

At a time when many people are becoming more sensitive to emergency preparedness (who can forget what Hurricane Hugo did to the area in 1989?), Marshall is one of those people. In addition to preparedness as an interest, Marshall is also interested in photography, computers, and gardening.

Marshall says that one thing most people do not know about him is his interest in preparedness, and what it can mean to an individual, family, neighborhood, and community.

Welcome to the MARS family, Marshall.

Mint Hill Ham Breakfast – (Or Liver Mush Special)

Don Eaves, KJ4ATJ, and Shelley Eaves, K44ATK, decided it would be a good idea for hams who live in the Mint Hill area to get to know each other a little better, outside of the normal routine meetings, evening nets, and MARS activities.

On Saturday, March 16, Don and Shelley invited MARS members and spouses to a breakfast (Dutch Treat) at the well-known Jimmie's Restaurant in Mint Hill. Don said he and Shelley put the breakfast together to do a little socializing with fellow hams whose interests cover a wide range of amateur radio, whether CW, DX'ing, D-Star, HF, or VHF/UHF.

The breakfast socials could become a traditional activity, because it was well received by the 14 people who showed up. Don will let club members if there will be a repeat opportunity, and we are betting the Mint Hill MARS social co-chairs have seen the value of off-net, face to face, QSO's.

[Ed - Our recent Member Questionnaire responses indicate that a large majority of MARS members would like more social gatherings, primarily breakfasts and dinners.]

Mobile Rig Audio Interfacing

By: Mitch Barbato, KX4MB

I'm sure that many of you have new enough cars to have an AUX jack on the front of your car radio. (And even if you don't, read on.) Car radio manufacturers typically include this jack to play music through the car's audio system from a personal player such as an iPod or MP3 player, etc.

This functionality can be very useful if you have a mobile rig with a separate control head within reach of the driver, but you'd like to move the radio portion to the trunk or under the seat. It makes hearing that little speaker a "bit" tough!

In the simplest form, it's just a matter of plugging the rig's external speaker output into the car's AUX jack. This does indeed work, but some annoying problems can arise:

1. The speaker output level from the rig is a bit higher than the "Line" level AUX input of the car radio, so you have to be really careful setting the rig's volume controls to not overdrive and distort this input. Adjusting such a touchy setting can be tough when you are driving, and you might have to adjust this pretty often, even more on dual-band radios.
2. The PL tone on some repeaters, like our 146.94 repeater with a tone of 118.8Hz, can be pretty annoying in your car with the premium audio system that has a subwoofer. Also, some radios, like my FT-8800, put out quite a good "thump" in the speakers when first turned on.
3. The AUX jack is stereo, so you do need to combine the L+R inputs together when plugging cables in. You can purchase an adapter for this, or make your own. I suggest the latter, as you'll see below.
4. Very often, there is noise in the system from an audio Ground Loop. This can be fixed with a simple and rather inexpensive audio isolation transformer.
5. Your car doesn't have an AUX input for the radio!

So let's take a look at some solutions.

To reduce the audio level from the radio, we could use two 1/4W resistors as a voltage divider, taking the center tap of the two as the audio output to the radio. This can better be done with a potentiometer ("pot"), which can make assembly a bit easier, and allows for easy adjustment of the audio level. A 500-Ohm PC-board-mount pot works great for this. Just take the center lead, the "slider", as the audio output that goes to the radio's AUX input. (Attach wires for both Left and Right AUX inputs to the slider.) You might need to attenuate the signal by 10 dB or more, and the pot allows for that.

One thing to be aware of is that the audio output of your rig was designed to drive a speaker load up to, typically, 16 Ohms maximum. Depending on the design of the audio output stage, it **might** need to be

loaded with a somewhat low value of resistance to make it work correctly. If necessary, a 1/4 Watt, 100 Ohm resistor should take care of this, but maybe even lower, like 47 Ohms, will be necessary. (If so, that will need to be a 1/2 Watt resistor.)

The assumption here is that the radio's maximum audio output is no more than 3 Watts into 8 Ohms, which is of course not full blast all of the time. An Ohm's law calculation of this yields about 5 V, and into 100 Ohms, that's about a 1/4 Watt of dissipated power. Again, that's a maximum, so the resistor is not too likely to get very warm.

Next, we'll try to get that PL tone out of there, or at least a good bit of it. Using a capacitor, we can create a simple RC filter that has a 6dB/octave slope, and we'll choose to have a modest attenuation of audio at 300 Hz, generally regarded as the "bottom end" of typical speech frequencies. We'll use this "input capacitor" in series with the 500 Ohm pot. (See the drawing below.)

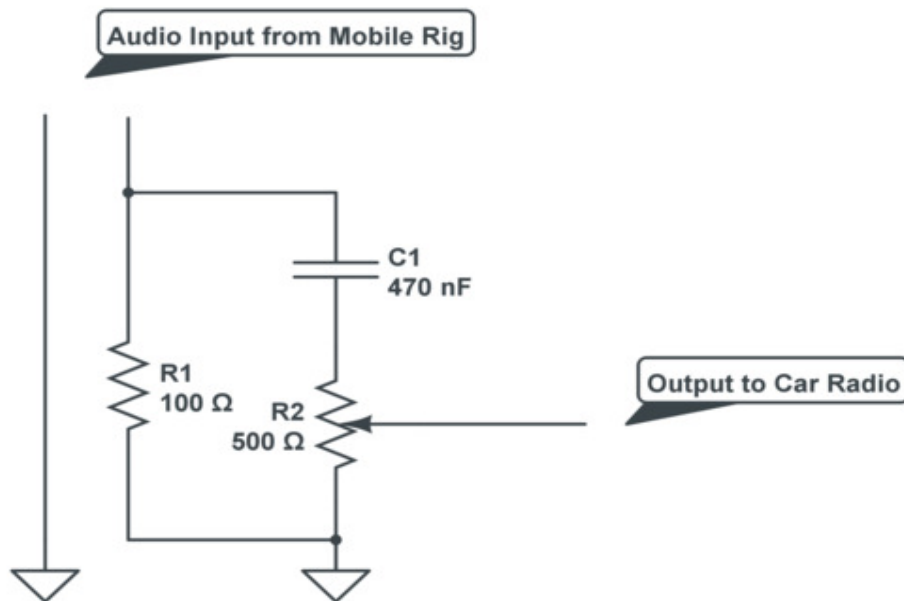
Grabbing a 0.47uF capacitor from the drawer and using the equation for capacitive reactance, $R_c = 1/(2\pi fC)$, we'll have a reactance of 1129 Ohms at 300 Hz. With our 500 adjustment pot in the circuit, this will be about a 2:1 attenuation of audio at 300 Hz, a minimal amount.

At 118.8 Hz, our 94 repeater PL tone, reactance will be 2852 Ohms. This gives a ratio of 500/3352. (The total "resistance" of the divider is 500+2852 at this frequency.) The PL tone will be attenuated by about 16 dB, which is a pretty good amount, and, we'll kill almost all of that turn on thump. ($\text{dB}=20 \log V_1/V_2$) Then add to that the attenuation that you'll need to reduce that audio level, perhaps 6 dB to 10 dB.

Ah, and what do we stuff all these components into? I've used small Radio Shack project cases, but my favorite is the nearly-obsolete 35mm film canister. Pretty much any tiny case will do, just be sure to insulate where necessary. You can even wrap the components onto a cable with electrical tape. But, that wouldn't be my first choice. J

Now, about that Ground Loop noise. In the case of our mobile installations, this is noise that is generated by currents flowing in the ground connections of the rig's power input, the AUX audio ground connection, and possibly even the antenna's coax ground connection. Noise comes from the ignition, the alternator, and even the car's control computers.

To break this ground loop, we can insert an audio Isolation Transformer. Some of the professional models available are rather expensive, \$50 is not uncommon, but PAC makes a great unit that is made for iPods, iPhones, etc. that is quite inexpensive. Their model SNI-1/3.5 is about \$20 from places like Crutchfield Audio. A Google search of this model turns up the same unit on eBay for about \$12 with free shipping. I highly recommend this, it does work very well. Make sure to get the "/3.5" model with 1/8" (3.5mm) jack/plug terminations. Put this transformer inline just before the car radio.



“But my car doesn’t have an AUX input!”

I’ve got that one covered, don’t sweat it. Go get a mobile FM modulator from an electronics store, an Internet store, or eBay, that has an LCD display and lets you change the frequency to whatever you desire in the FM band. Griffin used to make an “iTrip” that was fairly inexpensive, and had five memories - this is what I have in my car. There are LOTS of these things out there now, and you can likely find something for under \$50.

Many of these modulators are made to insert directly into the cigarette lighter socket, I wouldn’t use one of those. Choose one that is standalone with a cord to the lighter plug so that you can cut that off so that you can wire it directly to 12 VDC on the car. You do need to be careful to make certain that there are no voltage-reducing regulators in the plug assembly. (Some of these newer modulators are USB powered at 5 VDC.)

I hope that you’ve enjoyed reading this article and that you’ll get some helpful hints for your current or next mobile installation. I also welcome your comments. If you’d like to know how I calculated my results, please feel free to ask. (Or tell me where I made my mistakes.)

MINUTES FOR MARS CLUB MEETING OF FEBRUARY 26, 2013

The meeting was called to order by Andy – K4GKK at 7:32PM

We welcome the following new members:

Rush Johnson, W4QA

Marshall Lail, KK4OHF

Vincent Caponi, K2AMV

Michelle Caponi, KK4LKZ

Visitors:

Michael Cox, Karen Kaufman, and Peter

License upgrades:

Paul Jones, K4VCF, Amateur Extra

Matt Riell, KK4NKT, Amateur Extra

Jeff Viscount, KK4ONM, Technician

Mary Hunt, N4MH, spoke about the upcoming MS Challenge Walk this weekend in Charleston and the need for volunteers. The last VE Testing was successful as 9 of 10 entrants passed.

Mitch, KX4MB asked for volunteers for the Sandblast Rally in Cheraw, SC, also this weekend.

Bill Heybruck, WA2EDN and Mary told a bit about the upcoming Charlotte Cycle Time Trials Association event at the Charlotte Motor Speedway that earns money for the club. Ham operators help keep the cyclists safe and honest. It will be starting soon; they need volunteers and it is fun to be out on the Speedway track.

Bryan and Andy said Alan Richards, KF4NJP is in the hospital. His wife, Pam Richards, N8PAM wishes to thank everyone in the club who has supported them. Please keep them in our prayers.

Meeting Topic: Bryan talked about the Hamfest. There is a need for volunteers in Yellow Jackets and ticket sellers as well as other positions. He talked about different vendors that will be present. Ticket sales are good this year. If you don't have a badge, see Kevin before Hamfest to get one. Social Media is doing well in advertising with Twitter and Facebook. He asked every member to give two hours to help make Hamfest a success.

Mitch and Andy talked about the continuing possibility of offering license classes. If anyone is interested in helping, please speak to Andy. We have a new physical bulletin board that advertises equipment that is wanted or available.

Open Mic Time: several members spoke about a variety of things including the surveys, new ideas, classes etc. See Don Eaves, KJ4ATJ if you're interested in having breakfast on March 16 with hams in Mint Hill.

Use the clubroom radio, it is available for members. Robbie, AC4ZX would like a ride there if anyone is available. Don Eaves, KJ4ATJ and Bryan Ferdinand, K4NET have his contact information.

Bob Ferdinand, K9TMU announced that Tom Hunt, KA3VVJ had his 70th birthday and that everyone was welcome to stay for homemade chocolate cake.

The meeting was adjourned at 8:58PM.

Submitted by Sandra Jones, KK4DAW

Secretary MARS

MINUTES FOR MARS BOARD MEETING OF MARCH 5, 2013

1. Meeting called to order at 6:32 PM.

Present: Andy Hawkins-K4GKK, Tom Hunt-KA3VVJ, Sandra Jones-KK4DAW, Dave Holbrook-KC4YPB, George Hohas - W4GEH, John White-WB2NHQ, Mitch Barbato-KX4MB, Bryan Ferdinand-K4NET, Charles Comerford-KK4HOK

Visitors: Paul Jones-K4VCF and Barry May-KC4SSS

2. Tom proposed the minutes for the Board Meeting of February 5, 2013 be accepted as presented and Bryan seconded.

3. Treasurer's Report:

Tom presented the treasurer's report. New equipment was purchased. George motioned to accept, which was seconded by Dave and approved by the Board.

4. Vice President's Report:

Next club meeting will include a brief Hamfest review. We will continue the concept of small group discussions. We will run a 2-meter station for practice for new operators. The idea of having a 50/50 at the club meetings was discussed.

5. Secretary's Report:

101 total current paid members including 5 life members.

6. Committee Reports:

Repeater Committee: All is working well. Hamfest messages are going out. Dr. Bill contributed a printed circuit board for the controllers.

Public Service Committee: April-September will be starting with CCTA. May 18 will be the Southpark MS Walk and the Lake Norman Red Cross Excursion is July 13. September 21-22 is the MS Breakaway to the Beach and the Cystic Fibrosis Ride is October 26. See www.ridemaps.com for more information.

Equipment Committee: Andy is still working on it. Some of the equipment is ready to sell. There needs to be consistency in signing out equipment to use. Some of the wiring in the radio room needs to be reorganized. There was discussion of an efficient and possible way to do this. Charles brought up that the club equipment should be protected with surge protection. He emphasized the importance of keeping all the equipment up to date and also available for remote access. John pointed out that the building has a back up generator, but our equipment may not be on it.

Grants and Resources:

Paul Jones explained the process of the getting a 501(c)(3) tax designation. This would allow an organization who donated to the club to claim it on their taxes. Many other amateur radio clubs outside the state do have this status. Paul has agreed to work on it further along with what Kevin Keyes is doing now.

Website:

Charles has been looking at other clubs websites to get ideas of what works well. The link with the CDXA Boneyard will be maintained.

Hamfest:

Bryan discussed the Hamfest and roles of volunteers. There will be new issues at this Hamfest due to the change of the schedule.

New Business: Paul also recommended the club have a *Public Information Office Committee* to handle media advisories. The board recommended that Paul be appointed for this position.

There being no further business, Andy motioned to adjourn the meeting at 8:53 PM, seconded by Tom.

Submitted by Sandra Jones, KK4DAW
Secretary - MARS

Club Repeaters

Input	Output	Offset (KHz)	Autopatch	Tone
146.34	146.94	-600	No	118.8
144.69	145.29	-600	No	118.8
144.63	145.23	-600	No	118.8
222.8	224.4	-1600	No	none
449.6	444.6	+5000	No	118.8

W4BFB & Local 1200 Baud Packet Radio Frequencies:

145.010 / 145.090 / 223.400 / 446.500

W4BFB-9 = Charlotte BBS / W4BFB-2 = World Wide Chatroom

(All W4BFB packet nodes have links to all listed frequencies)

More info: <http://www.w4bfb.org/packet.htm>

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

Meeting Location:

East Baptist Church (Next to East Mecklenburg High School,
6850 Monroe Rd near Conference Drive)
Charlotte, NC 28212

Clubroom:

Red Cross Building
2425 Park Rd, Room 023
Charlotte, NC 28203

Club Officers and Board of Directors

President

Andy Hawkins, K4GKK, k4gkk@w4bfb.org

Vice President

Mitch Barbato, KX4MB, kx4mb@w4bfb.org

Secretary

Sandra Jones, KK4DAW, kk4daw@w4bfb.org

Treasurer

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

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