

The Link

Newsletter of the Durham FM Association

February 2020



Next Meeting is Tuesday, February 4th, 6pm, at Bullock's BBQ.

Program: Jack, KM4MBG will be talking about Software Defined Radios



President's Corner

It's cold season, and fittingly, I'm recovering from a cold as I write this. I'm fortunate that it wasn't worse, but I'm still thankful for the good health that I usually enjoy. Having a cold certainly changed my short-term priorities. I focused on things like getting enough sleep, tea, and cough drops, rather than on any DFMA business. While I believe that

this is reasonable and expected, as I have often heard from our secretary, Dan (KR4UB), it can create problems for volunteer organizations like ours. I'm not the only person in the club for whom life has other plans. Our vice president, Jimmy (KF4KHU), has had to take a step back from his work on meeting programs and a website refresh because of health needs. Jimmy, our best wishes are with you!

With that in mind, let's all try to make prudent use of the time that we do have to spend on the club. We still have meeting program spots open for the rest of the year as well as opportunities in AUXCOMM, DurHamFest, and Field Day.

73,
Jack — KM4MBG

Morse Code Practice

There has been a lot of interest lately in Morse code. OCRA had the build project for the K1EL trainer, which many DFMA members also built, including your editor. Steve Jackson has been holding classes and I am hearing renewed interest at club meetings and Saturday morning breakfast. Therefore, I am reprinting the following GroupsIO article from Ed Best.

CWCOM-Gerry Emson, "G3MS" From: Ed Best

Date: Sat, 25 Jan 2020 17:49:08 EST

You may not be aware of an excellent program called CWCOM you can use free to send and receive Morse over the Internet. Written by an Australian ham, it has been around since Windows 95 and can be made to work on Linux and Mac machines. <https://morsepower.blogspot.com/p/blog-page.html>.

I am not a ham, but from 1960 to 1972 trained and served as a wireless telegraphist for the Royal Navy and last used Morse, live on air, in 1968. I found CWCOM about five years ago. Since then I have been on it every day from about 1400 GMT until about 2200 GMT, having great QSOs, ragchews, and practice sessions with other like-minded Morse-men around the world.

Although I am not the author of CWCOM, the author knows about my blog. He has discontinued supporting his website and my blog replaces it.

Procedure on CWCOM is very similar to the HF comms of the amateur radio world, so it should be easy to follow. Please note, CWCOM does not need: Antenna, Rig, License, Government assigned callsign, no login, no registration and no moderation.

You can use the keyboard to type on, use the down arrow key as a straight key, or use an adapter with external Morse keys, straight or paddle, attached to your computer.

I have 16 straight keys attached to my laptop and use a different one each day in rotation. You can read stories about them on my other blog; at the end of each story is a short video of me using the key in the story. <http://nemosphotography.blogspot.com>.

All CWCOM users are very friendly and helpful to each other regardless of skill level, the only thing needed is some dedication to improving one's own skill level, and to just enjoy using Morse to communicate with others.

Last year I had over 1,100 contacts/QSOs on the program and, so far this year, my log shows 865 and counting. It's not always busy, but it can be very useful if you want to just key up, and get some practice in. The program is slightly "unforgiving" on the transmission side, this means you have to be a little more "precise" in forming your letters to get them to print out properly on screen, which, in a way, is a good thing, because it helps improve your sending skills!

You can contact me via the email address on the blogspot, if you have any queries or problems about the program I am always ready to help and assist, or you can just call me when you see my call, G3MS.

Hope to see you soon, and have some good practice sessions together...

Best Wishes,

G3MS

We have a new NC ARRL section manager. The Raleigh club recognized Karl Bowman, W4CHX and welcomed his replacement, Dr. Marvin Hoffman, WA4NC. Karl attended some of our events, such as Field Day and DurHamFest. We should invite Dr. Hoffman to make a presentation to our club.



Carl Davis, W8WZ, presented Karl Bowman, W4CHX, outgoing Section Manager, with a special letter of recognition and appreciation on behalf of RARS, for his past service. Karl spoke a few words about his future plans as a non-officer with the ARRL.

Carl Davis, W8WZ and Karl Bowman, W4CHX
outgoing NC ARRL Section Manager



Virginia, NC4VA

Virginia, NC4VA, introduced Dr. Marvin Hoffman, WA4NC, who has been elected, the new Section Manager for the Roanoke Division. She presented the club with a brief bio. RARS was honored to have Marv speak before the club.



Marv Hoffman, WA4NC,
Incoming NC ARRL Section
Manager

<http://www.pbcarolina.com/>

PCB Carolina is North Carolina's Premier Electronics Trade Show.

Located in Raleigh near Research Triangle Park makes this a prime area for this highly technical conference on electronics. There will be 16 technical sessions, a keynote address, a vendor exhibition with over 70 companies participating, food throughout the day, and best of all, this event is **FREE** to all attendees.

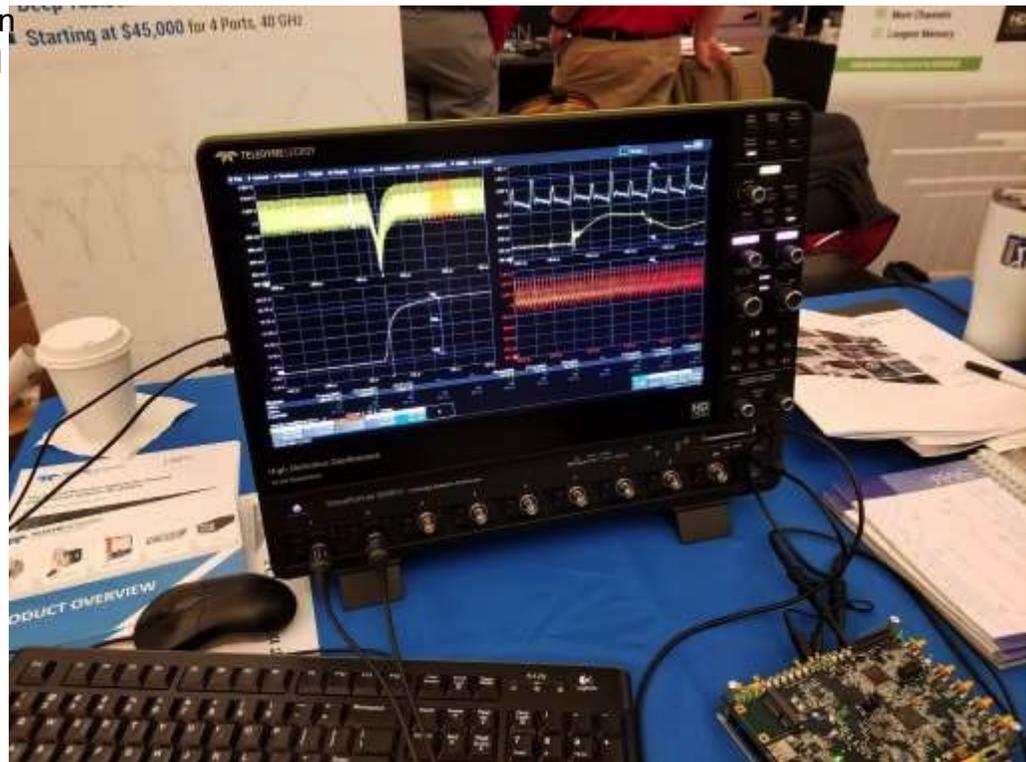
This is the place to be If you are involved in any stage of electronics: Product Development, PCB De-sign, Signal Integrity, Electrical Engineering, Firmware, Thermal, Mechanical, Test, Inspection, Con-tract Manufacturing, Technician, Debug, Compliance, Analysis, Purchasing, Management, etc.

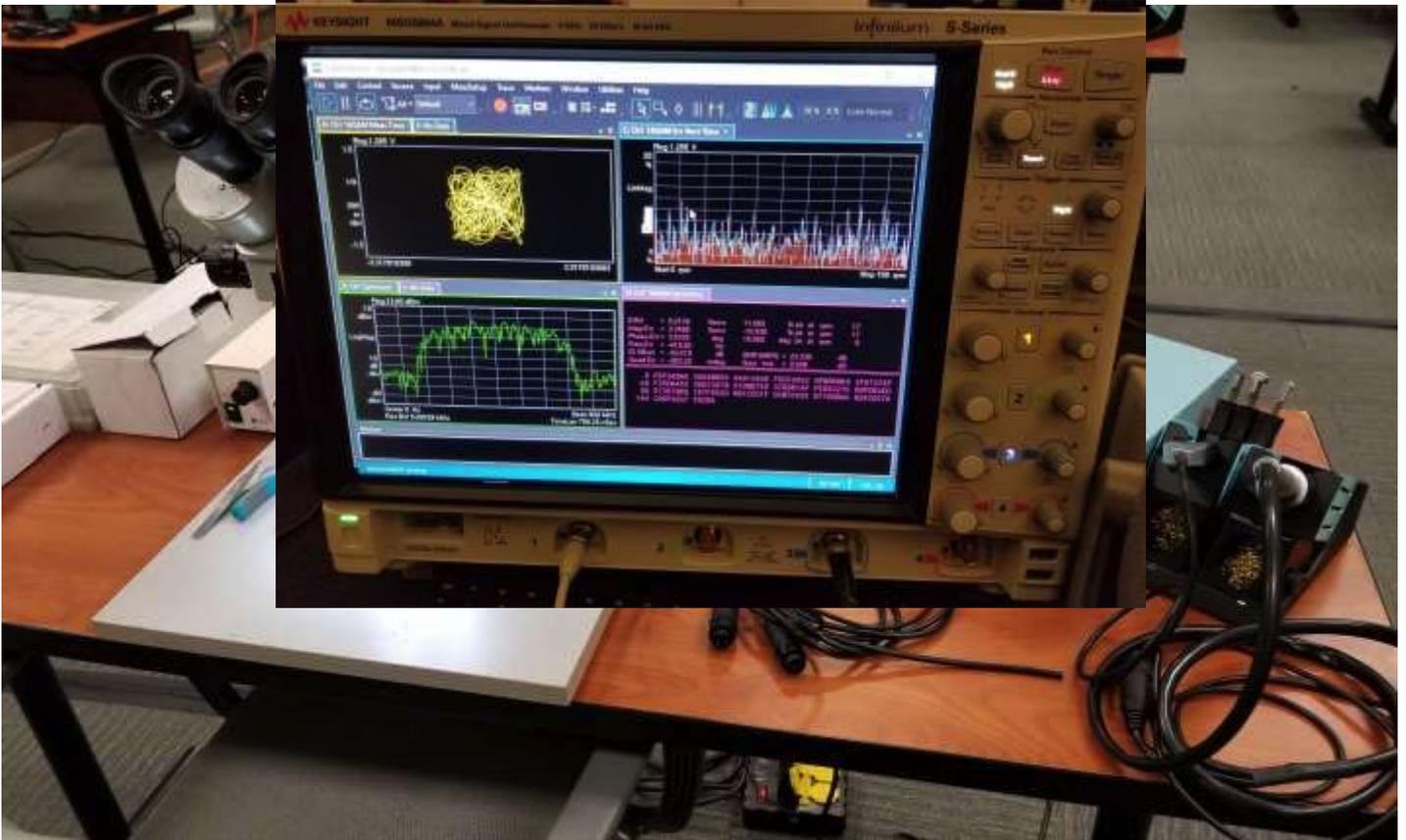
PCB Carolina is organized and run by the volunteers of the RTP Chapter of the IPC Designer's Council. We are committed to producing the best trade show possible. The exhibit hall will be filled with a diverse list of vendors offering a range of products and services. The technical classes will include outstanding presentations of the hottest topics including emerging technologies. The reputation of this event has spread coast to coast.

PCB Carolina comments by Tom Lewis, N4TL

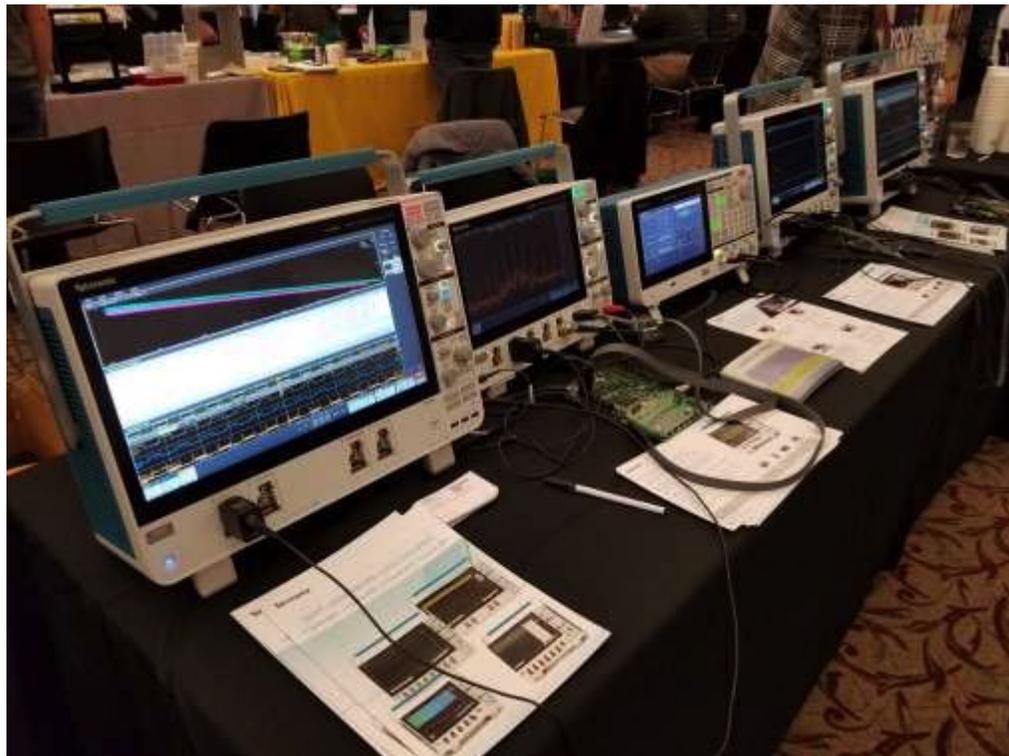
This event was held on November 13, 2019. I am retired but I still like to see what is happening in the latest technology. I also got to see some old friends. I took a few pictures of Oscilloscopes. The text to the upper left on this one states, "Starting at \$45,000"

Teledyne Lecroy
High Definition
Oscilloscope.





Keysight Oscilloscope



Tektronix Oscilloscopes



Weller soldering station with a microscope for surface mount parts.

A different room was being used to teach basic soldering. I did not take a picture there. This room was for teaching surface mount rework.

The Weller WXR3 rework soldering station lists for \$2,660 at Digikey.

The Meiji SMD-5 Stereo Zoom Microscope package with Incident Ring Light LED on a Boom Stand for Surface Mount Device Inspection – 7x – 90x Magnification lists for \$2,643.

Table, chair and aspirin are extra.

Message from your editor

I try to give you an informing and interesting newsletter. It becomes difficult when I'm not given any articles and I have to scrounge for content. This brief issue has some info from the Raleigh club's Exciter newsletter. Thanks RARS

Upcoming Hamfests

02/01/2020 | FrostFest, ARRL Virginia State Convention 2020

Location: Richmond, VA

Type: ARRL Convention

Sponsor: Richmond Amateur Telecommunications Society

Website: <http://frostfest.com>

03/13/2020 | Charlotte Hamfest, ARRL North Carolina Section Convention 2020

Location: Concord, NC

Type: ARRL Convention

Sponsor: Mecklenburg Amateur Radio Society

Website: <http://www.charlottehamfest.org>

04/11/2020 | Raleigh Hamfest, ARRL Roanoke Division Convention

RARSfest

Location: Raleigh, NC

Type: ARRL Convention

Sponsor: Raleigh Amateur Radio Society

Website: <http://rarsfest.org>

The Link Classified

Unfortunately, none of our members still do not have anything they want to sell or need!

If you have items that you want to sell, give away or are looking for an item, just write your ad and send to me.

Martin Brody, KA5JUU

martin@brody1.com

919.260.0632

Minutes of Last Club Meeting

Durham FM Association (DFMA)

DFMA Meeting – 01/07/2020 – Dan, KR4UB, Secretary

Location: Bullock's Bar-B-Cue, Durham

Attending: KR4UB, Dan; KU4GC, Dee; KF4PAB, Lenore; KM4MBG, Jack; KR3AM, Mark; KN4PTU, Charles; W4BOH, Wilson; KE4HIH, Rhett; KF4QOZ, Joanna; N8BR, Bill; KF4NTC, Bob & Renu; KW4XL, David & David Jr.; KN4FKH, Felicia; KW4KZ, Chuck & Mary; WA4UJM, Wally; WB4ROI, Henry; NA4VY, Dave; KV4ZR, Loren; KA5JUJ, Martin; KK4BPH, Michael; N2XZF, Paul; WA4AHR, Dewey; NC4CD, Charlie; KE4UVJ, Don; Guest: John Book

A total of 28 attending, with 24 of them currently licensed hams.

President: Jack opened the membership meeting at 7 pm with introductions, followed by announcements.

Announcements:

Wilson, W4BOH announced the upcoming Forsyth Amateur Radio Club Hamfest in Winston Salem on Saturday, January 11th. More information is available at w4nc.com.

REPORTS

Vice President – Jimmy, KF4KHU absent due to illness.

Treasurer – Lenore, KF4PAB provided the treasurer's report. Beginning with the new year 29 members dues are current.

Secretary – Dan, KR4UB, no news to report.

Repeater Manager – Charlie, NC4CD reported that a repeater site visit will be scheduled Saturday, January 11th. He reminded all of the annual Richmond FrostFest, the largest winter Mid-Atlantic hamfest to be held Saturday, February 1st. More information is available at <http://frostfest.com>

AuxComm EC – Shawn, K4CTD absent, no report.

DurHamFest – Dee, KU4GC has volunteered to be the chairperson for DurHamFest. The 2020 event will follow the same format as past years with the Friday setup and of course the call for volunteers. The Durham Public School Center site will not be available Memorial Day weekend due to a new policy of not renting the facility over holiday weekends to permit staff to have that time off. Dee has checked with DPS and KF4LJZ has confirmed with the key vendors that May 30th, the weekend following Memorial Day, is a good date for DurHamFest.

Field Day & VE Coordinator - Dave, W4SAR absent; Dee, KU4GC reported the next VE test session will be held at the upcoming OCRA meeting on Monday, January 13th at 7pm.

Presentation of the DMFA “Lid” Award - The DFMA LID was last presented by Jack, KM4MBG to Jimmy, KF4KHU for his generous gift to the club of the new Optoma projector and, for his IT work to upgrade and maintain the DFMA website.

Door Prizes - Door prize winners selected from the attendee sign in sheet by a random number generator program were as follows: Kit Box - John Book; Gift Certificate - Charlie, NC4CD; and Electronic Book - Mary, KW4KZ XYL.

Program: The program presentation a Show & Tell with Wilson W4BOH, Chuck KW4KZ, Dan KR4UB, Charlie NC4CD and Jack KM4MBG presenting.

Wilson, W4BOH brought his recently acquired RME-70 receiver he found at JARSFest. This very attractive looking 10 tube Superhet single conversion receiver began production in 1938. Wilson commented that it simply looked too good to not follow him home!

Chuck, KW4KZ showed his “LED Blue Plushy” toy from [adafruit.com](https://www.adafruit.com). Adafruit was founded in 2005 by MIT hacker and engineer Limor “Ladyada” Fried to create the best place online for learning electronics and making the best designed products for makers of all ages and skills. Click on this very interesting video by “[Ladyada](#)” about Adafruit. Adafruit offers a wide range of subscription based small projects, known as an “Adabox” that are great for learning, useful products or as gifts.

Dan, KR4UB brought his newly built Field Day power distribution panel to be used for the combined 10M & 6M stations. This project, in part motivated to use up some of the “good stuff” from his growing pile of junk parts, was also heavily motivated by the plans for 2020 OCRA/DFMA Field day to move to a different class of battery powered station permitting operation with up to 150 watts of RF power, and batteries to be recharged from fossil fueled generators during the 24 hour field day operating period.

Concerned that the magnitude of additional demand on field day batteries may be underestimated, Dan compared the previous year battery draw for 5 watt operation versus the planned 2020 operation. The 2019 combined current draw of the 10M & 6M transmitters and associated equipment required to be on battery, was approximately 3 amps in receive mode and rose to 6 to 8 amps if both radios were in transmit mode. For 2020, the combined key down transmit current draw, quoting from the Elecraft K3s specs on 10M and a Yaesu FT-857 for 6M operating at 100 watts will be approximately 39 to 44 amperes of current. While this might be a worst case key down situation with two field day stations running from the same battery bank, it does indicate that whatever operating mode and transmit duty cycle the stations were operated at last year, all stations need to assess their battery power assumptions of required capacity, battery condition (used & aging with diminishing amp hour capacity), means to re-charge and lastly station wiring voltage drop.

Dan concluded with one other consideration not covered in this show & tell. Finding a battery charger meeting all the requirements of, a) high enough charge rate to bring the batteries up without excessively long generator run time, b) not producing RF noise (which inverter style chargers will tend to do) or old style bridge rectifier chargers with no filtering tending to produce AC hum on the 12VDC if charging during radio operation is planned and lastly, 3) not costing a fortune, is a bit of a tough bill to fill.

Charlie NC4CD’s show & tell topic was a Bridgecom DMR model [AT-D578UV radio](#). This unit is a VHF/UHF dual band mobile radio with up to 60 watts on VHF and 50 watts UHF RF power output. It supports operation with both analog and DMR digital repeaters and are available at a very reasonable price. In venturing into DMR, Charlie also recommends looking into the [Contact Manager Software](#) for your DMR radio programming needs and, [NCPRN.net](#) to learn more about the local DMR repeaters, radio code plug downloads, and of course the greater DMR network.

Jack, KM4MBG's show & tell topic was his 50 watt dummy load from crowdsupply.com, another great source for interesting, useful, affordable project kits. His [Re:load Pro](#) by Arachnid Labs, is a programmable active load tester, useful for all sorts of electronics and battery testing requirements. It can dissipate 25 watts continuously and more with the optional fan kit. It offers milliamp precision over the whole range, has overcurrent, overvoltage and overtemperature protection.

Meeting adjourned at 8:30 pm.

Minutes of Last Board Meeting

Durham FM Association (DFMA)

DFMA Board Minutes – 01/21/2020 – Dan, KR4UB, Secretary

Location: 1920 Front Street, Durham

Attending: (y) Jack, KM4MBG - president; (n) Jimmy, KF4KHU - vice president; (y) Lenore, KF4PAB - treasurer; (y) Dan, KR4UB - secretary; (y) Charlie, NC4CD - repeater mgr; (n) Shawn, K4CTD - AuxComm; (n) Dee, KU4GC; (y) Dave, W4SAR - Field Day; (y) Martin, KA5JUU Link Editor; At-Large Board Members: (y) David, KW4XL; (y) Paul, N2XZF; (y) Chuck, KW4KZ; (y) Karen, KD4YJZ.

President – Jack, KM4MBG called the meeting to order at 7 pm with the call for officer reports.

REPORTS:

Vice President – Jimmy, KF4KHU unable to attend. Jack, KM4MBG filling in for Jimmy needs leads on presentations.

Treasurer – Lenore, KF4PAB provided the treasurer's report. There are 42 members with dues current; it's time for members to renew!

Secretary – Dan, KR4UB - The minutes for the 01/07/20 Club Meeting were approved.

Repeater Manager – Charlie, NC4CD reported 6m repeater work is progressing thanks to Paul N2XZF's work on the RF deck. Charlie will soon order a new antenna from fmbroadcastantenna.com that will be mounted on a support pipe atop the tower at TV Hill. He further reported that the 220mHz repeater is now the busiest DFMA repeater due to the number of linked distant locations and plans to add the 147.225 repeater for easy access to that linked network distant traffic.

Dan, KR4UB thanked Charlie for the superb plan for the TV Hill tower location of the 6M antenna and noted the project is timely; it appears the OCRA 53.45mHz 6M repeater has experienced a failure taking it off the air.

Auxcomm – Shawn, K4CTD unable to attend. Jack encouraged attendance at the upcoming meeting Tuesday, January 28th at 7pm at the Durham County EOC. This will be the kickoff meeting for 2020 and will have dinner for those that come. Please RSVP directly [Shawn](#) to ensure the proper amount of food (either a pizza or taco bar) is ordered.

DurHamFest – Jack, KM4MBG reported that Dee, KU4GC has volunteered to be the chairperson for 2020 DurHamFest. The 2020 event will be on May 30th, the weekend following Memorial Day. That date has been registered with the ARRL.

Field Day Coordinator - Dave, W4SAR reported feedback from DFMA & OCRA club members is positive and to proceed with plans to run the Field Day class permitting up to 150 watts, on battery power, with the option to recharge using fossil fuel generators (no commercial mains) during the 24 hour Field Day period. Updated or new bandpass filters will be needed; Jack, KM4MBG commented that the club should cover the cost for the updated/new filters. Dan, KR4UB will contact Steve, W3AHL regarding the field day filter and Field Day planning needs to address the safety aspects of carrying/movement of additional heavy batteries and generators.

NEW Business:

Jack, KM4MBF opened a discussion regarding the future of the DFMA MCU vehicle. The MCU presents a monetary cost in terms of insurance, licensing, repairs and a human cost of needing members to perform the ongoing maintenance & repairs and the issue of storage. It is being used only twice a year for DurHamFest and at the combined OCRA/DFMA Field Day.

The discussion generated the following questions that perhaps if answered, might help lead to a direction on the future of the MCU:

- What was the original purchase cost of the MCU?
- What is the annual total DFMA cost of ownership?
- What alternative shelter arrangement could be bought/rented for use during Field Day? What would be the cost? Would it work as well for Field Day participants?
- What could DFMA do, e.g. member group projects, with the money freed up by not having the MCU?
- The DFMA treasury is healthy & MCU cost is not putting the club in a bind. Is there any reason to change?
- MCU Storage - Deterioration of paint, lettering and internal body rust started by prior water leaks, and the human cost of storage.... Is there some (portable shelter/location) opportunity previously overlooked that could be used to store the MCU out of the weather elements and prevent further deterioration and not be a permanent fixture on a club member's property?

The meeting was adjourned at 8:00 pm.