

DEADLINE IS MARCH 31, 2024



President's Letter Jon Pearce, WB2MNF



March 2024

Despite some snowy weather there was plenty of activity in the Gloucester County Amateur Radio Club this month. Turnout was strong for the presentation at the General Membership Meeting on how hams can participate in scientific research during the upcoming solar eclipse in April. About a dozen participants showed up for **Len Rust, W2LJR**'s fascinating **Tech Saturday Forum** talk about **Voice Over IP** technology and how it developed and is currently implemented. And more than a dozen Club members got involved in the "Meshtastic" mesh networking project that's expanding throughout the Club's geographic area. Similar activities will continue in March.

General Membership Meeting Time Change In April!

As attendees at the February meeting were surprised to find, the Pfeiffer Community Center has changed their policy for the meeting ending time and now requires the room to be empty by 9:30 pm at which time the alarms will be armed. Last month there was a frantic race to get the A/V equipment packed up and out of the room, so the Board has voted to change the General Membership Meeting time to 7:00 PM beginning with the April 3, 2024 meeting. This will give a little extra time for longer meetings, after-meeting chats and equipment breakdown. *Remember - this starts in APRIL, not in March!*

Goodbye And Good Luck To Jim Clark KA2OSV

Past president and long-time GCARC board member **Jim Clark KA2OSV** attended his last official GCARC event this week, participating in his final Board of Directors meeting before moving to South Carolina. Jim has been active in all of the Club's major events - he has been a steadfast member of the ticket-taking team for the hamfest, an active Field Day operator and the net control station for the 10 meter net among many other activities. Jim promises to get on the air once situated in his new QTH so we hope he still remains in touch, if only on the air waves. *Good luck, Jim, and thanks for many years of service and friendship*.

Member Renewals

Member renewals are getting "down to the wire". If you haven't renewed your membership by the end of March you'll be dropped from the Club roster and will no longer receive Crosstalk or any other Club announcements. We hope that you won't want to miss the activities planned for the spring and summer months and will mail your check to **PO Box 370, Pitman, NJ 08071** or use the "<u>Pay Dues Here</u>" tab on the <u>w2mmd.org</u> website. Base dues are \$30 annually but many members have made additional contributions to support Clubhouse activities and other club events.

March General Membership Meeting And Tech Saturday Forum

The presentation at the March 6, 2024 meeting will be "Everything you wanted to know about a ARRL affiliation", and will cover the benefits of participating in that organization. Having recently received my "Certificate of Appreciation" for 60 years of ARRL membership I can safely conclude that Mom should have bought me a life membership when I was 13 which would have saved me a lot of money throughout my life. But I've also appreciated the value of being an ARRL member and receiving QST and having access to their other publications, as well as the advocacy work that they do for amateur radio, and I'm looking forward to this presentation.

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At the Tech Saturday Forum on March 9, 2024 session **Jim Wright N2GXJ** will present his always-excellent guide to fox hunting and using direction finding equipment as he describes in another **CrossTalk (Page 9)** article this month. This session follows the antenna building session that **Chris Prioli AD2CS** organized at which more than a dozen people built tape measure Yagi antennas and step attenuators to be used in locating hidden transmitters. If you participated in that group, or if you're just interested in learning about another fun activity you should plan to participate in this event. As always the W2MMD Clubhouse will be open after that session for general ham -related conversation and project work.

What's All This "Meshtastic" Stuff?

More than a dozen Club members have become involved in building out a mesh network on 433 MHz using inexpensive radios and an operating system called "Meshtastic". As described in more detail in an accompanying article (**Page 30**), Meshtastic offers an easy and inexpensive way to explore a number of facets of Amateur Radio and related activities. It's been gratifying to see the interest in this group project and the number of people who are pursuing different avenues in its development. One YouTube ham presenter commented that it was the biggest "rabbit hole" that he had seen in years, offering opportunities for research into radio, antennas, transmission protocols, microcontrollers, and many other areas. Discussions are occurring on the GCARC Discord group and we've had several Monday night TechNet ZOOM Forum calls to provide assistance and coordination on this topic. I'm hopeful that interest will continue and grow, and that more Club members will find an interesting niche or two in which to develop and contribute.

What's Coming Up?

With good weather coming we're hoping to resume outdoor activities over the next several months. The SatNOGS station should be back in operation, we're working on replacing the weather station with new equipment, the Wires -X node should be linked into the 440 repeater and initial VHF tower installation may begin if the remaining technical issues can be overcome. The grant-funded VHF equipment may finally be operational, and additional satellite station activities may occur with new satellites being launched. The **"Parks On The Air"** presentations at the **April 3, 2024 General Membership Meeting at 1900 Hours** and **Tech Saturday Forum** session may provide encouragement for this type of operation, and the antenna building sessions in May and June should help members develop the skills to build their own antennas. And with Field Day occurring in June and the ever-popular pizza night at the July meeting the GCARC is packed with activities for everyone for the next several months.

73 de Jon WB2MNF



Sunday, March 10, 2024 @ 0200 Hours

Membership Renewals - It's That Time Again By Jon Pearce, WB2MNF

All GCARC memberships renew in January except for Life Members and anyone who first joined at the 2023 hamfest or in the last quarter of the year. As was noted at the December meeting the base membership dues level of \$30 is barely sufficient to keep the lights on in the Clubhouse and relies on good Hamfest weather and a strong turnout to create a balanced budget. While \$30 is typical for radio club dues, few other clubs have a resource comparable to our Clubhouse along

With dues of:	We could:
\$30	Hopefully keep the Clubhouse lights on
\$40	Don't have to be lucky (hamfest weather)
\$50	Build for the future (new gear, ramp, etc.)

with its associated costs that account for almost 70% of our annual budget. Member dues only account for about 60% of Club revenue with the remaining revenue arising from hamfest income and donations, neither of which are certain to occur.

We want everyone to be able to be a member of the GCARC so the basic Club dues are \$30 per year, in line with those of other local clubs. However, we also know that many hams could and would pay more if asked - so we're asking. Last year additional dues payments raised more than \$900 - funds that were critical to cover the lost revenue from our rainy hamfest - and this year we're hopeful to exceed that amount to cover expenses that we know will increase and to potentially allow for some additional Club projects and activities. As you renew this year please consider selecting a dues level that you believe is appropriate for you.

Dues payments can be made at the March 6th meeting. Cash, checks and credit cards can be accepted. They can also be made any Saturday at the Clubhouse or on the GCARC website by PayPal. Checks can also be mailed to Gloucester County Amateur Radio Club, PO Box 370, Pitman, NJ 08071.





9X5RU QSL Card sent to Darrell Neron, AB2E



Regional Skywarn Websites For On-Line And In-Person Training Classes

Philadelphia/Mt Holly Skywarn : <u>www.weather.gov/phi/skywarn</u> State College, PA Skywarn : <u>www.weather.gov/ctp/skywarn</u> Pittsburgh, PA Skywarn : <u>www.weather.gov/pbz/skywarn</u>

Skywarn Forum : Skywarn Storm Spotter and Weather Discussions : https://www.skywarnforum.com

GCARC TechNet ZOOM Forum

Monday, March 11, 2023 @ 1930 Hours

Forum Topic : Open Discussion For Future Forum Topics

Go to : <u>https://gloucestercountyarc.weebly.com/gcarc-technet.html</u> for TechNet Information Resources and ZOOM Instructions

Meeting ID : 960 8543 6644 ; Passcode : 964974

Need a ride to a Club meeting, event, or activity?

Just send a message to the Club's e-mail reflector asking if a member can pick you up

GCARC <at> MAILMAN <dot> QTH <dot> NET

All Club members have access to this FREE e-mail service

General Membership Meeting

Wednesday, March 6, 2024 @ 1930 Hours

Pfeiffer Community Center

Simulcast Live Via ZOOM : Meeting ID : 943 0211 9674; Passcode : 843147

Go to : <u>www.w2mmd.org</u> to download the ZOOM log-on instructions PDF

Meeting Program : Ron Fish, KX1W : ARRL SNJ Section Affiliated Club Coordinator

ARRL Affiliated Club Primer Everything You Need to Know About ARRL Club Affiliation

Our speaker this month is **Ron Fish, KX1W**, the ARRL Southern New Jersey Affiliated Club Coordinator. His presentation will elaborate on his duties as club coordinator and what he can do for our Club to help us become a better and more effective organization.

He will briefly touch on the ARRL - its founding, purpose, and goals; focusing specifically on public service as it relates to the core purpose to : *"promote and advance the art, science, and enjoyment of Amateur Radio."* That will be followed by a review of what the ARRL does for its members and how we can utilize some of these services. Following that, Ron will review how being affiliated with the ARRL helps the Club grow and develop.

In addition, Ron will highlight the GCARC as the only Club in the Southern New Jersey Section that has achieved Special Service Club status and what that means for each of us.

Please join us at this month's General Membership meeting for this enlightening presentation. As usual, you will have the opportunity to get to know Ron and ask questions. Don't miss out on this informative session! See you there!



Advanced SMT Soldering Class Coming This Summer - W2MMD Clubhouse

For More Information & To Register, Go To : https://gloucestercountyarc.weebly.com/advanced-smt-class.html

March 2024 CrossTalk : Learning Stuff! Building Stuff! Doing Stuff! TOGETHER!

Tech Saturday Forum March 9, 2024 @ 0900 Hours W2MMD Clubhouse

Forum Topic : Direction Finding Workshop In preparation for the March 16, 2024 30th Anniversary Fox Hunt

Q & A Session About All Things Ham Radio and Socializing! The HF Station Will Be Available For Local Operation!

Tech Saturday sessions are held at the W2MMD Clubhouse on the first Saturday of the month following the Wednesday Night General Membership Meeting and are designed to be hands-on collaborative events focused on using the Clubhouse resources to demonstrate various aspects of Amateur Radio and related technical areas. Previous sessions have covered USB software-defined radios, Raspberry Pi and Arduino devices, satellite operations and other similar topics.

We would like to invite all of our new members as well as our veteran members to our Tech Saturday Forums to help answer any questions and discuss any and all issues the new members have come across as they progress through the *Amateur Radio Experience*.

The Discussion Theme is a QSO starting point - a way to initiate a conversation. All Tech Saturdays are an open QSO of all subjects of Amateur Radio interest. All questions are welcome as well as a venue for hams to show off their latest ham radio projects or gadgets. Have a problem programming that HT, we can help! Not sure what radio or antenna to buy, we can help!

All Club Members who would like Clubhouse access to use its radio equipment would have to have some brief "Elmering" on the Clubhouse rules, such as using the alarm system, the A/C and heaters, the antenna system, and the radio equipment. The Club's HF station is reserved for local use on Tech Saturday.

All are welcome - Hams and Non-Hams - Club Members and Non-Club Members.



Gloucester County Amateur Radio Club YouTube Channel <u>https://www.youtube.com/@W2MMD</u>

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"Dinner @ The Clubhouse" Wednesday, March 27, 2024 @ 1800 Hours W2MMD Clubhouse

GCARC's 30th Hidden Transmitters Game Set For Saturday, March 16, 2024 @ 1300 Hours By Jim Wright, N2GXJ & Marc Federici, WM2Y

We're talking about a game where you use your handheld radio to try and find other hidden transmitters nearby. It is an unusual activity that your GCARC Club is offering for you to try with other Club members here in March.



This will be slightly different from hunts the Club has done in the past.

For this 30th Anniversary hunt, we will be having a common starting location. For Saturday, March 16th, we ask for everyone to meet outside in front of our **W2MMD Clubhouse**. Please try and arrive there with enough time to assemble ahead of the **1pm rally start**. At 1pm, there will be a brief welcome, followed by an announcement of the first transmitter frequency to hunt for. A mini-hunt will then start from the Clubhouse to find that first transmitter to get everyone situated and pointed the right way. For those able to find this first fox transmitter, on it they will find a note. The note will tell them the frequency to switch over to for finding the second fox transmitter. And the hunt continues from there! Find just one to win. Find them all to win a chance to be the person to hide them for others to find next time. More fun for everyone!

Want time to practice ahead of time? A practice session is being set up for the **Tech Saturday Forum on March 9, 2024**. Come on out to the Clubhouse that morning from 10-11am for some practice finding the 146.565 MHz FM transmitter. There might be one of the new transmitters there available to find too. Bring your own radio or borrow one of ours. Helpers will be available to show you how, helping you to practice "homing-in" on the radio transmitter fox.

Hope to see you there!





Standard Fox Hunt Transmitter 146-565 MHz

Marc Federici, WM2Y New Fox Hunt Transmitter

Welcome New Club Members :

Michael Angelastro, an Associate Member who lives in Cherry Hill, NJ.

George Badger, W3AB, (Returning Member), an Amateur Extra Class who lives in Soquel, CA.

- George is a returning member who first joined in March of 1964. Also joining the Club that month was long time member and SK, **Ray Martin, WB2LNR (W2RM).**
- Welcome Back, George!

Art Strong, KA0WS, (Returning Member), an Amateur Extra Class who lives in Falkville, AL.

- Art is also a returning member who first joined in 1985. Art held many Club titles, including, Club President, officer, CrossTalk editor, webmaster, historian, etc.
- Art, welcome back OM! Hope Donna and you are doing fine in Sweet Home Alabama!

Jason Watkins, KD2VVJ, a Technician Class who lives in Sewell, NJ.

We are glad to have you as members of the Club and hope to see you regularly at Club meetings, events, and activities. Hope to see you at the March 6th General Membership Meeting , either in-person or on ZOOM, the March 9th Tech Saturday Forum, the March 11th GCARC TechNet ZOOM Forum, the Dinner @ The Clubhouse on March 27th.

We also hope to "SEE" you on the "AIR" on the following nets :

- Sunday Night Skywarn Net @ 1930 Hours and the Sunday Night ARES Net @ 2000 Hours.
- Tuesday AfterNoon Net @ 1200 Hours.
- Tuesday & Thursday Night 10M Rag Chew Nets @ 1930 Hours on 28.465 or 28.475 MHz.
- Thursday Night Rag Chew Net @ 2000 Hours.

All 2 Meter nets are on our 147.180 MHz (PL 131.8) repeater or on EchoLink W2MMD-R.





Pi Day! 3.14

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Happy Birthday, Al! March 14, 1879



GCARC Monthly VE Exam Testing Summary - February 8, 2024

Gary Reed, N2QEE, Reports : The GCARC monthly VE session was held on February 8th. There were two candidates with one an upgrade and one new Technician.

- Marylu Ciraula KE2CEF of Pittsgrove upgraded to General
- Kenneth Berry KE2CRL of Pitman passed Technician

The participating VE's were :

- Court KD2SPJ
- Rich W2RHS
- Mike KG4JYA
- Mike N2WOQ
- Earl KC2NCH
- Gary N2QEE

A big thank you to the participating VE's

The new Amateur Extra question pool is out with some recent corrections. The errata includes minor question changes, the removal of one question, and one modified graphic. All question pools are available on the w2mmd.org website at : <u>https://gloucestercountyarc.weebly.com/get-your-ham-ticket.html</u>

The next monthly VE session will be held March 14, 2024 @ 1900 Hours at the W2MMD Clubhouse.

Gloucester County Amateur Radio Club Elmers

We are still looking for some more Club Elmers. If you would to add your name to the Elmer's List, send your specialty to w2mmdgcarc@gmail.com. Here is what we have so far :

- Tony Starr, K3TS : Antenna Construction; Contesting; CW Help and Training
- Ken Bozarth, KN2U : Antennas
- Jeff Welsh, KD2AZI : Boat Anchor Repair & Operation; Raspberry Pi; Arduino; Python; POTA; Mobile Installation & Operating
- Karl Frank, W2KBF : Digital Messaging (FLDIGI, WinLink)
- Lenny Rust, W2LJR : DMR Radios & Programming
- Ron Block, NR2B : Lightning protection & grounding
- Chris Prioli, AD2CS : Kit Building; Antenna Building; Radio Programming; PC and Electronic Troubleshooting; ham radio licensing & studying
- John Zaruba Jr, K2ZA : Yaesu System Fusion Radio Programming, POTA, SOTA
- Jerry Barnish, K2EAB : Radio Astronomy
- Mike Thompson, KG4JYA : Radio Astronomy; VARA (HF and FM); WinLink
- Steve Farney, W2SEF : WSJT-X; FT-8; LoTW; TQSL; Grid Square
- Carl Wittig, N2CRW : Audacity[®] Audio Editor
- Gary Mirkin, WA3SVW : FLDIGI; MMSSTV
- Jon Pearce, WB2MNF : Satellite Communications
- Frank Romeo, N3PUU : Toilet Installer; Jack-Of-All Trades Master Of None
- John Hill, W2HUV : Local & Remote W2MMD HF Station Operation, Training & Support
- Dave Sheppard, W2PAX : National Traffic System

DAs and DITs

>> Congratulations to Marylu Ciraula, KE2CEF for upgrading to General Class.

>> Congratulations to **Tom Abernethy, W3TOM**, past Director of the ARRL Atlantic Division. In recognition for his many contributions to Amateur Radio and to the American Radio Relay League, the ARRL conferred the title of **Director Emeritus**. *FB Tom*!

>> SCARA (Southern Counties Amateur Radio Association) runs a *SLOW SPEED CW PRACTICE NET* on the fourth Sunday of every month @ 0900 Hours. The net meets on the their 146.745 MHz (146.2 Hz) repeater. Contact Alex Calabrese, WA2ADS (wa2ads@arrl.net) or www.k2br.com for more information.

** Don't forget - The April 3, 2024 General Membership Meeting Starts @ 1900 Hours. **

ARES Resources

Download the ARES Manual [PDF] : <u>https://bit.lv/3iUhJLQ</u> ARES Field Resources Manual [PDF] : <u>https://bit.lv/3QT4PtY</u> ARES Standardized Training Plan Task Book [Fillable PDF] : <u>https://bit.lv/3wg5kVt</u> ARES Standardized Training Plan Task Book [Word] : <u>https://bit.lv/3ZTNDbR</u> ARES Plan : <u>https://bit.lv/3XLokXH</u> ARES Group Registration : <u>http://bit.lv/3XodGpX</u> Emergency Communications Training : <u>http://bit.lv/3J2gMMf</u> 2022 National Preparedness Report : <u>https://bit.lv/3EnvcTW</u> Southern New Jersey Section EOP 2022.PDF : https://bit.ly/3SbrXol

The Amateur Radio Emergency Service[®] (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization is eligible to apply for membership in ARES. Training may be required or desired to participate fully in ARES. Please inquire at the local level for specific information. Because ARES is an amateur radio program, only licensed radio amateurs are eligible for membership. The possession of emergency-powered equipment is desirable but is not a requirement for membership.

If you are interested in learning more about the Gloucester County ARES Program or becoming an ARES member, please contact Bob Keogh (KD2NEC@QSL.NET)



March 2024 CrossTalk : Learning Stuff! Building Stuff! Doing Stuff! TOGETHER!

ZOOM Protocols For GCARC Meetings

To provide for a more pleasant and efficient ZOOM experience for our Club members, several protocols have been established for use at these meetings.

- All participants will be MUTED by the administrator.
- If you wish to comment, please use the ZOOM "Raise Hand" feature. (See Below)
 - In the meeting controls, click "Reactions", then click "Raise Hand".
 - Users can also raise or lower their hand with the Alt+Y (Windows) or Option+Y (macOS) keyboard shortcuts.
- The administrator will then un-mute you so you can join the conversation. You will not be able to un-mute yourself.
- If you are going to use your camera, please be attired as you would be if physically coming to the meeting. Otherwise, please turn off your video.

Thanks for following these points to help our meetings run smoothly.



ADIF Logs Wanted When Operating As W2MMD @ The Clubhouse By Jim Wright, N2GXJ - jim.n2gxj@gmail.com

It is a common courtesy in ham radio to be able to QSL 2-way contacts made with other hams. We're pretty good about doing this for our field day contacts made each year, but are falling behind in this for contacts we make from the Clubhouse as W2MMD.

So here is the ask :

If you operate from the Clubhouse as W2MMD (e.g. on HF, UHF/VHF, or on Satellite, at Tech Saturday, or during contests or other), please email me the electronic log entries in ADIF format from the logger program you used for those contacts?

That way, just like I do following field day each year, I can get them uploaded to LOTW and to eQSL to offer the courtesy of an electronic QSL to those who make contact with us as W2MMD here in NJ.

Thank you

Regional (Atlantic & Hudson Divisions) Hamfests & Events

March 9, 2024 : Cherryville Repeater Association, Hamfest and Technology Expo 2024, North Hunterdon Regional High School, 1445 Route 31, Clinton (Annandale), NJ. <u>www.qsl.net/w2cra</u>

March 9, 2024 : Westmoreland Emergency Amateur Radio Service, WEARS-FEST, Greensburg Masonic Lodge, 349 Donohoe Road, Greensburg, PA. <u>www.wc3ps.org</u>

March 16, 2024 : New Jersey Antique Radio Club, NJARC HamFest SwapMeet Show, Parsippany PAL, 33 Baldwin Road, Parsippany, NJ. <u>www.njarc.org</u>

March 16, 2024 : Frederick Amateur Radio Club, Fredfest 24, Independent Hose Company, 310 Baughmans Lane, Frederick, MD. <u>www.frederickarc.org</u>

March 30, 2024 : W2SZ RPI Amateur Radio Club, Flea at RPI, Rensselaer Union McNeil Room (2nd floor lobby), 1761 15th Street, Troy, NY. <u>www.w2sz.org</u>



American Legion 105th Anniversary Special Event Station

American Legion Post 104 in Sevierville, Tennessee, will celebrate the 105th anniversary of the American Legion with a special event station on March 8 - 9, 2024. K4L will be active from 1500Z - 0300Z on 7.250 and 14.250 MHz with operators from the American Legion Amateur Radio Club, AL4US (https://tnpost104.org/al4us), an ARRL Affiliated Club.

Everyone who contacts the station can request a digital certificate by providing a valid email address. On Saturday there will be an American Legion Birthday Party at the post from 11:00AM - 4:00 PM EST and the public is invited to attend. The American Legion was chartered by Congress in 1919 as a patriotic veterans organization. The Legion evolved into an organization with a focus on service to veterans, service members, and communities. Membership is now at nearly 2 million, and there are 12,000 American Legion posts worldwide.



Article Credit : The ARRL Letter for February 22, 2024 - www.arrl.org

So you find our website confusing, can't find anything, Well So Do I!!

I have created a page (What, Not Another Page !!) called "Quick Links"

On this page you will find "Buttons" to some the most popular pages I will add more as time goes on, but I hope this helps your journey navigating through your Club Website!

https://gloucestercountyarc.weebly.com/quick-links.html

"Voice Over IP" Tech Saturday Forum - February 10, 2023 By Jon Pearce, WB2MNF

Almost a dozen members gathered at the W2MMD Clubhouse on Saturday, February 10, 2024 for a fascinating presentation by **Len Rust W2LJR** on **Voice Over IP** technology. Len has worked in this industry for decades and presented an overview of the history of telephone long distance communication, beginning with leased lines and continuing into current technology. He also set up a small self-contained VoIP network on the Clubhouse table and demonstrated how this technology is implemented in a variety of different settings. Notably, he showed how a call to the Clubhouse telephone number could be answered automatically and routed to different extension units, which created some interesting suggestions from members on handling the different types of calls that come into the Clubhouse. Len is a frequent presenter at Tech Saturday Forums and always gives excellent presentations.

Following Len's presentation an ad-hoc group gathered to discuss issues related to the "Meshtastic" project in which many Club members are participating. As described on **Page 30**, Meshtastic provides an inexpensive way for members to get involved in mesh networking and a wide variety of related topics. As usual, multiple conversations followed, and the HF and satellite stations are generally available for operation during these times.

Tech Saturday is a great event at which to get together with other members in an informal setting and to collaborate and learn about ham radio topics.



Hanging A 40 Meter Dipole By The Rev. Todd Foster, W2TEF

A Long Time Ago In A Galaxy Far, Far Away...

In 1996 or so, as a newly licensed Tech+ with a seminarian's budget, I built a Small Wonder 40 transceiver and hung two 33'3" lengths of copper line between three Mesquite trees in West Texas. I cringed at the cost of a piece of coax to bring the signal back to my kitchen, with an RCA jack mounted on the wall. It was cheap, it was quick, it was dirty, and it worked.

A New Hope

Diving back into the hobby in the last few months, I have enjoyed operating from the W2MMD Clubhouse from time to time. But I wanted to operate from home, when I have a few minutes to play, not with an hour's commute. It was time to build another antenna. I located three trees that might serve, and began hatching my plans. My HF radio is a **QRP-Labs QMX** (<u>https://qrp-labs.com/qmx.html</u>) : a five-band CW transceiver. I thought about a G5RV multi-band antenna. But it's hard to beat the beautiful simplicity of a dipole. **Tony Starr K3TS** affirmed that idea (<u>https:// gloucestercountyarc.weebly.com/antennas.html</u>). So I decided to build what I knew.

I bought cables, wire, and connectors. Low-loss feedline for long runs is expensive! I found tools and encouragement from the GCARC to dress my cables myself.

Tony and others suggested I consider using a current balun this time around. Following instructions online (https:// www.iw5edi.com/ham-radio/5497/11-current-balun) I bought a large #43 toroid and some RG174. I found a Centex round junction box at True Value that looked like it should be weather proof, and just large enough to hold the balun and mount a UHF connector. As a bonus, it had tangs sticking out for securing it to a wall: perfect places to hang it from a rope! I bought some Budwig HQ-2 end insulators, 70' of Polystealth 18 wire, and some 1/8" Dacron rope for hanging things in trees. I bought a service wire drop wedge clamp from Billows Electric to secure the feedline to the house. I required several UHF connectors, coax seal, UV resistant electrical tape, and other miscellaneous hardware.



One weekend I took a water bottle, tied it to some lightweight poly line, and practiced tossing it until I got it over the branch I thought would best support the center of my dipole. I tied the line in a loop and left it anchored to a lower branch where I could reach it.

W2TEF Hanging A 40 Meter Dipole - Continued on page 17

W2TEF Hanging A 40 Meter Dipole - Continued from page 16

Roughing It In

On Friday, 9 February, I found myself with most of a day off (I work weekends). It was time to stop staring at this pile of parts I had bought and to do something with them. I thought I would try lofting my center point in a tree and see how far I would get. I calculated the dipole's legs should each be 33' 3" long with my 18 gauge wire. But I had 70 feet of Polystealth, so I hung 35' on each leg to have plenty of extra. It's easier to cut off excess than to tack on more.

More than 25 years ago, I had found the tallest extension ladder I could lay my hands on and climbed to the very top of it to anchor my center and lay out the radiators just so. I'm not so interested in ladders any more. I pulled the center point up on my loop of rope, with the radials hanging straight down. Then I began to throw my water bottle lines over other branches, slowly threading the radials into a reasonably clear path out of the tree and into free space. Lines strung from neighboring trees supported their endpoints in the air.

Tuning

Friday, 16 February was the big day. The moment of truth. Would it tune? **Chris Prioli AD2CS** had offered to help. He came over early with a lot of specialized equipment. I showed him the basic layout and we went to connect the antenna. We started with the DX Engineering RigExpert Antenna Analyzer. I connected it to my antenna and... it had infinite SWR across the entire HF spectrum. There was no sign of resonance anywhere. Was the analyzer broken? The connector bad? Chris asked, "Are you sure it's hooked up to the antenna?" Of course I'm sure, I replied.

Only then did I double check and find that the analyzer was plugged into the line leading into the house, not up to the antenna. I connected the analyzer to the antenna and there was a nice resonant range just below the 40m band. We gradually folded back the ends of each leg: lower, untwist, fold back another 3", twist together, raise the leg back up to its operating position. No ladders required, just a lot of hoisting of ropes. After folding back a foot on each side, we had minimum SWR of 1.02 at 6.96MHz, with SWR of 1.471 at my target 7.040MHz. This would not be a terrible antenna. But, I asked Chris, is there some way we can move that flat part of the resonance graph fully over into the 40m band and centered at 7040? "Get out your calculator," he said.

Back To The Theory

We started by calculating the theoretical ideal length of each leg of the dipole. To center at 7.040MHz, 984/7.04 = 139.77' = 1677.27'' / 2 = 838.64'' per leg. At 95% velocity factor, we want legs 33' 2.5'' long. That accords with my earlier calculations.

We plugged in the actual length of our adjusted legs into the same formula. The antenna was resonant exactly where it should be with its longer legs. In terms of SWR measured, it was acting according to the theory. If we cut off another foot from either end and folded it back to get the ideal length of 33' 2.5", we should find it resonant around 7.040MHz. Would we?

The Final Cut

We made the big cut, folded the ends, and secured them with zip ties. Then we went back in to check them out from the shack's operating position (known in common parlance as "the basement"). The Rig Expert said we nailed it: The floor of our SWR curve was in the low part of the 40m band, with a 1:1.03 reading at 7.040MHz. The first inflection point would be at 7.074MHz (1:1.16) and the next at 7200MHz (1:1.94MHz). In the upper, phone-oriented parts of the band I'd want to start thinking about an antenna tuner. In the CW portion, I had a perfectly tuned dipole.

W2TEF Hanging A 40 Meter Dipole - Continued on page 18

W2TEF Hanging A 40 Meter Dipole - Continued from page 17

Chris brought out his MFJ Antenna Analyzer and we verified our results. Then he fired up the NanoVNA and we got another nice graphical representation of the SWR curve. This antenna was ready for operation on the 40m band!

Tying Up Loose Ends

I needed to zip-tie the trimmed ends of the legs, find cleats to secure the lines to the trees (rather than strangling growing branches), think about lightning protection, and seal the feedline connections against moisture. But the antenna tuned. That night I made a QSO with a buddy in my CW Academy class who lives near Chicago. That weekend I got a response from every station I called in the K1USN SST. The RBN tonight shows me reaching all across the United State, Canada, Europe, and the Caribbean on 40m and 20m, and down into South Carolina on 60m. Not bad for 4.6 watts and a simple 40m dipole! Thank you to Chris and the GCARC for advice, support, and practical help in getting my new station operational!

STEM Program For Upper Deerfield Township School District By Joseph Lee, N2BNJ and Ella Lee, K2BNJ

Good Day To You!

I am a member of the Club and also a member of the school board of **Upper Deerfield Township School District**. I am going to recommend to our district that we look at partnering with local experts to develop a **STEM** (**Science**, **Technology**, **Engineering and Mathematics**) program.

I would like to provide education to our 6th - 8th graders on HAM radio, the science, math, engineering and technology behind it. I know that there are many areas that the kids would be anxious to learn about and perhaps become ham operators themselves.

I would like to reference the article from yahoo news from this link : <u>https://bit.ly/3OUEImN</u> *"A different world:' Ham radio points East Elementary students to STEM concepts"* (<u>vahoo.com</u>)

I hope that some members of our Club members would be interested in providing presentations and classes on HAM radio and all that is involved. I am also hopeful that the Club would adopt the program and provide support.

Please, if you are interested let me know at genjtlee@comcast.net. I think that this could be an awesome program and we can develop new HAM Radio enthusiasts.



TCF Trenton Computer Festival

Saturday, March 16, 2024 The College of New Jersey Ewing Township, NJ <u>www.tcf-nj.org</u>



The Education Connection By Chris Prioli, AD2CS - chris@ad2cs.com <u>www.ad2cs.com</u>



March 2024

I would like to start out this month's column by offering a heartfelt "Thank You!" to everyone who made the GCARC Fox Hunt Antenna/Attenuator Build Class such a huge success. This includes thanks to each and every one of the students who attended. And also, a big thank you to **Gary Reed N2QEE**, **Mike Resnick N2WOQ**, **Jon Pearce WB2MNF**, **John O'Connell K2QA**, and **Frank Romeo N3PUU**. Each of these extremely helpful Club members and officers were there on all three evenings of the class meetings to lend whatever support they could. These class sessions could not have taken place without their help. Gary and Mike were especially helpful, as they worked directly with the students in solving any issues that arose during the build.

The following Club members came out to try their hand at building the attenuator and antenna combination :

- Bruce Canino KD2LBU
- Jerry Barnish K2EAB
- Greg Ciraula W5DO
- MaryLu Ciraula KE2CEF
- Glen Guenther KE2BUO
- Melissa Guenther KE2BWZ
- Earl Moore KC2NCH
- Aimée Ortiz K9RVT
- Melissa Seidner KE2BEK
- Court Smith KD2SPJ
- Jim Wright N2GXJ
- Ethan Yost KE2AVA

In addition, another Club member, **Mike Covaleski N2MMC** purchased the complete kit to build on his own. A very limited number of kits are still available if anyone else is interested in taking this on as a solo project. The cost of the kit is the same as the class price was, a mere fifty dollars, payable to the Club. Let me know if you are interested.

The most exciting thing about this whole experience is that some of the folks who participated had never done any soldering before. Yet, everyone made it through, completing the entire project in good order.

The first night, all of the attendees assembled the attenuator sub-kits. The second evening was spent doing the basic assembly of the antenna. On the third and final evening, we competed the assemblies, marrying the two parts and installing the connecting cables and finishing touches. Even those individuals who had to miss one meeting still got caught up, with the help of their classmates, and everyone finished right on time.

It was a fun time as well as a learning experience, and it is my intention to see that more events like this are made available to the Club members as time goes by.

Education Connection - Continued on page 20

Education Connection - Continued from page 19

Before I close, I would like to mention that the GCARC License Exam Preparation Classes are set to start up again beginning on 22 April, and following the usual schedule. Plenty of seats are still available, especially for the General and Amateur Extra groups. Remember that this is the last Amateur Extra class before the new question pool takes effect.

That's about it for this month's column.

See you next month!



Other side of 9X5RU QSL Card sent to Darrell Neron, AB2E



Donate The ARRL Library Book Set

ARRL Affiliated Clubs and members who wish to gift or donate books to a local library, school, or classroom, can do so with ease via ARRL's Library Book Set. For a special price of \$250 (including US ground shipping), the set includes the most popular ARRL publications, such as ARRL license manuals, *The ARRL Handbook*, and *The ARRL Antenna Book for Radio Communications*, among others. These publications and resources will encourage potential new amateur radio operators from among students,

youth, and the wider community, while also providing support to current licensees who are library users.

A complete description of the program, including the books and details for ordering, is available at **Library Book Set** (<u>https://www.arrl.org/library-book-set</u>).

Be sure to read the "Club Station" column in the April 2024 issue of QST (coming soon), in which a Florida club shares how they donated books to their local library.

Article Credit : ARRL Club News for February 20, 2024 - <u>www.arrl.org</u>

March 2024 CrossTalk : Learning Stuff! Building Stuff! Doing Stuff! TOGETHER!

Tuesday AfterNoon Net @ 1200 Hours



Net Control Operator Net Control Stations : Steve Farney, W2SEF; Chris Prioli, AD2CS; Mike Thompson KG4JYA; Greg Ciraula, W5DO; & Jeff Garth, WB2ZBN



147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

Here is the schedule for the upcoming weeks

Greg Ciraula, W5DO : March 5, 2024 Chris Prioli, AD2CS : March 12, 2024 Mike Thompson, KG4JYA : March 19, 2024 Steve Farney, W2SEF : March 26, 2024

Greg Ciraula, W5DO : April 2, 2024 Chris Prioli, AD2CS : April 9, 2024 Mike Thompson, KG4JYA : April 16, 2024 Steve Farney, W2SEF : April 23, 2024 Jeff Garth, WB2ZBN : April 30, 2024

If you would like to be a Net Control Station for this net, please contact Steve Farney, W2SEF

Thursday Night Rag Chew Net @ 2000 Hours





147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

Here is the schedule for the upcoming weeks

Chris Prioli, AD2CS : March 7, 2024 Mary Delemarre, W2TDS : March 14, 2024 Gary Mirkin, WA3SVW : March 21, 2024 Steve Farney, W2SEF : March 28, 2024

Chris Prioli, AD2CS : April 4, 2024 Mary Delemarre, W2TDS : April 11, 2024 Gary Mirkin, WA3SVW : April 18, 2024 Steve Farney, W2SEF : April 25, 2024

If you would like to be a Net Control Station for this net, please contact Jeff Garth, WB2ZBN



Gloucester County Skywarn Net

The Gloucester County Skywarn Net is held every Sunday @ 1930 Hours on the 147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

All Are Welcome To Participate

Net Control Stations : Steve Bromhead KB2RTZ, Greg Ciraula W5DO, Bob Keogh KD2NEC, & Jeff Garth WB2ZBN

SOUTHERN NJ REFR SECTION

Gloucester County ARES Net

The Gloucester County ARES Net is held every Sunday @ 2000 Hours on the 147.180 MHz (+) (131.8) Repeater & EchoLink W2MMD-R

All are welcome to participate

Net Control Stations : Steve Farney W2SEF, Greg Ciraula W5DO, Bob Keogh KD2NEC, Karl Frank W2KBF, Al Arrison KB2AYU, Gary Mirkin WA3SVW, Todd Woodward KD2ESH, & Jim Wright N2GXJ

ARRL Learning Center https://learn.arrl.org

Discover how to make Amateur Radio your own.

Online courses from the ARRL Learning Center provide ARRL members with additional instruction and training for getting on the air, emergency communications, and electronics and technology.

Current Website Updates : Go to this page to find out the latest changes & updates on our W2MMD Website https://gloucestercountyarc.weebly.com/current-website-updates.html



Larry Ferrari, WA2MKI March 4, 1932 - November 20, 1997

Larry was not only a ham, he was also a GCARC member from the late 1970s to the late 1980s.

He was the host of The Larry Ferrari Show from 1954 to 1997 on Channel 6 in Philly. It was a weekly Sunday morning half-hour program of organ music. He was born in Boston and resided in Cinnaminson, NJ.





A monthly column describing a recent repair bench event. By Chris Prioli, AD2CS - chris@ad2cs.com - <u>www.ad2cs.com</u>

Heathkit® IT-5283 Signal Tracer - March 2024

As is well-known by now, I have a tendency to take on unusual projects, especially those that others cannot seem to repair. This was the case recently with a **Heathkit® IT** -5283 Signal Tracer (Figure 1) that came in for repair. It was shipped to me in "inoperative" condition, with no other information except that the owner purchased it on <u>ebay.com</u> and was disappointed when he was not able to get it to work at all. He is a hobbyist, but is not much of a repair technician, though he did say that he took voltage measurements with a fresh pair of batteries, but could not find *any* operating voltages anywhere on the main (and only) circuit board.



The IT-5283 is one of a five-piece test equipment family of about an early- to mid-1970's vintage. The family includes a multimeter, an audio signal generator, an RF signal generator, an RLC bridge, and this signal tracer. All five units share a common design as regards form factor and appearance, residing in two-piece plastic enclosures. The kit builder had the option of powering the units either from a pair of nine-volt snap-top batteries, or from a specialized five-output power supply that offered ±9VDC to each of its five output cables. The power supply, Heathkit® model IPA-5280-1, is very hard to come by today, but it is not very hard to duplicate. Each of the five output cables was terminated with a Molex® three-pin 0.093" connector. If the kit builder chose to power the kit from the power supply, there were five sets of parts that came with the power supply kit and that were used to modify each of the 5200-series test units to accept power from the power supply. I mention all of this because it is an important point in the repair of this unit.

When the power supply conversion was made to the test equipment, regardless of which specific model it was, a removable blocking panel gets taken out of the back of the enclosure, and a replacement panel got installed in its place. The **new panel (Figure 2)** held a slide switch used to select between battery power (for portability) and the line power from the power supply. In addition, this panel also held the mating Molex® threepin connector so that the power supply cable could be tied in to the unit. OK - more about this later... just remember this detail.

When I received this unit for repair, there were no batteries installed, so I put a fresh set of nine- volt batteries into the snap connectors, got out the



voltmeter and my signal generator, and set out to test the unit. I set the signal generator for a one-volt peak-to-peak signal at one kilohertz, connected its output to the signal tracer input, and turned it on. Needless to say, there was nothing - not even static or noise - from the signal tracer. So far, my findings matched what the owner told me - no operation.

At The Repair Bench - Continued on page 24

At The Repair Bench - Continued from page 23

I opened up the housing to access the circuit board, and got out a schematic of the unit (Figure 3) from my Heathkit® library, and started to check for voltages on the printed circuit board (PCB). Once again, the owner was correct in that there was absolutely nothing alive on the PCB. Knowing that I had a pair of good batteries, I went to the power switch, which is a section of the rotary function selector switch on the front panel. The switch was badly oxidized, so I cleaned it up with some DeoxIT[®], but that was not the problem, as I was not



even getting power to the switch. The only thing between the batteries and the power switches (there are actually two power switch sections in the selector switch, one for +9VDC and one for -9VDC) is the PCB, the power source selector switch on the back panel, and the wiring between them. A quick look at the power source selector slide switch showed that it was installed (or wired) backwards, so that the "BATTERY" position was actually indexed to the "LINE" indication on the panel. A simple fix for this one, I thought. Simply dismount the switch, rotate it 180°, and remount it. Once I saw that problem, I simply moved the switch to the correct position (I would turn it around later) and continued with my testing.

When the power switch was turned on, I now had power to the PCB at both voltage levels as appropriate for the function selector switch position. However, as I quickly discovered when I powered up the signal generator again, there was still no output at all from the signal tracer speaker - not even static or noise - the same as earlier.

I started probing the PCB (Figure 4) for actual voltages in accordance with the schematic, and I quickly found that the operating voltages for transistors Q6, Q7, and O8 were very low, with no voltage present at all on Q8. According to the schematic, there is a 250µF electrolytic capacitor (C11) that is connected to the collectors of Q6 and Q7, and if shorted or very leaky, would drag those terminals, and by extension Q8, right down to low levels. I removed that capacitor and tested it. It turned out to be extremely leaky, testing out more like a 98Ω resistor than like a capacitor. I replaced it with a 220µF 25V electrolytic from my inventory, and the unit came alive.



At The Repair Bench - Continued on page 25

At The Repair Bench - Continued from page 24

I was not finished there, however, as although it was alive, it was extremely noisy when the level (gain) potentiometer was rotated, and from time to time there was a loud "pop" in the speaker as well. Some more investigation turned up another failed capacitor, this one a 10μ F electrolytic in the level control circuit. I replaced it with a like 10μ F 16V electrolytic capacitor from my inventory, and the "pop" was gone. Some DeoxIT® spray took care of the noisy level potentiometer as well.

With two of the seven electrolytic capacitors in this unit having failed, I opted to replace all of the electrolytics, three (total) 250μ F (replaced by 220μ F), two 50μ F (replaced by 47μ F), and two (total) 10μ F capacitors. Once that was completed, I went over the rest of the unit to check for any other problems, and I found one wire in the "LINE" power circuit that was not soldered to the PCB. It was in the hole in the PCB, and because it was solid rather than stranded wire, it stayed in place, but the circuit would have been problematic at best, if it worked at all. Of course, I soldered this wire in place properly. I then remounted the power source selector switch in its proper orientation, gave the unit a good cleaning, and buttoned it up. Finished!

Truth be told, I have to wonder if the original builder of this unit ever got it to work at all, or if the builder just never noticed that the power source selector switch was backwards. While that individual may have known and not cared that it was backwards, that little problem sure caused some grief for at least one later owner of the unit. It is a safe bet that the current owner never noticed the backwards switch, as he was lost as to why there was no incoming supply voltage to the PCB.

It takes a systematic approach to any problem if you want to find a solution to the problem. It certainly does not pay to just go jumping from place to place, and guessing or assuming anything. Know what you have, and know what you expect to find. Then, when you don't find what you expected to find, look for the reason why the result is different. With a logical and systematic approach, you will find the answer.



See You Next Month!

Club Member	DMR ID
W2MMD Clubhouse	3198604
Henry Ammon IV, KD2YZS	3190004
Vincent Antonelli Sr, KA2APD	3186826
Lance Appel, KE2UC	3200487
Alex Calabrese, WA2ADS	3100583
Matthew Carango, N3QB	3169432
Chuck Capasso, WB2PGE	3169781
Todd Cecilio, KA2YNT	3169458
Anthony Cerami, N2OAC	3202759
Mark Clark, N3QMJ	3102110
Holden Correia-Fisher, KD2JPV	3104911
Mike Covaleski, N2MMC	3134855
Bob Demola, KD2GFL	3134319
Doug Dersch, KD2VQA	3193630
Thomas Distelcamp Sr, KC2GYC	3110869
Glenn Dougherty, N2YIO	3161836
Keith Dreyer, KD2ZRB	3192630
Adam Duncan, W3DUN	3202691
Herb Dyer, KT2Y	3134907
Harry Elwell, AD5TT (K2ATX)	3128498
James Foster, W3JNF	3142117

For more information, DMR links, and W2LJR's DMR presentations, go to : <u>https://gloucestercountyarc.weebly.com/dmr.html</u>

CrossTalk Submissions

This is your Club Magazine. Make use of it.

If you have stories or photos of your hobby that you would like to share with the Club, please do so!

We will keep covering all of the GCARC events, but it is also nice to get those personal perspectives to include in every issue. Connecting through experiences is what makes the Gloucester County Amateur Radio Club a *REAL* Club.

> All submissions, queries, comments, and editorials should be addressed to : Jeff Garth, WB2ZBN at djgrath1 <*at*> gmail <*dot*> com

Submission deadline for the April 2024 issue : Wednesday, March 20, 2024

Club Website <u>www.w2mmd.org</u> Club E-Mail Reflector: GCARC *<at>* Mailman *<dot>* QTH *<dot>* net

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DMR Configuration Sequence

- Obtain and Configure DMR ID :
 https://www.radioid.net
- 2. Download Contact List :
 - <u>http://www.dmrcontacts.com</u>
- 3. Identify Repeater or Hotspot :
 - <u>https://www.repeaterbook.com</u>
- 4. Define Talk Groups
 - Numerical ID
 - Text Name
- https://brandmeister.network/?page=talkgroups
- 5. Create Channel
 - Select Number
 - Assign Name
 - Select DMR ID
 - Assign Frequency
 - Transmit
 - Receive
 - Bandwidth
 - Power
 - DMR Mode (Simplex/Repeater)
 - TX Permit (Channel Free)
 - Assign Talk Group
 - Assign Color Code
 - Agreed Upon with Other Users
 - Assign Time Slot
 - Agreed Upon with Other Users



- 7. Add Channels to Zones
- 8. Configure Features
- 9. Upload Code Plug
- **10. Upload Contact List**



Amateur Radio Emergency Services - March 2024 Resources - News - Updates By Bob Keogh, KD2NEC - kd2nec@qsl.net Gloucester County Emergency Coordinator



Amateur Radio Emergency Service currently provides the New Jersey Region of the American Red Cross with traditional RF Radio Equipment

when needed.

Below are the roles, as stated in the Memo of Understanding (MOU) that was signed by both the American Red Cross (ARC) and the Amateur Radio Relay League (ARRL) :

During a Red Cross Disaster Relief Operation (DRO), ARRL volunteers may perform in any of the following roles. These are examples of actual roles they may or may



American Red Cross

not actually be included in the operations depending on the needs of the operation. It is possible that one person can support multiple roles, or one role may require support from several people. *This is not an exhaustive list and ARRL volunteers who have taken Red Cross Disaster Services training can participate in other roles*. ARRL Volunteers who are assigned roles by the Red Cross during a DRO will be provided with Red Cross credentials as required by the role, consistent with Red Cross policy.

Amateur Radio Liaison : This role is for a person who is familiar with both the Red Cross and local Amateur Radio operations. This role would establish contact with the local ARES unit, amateur radio club and repeater owners to provide a single technical-level point of contact for the DRO. If local agreements already exist, this role could be pre-designated. It would be expected that this role would be linked to a similar role in the partner organization.

Communication Equipment Operator : This is a standard radio operator role for someone who would operate a two-way radio or other communication device at a fixed facility or mobile/portable location to support the DRO. They would pass messages from point to point either directly or through a message relay. Operators may use DRO -issued equipment or personally owned equipment, and they may be on amateur radio frequencies or frequencies coordinated or licensed by the Red Cross.

Communication Equipment Installation/Repair : This is a more technically hands-on role than the operator. In this role, the person would be asked to temporarily install two-way radio equipment into a facility or vehicle that is under Red Cross authority through ownership, lease, or rental. The equipment could include base-station radios, mobile radios, and appropriate antennas. Equipment may also require field repairs, such as the radios installed into Red Cross emergency response vehicles (ERVs).

Disaster Assessment: Individuals who have taken the necessary training with the Red Cross can assess the damage caused by a disaster and use their radio skills to relay that information back to a central point that will use the information to develop a complete picture of the event.

End of ARC/ARRL MOU

Below is the roll of the Red Cross Disaster Services Technology (DST) Team. The ARRL/ARES primary responsibility is to provide the Red Cross, voice and data emergency communications, when standard communications has been disrupted by severe weather or a Cyber Attack.

SNJ ARES Update - Continued on page 29

SNJ ARES Update - Continued from page 28

Within 12 hours of a disaster, a Disaster Services Technology (DST) team is already in route. Their primary goal is to set up connectivity to support the Red Cross relief effort. By using *satellite technology*, the team can network the operation quickly. Once the network is completed, DST will start issuing laptops and equipment such as cell phones, printers, fax machines *and radios (that's us)*. They can set up a 100 seat office overnight.

All the steps that DST volunteers take are fully documented in step-by-step directions and there are experienced volunteers to help guide us, in addition to the formal training.

If you desire to be more involved in the total DST Operation described above, reach out to **Bob Keogh, KD2NEC**, Gloucester County Emergency Coordinator and Volunteer Member of the Red Cross Disaster Services Technology group. My contact information is on the GCARC Roster.

See the video below, that further describes the work that DST provides to the Red Cross Disaster Relief Operation : <u>https://www.youtube.com/watch?v=e47HVIADXxk</u>



Meshtastic - What And Why? By Jon Pearce, WB2MNF

More than a dozen GCARC members have become involved in building an experimental data network using Meshtastic devices. What's this "Meshtastic" stuff all about and why should you be interested?

Meshtastic is an operating system for LoRa radios that adds mesh networking capabilities to these long-range, low -powered inexpensive units. LoRa is a proprietary radio protocol owned by Semtech that provides surprisingly long range communication from low powered (generally 100 milliwatt) radio devices. These radios are mounted along with a microcontroller, generally a familiar ESP 32 device, on which the Meshtastic operating system is running. Together they provide both a mesh network and an almost-unending list of radio and other related projects for experimenters.

Meshtastic is an international project and in the US uses unlicensed radios in the 900 MHz band, but radios are available for European use in the 433 MHz band which covers frequencies available for ham use. There's a configuration option that allows hams to turn off encryption, bypass the unlicensed power limitations and causes the device to identify every 10 minutes. This allows us to bypass some of the restrictions and use them as regular ham radio units.

Meshtastic was developed to allow text-type messaging using a smartphone interface to the device over a Bluetooth connection, but hams can take its capabilities much further. Given our knowledge of radio and electronics we can make these devices do far more than their original text-messaging objectives.

Here's why Meshtastic can be a fascinating diversion for hams :

- It's radio, and we're ham radio operators. We understand frequencies, antennas, and propagation. Antennas in the 70 cm band are small and easy to build, and many of us already have them. Also, since they're on the 70 cm band antennas are small, cheap and easy to construct. Our radio skills enable us to make these devices more RF-efficient than unlicensed users can.
- It's digital radio, whose success depends on factors like redundancy, error correction and the ability to dig a signal out of deep levels of noise, kinda like FT-8. Meshtastic lets us vary signal spreading factor, bandwidth and coding rate to create a coding protocol that's as fast as possible while maintaining link integrity, which we can't do with FT-8. So for those willing to experiment we can optimize our network for our own particular characteristics.
- It's electronics. There are non-radio aspects of setting up mesh networks like designing solar powered free-standing units that will withstand normal cloudy conditions and yet have sufficient battery power to stay on the air.
- It's mesh-based APRS. Many Meshtastic devices have built-in GPS receivers, and they're easy to add to devices without them (you're adding them directly to the data feed no audio interfacing like SignaLink-type devices with analog radios). Traditional APRS units work through digipeaters that are located at high elevations, which is great if you're near one of them. In contrast, Meshtastic devices relay signals through individual nodes without the need for a high-elevation repeater, although one would certainly be helpful. This means that mesh-based APRS would work well in an ad-hoc situation such as a missing person search where there are many devices within a relatively local area (maybe ½ mile) and where the APRS location signals could be relayed across the devices. In such situations traditional APRS wouldn't work because there's no high-elevation digipeater.

Meshtastic, What and Why - Continued on page 31

Meshtastic, What and Why - Continued from page 30

- It's microcontrollers. The ESP32 chip used in many of these devices is easy to work with and can create a first step into this area for newbies. For example, it's easy to connect an LED and resistor to a couple of pins on the board and have it light when an incoming message arrives. It's also simple to have an incoming remote command turn on or off one of the GPIO pins on the board which allows remote access to almost any type of device by connecting a relay to that pin. It's also easy to add an environment sensor to a unit. More detailed examples allow connecting an Arduino or Pi to the device and having it send messages to another device with Meshtastic carrying the signal through the network. This is a great way to gain familiarity with these devices in a structured environment.
- It's remote telemetry. Some of the devices have temperature, air quality and humidity sensors built in and it's easy to add them to other units. The software recognizes the common devices and allows the user to enable broadcasting of these metrics over the mesh. The solar-powered unit at the Clubhouse could be located anywhere and autonomously act as an unmanned SKYWARN station reporting weather conditions automatically to a recording station located elsewhere on the mesh network.
- It's remote sensing and control. The Meshtastic software builds in capabilities for remotely controlling devices using the GPIO pins on the node and also has the capability for remote notification with devices like motion sensors in which a node could notify the network of an intrusion at one of the node locations.
- It allows easy interaction with users. For example, the Meshtastic device can be preprogrammed with several canned messages that can be transmitted based on the setting of a rotary switch. This would allow quick status messages to be programmed and sent; for example in the MS 150 ride when the first rider has crossed a checkpoint. In unlicensed use it would allow a button to be set up to send a message requesting emergency assistance when pressed, or to send any other message.
- It's a radio-based data pipe. You can connect any device sending low-volume text data to the TX and RX ports on the device and have that data piped out to other nodes on the network without having to worry about the delivery system in your application. You just push the message out Meshtastic takes care of delivering it.
- It's a prototype EMCOMM system. One of the issues involved in any emergency communication system involving hams is the need to have a ham operator present along with the lack of ability to use encrypted communications for sensitive personal information. While Meshtastic device is configured for Amateur Radio has these limitations, a ham Meshtastic network could be augmented by the 900 MHz unlicensed radios that could be operated by anyone and could also use encrypted communications that are native to these devices. Thus, hams could design an EMCOMM network that could be duplicated by a public service or health care agency and run by non-hams come up with the same level of effectiveness.
- It's easy to grab data from the data stream. Meshtastic units can be configured to send data to an MQTT server, either local or a centralized unit, from which users can subscribe to various threads of data. This allows our group to write a decoding program in the Node Red programming language to decode the messages, collect statistics about the network and potentially work with any data sent on the network.
- It's supported by the GCARC work group on the Discord channel, at ad-hoc Saturday sessions and occasional ZOOM sessions. The larger the work group the better the support!
- AND BEST OF ALL IT'S CHEAP! The ubiquitous Heltec V3 radios cost about \$25 from Amazon (less if ordered directly from Heltec) and the premium T-Beam Supreme units that have the high-performance GNSS GPS module, temperature and humidity sensors and a holder for an 18650 battery cost around \$50. A complete solar-powered node costs about \$100. If you're interested in getting one be sure to get the 433 MHz European version some vendors assume that because you're in the US you want the 800 MHz LoRa module. And you might want to get a couple of units for configuration testing at your location before trying to put them on the air.

Meshtastic, What and Why - Continued on page 32

Meshtastic, What and Why - Continued from page 31

Several people have asked about the practical applications of Meshtastic and there are several that are discussed above, but for me ham radio has always been about the journey, not the destination. I'm interested in Meshtastic not because it will allow me to do something that I can't currently do, but instead because it's fascinating to figure out how to do all of the stuff that it can do. Hopefully others will find the same fascination with this opportunity.

For more information check out their website at <u>Meshtastic.org</u> or email me (**president@w2mmd.org**) and I'll get you on the Discord group.

Electronic Tool Tip #5 - Hot Tweezers By Chris Prioli, AD2CS - chris@ad2cs.com - <u>www.ad2cs.com</u>

From time to time, it becomes necessary to solder - or desolder - SMD devices to or from a printed circuit board (PCB). -While this can often be done with a pencil-type standard soldering iron with a fine tip, it is often much more convenient to use a pair of *"hot tweezers"* for this task.

Many companies make hot tweezers, but I am a fan of the Yihua products. I already own a Yihua 948-II soldering station and a 929D-V desoldering pump iron. This tool was a logical addition to my armory of soldering equipment.

The use of a hot tweezer becomes especially useful when the chip sizes get smaller. The larger chips are more easily handled with a standard pencil iron, but the tiny SMD devices demand a better alternative, and this may just be it.

The tool consists of a fixed iron with a specialized bent tip, and an opposing movable spring-loaded iron with its tip



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bent to mate with that on the fixed iron. The opening angle of the hot tweezer is adjustable for convenience of the user.

The hot tweezers, Yihua model #938D, comes complete with a stand and a cleaning sponge, as well as a protective cover for the (cool) tips. The unit is temperature-controlled, with the adjustment made via a potentiometer on the control unit located on the tweezers cord. I have ordered replacement tips directly from the manufacturer via an e-mail exchange.

The tool shown above is available at \$104.99 (USD). It can be ordered directly from the Yihua store at **www.amazon.com**, where the many high-quality offerings of this company are showcased. Yihua manufactures a wide line of soldering and desoldering tools and equipment, suitable for anyone from the hobbyist to the professional.

Go to https://www.amazon.com/gp/product/B078NS2HZ8 to investigate this tool for yourself.

Announced DX Operations									
www.ng3k.com/Misc/adxo.html									
	From The Shack of Bill Feidt, NG3K : <u>www.ng3k.com</u>								
2024 Mar01	2024 Mar31	Benin	TY5C	LoTW	DXW.Net 20230920	By F5NVF 7X2TT F5RAV; HF; CW SSB FT8; QSL via F5RAV direct			
AR	RL Inter	national DX C	ontest, Ph	none (Mar	2-3, 2024)	Check here for pericontest activity too.			
2024 Mar02	2024 Mar30	Sint Maarten	PJ7AA	LoTW	<u>TDDX</u> 20230807	By AA9A; 40-6m; CW; FT8 FT4; QSL via AA9A direct			
2024 Mar03	2024 Mar22	Grenada	<u>Ј38</u> NG3К	LoTW	DXW.Net 20231223	By ON4HIL ON4MA ON5RA ON5TN ON6CC ON7RU; 160-10m; 3 high power stations; QSL via M0URX			
2024 Mar04	2024 Mar16	Grenada	J3 NG3K	LoTW	ON4MA 20230622	By ON4HIL ON4MA ON5RA ON5TN ON6CC ON7RU; 160-10m			
2024 Mar08	2024 Mar20	Tanzania	5H3VJG	ΜΟΟΧΟ	<u>DXW.Net</u> 20231202	By G0VJG fm Zanzibar I (IOTAAF-032); HF; mainly SSB, some FT8; QRV for BERU contest			
2024 Mar10	2024 Mar19	New Caledonia	NG FK	LoTW	<u>DXW.Net</u> 20231227	By LZ1GC as FK/LZ1GC and LZ5QZ as FK/LZ5QZ; 160-10m; CW SSB RTTY FT8 FT4			
2024 Mar11	2024 Mar27	Curacao	NG PJ2	LoTW	DK5ON 20231219	By DK5ON as PJ2/DK5ON; 160-6m; CW SSB FT4 FT8 RTTY SAT; QSL via DK5ON (B/d) or Club Log OQRS			
2024 Mar12	2024 Mar27	East Kiribati	NG3K <u>T32EU</u> NG3K	LoTW	DL2AWG 20240118	By DF4GV DK2AMM DL4SVA DJ7TO DL1KWK DL2AWG; 160-6m; CW SSB RTTY FT8 FT4; QSL via Club Log OQRS, DL2AWG (B/d)			
2024 Mar16	2024 Mar21	Bahamas	C6A	LoTW	<u>TDDX</u> 20231115	By WA1JAY as WA1JAY/C6A; mainly 10m; FT8 FT4 SSB			
2024 Mar20	2024 Mar29	Lesotho	7P8EI	M0OXO OQRS	<u>TDDX</u> 20231203	By DJ9RR EI2II EI2JD EI3ISB EI3IXB EI4HH EI5GM EI5GSB EI6FR EI8KN EI9HQ EI9HX EI9FBB PA3EWP; 160-10m; CW SSB + digital			
2024 Mar25	2024 Apr08	Guadeloupe		LoTW	DXW.Net 20240120	By F1ULQ; @FG8OJ; HF + 6m; SSB + digital; QSL via F1ULQ (B/d)			
2024 Mar26	2024 Apr01	Cyprus SBA	ZC4MK	LoTW	DXW.Net 20240108	By G0KOM; HF; QRV for CQ WPX SSB Contest; QSL via Club Log OQRS			
2024 Mar26	2024 Apr02	Turks & Caicos	VQ5P	LoTW	<u>TDDX</u> 20240123	By AF3K KH6M W2TT; 160-6m; SSB CW FT8 FT4; QRV for CQ WPX SSB contest; QSL via N2OO			
2024 Mar27	2024 Apr03	Austral Is	N <u>TX5XG</u>	LoTW	DXW.Net 20230810	By JA1XGI fm IOTA OC-114; 160-6m; CW + digital + Greencube SAT			
2024 Mar28	2024 Apr02	Mayotte	NTO5LA	LoTW	20230209	By 4Z5LA 4Z5FI; HF; SSB CW FT4 FT8;QRV for CQ WPX SSB Contest; QSL via 4Z5FI			
2024) Mar29	2024 Mar31	Mayotte	τοάνν	LoTW	DXW.Net 20230902	By FH4VVK fm Quatier Cabaribere; HF; SSB FT8; QSL via Club Log OQRS or FH4VVK direct			
2024 Mar29	2024 Apr11	Vanuatu	YJOVK NEW	LoTW	DXW.Net 20240206	By VK3HJ VK6CQ K0BBC VK3QB fm Port Vila; 40-6m; SSB CW FT8; QSL via M0OXO			
Also	for you	r convenience t	here is a di	rect link to	NC3K of o	ir website Click on the NC3K DV Page			

March 2024 CrossTalk : Learning Stuff! Building Stuff! Doing Stuff! TOGETHER!

NanoVNA Recommendations From AD2CS By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

I have just been asked to offer some recommendations as to the better Nano-VNA options that are available online. To that point, I can only offer my opinions, which I will gladly do, but it should be remembered that these are my preferences and are not necessarily best for everyone.

I own and routinely use two different NanoVNA models. One is the NanoVNA-H4 and the other is the NanoVNA-F v2. I will attempt to delineate these two choices and explain the pros and cons of each version. These are the two that I have settled on after using several different versions.

The **NanoVNA-H4** (**Figure 1**) is my daily go-to device. It is rather compact, measuring a mere 5.2" x 2.9" overall, which includes the SMA connector length. The contour of the body is such that it protects the SMA connectors somewhat by projecting past the end of the connectors at the top and bottom of the body. The body is a hard plastic material with a 4.3" touch-screen display.

Figure 1 : NanoVNA-H4 With Accessories

The label on this device carries the following information :

- Frequency...
 - \diamond 50kHz to 300MHz;
 - \diamond 300MHz to 900MHz;
 - \diamond 0.9GHz to 1.5GHz;
- Power 5VDC, input via USB Type C port at 1A maximum; and
- Hardware version 4.3_MS.

This unit is made by ZeenKo in China, and the label includes a QR barcode to access their website. I have upgraded the installed firmware to a DisLord release labeled as version 1.2.14 and dated 31 August 2022 at 13:39:49. This firmware provides for a maximum of 401 data points, an IF of 12kHz, an ADC rated at 348K, and an LCD screen of 488 x 3281 pixels. This is the latest version of the DisLord firmware for this device.

The NanoVNA-H4 has an ARM v7E-M core using the Cortex-M4F core variant. It is listed as being an STM32F303xC Analog and DSP platform and has a TCXO running at 26.000000MHz.

One of the most useful features of this particular version is the fact that it has a Micro-SD card slot, which allows capture of the screen image to a .BMP file. The current firmware version provides four different save options :

- save S1P;
- save S2P;
- screenshot; and
- save calibration.

AD2CS NanoVNA Recommendations - Continued on page 35

AD2CS NanoVNA Recommendations - Continued from page 34

The S1P and S2P are two different data collection and representation formats that are standardized in the electronic measurement field. The screenshot, possibly the more useful option for most of us, does a capture of the displayed data from the screen exactly as displayed.

The S1P format, sourced from a one-port network, contains three columns of data, frequency, and two columns representing vector S11. The S2P format, on the other hand, is sourced from a two-port network and contains nine columns of data. First is frequency, then S11, S21 S12 and S22 in some type of vector format with two columns for each parameter.

The screenshot is stored as a standard Windows® bitmapped file. In every case, the option is available to either have a name automatically generated for the saved files, or the user can input a filename. The automatic naming option is selected by clicking on the AUTO NAME menu item, which places a mark in that item's check box.

Management of the stored files is done externally, by removing the MicroSD card and inserting it into a card reader connected to a computer. Files can be moved, renamed, or deleted using the normal file management tools of the computer. The firmware version installed on my NanoVNA-H4 supports setting the system date and time. These items are used by the auto-name function when saving files to the SD card. This firmware provides for many other advanced feature options, including the ability to flip the display, to remember the current state at power-down, to load a CONFIG.INI file from the SD card, and to dump the firmware to a disk file. In addition, some more obscure options can be changed, such as the IF offset and the TCXO frequency.

From a user standpoint, this firmware supports a PAUSE SWEEP feature, which is very useful for getting a clear screenshot at a given point in the ever-changing sweep. There is also a MEASURE menu that provides some new measurement capabilities over the stock firmware. The DISPLAY menu includes a useful DATA SMOOTH option.

Next up is the **NanoVNA-F**. Mine is a Sysjoint v2 listed as having Revision C hardware and sysjoint firmware v0.5.0 dated 24 June 2022 at 10:35:55 (**Figure 2**). The firmware installed is the latest available for this unit, and it supports operation from 50kHz to about 3GHz, with from 101 to 301 data points available.

The NanoVNA-F v2 is supplied in an extruded aluminum enclosure of roughly the same overall dimensions as the NanoVNA-H4, and also has a 4.3" touch screen. The SMA ports protrude from the left side of the enclosure. This aluminum enclosure provides good shielding for the device. While the NanoVNA-H4 has a MicroSD card slot for file storage, the NanoVNA-F does not. Instead, it utilizes internal flash memory for data storage. It does not, however, provide for screenshots, instead offering only storage of S1P and S2P data. However, on this device, there is a LIST menu item that permits display of the currently-stored files.



AD2CS NanoVNA Recommendations - Continued on page 36

AD2CS NanoVNA Recommendations - Continued from page 35

In this case, management of the stored files requires placement of the NanoVNA into its "U-Disk" mode, also referred to as its "Firmware Update" mode. Start by connecting the NanoVNA-F to the computer using a USB-C cable in the Type C port on the NanoVNA-F. Then press and hold the center of the three pushbutton switches on the right-hand edge of the NanoVNA-F, and power up the unit while this switch is held. This will cause the unit to enter a mode where the computer will see the device as a drive, on which all of the normal file management techniques can be used. The data files written by the NanoVNA-F are in a folder names FILES.

As an interesting note on this device, it is possible to create a file called callsign.txt as a flat text file of up to fifty characters in length. Do not place a carriage return or line feed at the end of the line of text when creating the file. Store that file in the root of the NanoVNA-F u-disk. The contents of the file will be displayed on-screen during start-up of the NanoVNA-F.

This unit also uses an ARM microcontroller, this time using the Cortex-M3 core variant. The actual IC used is a GD32F103. The flash memory capacity is sixteen kilobytes. While the sysjoint firmware does not offer as many different operational options for this NanoVNA as the DisLord firmware does for the NanoVNA-H4, there are some options available here that are not offered on the NanoVNA-H4. For example, a reference position option is offered. In addition, the NanoVNA-F offers a choice of language, either English or Chinese. Now... these may not be very useful options for most of us, but they do exist and should be mentioned.

The accessory packages shipped with the two models are very similar, with the NanoVNA-F v2 including some additional SMA adapters that are not shipped with the NanoVNA-H4. In addition, the NanoVNA-F ships with a clamshelltype plastic storage box with foam insert, while the NanoVNA-H4 has a cardboard storage box, albeit also with a foam insert.

It is obvious that I have not discussed the cost of these two devices. The reason for that, and it was a conscious decision not to talk price here, is because the prices of these units can be quite volatile. I have seen forty- to fifty-dollar swings in both directions over a period of time. I have actually purchased three of the NanoVNA-H4 variants, and the prices that I paid varied by almost fifty dollars from the lowest price to the highest, all from the same vendor at Amazon. I will say at this time, however, that the NanoVNA-H4 is generally less expensive than is the NanoVNA-F v2.

OK - now for some direct comparisons, as shown on the right.

Direct Comparison Chart	NanoVNA-H4	NanoVNA-F v2
Accessibility	Open Source	Proprietary
Pause Sweep	Yes	No
File Storage	Yes	Yes
Removable File Storage	Yes	No
Screenshot	Yes	No
Maximum Data Points	401	301
Maximum Frequency	1.5GHz	3.0GHz
Dynamic Range S11 1.5GHz	60dB	50dB
Dynamic Range S11 3.0GHz	N/A	40dB
Dynamic Range S21 1.5GHz	70dB	70dB
Dynamic Range S21 3.0GHz	N/A	60dB
USB Port (communications)	Туре С	Туре С
USB Hub (output power)	No	Yes
Measurement Menu	Yes	No
Scrolling Via	Thumbwheel	Discrete Switches
Firmware Update Via	DFU	U-Disk
Usable Screen Width	3.4"	3.8"
Manual Available	Yes	Yes
Computer Software Interface	Yes	Yes

AD2CS NanoVNA Recommendations - Continued on page 37

AD2CS NanoVNA Recommendations - Continued from page 36

Instruction manuals have been written for both of these units, though neither is from the factory, but instead are user products :

- The NanoVNA-H4 user manual can be found at : <u>https://bit.ly/3UI2HcA</u>
- The NanoVNA-F v2 user manual can be found at : <u>https://bit.ly/3OOY2BM</u>

In addition, there is a pretty good "Absolute Beginner Guide" located at : <u>https://bit.ly/42KEjcm</u>

These two devices can be purchased from Amazon, using the following URL's :

- NanoVNA-H4 : <u>https://bit.ly/3SM94cb</u>
- NanoVNA-F v2 : <u>https://bit.ly/3wo2261</u>

Whichever model you choose, you will get good value for the dollar spent. Because of the differences between them, especially as to frequencies and features, I maintain one of each in my equipment inventory. The model that I selected for the Club's Test and Repair Bench is the NanoVNA-H4. Mostly because of its feature set, and largely because of the removable file storage.



Be A Club Volunteer!

Club Technical Volunteer Projects :

- Processing monthly membership meeting and Tech Saturday videos for the YouTube channel
- Assisting the AV team at the Wednesday night General Membership Meetings
- Assisting in the inventory of Clubhouse assets and keeping that inventory current
- For the more technically inclined, managing the SatNOGS station, reviewing observations, and adding new satellites to the list of those being tracked
- Reviewing new technologies for presentation at meetings or write-ups in CrossTalk.

For example, the VarAC HF digital communications program has recently been updated, it is installed on the HF station at the Clubhouse, and might provide an opportunity for an interesting short article or presentation

If you would like to volunteer for any of these projects, please contact Jon WB2MNF, Ron NR2B, or Chris AD2CS

Clubhouse Construction Volunteer Projects :

Shed : Build Ramp

Replace Back Steps

Clubhouse :

- Build Ramp
- Replace Interior Front Door

Install 2 New VHF Towers

Lightning Protection Project :

- Install copper strapping in Library Room
- Install copper strapping in VHF/UHF Room
- Complete grounding rod installation around Clubhouse and Towers

Install New Light Pole

A *Club* that goes *above* and *beyond* for their communities and for Amateur Radio, is what defines a *Special Service Club (SSC)*.



They are the leaders in their Amateur Radio communities who provide active training classes, publicity programs, and actively pursue technical projects and operating activities.

GCARC has been an ARRL Affiliated Club since February 1960 and an SSC since April 2010.



by Chris Codella, W2PA

3/16/2009

Radiogrammar

60

Across

- 1. Sea eagles
- 5. 1950s car maker
- 9. Face-to-face exams
- 14. Ham's OM
- 15. Director Preminger
- 16. Come again
- 17. N N, on 7.007, say
- 18. Start of a conclusion
- 19. It might be airtight
- 20. Four and four
- ninths?
- 23. Coax adapters
- 24. Revr ekt
- 25. Squirrel food
- 28. KH6IJ (SK)
- 30. Smart or Bond
- 33. QRS sending, not
- 34. FD abode
- 35. Joint with a cap
- 36. 1, 13, 53 and 56down, and a puzzle sub-
- theme
- 39. Swimming power
- supplies?
- Bit of trivia, slangily
 A Czech Republic
- prefix
- 42. Driller's deg.
- 43. Tiny parts
- 44. Plates
- 45. W7 sect.
- 46. Flower tower?
- 47. Two-hundred ten?
- 53. Jeered
- 55. Jeered
- 54. Surf sound
- 55. TA-33 part
- 57. Kazakhstan prefix

59. Dipole terminators

58. Gawk at

13 10 12 14 15 16 17 18 19 20 21 22 23 24 26 27 28 29 30 32 25 31 33 34 35 36 37 38 39 40 41 42 43 44 45 46 48 49 50 51 52 54 55 56 53 57 58 59

Crossword Puzzle courtesy of <u>https://www.w2pa.com/Home/articles/crossword-puzzles</u>

61

62

	60. Dings	13. Apologize, on 30m,	44. AM
	61. SU river	say	45. Special
	62. Compass symbol	21. Big gain	station
		22. Bob Marley fan	46. Play for time
	Down	25. Flashed over	47. Kind of wave
	1. FB RST., in the DX test, say	 Crowed Milky gems 	 Like some piano keys
	2. Easy antenna place	28. V4 place	49. High-tech suffix
	Smaller than a micro	29. "Put a lid !"	50. Cartoon bear
	Popular beef cuts	30. Hair net	51. Start of a conclusion
	Meaning of 17-across	31 Edible tubes	52. What a long element
	6. Monk Apollo's QTH	32 C C on 7007 ray	does
	7. R followers	34. Da inclined	53. Not bad, on 7.007,
	8. Nozzle site	34. Be included	say
	9. Three on a resistor	35. KM, on 7.007, say	56. Word with QSL
	10. Museum piece	37. VU physicist and Nobel Prize winner	
	11. Label on a DC	38. Copier stuff	
	supply, say	43. SM ops	Answers on Page 55

March 2024 CrossTalk : Learning Stuff! Building Stuff! Doing Stuff! TOGETHER!

12. Garage job

CQ Worldwide DX Contest, RTTY September 23, 2023	California QSO Party 2023 October 7, 2023	
Call : AB2E Operator (s) : AB2E Station : AB2E	Call : K3TS Operator (s) : K3TS Station : K3TS	
Class : SO(A)AB HP QTH : SNJ Operating Time (hrs) : 8 Location : USA	Class : SO(A) HP QTH : SNJ Operating Time (hrs) : 6 Location : Out of State/Province	
Summary : Band QSOs State/Prov DX Zones	Summary : Band CW Qs Ph Qs	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
Total : 225 62 73 37 Total Score : 82,216	Total : 149 14 Mults : 57 Total Score : 27,075	
Club : Frankford Radio Club 57	Club : Frankford Radio Club	
Comments : Rig : FTDX-9000D/OM Power 2000A+ Antennas : 80m dipole @ 95ft 40m dipole @ 90ft 20m/15m/10m C3SS Force 12 tribander N1MM+/MMTTY	Comments : A casual part-time effort. Almost had a sweep of all counties, but never heard MADE, and only saw it spotted briefly one time. Other than that, pretty good coverage by the CA participants. See you next week in the PA QSO Party. 73. de K3TS	
Guest op was Murphy. Config problems relating to getting clicked- on spots to decode. CQing no problem, many replies. Some S&P. Not much time this weekend, many family things going on too.	CWops Test 2023 0300Z November 16, 2023	
73 Darrell AB2E	Call : K3TS Operator (s) : K3TS	
Contest : CQWWRTTYBandQSOsPtsZNCtySPPt/Q3.5171721111.0780155821221.91465149822182.32119486942.52844109132072.5Total2254783773622.1	Station : K3TS Class : Single Op HP QTH : SNJ Operating Time (hrs) : 1 Location : USA Summary :	
1 Mult = 1.3 Q's	Band QSOs 	
	40: 60	
	Total : 79 Mults : 69 Total Score : 5,451	
	Club : Frankford Radio Club 72	
	Comments :	

Pennsylvania QSO Party 2023 October 14, 2023	Arizona QSO Party 2023 October 14, 2023		
Call : AB2E Operator (s) : AB2E	Call : WB2PJH		
Station : AB2E	Station : WB2PJH		
Class : SO Mixed HP	Class : SO CW LP		
OTH : SNJ	OTH:		
Operating Time (hrs) : 5	Operating Time (hrs) : 2		
Location : Out of State/Province	Location : Out of State/Province		
Summary :	Summary :		
Band CW Qs Ph Qs	Band CW Qs Ph Qs		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20: 7 0		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Total:70CW Mults:4Ph Mults:0Total Score:56		
Total : 79 60 Mults : 64 Total Score : 14 752	Club : Frankford Radio Club 60		
Club : Frankford Radio Club 59	Comments :		
Comments : Rig : FTDX-9000D/OM Power 2000A+ Antennas : 10/15/20m C3SS @ 52ft	CWops Test 2023 1300Z November 8, 2023		
40m dipole @ 85ft 80m/75m dipoles @ 95/90ft	Call : K3TS Operator (s) : K3TS		
5hours op time	Station : K3TS		
Hi all, Great to operate the PA QSO Party. Worked 64 out of 67	Class : Single Op HP		
counties, missed CLI, FUL, and INN. All 3 had been spotted, but I was out at those times	QIII: SNJ Onerating Time (hrs) • 1		
was out at mose times.	Location : USA		
73 Darrell AB2E	Summary :		
Contest : PA QSOPARTY	Band QSOs		
Band Mode QSOs Pts Mul Pt/Q			
3.5 CW 24 48 2 2.0 3.5 LSB 26 26 12 1.0	80: 10		
7 CW 43 86 30 2.0	40: 50 20: 22		
7 LSB 34 34 11 1.0			
14 CW 11 22 8 2.0	Total : 62 Mults : 51		
21 CW 1 2 1 2.0 Total Dath 120 218 64 16	Total Score : 3,162		
Score : $14,752$	Club : Frankford Radio Club 65		
1 mun – 2.2 Q S	Comments : Wow! Have not done this for a while. I definitely need more practice! 73.		
	de K3TS		

2020-2024 Element 4 Amateur Extra Class License Question Quiz

This month we start with Subelement E5 Electrical Principles (4 exam questions out of 4 groups) (Answers on 'Last Page Calendar')

E5A01

What can cause the voltage across reactances in a series RLC circuit to be higher than the voltage applied to the entire circuit?

- A. Resonance
- B. Capacitance
- C. Conductance
- D. Resistance

E5A02

What is resonance in an LC or RLC circuit?

- A. The highest frequency that will pass current
- B. The lowest frequency that will pass current
- C. The frequency at which the capacitive reactance equals the inductive reactance
- D. The frequency at which the reactive impedance equals the resistive impedance

E5A03

What is the magnitude of the impedance of a series RLC circuit at resonance?

- A. High, as compared to the circuit resistance
- B. Approximately equal to capacitive reactance
- C. Approximately equal to inductive reactance
- D. Approximately equal to circuit resistance

E5A04

What is the magnitude of the impedance of a parallel RLC circuit at resonance?

- A. Approximately equal to circuit resistance
- B. Approximately equal to inductive reactance
- C. Low compared to the circuit resistance
- D. High compared to the circuit resistance

E5A05

What is the result of increasing the Q of an impedance-matching circuit?

- A. Matching bandwidth is decreased
- B. Matching bandwidth is increased
- C. Matching range is increased
- D. It has no effect on impedance matching

E5A06

What is the magnitude of the circulating current within the components of a parallel LC circuit at resonance?

- A. It is at a minimum
- B. It is at a maximum

C. It equals 1 divided by the quantity 2 times pi, multiplied by the square root of inductance L multiplied by capacitance C

D. It equals 2 multiplied by pi, multiplied by frequency, multiplied by inductance

Element 4 Amateur Extra Class Quiz - Continued on page 43

Element 4 Amateur Extra Class Quiz - Continued from page 42

E5A07

What is the magnitude of the current at the input of a parallel RLC circuit at resonance?

- A. Minimum
- B. Maximum
- C. R/L
- D. L/R

E5A08

What is the phase relationship between the current through and the voltage across a series resonant circuit at resonance?

- A. The voltage leads the current by 90 degrees
- B. The current leads the voltage by 90 degrees
- C. The voltage and current are in phase
- D. The voltage and current are 180 degrees out of phase

E5A09

How is the Q of an RLC parallel resonant circuit calculated?

- A. Reactance of either the inductance or capacitance divided by the resistance
- B. Reactance of either the inductance or capacitance multiplied by the resistance
- C. Resistance divided by the reactance of either the inductance or capacitance
- D. Reactance of the inductance multiplied by the reactance of the capacitance

E5A10

How is the Q of an RLC series resonant circuit calculated?

- A. Reactance of either the inductance or capacitance divided by the resistance
- B. Reactance of either the inductance or capacitance multiplied by the resistance
- C. Resistance divided by the reactance of either the inductance or capacitance
- D. Reactance of the inductance multiplied by the reactance of the capacitance

E5A11

What is the half-power bandwidth of a resonant circuit that has a resonant frequency of 7.1 MHz and a Q of 150?

- A. 157.8 Hz
- B. 315.6 Hz
- C. 47.3 kHz
- D. 23.67 kHz

E5A12

What is the half-power bandwidth of a resonant circuit that has a resonant frequency of 3.7 MHz and a Q of 118?

- A. 436.6 kHz B. 218.3 kHz C. 31.4 kHz
- D. 15.7 kHz

Element 4 Amateur Extra Class Quiz - Continued on page 44

Element 4 Amateur Extra Class Quiz - Continued from page 43

E5A13

What is an effect of increasing Q in a series resonant circuit?

A. Fewer components are needed for the same performance

- B. Parasitic effects are minimized
- C. Internal voltages increase
- D. Phase shift can become uncontrolled

E5A14

What is the resonant frequency of an RLC circuit if R is 22 ohms, L is 50 microhenries and C is 40 picofarads?

A. 44.72 MHz

B. 22.36 MHz

C. 3.56 MHz

D. 1.78 MHz

E5A15

Which of the following increases Q for inductors and capacitors?

A. Lower losses

B. Lower reactance

- C. Lower self-resonant frequency
- D. Higher self-resonant frequency

E5A16

What is the resonant frequency of an RLC circuit if R is 33 ohms, L is 50 microhenries and C is 10 picofarads?

A. 23.5 MHz B. 23.5 kHz

C. 7.12 kHz

D. 7.12 MHz





Doug Gehring, WA2NPD March 13, 1932 - October 24, 2012

Doug was a Club member from 1961 to 2012. He was a very active member. He served on many committees and held many officer positions. He was Club President in 1967, 1975, 2008, and 2009. Doug was most famous for wearing the T-shirt shown below at every Field Day.

Editor's Note : Doug's many contributions to the Club was my inspiration that motivated me to give more time to the Club.

ARRL Board Approves Free Membership for Students. New Vice Presidents Elected.

The ARRL Board of Directors met in Windsor, Connecticut, for its Annual Meeting, January 19 - 20, 2024. ARRL President Rick Roderick, K5UR, presided over the meeting, and the Board welcomed Great Lakes Division Vice Director Roy Hook, W8REH, as a newly elected member to the Board.

Here are highlights of some of the actions taken at the meeting :

- Board members discussed proposed changes to By-Law 46, the Board's Conflict of Interest Policy, and decided to consider revisions at a later date. The Board unanimously voted to approve the establishment of a committee appointed by the ARRL President to affirm the set of **ethics guidelines and standards for the Board**. In addition to the guidelines, the committee will review By-Laws 42 (Ethics and Elections Committee) and 46 for possible revision. The committee will also engage with a competent legally qualified independent third party to handle all Ethics & Elections inquiries in the future.
- The Board voted to make the **ARRL Director's Workbook** publicly available on the ARRL website.
- The Board approved the reintroduction of **ARRL Life Membership and 70+ Life Membership** (for members of age 70 and over) on a revenue-neutral basis. At its July 2023 Second Meeting, the Board had suspended the Life Membership Program, pending the approval of an adjusted revenue-neutral program.
- The Board approved two motions aimed at engaging young hams with a strong start to their lifelong journey with amateur radio and ARRL :
 - ◊ FREE ARRL Membership for Students. For decades, ARRL has offered a reduced dues rate for young hams, currently priced at \$30 per year. At this meeting, the Board established a new option for a no-cost Associate membership for full-time students of age 21 and younger.
 - ◊ ARRL Student Coding Competition. The Board approved the creation of a coding competition that will challenge students 21 and younger to design a software application that meets the specifications established by ARRL. Awards of up to a total of \$25,000 will be granted by an awards committee to the winning student. The terms and schedule for the competition will be determined by the committee.
- With a goal of recruiting and developing greater participation in the **ARRL Amateur Radio Emer-gency Service®** (**ARES®**), the Board has approved, at the recommendation of the Emergency Communications and Field Services Committee, a commitment to expand messaging and marketing for the program.

• Government Relations.

- ◊ The Board issued its strongest rebuke of efforts by the ad-hoc group "Shortwave Modernization Coalition" (SMC) to introduce high-power signals to the shortwave spectrum, including frequencies immediately adjacent to the Amateur Radio HF bands. The Board made a clear statement that the interests of the SMC are in conflict with those of ARRL and its membership, and has requested that the ARRL Volunteer Monitors explore ways to gather data on SMC station emissions.
- ♦ The Board voted to expand ARRL's ongoing efforts to help hams who are faced with involuntary limitations that limit their amateur radio operations beyond the regulatory efforts being pursued in Washington.

ARRL Free Student Membership - Continued on page 46

ARRL Free Student Membership - Continued from page 45

• **ARRL Foundation**. The Board heard a report ARRL Foundation President David Norris, K5UZ. The Foundation, which marked its 50th anniversary last September, provides philanthropic support for amateur radio by way of the ARRL Foundation Scholarship Program, Club Grant Program, and through other grants and funds. In 2023, the Foundation awarded 113 scholarships totaling over \$600,000, through the generosity of individuals and clubs. Norris also recognized the generous commitment made by Amateur Radio Digital Communications (ARDC) which will fund over \$2.1 million, over three years, to support scholarships, radio technology for classroom teachers, and amateur radio club grants.

• Elections.

- Officers. The Board re-elected ARRL President Rick Roderick, K5UR, to a fifth 2-year term. The Board also elected Pacific Division Director Kristen McIntyre, K6WX, to be First Vice President, succeeding Michael Raisbeck, K1TWF. Northwestern Division Director Mike Ritz, W7VO, was elected Second Vice President, succeeding Bob Vallio, W6RGG. International Affairs Vice President Rod Stafford, W6ROD, was re-elected.
- The elections of McIntyre and Ritz to the Vice President positions mean that incumbent Vice Directors Anthony Marcin, W7XM (Pacific), and Mark Tharp, KB7HDX (Northwestern) will succeed as Division Directors, creating vacancies for Vice Director in those Divisions, which will be filled by appointment.
- Executive Committee. As First Vice President, Kristen McIntyre, K6WX, will remain on the Executive Committee (EC), succeeding former Vice President Raisbeck. Directors re-elected to the EC include Dr. Jim Boehner, N2ZZ (Roanoke); Fred Kemmerer, AB1OC (New England), and Art Zygielbaum, K0AIZ (Midwest). Newly elected members include Jeff Ryan, K0RM (Rocky Mountain), and Bill Lippert, AC0W (Dakota).

The complete minutes of the 2024 Annual Meeting of the ARRL Board of Directors will be available soon on the ARRL website. The next meeting of the ARRL Board of Directors is scheduled for July 19 - 20, 2024.

Article Credit : ARRL Member Bulletin for January 21, 2024 - <u>www.arrl.org</u>

QST de W1AW ARRL Bulletin 4 ARLB004 From ARRL Headquarters Newington CT February 16, 2024 To all radio amateurs

SB QST ARL ARLB0044 Errata to the 2024 - 2028 Amateur Extra-Class Question Pool Released

The National Conference of Volunteer Examiner Coordinators (NCVEC) Question Pool Committee (QPC) has released errata for the new 2024 - 2028 Element 4 Extra Class Question Pool, which goes into effect on July 1. The errata includes minor question changes, the removal of one question, and one modified graphic.

These updates are reflected in the new downloadable files, dated January 31, 2024.

The ARRL VEC advises the community to regularly check the NCVEC website at : <u>https://www.ncvec.org</u> for updates to the question pools.

Submit feedback or questions to the Question Pool Committee at : qpcinput@ncvec.org

Gloucester County Amateur Radio Club General Membership Meeting Minutes Wednesday, February 7, 2024

President Jonathan Pearce WB2MNF opened the General Membership Meeting @ 1930 Hours with the Pledge of Allegiance to the Flag.

Attendance :

- 31 In Person
- 22 Zoom

Visitors : None

New Members :

- Jim Anderson, N2DQG, Mt Royal, NJ
- Matthew Carango, N3QB, Springfield, PA
- Fred Munzenmayer, K2DX (Returning Member), Grenloch, NJ
- Michael Pentimall, KC3VFT, Folsom, PA

Announcements :

- Dues are due. Basic dues are \$30, asking members who can to consider giving a bit more.
- Changes at the Pfeiffer Community Center require meetings to be over and people out the door by 21:30.
- Club Merchandise launch, initially club logo stickers. See John Zaruba Jr K2ZA.

Upcoming Events :

- Tech Saturday Forum, February 10, 2024 VOIP with Len Rust W2LJR then Meshtastic Radio Programming
- TechNet ZOOM Forum, February 12 & 19, 2024 Discussion of Meshtastic Radios
- Board of Directors Meeting February 21, 2024.
- Informal Clubhouse Dinner February 28, 2024.
- Saturday, March 16, 2024 30th Anniversary Fox Hunt at the W2MMD Clubhouse.

Member Current Activities :

- Marc Federici WM2Y showed a Fox Hunt transmitter he built.
- Discussion of assistance given to Rowan Engineering students regarding rocket avionics.

Chris Prioli AD2CS discussed the Quansheng UV-K5 (8) handheld radio and it's unique capabilities.

Jon Pearce WB2MNF mentioned the JS1YMG, the Japanese probe that landed on the Moon and is transmitting in the 70cm ham band with modified Morse code.

Business Meeting :

Minutes of January 2024 business meeting as published in Crosstalk were approved by voice vote of members present.

February 2024 General Membership Meeting Minutes - Continued on page 48

February 2024 General Membership Meeting Minutes - Continued from page 47

Treasurer's Report : 2024 Operating Profit and Loss :

- Operating Revenue : \$12,301
- Operating Expenses : \$12,008
- Net Operating Income : \$293
- Memorial Donations : \$1,025
- Net Income (Loss) : \$1,318

Non-Operating Revenue and Expenses:

- Revenue : \$5,029
- Non-operating expenses (Loss) : (\$23,698)

Remarks : Discussion of 2024 GCARC Operating Budget, motion to approve passed by voice vote of members present. **Sheldon Parker K2MEN** presented the results of the annual audit report.

W2MMD Clubhouse Report :

• Report : Al Arrison KB2AYU noted the Clubhouse survived some fairly intense weather in January with minimal damage. Looking forward to better weather to continue VHF tower and operating room work.

DX And Contests :

• Report : **Tony Starr K3TS** provided his report remotely from Hamcation in Orlando, FL. Discussion of North American QSO Party and the upcoming ARRL DX contest as well as the recent TX5S Clipperton Island DXpedition.

Public Service :

• Report : **Bob Keogh KD2NEC** discussed Red Cross support as the main public service opportunity since Gloucester County has abandoned the RACES program. **Chris Prioli AD2CS** and **Steve Farney W2SEF** provided storm damage assessment for Pitman Borough.

Education Committee :

• Report : Chris Prioli AD2CS reported on the Fox Hunt Attenuator and Antenna Building class recently held. Jim Wright N2GXJ discussed upcoming 30th Anniversary Fox Hunt.

Old Business : None

New Business : None

Closing Remarks :

• Jon Pearce WB2MNF provided a quick synopsis of LoRa / Meshtastic activities and encouraged interested members to get involved. The Club's Discord server #LoRa channel was also mentioned.

Presentation : April 2024 Annular Solar Eclipse By Ed Efchak WX2R, HamSCI

Meeting adjourned @ 2004 Hours

Respectfully submitted, John Zaruba K2ZA, Recording Secretary

Gloucester County Amateur Radio Club Board of Directors Meeting Minutes Wednesday, February 21, 2024

Meeting opened @ 1900 Hours by President Jonathan Pearce WB2MNF

Attendance :

- **President** Jon Pearce WB2MNF : **Present**
- Vice President Ron Block NR2B : Present
- Treasurer John O'Connell K2QA : Present
- Recording Secretary John Zaruba Jr K2ZA : Present
- Corresponding Secretary Frank Romeo N3PUU : Present
- Director (2022-2024) James Clark Sr. KA2OSV : Present
- Director (2022-2024) Jeffrey Garth WB2ZBN : Present
- Director (2023-2025) Chris Prioli AD2CS : Present
- Director (2023-2025) James Wright N2GXJ : Present
- Director (2024-2026) Al Arrison KB2AYU : Present
- Director (2024-2026) Bill Price NJ2S : Present
- Trustee (2021-2024) Carl Wittig N2CRW
- Trustee (2022-2025) Charles Lanard KD2EIB
- Trustee (2023-2026) Sheldon Parker K2MEN
- Trustee (2024-2027) Len Rust W2LJR
- Member Mike Resnick N2WOQ : Present

New Member Applications :

- George M. Badger III W3AB, Soquel, CA (Returning Member)
- Jason Watkins KD2VVJ, Sewell, NJ
- Arthur Strong KA0WS, Falkville, AL (Returning Member)
- Michael Angelastro No Call, Cherry Hill, NJ

Treasurer's Report :

- Income : \$6,118.30
- Expense : \$609.06
- Net : \$5,509.24
- Discussion of VHF Tower fund cutoff, goal has been achieved don't want to create donor fatigue. Motion made and approved by voice vote of Club Officers present. Discussion of plaque to recognize donors.
- Detailed financial statements are available for member review upon request.

Clubhouse Report : No report

Technical Committee :

• Discussion of tasks and methods to finish VHF room and provide completed project details to ARDC to close out the grant.

February 2024 Board of Directors Meeting Minutes - Continued on page 50



February 2024 Board of Directors Meeting Minutes - Continued from page 49

GCARC Foundation :

• Discussion of foundation funding of Clubhouse IT infrastructure.

Repeaters : No report

Programs and Activities Committee :

- Discussion of March GM Meeting Program, which is ARRL SNJ Section Club Liaison. What questions need to get asked and time management due to 2130 Hours hard stop.
- Discussion of program speakers and cross club collaborations.
- Discussion of potential Club activity around April Solar Eclipse.
- Jim Wright N2GXJ reported on upcoming Fox Hunt on March 16th. Slightly different format than previous hunts. Discussion of Tech Saturday start time for Fox Hunt presentation.
- Jeff Garth WB2ZBN noted 2M Club Nets averaged 10 check-ins in January.

Membership Committee :

- To date, 73 members have not renewed. **Chris Prioli AD2CS** will approach these members to find their reasoning to see if there are things to be done to improve member engagement and retention.
- Discussion of ARRL tardiness in processing renewals submitted by the Club. It is creating a sore point among some members. Issue to be brought up with the Section Club Liaison.

Hamfest :

• **Mike Resnick N2WOQ** reported on ticket printing. Asked about logistic of sending a thank you e-mail for attendees.

Education Committee :

- Chris Prioli AD2CS discussed Advanced SMT Soldering Class proposal.
- Technician and General License Classes to start the week of April 22nd, no sign ups currently for Extra Class.

Old Business : None

New Business :

- John O'Connell K2QA proposed adding PayPal fees to online membership renewal. Will NOT apply to online donations (convenience fee). Since this is not a change of membership rates, it was determined that a bylaws change is not required as the fee can be bypassed by paying in person. Motion passed by voice vote of Club officers present
- GoDaddy e-mail address subscription not renewed, Club e-mail addresses moved to Club server for a savings to the budget of \$125.
- Discussion of moving GM meeting start time to 1900 Hours due to Pfeiffer Community Center constraints, to be announced at the March Meeting and beginning in April. Motion approved by voice vote of Club officers present.
- Jim Clark KA2OSV announced his resignation from the Board due to relocation to South Carolina. The Board thanked Jim for his many years of service to the Club and wished him all the best in his new home.

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Meeting adjourned @ 2017 Hours.

Respectfully Submitted, John Zaruba Jr K2ZA, Recording Secretary

Gloucester County Amateur Radio Club Board of Directors Budget ZOOM Meeting Minutes Wednesday, January 31, 2024

Meeting opened via ZOOM @ 1900 Hours by President Jonathan Pearce WB2MNF

Attendance :

- **President** Jon Pearce WB2MNF : **ZOOM**
- Vice President Ron Block NR2B : ZOOM
- Treasurer John O'Connell K2QA : ZOOM
- Recording Secretary John Zaruba Jr K2ZA : ZOOM
- Corresponding Secretary Frank Romeo N3PUU : ZOOM
- Director (2022-2024) James Clark Sr. KA2OSV : ZOOM
- Director (2022-2024) Jeffrey Garth WB2ZBN : ZOOM
- Director (2023-2025) Chris Prioli AD2CS : ZOOM
- Director (2023-2025) James Wright N2GXJ : ZOOM
- Director (2024-2026) Al Arrison KB2AYU : ZOOM
- Director (2024-2026) Bill Price NJ2S
- Trustee (2021-2024) Carl Wittig N2CRW
- Trustee (2022-2025) Charles Lanard KD2EIB
- Trustee (2023-2026) Sheldon Parker K2MEN : ZOOM
- Trustee (2024-2027) Len Rust W2LJR

John O'Connell K2QA discussed the proposed budget in detail. After questions and answers, the motion to approve the proposed budget for presentation to the membership was passed by voice vote of Board members present.

John O'Connell K2QA and Sheldon Parker K2MEN presented the findings of the annual audit report. A motion to accept the report was made and passed by voice vote of Board members present.

Meeting adjourned @ 1925 Hours

Respectfully Submitted, John Zaruba K2ZA Recording Secretary





March 2024 CrossTalk : Learning Stuff! Building Stuff! Doing Stuff! TOGETHER!

W2MMD Clubhouse Test & Repair Bench Equipment and Supplies



A Special Thank You to Chris AD2CS for donating the equipment and organizing these test benches

- YiHua 948 11-in-1 Solder Station
- Universal Screwdriver Set
- PanaVise PCB vise with full tilt and rotate on parts bin base
- 500 Watt Dummy Load
- 100 Watt Dummy Load
- Heathkit HD-1234 6-position Coax Switch with RG-213 jumpers
- Hook-up Wire :
 - 18 AWG stranded
 - 22 AWG solid and stranded
 - 24 AWG solid and stranded
- Bird 4304A Thruline Directional Wattmeter
- CMS BE-01 Battery Eliminator 1A/1.5-15V Power Supply
- 12 AWG Red/Black Dual Stranded ZIP Wire
- Simpson 260 Series 5 Analog Multimeter
- CMS ESR-01 Equivalent Series Resistance Meter
- Elenco DT-100 Diode & Transistor Tester
- TekPower TP50SW 50A/13.8V Power Supply
- Elenco XP-720 12.6VAC/5VDC/1.5-15VDC 3A/1A Power Supply
- RSR Electronix Express RSR-3040 15VAC/5VD/1.5-15VDC 3A/1A Power Supply
- BK Precision 1803D Frequency Counter
- KKmoon MHS-5225 Digital Arbitrary Waveform Signal Generator
- Exact 121 Analog Signal Generator
- Greenlee DM-510A Handheld Digital Multimeter
- HP 34410A Benchtop Digital Multimeter
- BK Precision 1655 Variable isolated AC Supply

- CMS Dim Bulb Current Limiter 100 Watt
- CMS BDST-01 Signal Tracer
- CMS CRTT-01 Gas-charged Voltage Regulator Tube Tester
- Conar 224 Tube Tester
- GW LCR-814 LCR Meter
- Siglent SDS-1102CML+ Digital Storage Oscilloscope
- DX Engineering Coaxial Cable Gripper and Stripper (RG-8U / RG-213)
- DX Engineering Coaxial Cable Cutter,
- Trimmer, and Crimper (RG-8U / RG-213)
- DX Engineering RG-8X Die Set for Coaxial Cable Crimper
- Adjustable Wrench Set for Slotted/Recessed Round Nuts
- Speedwox Miniature Box Wrench Sets, Metric and SAE
- 69238 Nut Driver Set, Metric
- 69239 Nut Driver Set, SAE
- Velleman K-8115 Universal Component Tester
- Anderson Powerpole[®] Connector Assortment
- Anderson Powerpole[®] Crimping Tool
- Heat Shrink Tube Assortment, cut lengths
- Ring Terminal Assortment
- Alignment Tool Set
- Craftsman Wire Cutter/Crimper
- Craftsman 6-piece Pliers Set
- Laptop PC
- Programming Cable Sets (2)
- Test Lead Set
- Oscilloscope Probe Set

Jersey String Band News By Glenn Dougherty, N2YIO

Here is what is going on with the Jersey String Band in March.

We have submitted our 2025 theme concept and were approved for a Spy Theme for 2025.

We start off our parade season with two confirmed parades :

• Saturday, March 9, 2024 : We will be marching in the Hamilton, NJ St Patrick's Day Parade.



- Sunday, March 10, 2024 : We will be getting up very early because it's also the start of Daylight Saving time to head to New Haven, Connecticut for another St Patrick's Day Parade that will be a long day for us since we aren't staying over.
- Saturday, March 16, 2024 : This parade isn't confirmed yet, but we are tentatively scheduled to march in Sussex, NJ for a third St Patrick's Day Parade.

Now a step back to last month and I didn't hear about this until after the Crosstalk was already out. The band is holding a Beef and Beverage fundraiser at the Colonial Cafe in West Deptford on Saturday, February 24, 2024 and on Wednesday, February 28, 2024, we will host an open house for anyone that wanted to come out and sit in and play with the band.

Our Captain and Business Manager is currently booking parades already into June. Well that is it for this month. Thanks for letting me continue to inform the Club of what is going on with the band. If any of the members of the Club plays an instrument you are more than welcome to stop out at one of our Wednesday evening practices. We are there from 7:30 - 9:30 pm at the Woodbury Heights Firehouse on Elm Avenue in Woodbury Heights. Or if you know of anyone that needs a band for a birthday party or if your town is holding a parade and looking for bands, you can contact pwalton7777@gmail.com or you can call him @ 856-278-5320.

		Durning	
2		Jersey	
3		Duffy	
4		Hegeman	
5	F	Polish American	
6	Gru	eater Kensington	
7		Aqua	-
8		Ferko	
9		Uptown	
10		Fralinger	•
11		Quaker City	
12	So	outh Philadelphia	
13		Avalon	61
14		Voodland	

Georgetown Hamfest

SATURDAY April 20, 2024

Cheer Community Center 20520 Sand Hill Rd. Georgetown, DE 19947

Sponsored by Sussex Amateur Radio Association

Radio Electronics EXPO.com Follow us on Facebook at Delmarva Amateur Radio & Electronics EXPO

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March 2024 CrossTalk : Learning Stuff! Building Stuff! Doing Stuff! TOGETHER!

USSEX

To Be Added To The DX HONOR ROLL, Please contact Ernest Kraus, KD2EAV meanddelcanotc@verizon.net



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D	Е	Ν	Т	S		Ν	1	L	Е		R	0	S	Е
	Crossword Puzzle Answers From Page 39													

Name/Callsign	DXCC
Bill Grim, W0MHK	352
Edward De Fonzo, W2DE	339
Darrell Neron, AB2E	334
John Hill, W2HUV	270
Vinnie Sallustio, N4NYY	257
Gary Castellini, N2IEC	250
Ken Denson, WB2P	248
Jim Wright, N2GXJ	235
Tony Starr, K3TS	226
Sheldon Parker, K2MEN	222
Dennis Sandole, K2SE	204
Matt Wilson, K2MFW	201
Howard Marder, WA2IBZ	151
Eric Morris, N2BRJ	137
Phil Nunzio, WA3RGY	137
Rich Subers, W2RHS	124
Marc Federici, WM2Y	116
Steve Farney, W2SEF	111
Bart Kleczynski, AC2PT	106
Chuck Capasso, WB2PGE	103
Harry Strahlendorf Jr, W3DNQ	87
Jim Clark, KA2OSV	71
Lee Marino, N2LAM	62
Updated As Of 02/17/2024	

Hmm...It's Saturday and you want to know if someone is at the Clubhouse? Why not call and find out! What!!!

W2MMD Clubhouse : (856) 244-6914

(Please, no car warranty calls!)



March Birthdays

Congratulations To Our Members Who Are Celebrating A Birthday This Month

Bruce Canino, KD2LBU (President 2018) Bill Cobb, W2WRC Tom Distelcamp Sr, KC2GYC Joe Gadoury, N2JJG Joe Gallagher, KC2VAQ Jeff Garth, WB2ZBN Fred Munzenmayer, K2DX Randy Testa, KC3VCC Gary Triplo, KD2EBX Mark Wilson, K1RO Wayne Wilson, WA2LET Jim Wright, N2GXJ (President 2014, 2015, 2016) John Zaruba Jr, K2ZA

In Memoriam : March Birthdays

Lawrence Archut Sr, K2LMN Janice Bond, KA2COX James Casto Sr, N2IMH Stuart Cleveland, N2WUP Wayne Clifford, N2FX John Cronin Sr, KB2ETT Larry Ferrari, WA2MKI

Doug Gehring, WA2NPD (President 1967, 1975, 2008, 2009)

Edwin Kephart, W2SPV Milton Marder, WA2FGA James Mollica Jr, K2OWE Jerome Morrison, KF2ZA John Oberst, W2TLO (Charter Member) Paul Scarpa Sr, W2HSE (Charter Member) John Seaton Sr, KB2RXQ Harold Steelman, W2BZI

** ATTENTION EVERYONE ** EFFECTIVE APRIL 3, 2024, ALL GENERAL MEMBER-SHIP MEETINGS WILL BEGIN @ 1900 HOURS (7:00 PM) ON THE FIRST WEDNESDAY OF THE MONTH



Full Worm Moon - Monday, March 25, 2024 @ 0301 Hours

This name is traditionally thought to refer to the earthworms that appear as the soil warms in spring. Alternatively, during his travels in the 1760s, Captain Jonathan Carver wrote that this Moon name refers to a different sort of "worm"-larvae-which emerge from the bark of trees and other winter hideouts. Although some Cree groups used the term Eagle Moon to describe the time around February, others used this term for the Moon cycle closer to spring. The Northern Ojibwe called this Crow Comes Back Moon. The term Goose Moon was used among Algonquin and Cree peoples. Snow Crust Moon was an Anishinaabe term. Sore Eyes Moon is a Dakota, Lakota, and Assiniboine term referring to the blinding rays of the sun on snow. Sugar Moon (Ojibwe) is the time when maple sap runs. Wind Strong Moon (Pueblo) refers to the strong windy days that come at this time of year.

Old Farmer's Almanac - www.almanac.com

	March 2024 Contest Calendar - WA7BNM Conte	est Calendar : <u>www.contestcalendar.com</u>
+-	NCCC FT4 Sprint	0100Z-0130Z, Mar 1
+	Weekly RTTY Test	0145Z-0215Z, Mar 1
+	QRP Fox Hunt	0200Z-0330Z, Mar 1
+	NCCC Sprint Ladder	0230Z-0300Z, Mar 1
+	K1USN Slow Speed Test	2000Z-2100Z, Mar 1
+	Novice Rig Roundup	0000Z, Mar 2 to 2359Z, Mar 10
+	ARRL Inter. DX Contest, SSB	0000Z, Mar 2 to 2400Z, Mar 3
+	Wake-Up! QRP Sprint	0600Z-0629Z, Mar 2 and
		06302-06592, Mar 2 and
		07002-07292, Mar 2 and 07207-08007 Mar 2
	Open Ukraine RTTY Championship	18007 Mar 2 to 12507 Mar 2
÷	URA Spring Contest CW	07007-11007 Mar 3
÷	NSA BA Contest, CW	12007-16007 Mar 3 and
	NSARA Contest	18007-22007, Mar 3
+	SARI Hamnet 40m Simulated Emerg Contest	12007-14007, Mar 3
+	WAB 3.5 MHz Phone	18007-22007, Mar 3
+	KIUSN Slow Speed Test	00007-01007. Mar 4
+	ICWC Medium Speed Test	13007-14007, Mar 4
+	OK1WC Memorial	16307-17297, Mar 4
+	ICWC Medium Speed Test	19007-20007, Mar 4
+	RSGB 80m Club Championship, Data	2000Z-2130Z, Mar 4
+	Worldwide Sideband Activity Contest	0100Z-0159Z, Mar 5
+	ARS Spartan Sprint	0200Z-0400Z, Mar 5
+	ICWC Medium Speed Test	0300Z-0400Z, Mar 5
+-	AGCW YL-CW Party	1900Z-2100Z, Mar 5
+-	QRP Fox Hunt	0200Z-0330Z, Mar 6
+	Phone Weekly Test	0230Z-0300Z, Mar 6
+-	A1Club AWT	1200Z-1300Z, Mar 6
+	CWops Test	1300Z-1400Z, Mar 6
+-	VHF-UHF FT8 Activity Contest	1700Z-2100Z, Mar 6
÷	Mini-Test 40	1700Z-1759Z, Mar 6
÷	Mini-Test 80	1800Z-1859Z, Mar 6
÷	CWops Test	1900Z-2000Z, Mar 6
÷	UKEICC 80m Contest	2000Z-2100Z, Mar 6
+-	Walk for the Bacon QRP Contest	0000Z-0100Z, Mar 7 and
		0200Z-0300Z, Mar 8
+	CWops Test	0300Z-0400Z, Mar 7
+	CWops Test	0700Z-0800Z, Mar 7
+	NRAU 10m Activity Contest	1800Z-1900Z, Mar 7 (CW) and
		20007-21007 Mar 7 (SSB) and
		2100Z-2200Z, Mar 7 (Dig)
+	SKCC Sprint Europe	2000Z-2200Z, Mar 7
+-	NCCC FT4 Sprint	0100Z-0130Z, Mar 8
+-	Weekly RTTY Test	0145Z-0215Z, Mar 8
+	QRP Fox Hunt	0200Z-0330Z, Mar 8
+-	NCCC Sprint	0230Z-0300Z, Mar 8
+-	K1USN Slow Speed Test	2000Z-2100Z, Mar 8
÷	YB DX RTTY Contest	0000Z-2359Z, Mar 9
÷	SARL Field Day Contest	0800Z, Mar 9 to 1000Z, Mar 10
+-	SARL VHF/UHF FM Contest	0800Z, Mar 9 to 1000Z, Mar 10
÷	RSGB Commonwealth	1000Z, Mar 9 to 1000Z, Mar 10
÷	DIG QSO Party, SSB	1200Z-1700Z, Mar 9 (20m-10m) and
		0700Z-0900Z, Mar 10 (80m) and
	SKCC Waakand Sprintsthan	12007 Mar 0 to 24007 Mar 10
÷	Skee weekend Sprintation	12002, Mar 9 to 24002, Mar 10
-	EA DSK62 Contest	12002, Mar 9 to 12002, Mar 10
-	ACCW ORD Contest	14007-20007 Mar 0
	Stew Perry Tonhand Challenge	15007 Mar Q to 15007 Mar 10
-	Oklahoma OSO Party	1500Z, Mar 9 to 1500Z, Mar 10 and
	on anoma goo rarey	1500Z-2100Z. Mar 10
+	TESLA Memorial HF CW Contest	1800Z, Mar 9 to 0559Z, Mar 10
+	Idaho OSO Party	1900Z, Mar 9 to 1900Z, Mar 10
-+-	North American Sprint, RTTY	0000Z-0359Z, Mar 10
+-	UBA Spring Contest, 2m	0700Z-1100Z, Mar 10
+-	FIRAC HF Contest	0700Z to 1700Z, Mar 10
+-	YOTA Contest	1000Z-2159Z, Mar 10
-+-	Wisconsin QSO Party	1800Z, Mar 10 to 0100Z, Mar 11
+-	4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Mar 11
+-	K1USN Slow Speed Test	0000Z-0100Z, Mar 11
÷	ICWC Medium Speed Test	1300Z-1400Z, Mar 11
÷	OK1WC Memorial	1630Z-1729Z, Mar 11
+-	ICWC Medium Speed Test	1900Z-2000Z, Mar 11
+-	Worldwide Sideband Activity Contest	0100Z-0159Z, Mar 12
÷	ICWC Medium Speed Test	0300Z-0400Z, Mar 12
÷	QRP Fox Hunt	0200Z-0330Z, Mar 13
+	Phone Weekly Test	0230Z-0300Z, Mar 13
+	A1Club AWT	1200Z-1300Z, Mar 13
+	CWops Test	1300Z-1400Z, Mar 13
÷	VHF-UHF FT8 Activity Contest	1700Z-2100Z, Mar 13
+	Mini-Test 40	1700Z-1759Z, Mar 13
+	Mini-Test 80	1800Z-1859Z, Mar 13
+	CWops Test	1900Z-2000Z, Mar 13
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2024 Club Committees

Standing Committees

Budget Constitution & By-Laws Education Field Day Hamfest Health, Welfare, & Silent Keys Hospitality Membership Membership Badges Nominations Publicity *Repeaters* W2MMD Clubhouse Site

Committee Chairs

John O'Connell, K2QA Ron Block, NR2B Chris Prioli, AD2CS Tony Starr, K3TS Sheldon Parker, K2MEN and Bill Price, NJ2S Bill Price, NJ2S Jeff Garth, WB2ZBN Chris Prioli, AD2CS Chris Prioli, AD2CS Jon Pearce, WB2MNF Tony Starr, K3TS *Open Chair* Al Arrison, KB2AYU

Activity Committees

Awards & Certificates Club Photographer Club Publications & Historian Contests DX **GCARC** Family Picnic **GCARC** Foxhunts **GC-ARES Emergency Coordinator Holiday Dinner Party License Testing/VEC Liaison Membership Roster Database Programs : General Membership Meetings** Radio Nets **Technical & Tech Saturday Programs** W2MMD License Trustee W2MMD Special Event Station

Committee Chairs

GCARC Board of Directors Phil Nunzio, WA3RGY Jeff Garth, WB2ZBN **Tony Starr, K3TS Open Chair Open Chair** Jim Wright, N2GXJ **Bob Keogh, KD2NEC** Frank Romeo, N3PUU & Kathy Romeo Gary Reed, N2QEE Jeff Garth. WB2ZBN **Ron Block, NR2B Open Chair** Jon Pearce, WB2MNF **Darrell Neron. AB2E** Mark Gottlieb, KK2L

GCARC <at> Mailman <dot> QTH <dot> Net e-mail reflector guidelines

1. No attachments (e.g. pictures, files) are allowed on the reflector.

2. If you have Club-related pictures that you would like to share, you can send them to the webmaster, he will put them on the website and will send out a general e-mail to all the members.

3. Otherwise, the pictures will have to be sent to the members' addresses.

4. URLs/Hyperlinks are acceptable on the reflector.

5. Do not send any messages with e-mail addresses in the BCC (Blind Carbon Copy) field. The message will be rejected. Use only the To: or CC: fields.

6. Members are subscribed to the reflector using the member's e-mail address from the roster database. You must use that address when sending an e-mail via the reflector.

7. If you use another address on the reflector, the message will get rejected or "*bounced*", because the reflector does not recognize that address. Whenever a message sent to reflector is rejected or "*bounced*" for various reasons, the administrator has to log-in to the Mailman.QTH website and approve the message.

The W2MMD Repeaters

2 Meter Repeater Output : 147.180 MHz Input : 147.780 MHz Offset : +600 kHz - PL : 131.8 Hz (Conventional FM plus C4FM Capability) EchoLink : W2MMD-R

70 cm Repeater Output : 442.100 MHz Input : 447.100 MHz Offset : +5 MHz - PL : 131.8 Hz (Conventional FM plus C4FM Capability)

> The above repeaters are both located in Pitman, NJ GPS : 39.728481°, -75.131088°

1.25 Meter Repeater

Output : 224.660 MHz Input : 223.060 MHz Offset : -1.6 MHz - PL : 131.8 Hz Location : Sewell, NJ GPS : 39.746738°, -75.077094°

SKYWARN[™] Net Sunday @ 1930 : 147.180 MHz Repeater

Gloucester County ARES Net Sunday @ 2000 : 147.180 MHz Repeater

GCARC TechNet ZOOM Forum 2nd Monday of Every Month @ 1930 Hours

> **Tuesday AfterNoon Net** Every Tuesday @ 1200 Hours

Tuesday & Thursday Night 10M Net Every Tuesday & Thursday @ 1930 Hours Tune in on 28.465 MHz or 28.475 MHz

> **Thursday Night Rag Chew Net** Every Thursday @ 2000 Hours

Meeting Calendar

General Membership Meeting Wednesday, March 6, 2024 1930 Hours Pfeiffer Community Center Simulcast Live on ZOOM Meeting ID : 943 0211 9674 Passcode : 843147

Board of Directors Meeting Wednesday, March 20, 2024 1900 Hours W2MMD Clubhouse

"There's More To Ham Radio Than You Can Possibly Do!" - K3TS

"The big thing about being in a club and being a "Ham" is to help each other when there is a need " - W2SEF

*** Badges ***

Need a new or replacement badge Contact "The Badge Man"

> Chris Prioli, AD2CS chris@ad2cs.com

> > 60

E2V06:C: E2V10:V: E2V11:C: E2V13:C: E2V13:C: E2V14:C: E2V12:V: E2V08:C: E2V08:E: E2V

73 Gloucester County Amateur Radio Club - P. O. Box 370 - Pitman, NJ 08071 Ω