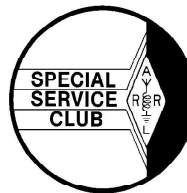


The Hertzian Herald



December 2023 • Volume 47, Issue 12 • Monroe, Michigan, U.S.A.

Hello friends

I hope everyone is about ready for the blessings and the "gettin' busy" in the next two weeks.

I know some will be enjoying their new Call signs and band privileges as new and upgraded licenses go into effect. Our club leaders have helped many people "get their ticket" this year and promoting the hobby is a core function of MCRCA.



IN TOUCH WITH HUTCH

I want to thank you for every occasion that you show up for a meeting. We all have other things to do but just by "showing up" we are stronger and more effective as a force in our communities.

Thanks to everyone for your help and support, making my first year as President work for all of us. For me, it went better than expected. It's been a long time since I've been in a room with so many nice folks who are like minded and pleasant to be around. That makes it a privilege.

Our Christmas party is our December meeting, as always. If I could I would give you all a pen that knows how to write 2024 all by itself, instead of 2023 again. Why do pens get such habits?

I hope to see all at the Christmas Party



<http://mcrca.org/>

[www.facebook.com/
groups/
1643856795878368/](http://www.facebook.com/groups/1643856795878368/)

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MCRCA Meeting Minutes for November 16, 2023

Meeting called to order at 7:30 pm, by Keith KJ8H.

Pledge of Allegiance

Introductions: No new members, one upgrade (Phil KE8YQE to General) and no guests.

MINUTES: Motion by Don N8BZN, supported by Barb NM8I, to approve as written in the Herald. Approved.

TREASURER REPORT: Motion by Paul W8PI, supported by Don N8BZN, to approve the treasurer's report as passed out to the membership. Approved.

DX REPORT: Paul W8PI, PR0T Trindade and Martim Vaz Archipelago off of Brazil, a big one, 17th most wanted, 16 - 19 November 2023. 10m-40m with 10m phone. 4W8X Timor, Micronesia. TX7L Marquesas Isl. VK9XL Christmas Isl. H44WA Solomons. 10, 15, 20m have been pretty good lately

CONTESTING: Paul W8PI, Dec 18 ARRL Sweepstakes SSB. — CQ WW DXCW — ARRL 160m CW

Dec 9 ARRL 10m contest. VOTA. — FD Results, we were second in 2A MI. 5216 score.

TESTING: Paul - Next session - Sat. Dec. 16, 2023. **Appointments Preferred - FRN and email req'd**

CLASSES: Sat. December 9, 2023 contact Don N8BZN – **GENERAL class**. 9 signed up for Gen class. Next Tech class will be February 10, 2024. 3 or 4 signed up already.

ARPSC: Dale WA8EFK, thanks to everyone that helped out with the Dundee spook patrol.

ARRL: Dale WA8EFK, FCC approved proposal to allow high speed data, with an approach to bandwidth, this will speed up data.

RRRA: Dale WA8EFK, Renewed the repeater license, K8RPT after 20 years. They are working on Dundee DMR yet but the rest are working fine.

OLD BUSINESS: none

NEW BUSINESS: Terry N8NYP, is pricing another membership drive details. Barb NM8I is pricing T shirts with MCRCA logo on them. The DXCC Plaque is being updated with newest members who have accomplished DXCC.

DOOR PRIZE DRAWING: Wes KC8SKP

50/50: Phil KE8YQE, donated his winnings to the scholarship.

ANNOUNCEMENTS: Ft Wayne Hamfest is November 18th and 19th

PROGRAM: An old army video "Voice of Victory" brought by Paul W8PI

ADJOURNED: 8:34 pm

ATTENDANCE: 13

KE8PUN Aaron	NM8I Barb	WA8EFK Dale
N8BZN Don	K8EBI Fred	KB8OSU George
WA8YZB John	KJ9H Keith	KA8PQH Neil
W8PI Paul	KE8YQE Phil	KE8NSU Tony
KC8SKP Wes		

Committees

Club Station

Wes Busdiecker KC8SKP

DX Net

Soon

Field Day

Jeff Breitner KA8NCR

Finance

Paul Trouten W8PI (chair)

Fred VanDaele K8EBI

Dale Williams WA8EFK

HamFest

Fred VanDaele K8EBI

Hertzian Herald

Fred VanDaele K8EBI

Historian

Paul Trouten W8PI

Public Relations

Terry Kolton N8NYP

Tom Imlach KE8KNZ

Scholarship

Fred VanDaele K8EBI

Program Chairman

WANTED

Membership

Terry Kolton N8NYP

n8nyp@arrl.net

Property Custodian

Paul Trouten W8PI

Making Math Easy for Ham Radio Experimenters

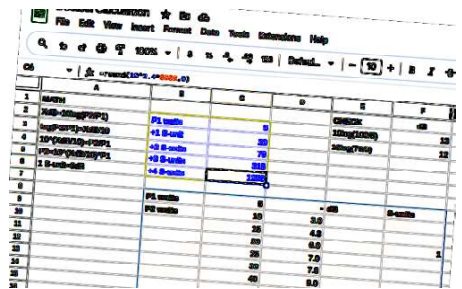
[John VA3KOT](#) [Builder Projects](#), [Miscellaneous topics](#), [QRP](#) November 29, 2023 3 Minutes

If you buy all your equipment and spend most of your on-air time simply chatting to friends, then keep calm and carry on; you are doing us all a favor by keeping the bands alive. Some of us, on the other hand have to take a look “under the hood” to learn what is really going on. We are the experimenters; we build our own antennas, ununs, baluns and chokes. Some even build their own transceivers – it’s relatively easy if you buy a kit.

But, when we sally forth into the world of coils, cores, wires and wireless we inevitably bump into the need to do calculations. Math comes easy to some and not so easy to others, but there is a tool that can level the playing field – it’s called the spreadsheet. By plugging formulas (that we all learned when we studied for our ham exams) into a spreadsheet we can hasten the moment when we complete a project and “let the smoke out” (or hopefully not)

I have a collection of spreadsheet calculations for various tasks that are commonly encountered between initial idea and solder-smoke stages of a project. Some that I regularly use include:

- Decibel calculations
- Capacitor value conversions (F, uF, nF, pF)
- Capacitors in series calculations
- Resistors in parallel calculations
- Dummy load resistances and power ratings
- Quarter wave stub calculations
- Tuned circuit resonance calculations
- Inductive reactance, capacitive reactance and impedance calculations



It takes a little bit of skill and practice to master the formulas used in spreadsheets, but once you acquire that skill every ham radio design problem looks like a nail for which the proverbial hammer is a spreadsheet. Some years ago I was passionate about monitoring the signals from military satellites in Low Earth Orbit (LEO). Of particular interest were the Russian navigation satellites used by their submarines for precision geo-location. The signals had been previously decoded by a group of enthusiasts in the UK. My contribution was to design a complex spreadsheet that simplified the technique they had used. The publishers of Monitoring Times magazine (now sadly out of publication) kindly agreed to publish my detailed account of the process.

Let’s discuss an example of how a spreadsheet can assist the amateur radio experimenter. Decibels are a straightforward way of comparing the relative strength of two signals, but how many of us know how to actually do the calculations? We all once learned the formula:

$$XdB = 10\log(P2/P1)$$

This formula compares two signals P1 and P2, each at different power levels. What is the relative strength of the two signals in decibels? For example, how does a QRP signal at 5 watts compare to a standard 100 watt signal? The answer is the QRP signal is 13dB lower. Sounds like a big deal – and sometimes it may well be – but 13dB is only just over 2 S-units. If the bands are good and the 100 watt signal is coming in at S9+, the QRP signal will still be perfect copy at S7 or more. Easy stuff, but let’s turn it around and ask a different question. What power is P2 if it is 4 S-units above P1?

Now we have to really understand logarithms (yikes, college was eons ago!). Something about exponents of the log base wasn’t it? How about we forget about scrambling through boxes in the dark and musty basement trying to find those old college electrical engineering textbooks. Let’s just plug this formula into a spreadsheet and watch the electronic mathematician pull a rabbit out of a hat:

$$P2 = 10^{(XdB/10)} * P1$$

When I went to college one of the first things they taught us was – “a computer is a very fast idiot”; it has to be told how to solve a problem, then performs the task at lightning speed. Nowadays we live in the world of Artificial Intelligence (AI) and I’m not sure that is still true! Incidentally, my major was Applied Physics and the other thing they taught us early in our courses was how to build an atomic bomb. Ah ... I think I’ll stick with ham radio!

A computer is a very fast idiot?

Back to our headscratcher: What power is P2 if it is 4 S-units above P1? Well, if we plug those numbers into our spreadsheet it will deliver the answer toute-de-suite. If, for example, P1 is our old friend the humble QRP signal, P2 will be 1256 watts. That’s an eye-opener for anybody considering investing in a big amplifier. If you pump out legal max and get heard at S9, the little guy with a hundred dollar kit rig will be right behind at S5!

(Continued next page)

MCRCA Christmas Party Time

Thursday, December 21st is our annual Christmas Party, Potluck and Dirty Santa Swap.

The December Christmas party will be held once again at the Monroe Country Club Estates, 5840 E. Dunbar Rd. just West of S. Dixie Hwy. Guests start arriving at 6:00 pm and the party starts at 6:30 pm.

The club will provide several entrees, lettuce salad, pop, coffee, paper and plastic ware. We ask that you bring a dish to pass or favorite treat or goodie, and join us in all the fun. You may even get lucky and take home one of the fabulous gifts



Continued from page 3

As we get older our grey matter begins to decline while at the same time computers get smarter and faster. So here's my advice: make your own personal computing device work for you before it turns the tables and makes you work for it.

Final note: if I can assist your spreadsheet journey please get in touch either by leaving a comment or sending me an email (address good on QRZ.com). If you have an interesting spreadsheet idea to share please also comment; thanks!

Help support *HamRadioOutsidetheBox*

No "tip-jar", "buy me a coffee", Patreon, or Amazon links here. I enjoy my hobby and I enjoy writing about it. If you would like to support this blog please **follow/subscribe** using the link at the bottom of my [home page](#), or **like, comment** (links at the bottom of each post), **repost** or **share** links to my posts on social media. If you would like to email me directly you will find my email address on my [QRZ.com](#) page. Thank you!

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A few months ago, I asked Fred VanDaele K8EBI about running the series of articles written for the Hertzian Herald by Dan Metzger, K8JWR (SK). Fred has found the collection of articles, scanned them and has them prepared for re-publishing in the Herald.

For those unfamiliar with Dan, he was first licensed as KN8JWR as a teen and went on to earn a degree in electrical engineering. After working for several companies, he settled back in the area as a professor of electronics technology at Monroe County Community College and remained there for over thirty years.

Dan's teaching style may be seen in his writings where the topic is explained using real-life examples or circuits he had designed and tested. Dan always provided encouragement directed toward further reading and exploration, and in the classroom often left the labs open for extra study or experimentation.

Technology and amateur radio have changed greatly since these articles were first published, but the fundamentals of the electronic theory that underpin the hobby remain the same. Hopefully Dan's writings for our club will inspire more exploration and experimentation.

Jeff KN8CR

Tech Trivia — Lessons from Industry

When I was a very young engineer I took a job with an elevator company and was assigned to design several pieces of test equipment for an electronic elevator controller and was given a four-month timetable.

The senior engineer to whom I reported, Gary, was the guy who had designed the controller, and he was a whiz. It soon became apparent that he knew way more than I did about electronic systems — so much so that I began to feel a little inferior. I would spend half an hour every morning picking Gary's brain about how his system worked, and then work the rest of the day trying to devise circuits to run his system through its paces to verify that it was doing what he designed it to do.

Abut midway through the project, Don, the vice president of engineering, invited me to have lunch with him. I was young, as I said, and foolish, and I brashly asked, "Don, why did you hire me? This test gear that I, taking four months to design, Gary could do that in two weeks." Don smiled and said, "I know that, but Gary is my system designer and he's working on our next new product. I can't spare him for two weeks. If I could find another genius like Gary I'd hire him — but I can't, so I have to hire guys like you. Gary can't do it all alone."

Since then I've met some very impressive engineers who have worked on the space shots, the stealth bomber, and the latest microchips. I'd envy them for a while, but then I'd remember: "Gary can't do it all alone" — they need me too. Once, at another company my boss, Joe, came up just before quitting

time and asked me to work up a calculation for the minimum beta required for the transistor in the "keyer" circuit of a display panel we were building. It seems our shipment of transistors had gotten lost, and we would have to shut down production the next day unless some more could be found.

Well, the transistors had a guaranteed beta of 80, and we had been testing them all, so we had a bin full of rejects that fell below 80. If I could verify by calculation that the value actually required in our system was, say, 50 or above, Joe could have the rejects retested and pick out those that were 60 or above and keep the production line going. Next morning, while trying to wake up with my first cup of coffee I started scribbling the calculations on a yellow pad. It came quite easily, and I had just gotten the number (46) when I heard Joe come up behind me. "Got that beta minimum?" he asked.

"Just got it," I said. "Let me recopy this in good form and we can have it out on an ECO (Engineering Change Order) is half an hour." "No time for that," he said. "I'll just photocopy this and attach it to the ECO form." And with that he grabbed my coffee-stained scribble sheet and had it sent all over the plant with my name on it.

Since then, I don't make so much as a grocery list unless I do it neatly and in engineering form. And neither do I let my students get by with saying, "This is just my scribble sheet; I'll recopy it neatly later."

Until next month - 73 de Dan, K8JWR

ARPSC Report

2023 is already at an end...how can that be...

A reminder to join us this upcoming Monday night Dec 18th 8pm for a special holiday reading at the end of the weekly net.

I would like to take this opportunity to express my gratitude to all those operators on the Monroe ARPSC team for their hard work and dedication! I truly believe that the Monroe team is one of the best teams in the state and many of our scores confirm that.

I also want to extend a Thank You to those operators in the county that may not be a part of the ARPSC team but have helped us out throughout the year.

Next ARPSC meeting is Thursday January 4th at 7:30pm at Monroe EMD.

My wife and I would like to wish everyone a Merry Christmas and a Safe and Happy New Year!

73, Lance Charter KE8BYC
Emergency Coordinator
Monroe Amateur Radio Public Service Corps

Monroe County Radio Communications Association

Dues run from January 1st to December 31st of each year. As a current / Past Member, you are invited to attend our monthly meetings to find out the latest plans for our club. You may pay your dues at any regular meeting or by filling in the form below and mailing it to:

MCRCA, 4 Carl Dr, Monroe, MI 48162.

Your membership and support will help with the continued success of our club. Thank you.

MEMBERSHIP APPLICATION / RENEWAL FORM

Regular – \$10 — Add'l Family – \$5 each

DATE _____ ARRL MEMBER? Y _____ N _____ RRRRA Member? Y _____ N _____

NAME _____

ADDRESS _____ PHONE _____

CITY _____ STATE _____ ZIP _____

CALL _____ CLASS _____ E-MAIL: _____

ADDITIONAL Family Members: _____

Please Circle All That Apply:

Active Bands: 160 80 75 40 30 20 17 15 12 10 6 2 220 440 higher

Modes: CW - SSB – DIGITAL - PACKET - RTTY - FM - DX - MOBILE - EME - SAT - ATV - SSTV

Interests: Traffic - DX - Contests - Foxhunts - Satellites - Nets – Antennas - Computers
Emergency - ARES/RACES - Skywarn - Classic Radios (circle all that apply)

Do you plan to upgrade your license? Y _____ N _____ If yes, what class? _____

What kinds of meeting programs would you like to see?

Other activities you would like to see the Club offer _____

General Comment's _____

Signature _____ Date _____



The American Radio Relay League's round-up of the forthcoming week's DX activity on the amateur radio bands

This week's bulletin was made possible with information provided by The Daily DX, 425 DX News, DXNL, Contest Corral from QST and the ARRL Contest Calendar and WA7BNM web sites. Thanks to all.

KUWAIT, 9K. Members of the Kuwait Amateur Radio Society are QRV as 9K9BHR until December 18 in celebration of neighboring Bahrain's Commemoration Day. QSL via operators' instructions.

BAHRAIN, A9. Members of the Bahrain Amateur Radio Society are QRV as A91CD until December 18 in celebration of Bahrain's Commemoration Day. QSL via EC6DX.

CAPE VERDE, D4. Markus, OE3MCS is QRV as D44MCS from Sal Island, IOTA AF-086, until December 22. Activity is holiday style on 40 to 10 meters using CW, SSB, RTTY, and FT8. QSL to home call.

FINLAND, OH. Special event station OF9X is QRV until December 31. Activity is on all bands using CW, SSB, and FT8. QSL via OH2BH.

EAST KIRIBATI, T32. Members of the Rebel DX Group are QRV as T32TT from Christmas Island, IOTA OC-024, until December 21. Activity is on 160 to 6 meters using CW, SSB, FT8, and FT4. QSL via OQRS.

GUATEMALA, TG. Steve, K4IM is QRV as TG9AWS. Activity is on 80 to 6 meters using mainly FT8 but plans to soon be active using CW and SSB as well. His length of stay is unknown. QSL via N2OO.

MICRONESIA, V6. A group of operators are QRV as V6EU from Chuuk Island, IOTA OC 011, until December 16. Activity is on 160 to 10 meters using CW, SSB, RTTY, and FT8. QSL via DL2AWG.

FALKLAND ISLANDS, VP5. Special event station VP8FLY will be QRV from December 19 to 31 to commemorate the 75th anniversary of the Falkland Islands Government Aviation Service. QSL direct to VP8LP.

INDIA, VU. Operators Sharmi, VU3OAA and Rhea, VU3OAC will be QRV as AT2BOTA on December 16 and 17 from Junpat Sea Beach, BOTA 62417, and then from Haripur Sea Beach, BOTA 62418. QSL direct.

ANDAMAN AND NICOBAR ISLANDS, VU4. Krish, W4VKU will be QRV as VU4N from Andaman Island, IOTA AS-001, from December 16 to 26. Activity will be on 160 to 6 meters. QSL to home call.

BURKINA FASO, XT. Harald, DF2WO is QRV as XT2AW from Ouagadougou until December 19. Activity is on the HF bands using CW, SSB, FT8, and FT4. QSL via LoTW.

VIET NAM, XV. Roman, RN5M is QRV as XV9MA from Mui ne. Activity is in his spare time on 160 to 6 meters. His length of stay is unknown. QSL via LY5M.

LAOS, XW. Vincent, F4BKV is QRV as XW4KV until mid-2024. Activity is mostly on 15 and 10 meters using FT8. QSL to home call.

ROMANIA, YO. Special event station YR8XMAS is QRV until January 10, 2024. QSL via operators' instructions.

REPUBLIC OF KOSOVO, Z6. Gab, HB9TSW is QRV as Z68BG from the Slatina Air Base until December 19. Activity is in his spare time on the HF bands using only CW. QSL to home call.

ST. HELENA, ZD7. Chris, HB9FIY and his wife Agata will be QRV as ZD7CA and ZD7AA, respectively, from December 16 to January 14, 2024. Activity will be on 40 to 10 meters using SSB and various digital modes. QSL via EA5GL.

CAYMAN ISLANDS, ZF. Bruce, K3NQ is QRV as ZF2NQ from Grand Cayman until December 20. Activity is holiday style on 17, 15, 12, and 10 meters using CW, SSB, and FT8. QSL via M0OXO.

THIS WEEKEND ON THE RADIO. The ARRL CW Rookie Roundup, NCCC FT4 Sprint, NCCC RTTY Sprint, QRP 80-Meter CW Fox Hunt, NCCC CW Sprint, AGB-Party Contest, Russian 160-Meter Contest, K1USN Slow Speed CW Test, Feld Hell Sprint, OK DX RTTY Contest and the Croatian DX Contest are all scheduled for this weekend.

The Run for the Bacon QRP CW Contest, K1USN Slow Speed CW Test, ICWC Medium Speed CW Test, OK1WC Memorial, Worldwide Sideband Activity Contest, NAQCC CW Sprint, QRP 40-Meter CW Fox Hunt, Phone Weekly Test, A1Club AWT, CWops Test, VHF-UHF FT8 Activity Contest, Mini-Test 40 CW and Mini-Test 80 CW are on tap for December 18 to 20.

Please see December QST, page 65, and the ARRL and WA7BNM contest websites for details.



Amateur Radio Examinations Monroe, MI

Monroe County Radio Communications Association Amateur Radio examinations are held the 3rd Saturday of every even numbered month at:

American Red Cross Chapter Bldg.
1645 North Dixie Highway
Monroe, MI 48161

Registrations preferred
Call for information.
email address and FRN required

2023 Schedule:
February 18 April 15
June 17 August 19
October 21 December 16

TESTING BEGINS PROMPTLY AT 9:00 AM

Applicants are expected to have all forms filled out and be ready to take tests at that time. Coffee and doughnuts are available at 8:30 AM. For more information or to make reservations, call Paul Trouten - W8PI at 734-854-2224

Join us at the next meeting

November 21st at 7:30 pm
American Red Cross Chapter Bldg.
1645 North Dixie Highway
Monroe, MI 48162

Local Net

ARPSC Net - Every Monday evening on '72-Monroe
(146.72 Mhz) starting at 8:00pm.

ARPSC Meeting first Thursday of every month at the
EMD office on Raisinville Rd.. 7:00 PM

One Day Bi-Monthly Technician classes

Next class will be February 10, 2023

The Monroe County Radio Communications Association (MCRCA) is offering a one-day Amateur Radio course for the entry level Technician class license. The class will run from 8:30 AM to 4:00 PM on the **second Saturday of every even numbered month**. The cost is \$10 and includes lunch, snacks and beverages. The test will be conducted immediately following the class and has a separate fee of \$14. These classes will be held at the Red Cross building, 1645 N Dixie Hwy, Monroe, MI 48162.

There is a maximum class size of 10 people on a first come first served basis and you should sign up no later than 1 week before the class. All study material and testing paperwork will be provided at the time you sign up and you should plan on doing some pre-class studying to make things easier in the class.

If you are interested in becoming a Ham Radio Operator, please call or email me to get signed up for the next class.

N8BZN Don Fritz / (419) 345-4495 after 6PM / Donfritz56@gmail.com

New MCRCA Members

Please welcome recent new members to the club.