

CrossTalk

August 2023

64 Years Of Service To Our Community

Issue 64:08



A

2023 Club Officers

President : Jonathan Pearce, WB2MNF
Vice President : Ronald Block, NR2B
Treasurer : Alan Arrison, KB2AYU
Recording Secretary : Karl Frank, W2KBF
Corresponding Secretary : Frank Romeo, N3PUU

Trustees - 4 Year Term

Mark Gottlieb, KK2L (2020-2023)
Carl Wittig, N2CRW (2021-2024)
Charles Lanard, KD2EIB (2022-2025)
John O'Connell, K2QA (2023-2026)

Directors - 3 Year Term

Charles Colabrese, WA2TML (2021-2023)
William Price, NJ2S (2021-2023)
James Clark Sr, KA2OSV (2022-2024)

Jeffrey Garth, WB2ZBN (2022-2024)
Chris Prioli, AD2CS (2023-2025)
James Wright, N2GXJ (2023-2025)

General Membership Meeting

Wednesday, August 2, 2023 @ 1930 Hours
In-Person & ZOOM

Tech Saturday Forum

Saturday, August 5, 2023 @ 0900 Hours
W2MMD Clubhouse

License Testing Session

Thursday, August 10, 2023 @ 1900 Hours
W2MMD Clubhouse

Board of Directors Meeting

Wednesday, August 16, 2023 @ 1900 Hours
W2MMD Clubhouse

Dinner @ The W2MMD Clubhouse

Wednesday, August 23, 2023 @ 1800 Hours

Tuesday Noon Day 2 Meter Net

Every Tuesday @ 1200 Hours

Tuesday & Thursday Night 10 Meter Net

1930 Hours - 28.465 or 28.475 MHz

Thursday Night 2 Meter Net

Every Thursday @ 2000 Hours

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Charles A. Colabrese, WA2TML
February 27, 1949 - July 21, 2023

On July 21, 2023, of Washington Township. Age 74. Beloved husband of Irma (Pulgino). Devoted father of Michael Colabrese (Katie).

Chuck graduated from Father Judge High School in 1968. Following high school, he was a civilian employee of the U.S. Navy since co-operative education while getting his BS in Electronic Engineering at Drexel University ('72). In his retirement he worked at SAIC and Leidos as an Engineering Contractor full-time. When he wasn't a full-time contractor, he found part-time work at Home Depot and L.L. Bean. As an Amateur Radio Operator (WA2TML), Chuck was very active with the Gloucester County Amateur Radio Club for 40+ years. During that time, he represented Amateur Radio to the Washington Township Community for disaster and civil defense. Another interest and a large part of Chuck's life included sailing on his 25-foot sailboat (Windchimes) with his wife and son.

Chuck was a Club member for 45 years. He held many positions in the Club, including : 1980 Vice President, Long Range Planning Committee Chairman, Technical Committee Chairman, Repeater Technical Manager, Membership Badge Chairman, but his longest tenure was as a Club Director. He was the 1992 receipt of the Milt Goldman Award, an award given to a member who exemplifies outstanding commitment and service to the Club.

Condolences and Comments

Chuck fought a brave battle with cancer for several months, but sadly succumbed to it on Friday night, July 21, 2023. Chuck was a pillar of our Club, serving as a Director for many years and bringing his wisdom, experience, and compassion to every meeting. He was also involved in all aspects of the Club's activities, from Field Day to license exams and training, was a mentor to many, and always ready to lend a hand for Club projects. He was also involved in the building of the Clubhouse and appears in photographs of Club activities over many years. We will honor Chuck's memory at the August 2023 General Membership Meeting and remember his legacy in our future events.

Chuck's viewing is scheduled for 6-8 PM this Wednesday, July 26 at the Egizi Funeral Home, 119 Ganttown Road, Turnersville, NJ 08012. I'm planning to be there at 6 in case other GCARC members would like to attend at the same time. It would be nice to wear our GCARC nametags to show our regard for the guy who was so supportive of our Club.

73 de Jon Pearce, WB2MNF
GCARC President

+++++

It is with great sadness that I recognize the passion of my friend and fellow instructor *Chuck Colabrese WA2TML*. Chuck was more than just a friend, and much more than just a fellow instructor. He was a *leader.* Chuck was a long-time member of the Board of Directors who always had a firm idea of where the Club was, where it was going, and where it *should *be going. His was a voice of reason when discussions got heated, and he stood fast on his principles. His ideas were always based upon reasoned thought and as a result, his words carried significant weight.

He was one of my original assisting instructors, helping to teach at the Amateur Extra level. His knowledge - of electronics in general and of ham radio in specific - was incredible, and it will be impossible to replace him. The best that I will be able to do is to approximate his knowledge levels, and it may take multiple individuals to do that.

Chuck had a way of explaining things that made certain topics immediately understandable to the students. In addition, he helped to solidify my own knowledge of several different issues, making me a better ham operator and a better instructor as well.

In his last days, he was very worried about the proper succession of the Club name badge manufacturing process, with a great concern for making sure that the quality level that he had established would be maintained. I am honored that he had his family reach out to me to take this over from him, and he tried very hard to get the important points of the badge-making process across to me, even in his exhausted state.

He will be sorely missed and impossible to replace. I wish the best for him in his afterlife, praying for him and his family daily. I hope to see many of his fellow Club members at his viewing and/or funeral services when they are held later this week.

Rest In Peace, Chuck.
73
Chris Prioli, AD2CS

Condolences - Continued on page 4

Condolences - Continued from page 3

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So sad to hear. Chuck is a neighbor that I hadn't met as I just found out he lives nearby. I was hoping to meet him. RIP Chuck, I wish I'd had the chance to meet you.

Todd Woodward, KD2ESH

+++++

Terribly sad news, and a shock to hear. I had no idea Chuck has apparently been ill lately. Chuck was a real champion for the Club and as Jeff noted, his contributions many.
RIP OM,

Darrell Neron, AB2E

+++++

VERY SAD NEWS. I only recently heard of Chuck's health challenge but it was clear he was up against it. I've known Chuck since he joined the Club. He was truly one of the really nice guys and will be missed by all. My condolences to Irma and family.

With sadness,
Dennis Sandole, K2SE

+++++

Prayers to everyone.

Keith Dreyer, KD2ZRB

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We will get a sympathy card off to Irma. Hard to believe I've known Chuck almost 40 years.

Art KA0WS and Donna Strong

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OMG!!! So, so sorry to hear....known Chuck for a very long time....

Curt Myers, K2CWM

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This is a total shock to me. I never knew he was sick. We exchanged some technical emails not so long ago. Very sad. Rest in peace old friend.

Ken Bozarth, KN2U

Condolences - Continued on page 5

Condolences - Continued from page 4

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RIP Brother. Your "budget" is safe with me.

Bill Szkromiuk, W4WCS

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Very, very sad news.

Regards,
Tom Gorman, KE2ES

+++++

So very sorry. He and Ray were friends tho they differed on philosophy at times. Chuck visited Ray. So sorry. I'm saddened all over again. Its only 9 months since Ray passed. Sad, Sad, Sad

Phyllis Martin, W2PDB

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My condolences to the Colabrese Family.

Joe Gadoury, KE2AKT

+++++

Chuck has been a longtime close friend since the beginning of our time in GCARC from the 1970's. He was a great friend. He will be missed by everyone who knew him. My condolences to Irma, Mike and the entire family. RIP Chuck...

Howard Marder, WA2IBZ

+++++

Our condolences to all family and friends.

Lou N2JXG and Robin N2NXM Bonaventura
Savannah, TN / Sewell, NJ

+++++

RIP Chuck! Your decades of service to GCARC was greatly appreciated! Rest easy.

Vinnie Sallustio, N4NYY

+++++

Condolences - Continued on page 6

Condolences - Continued from page 5

Hello from Wellsboro, PA. I'm a former member before I retired to Wellsboro in 2011. I heard that Chuck Colabrese has passed away recently and wanted to express my sympathy over his loss. We shared good times and have nice memories. KA0WS (Art Strong) and I keep in contact. We did several Field Days with GCARC. Again my sympathies for Chuck...

73 Larry

Larry Mommicco, AD2L

+++++

I had no idea Chuck was sick. I have operated with him more than any other person in SSB contesting. WA2TML and W2YC taught me everything I know about contesting. He was a good person. I will miss him.

Kenny Denson, WB2P

+++++

Oh no, he shall be missed. He was a very nice person. Had wit, humor, and intellect..

Gary Mirkin, WA3SVW

+++++

What sad news. Chuck was always so very patient, helping me with Technical problems, both when I was first licensed in the 1990's to his recent help with the Extra class training with Chris. Just chatting with Chuck at Club events was always a pleasure, he was always an encourager. Chuck will most definitely be missed!

Irma and Family will be in our thoughts and prayers!

Charlie Olinda, N2SRQ

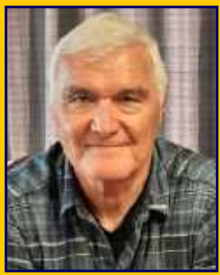
+++++

So sad that Chuck, a friend, mentor, and all around good guy has passed too soon. Chuck played a big role in keeping the GCARC on course over many decades. A lot of his efforts were behind the scenes.

Chuck and his family and friends are in our prayers.

Al Arrison, KB2AYU

Pictures of Chuck throughout the years can be viewed on his Silent Key page :
<https://gloucestercountyarcs.weebly.com/wa2tml.html>



President's Letter

Jon Pearce, WB2MNF



August 2023

Sadly I have to begin this message noting the loss of one of our most valued and dedicated members, **Chuck Colabrese WA2TML**. Chuck fought a brave battle with cancer for several months, but succumbed to it on Friday night, July 21, 2023. Chuck was a pillar of our Club, serving as a director for many years and bringing his wisdom, experience, and compassion to every meeting. He was also involved in all aspects of the Club's activities, from Field Day to license exams and training, and always ready to lend a hand for Club projects. We will honor Chuck's memory at the August General Membership meeting and remember his legacy in our future events.

August Activities

Do you want to learn how to install and operate amateur radio equipment in your vehicle? If so, don't miss our August events at GCARC! At the Wednesday night General Membership meeting, **Tony Starr K3TS** will share his tips and tricks for going mobile at our general meeting. Tony is an expert in mobile radio, so you'll get valuable insights from him. On Saturday, we'll have a Tech Saturday at the W2MMD Clubhouse where you can show off your own mobile stations, exchange ideas, and get help from others. Whether you already have a radio in your car or you're thinking of getting one, these events are for you!

And while Tech Saturday is designated for planned activities, the Clubhouse is open and occupied almost every Saturday, so stop by if you're looking for help with a particular issue, you want to operate the HF station or possibly work some satellite passes, or just check out what's happening that day. Call the Clubhouse phone at 856-244-6914 to check to see if anyone is there.

The Perseids meteor shower peaks on August 13th this year, and we hope that it will give us a chance to work with our new grant-funded VHF/UHF equipment to try to bounce signals off of meteors. Look for an announcement closer to that date.

We hope to get the building permits for the VHF tower installation from the Township soon, which will allow us to start working on the foundation planning. In that case we might need some volunteers to help with the construction, so please stay tuned for more details. And if you prefer to stay indoors, we have some cleanup and organization tasks at the Clubhouse that need your attention. Let's work together to make our Club space more neat and efficient!

We hope to see you at our August activities and have some fun with amateur radio!

Soldering Classes

Several significant activities and advances have occurred at the Clubhouse during July. One of them was the successful delivery of two classes on proper soldering techniques by **Chris Prioli AD2CS** and **John Zaruba Jr K2ZA** on Saturday mornings July 8th and 15th. We were pleasantly surprised to see 14 people attending the classes, as we had only a few registrations a week before.

President's Letter - Continued on page 8

We were especially glad to see many new members who had not been very active in other Club events before. This shows that hands-on sessions are appealing and we will look for more opportunities to offer them in the future.

VHF/UHF/Satellite Room Air Conditioner

Also, the new mini-split air conditioner was installed in the VHF room by **Frank Romeo N3PUU** and others, being completed on Saturday, July 15th. This unit will provide ample and efficient cool air to control temperatures for the computers and networking equipment that permanently resides in that room. It will also act as a heat pump in winter. The unit was purchased for the Club by donations made to the Gloucester County Amateur Radio Foundation.

Many thanks to **Frank, John O'Connell K2QA, Earl Moore KC2NCH**, and others who worked on that installation.

Clubhouse Work Area Cleanup

We used the project area outside the VHF room to store boxes of stuff from the VHF room while we renovate it. The project area is for making things with microcontrollers, Raspberry Pi, SDR, etc. but we couldn't use it for that because of the boxes. Chris and I spent two days sorting out the boxes. We put cables, connectors, hardware, and other things in containers on the shelf along the wall. Now the project area is free for its original purpose. We hope to set it up soon as a workspace for training and building projects. We also want to have a collection of common components for people to use in that area.

Volunteering At GCARC

Volunteers are the lifeblood of any not-for-profit organization, and particularly at GCARC. We have several different groups of volunteers who participate in various types of activities, and I think there are additional opportunities that may be less evident for other members.

The core group of volunteers is a small but dedicated team that meets most Saturdays to work on projects. They take care of the Clubhouse maintenance and improvements, training on equipment and other skills, Club communications like CrossTalk and the website, and many other tasks.

The workday group is a larger team that comes out several times a year for major Clubhouse workdays. They have done amazing things like cleaning and painting the Clubhouse, installing ground rods for the lightning protection project, and other similar tasks.

Finally, there are the many event volunteers involved in the planning and execution of Field Day and the Hamfest. Dozens of members come out for these activities year after year to make them a success.

But I think there's an opportunity for a fourth group of volunteers to handle short term projects that occur frequently, or minor tasks throughout the month. These projects and tasks are great for new members who want to get involved with the Club without having to commit to a long-term or large scale activity. They are also great for members who have specific skills or interests that they want to share with the Club.

Some of these projects include :

- Processing monthly membership meeting and Tech Saturday videos for the YouTube site
- Assisting or backing up 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're interested in becoming part of this project group or any other group of volunteers, please contact me, **Ron Block NR2B**, or **Chris Prioli AD2CS**, and let us know your availability and interest. We would love to have you join us and contribute to the Club in any way you can.

Volunteering is not only helpful for the Club, but also for yourself. You can learn new skills, meet new friends, have fun, and make a difference.

This month we welcome 9 new Club members. See the *Welcome New Members* list on page 12.

Thank you for your support!

**73 de Jon WB2MNF
GCARC President**

ARRL SNJ Section Convention and Hamfest

Presented By The



**Gloucester
County
Amateur Radio
Club
W2MMD**

Celebrating Our 64th Year

www.w2mmd.org



Open to the public at 8:00 AM : *Rain or Shine*

45th Annual Hamfest : September 10, 2023



General Membership Meeting

Wednesday, August 2, 2023 @ 1930 Hours

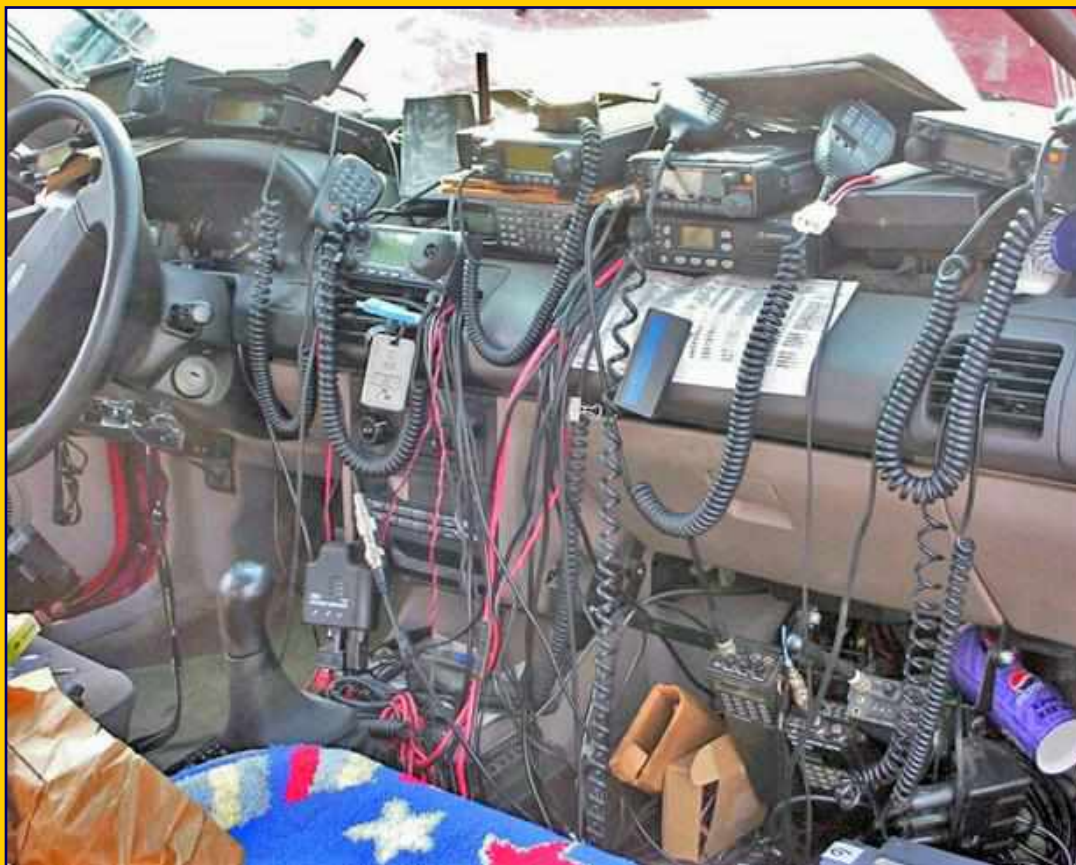
Pfeiffer Community Center

Simulcast Live Via ZOOM

Go to : www.w2mmd.org to download the ZOOM log-on instructions PDF for this meeting

For our August General Membership meeting, our speaker is former President and avid mobile operator Tony Starr, K3TS. He will take us on a brief history from the days of a Swan 350 under the dash of some old timer's '66 Impala, to the tiny FT-891 in Lee Marino's, N2LAM, Subaru. He will admit that mobile HF installations have always fascinated him, so a couple of years ago he set out to build a capable mobile station in his Ford Superduty truck; the results of which look just a little nicer than that pictured below. We can benefit from his experience in that modern vehicles are some of the most efficient RFI generators ever devised, so the effort to make it all work right is challenging and remains a work in progress.

Please join us at the GCARC August meeting for a discussion of the complexities of building a mobile ham station in the 21st century, along with some of the most exciting surprises that were encountered on the air and on the road. Don't miss it!





**Tech Saturday Forum
August 5, 2023 @ 0900 Hours
W2MMD Clubhouse**

Forum Presentation :

Tony Starr, K3TS : Mobile Amateur Radio Installations - Show & Tell

**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.



Anyone remember this? Come to the August 2nd General Membership Meeting and see it in person!



**Gloucester County Amateur Radio Club
YouTube Channel**

<https://www.youtube.com/@W2MMD>

Welcome New Club Members :

Dan Goulianos, KE2BPK, who has a Technician Class license and lives in Wenonah, NJ.
Beth Kraus, KE2BPE, who has a Technician Class license and lives in Vineland, NJ.
David Mitchell, WB2PJH, who has a Amateur Extra Class license and lives in Bridgewater, NJ.
Serge Nenasheff, KE2BLO, who has a Technician Class license and lives in Vineland, NJ.
Richard Nicholas IV, KC3WIR, who has a Technician Class license and lives in Swarthmore, PA.
Aimee Ortiz, KE2BPJ, who has a Technician Class license and lives in Clementon, NJ.
Gregory Sleet, who is joining as an Associate member and lives in Somerdale, NJ.
Charles White IV, KE2BPD, who has a Technician Class license and lives in Sewell, NJ.
Michael Zerby, W2EFR, who has a General Class license and lives in West Deptford Township, NJ.

We are glad to have you as a member of the Club and hope to see you regularly at Club meetings, events, and activities. Hope to see you at the August 2nd General Membership Meeting , either in-person or on ZOOM, the August 5th Tech Saturday Forum, and the Dinner @ The Clubhouse on the August 23rd.

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 Noon Day 2M Rag Chew Net @ 1200 Hours.
- Tuesday & Thursday Night 10M Rag Chew Nets @ 1930 Hours on 28.465 or 28.475 MHz.
- Thursday Night 2M Rag Chew Net @ 2000 Hours.

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

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**
- **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**



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.



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

Philadelphia/Mt Holly Skywarn : www.weather.gov/phi/skywarn

State College, PA Skywarn : www.weather.gov/ctp/skywarn

Pittsburgh, PA Skywarn : www.weather.gov/pbz/skywarn

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



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GCARC Monthly VE Exam Testing Summary June 27, 2023 & July 13, 2023

Gary Reed, N2QEE, reports : We had two VE sessions in the last month. One for the Technician and General classes and the monthly July session.

The June 27th session had nine candidates from the two license classes. All candidates obtained a license.

- **Charles White IV KE2BPD (Technician) Sewell**
- **Beth Kraus KE2BPE (Technician) Vineland**
- **Dionsios Goulianos KE2BPK (Technician) Wenonah**
- **Richard Nicholas IV KC3WIR (Technician) Swarthmore PA**
- **Aimee Ortiz KE2BPJ (Technician) Clementon**
- **Humberto Espanol N3PKH (General) Swedesboro**
- **Melissa Seidner KE2BEK (General) Burlington**
- **Ethan Yost KE2AVA (General) Burlington**
- **Jacques Latoison KE3VYU (General) Chester PA**

The participating VE's were :

- **Chris AD2CS**
- **Jim N2GXJ**
- **Earl KC2NCH**
- **Rich W2RHS**
- **Mike N2MHO**
- **Court KD2SPJ**
- **Mike N2WOQ**
- **Gary N2QEE**

There were some issues with the FCC ULS posting of the Technician candidates. For some reason three of them were in the ether because they didn't make it to the database. They had to contact FCC ULS customer service to resolve the issue. They were very helpful in resolving the problem. Evidently the FCC ULS still has some issues.

The July monthly session was held on July 13, 2023. We had no candidates for the session. Since the FCC doesn't recognize a session with no candidates, the ARRL doesn't acknowledge the session.

The participating VE's were :

- **Rich W2RHS**
- **Chris AD2CS**
- **Mike KG4JYA**
- **Court KD2SPJ**
- **Jerry K2EAB**
- **Steve W2SEF**
- **Mike N2WOQ**
- **Gary N2QEE**

The ARRL session postings have been changed to no longer require preregistration for the session, Since we have the technology at the Clubhouse to create a FRN and a copy of their license, preregistration isn't necessary. A big thank you to the attending VE's and **Chuck Colabrese WA2TML** who has helped with the classes and past VE sessions. The next VE session will be August 10th at 7 PM at the W2MMD Clubhouse.

DAs and DITs

>> Get well to **Dave Paster, AC2IQ**, recovering from a recent medical issue.

>> **Karl Frank, W2KBF. reports** : This is an interesting story I found on MSN : Experts are suggesting that the Sun's activity could peak 2 years early possibly by the end of this year : <https://bit.ly/44ruzTP>

>> **From the November 1978 CrossTalk : What is an ATTENUATOR - One more than A NINE-U-ATOR.**

>> **Ralph Daggan, KE2AHX**, comments, *"Chris, Thank you for the soldering class. Once again I learned many things. The benefits of belonging to this Club are great."*

>> In the **2022 ARRL Simulated Emergency Test Top Ten List** under ARES Activity, the Southern New Jersey Section finished #6 with 1,729 points. Gloucester County scored 194 points.

>> In the **2022 ARRL 10 Meter Contest**, under the Affiliated Club Competition, the Club scored 8,444 points.

>> In the **2023 ARRL January VHF Contest**, under the Limited Multioperator division, the Club scored 66,700 points and finished #3 in the top ten list.

>> **ARRL Atlantic Division Director Bob Famiglio, K3RF** and **Vice Director Marty Pittinger, KB3MXM**, are up for election this year. If elected, their 3 year term would start on January 1, 2024.

>> **Sheldon Parker, K2MEN**, reports, **Joe Taylor, K1JT**, did a presentation for DVRA at their May 10th meeting called *"WSJT-X Innards Explained"*. Details of the meeting are at : <https://www.w2zq.com/wsjt-x-innards-explained-by-joe-taylor-k1jt> . The recording is now up on Vimeo at : <https://vimeo.com/828432363?share=copy>

>> **Karl Frank, W2KBF. reports** : About a video of the Battleship New Jersey NJ2BB during Museum Ships Weekend. "I think I see GCARC member Jerry K2EAB operating a bug at the 7:40 minute point." Inside a Radio Room on Battleship NJ [NJ2BB] : <https://youtu.be/12fKZM1cNtY>

>> The **W2MMD Clubhouse** front door combination was changed on **July 1, 2023**. If you need the new number, please contact **Chris Prioli, AD2CS**.

Current Website Updates : Go to this page to find out the latest changes & updates on our W2MMD Website

<https://gloucestercountyarca.weebly.com/current-website-updates.html>



www.facebook.com/W2MMD



twitter.com/w2mmd_gcarc





Special Event Stations On The Air In August!

By Jim Wright, N2GXJ

Did you know this is the 100 year celebration of President Calvin Coolidge's Inauguration? Me neither. That is until I started looking at a list of special event radio stations being set up for the month of August!

Turns out, former President Coolidge's first inauguration was performed in Plymouth Notch, VT by his father, a justice of the peace, after the sudden death of President Warren G Harding. And a bunch of Hams in the Plymouth Notch area this year have gotten together and secured the special event callsign "W1C" to use on the air to celebrate the event! They say they'll be on the air on August 3, 2023 from the VT Coolidge Historic Site, and on August 5 & 6 at Coolidge State Park to combine to activate for POTA weekend at the Park. How about that!

Want to share in the celebration of the US Coast Guard's 233rd Birthday? There's an on-air celebration by the USCG CW Association honoring that. Look for K1CQ and friends Aug 4-5 from Port Angeles, Washington. I was actually in Port Angeles in the fall last year. It was great place to use as base camp to explore parts of Olympic National Park. Really beautiful part of our country if you can ever get out to see it. Small world!

Want to get in on some of the Indianapolis Motor Speedway action this year? W9IMS will be active Aug 7-9 for the Brickyard 400 - race #3 this year. I've had good luck on voice in the past getting them. Look for them around 7.245 MHz or 14.245 MHz. If you have not seen a W9IMS QSL card before, they are collector's items. I will definitely be trying to get this one to complete the sweep for this year to get the certificate in addition to the glossy cards! Do look at <https://www.qrz.com/db/w9ims> to see what I am talking about. They do these cards right.

Ever hear of International Lighthouse and Lightship Weekend? You have now! It's held on the 3rd weekend of August every year. That's August 19 and 20 of this year. The entrants list for this year already has 250+ entries signed up from all over the world! More details, including the list of Lighthouses here : <https://lighthouse-weekend.international> How many will you catch?

Of course, there's more. Have you heard about the Route 66 On The Air event in September? Yup, it is exactly what you think! Stations with special event callsigns from "W6A" in Santa Monica, CA more than 2000 miles all the way to "W6U" in Illinois will be on the air Sept 9-17. Don't miss 'em!

How'd I find out about all these? <https://www.arrl.org/special-event-stations>. They're also listed on page 90 of the August edition of QST. They often have QSL cards available. Where to QSL to get one is listed for each event at that same link.

Have fun!

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



The Education Connection *By Chris Prioli, AD2CS : AD2CS.COM*



August 2023

This month, I am going to talk about something just a little bit different, while still in the educational realm. A little while ago, I had the germ of an idea to hold a two-part class on some basic soldering techniques, geared towards through hole components and involving a little bit more than just how to solder. I thought that I might get five or six enrollees, and that it would be easy - an easy fit in the Clubhouse, an easy teach with enough time for each student, and an easy review. Boy, was I ever wrong!

First off, I had a total of fourteen Club members sign up for the class :

Bruce Canino, KD2LBU
Anthony Cerami, N2OAC
Greg Ciraula, W5DO
Ralph Daggan, KE2AHX
Gary Hewitt, N2WHV
Gary Kinney, KC2ULS
Earl Moore, KC2NCH

Mike Resnick, N2WOQ
Alex Rodriquez, N5MG
Courtney Smith, KD2SPJ
Randy Testa, KC3VCC
Mike Thompson, KG4JYA
Chuck White, KE2BPD
Marty Wilt, W2ILT

In order to accommodate fourteen people around the table in the Clubhouse, I placed a second table end-to-end with the main table - it was like a Thanksgiving Day dinner arrangement!

The day started with some basic theory and review of terms and terminology, solder basics, and the tools required, as well as a word or two about safety. I had designed two simple circuits for the students to build, each on his own 40mm x 60mm piece of perfboard. I had each student keep working their circuits until the circuits were operational. A powered breadboard was available to test the circuit operation, together with an oscilloscope and a signal generator. Not everybody got through building both circuits that morning, but some did. Some students were there working away as late as 1430 Hours, long after the bulk of the students had gone home. A good time was had by all.

The second session, held on the following Saturday, involved first the assembly of a standard kit that I had put together, which involved soldering a three-pin jumper to a manufactured printed circuit board, followed by a high-density 15-pin D-sub connector and a Mini-DIN 6-pin connector. The concept was to give some hands-on practice with closely-spaced pins on an actual PCB. After completion of that kit, each student started in on whatever personal kits they had brought with them for the class. Some built 40-meter Pixie QRP CW transceivers, while others built Fox Hunt attenuators, while others built code practice oscillators, while... well, you get the idea.

Through both Saturday mornings, I was ably assisted in the instruction by **John Zaruba Jr, K2ZA**, who has extensive experience in this area. John was a huge help to me, in that between the two of us, no student went very long waiting for personal assistance with whatever problem had been encountered.

This program is being followed up with another soldering class, with this new one covering surface mount device (SMD) soldering. I have tentatively set a date of 23 September for that class. Please let me know if you are interested in attending so that I can obtain adequate supplies for all students.

Education Connection - Continued on page 18

On another topic, it is almost time to start up the Ham Exam Preparation Classes Session VI. I have not yet set the dates for this year's classes, but I will be doing so in the next few days. In the meantime, I already have three or four enrollees ready to go.

Of course, on a sadder note, I am looking for a new assisting instructor for the Amateur Extra class. Any volunteers?

That's it for now... see you next month!



Volunteer Monitor Program Report - April 2023

The Volunteer Monitor (VM) Program is a joint initiative between ARRL and the FCC to enhance compliance in the Amateur Radio Service. This is the April 2023 activity report of the VM Program.

- An advisory notice was issued to a Technician-class operator in Michigan for FT8 operation on 7.074 MHz, and to a Technician-class licensee in Ohio for FT8 operation on 14.074 MHz. Technicians have no privileges on those frequencies.
- An advisory notice was issued to a General-class operator in Ohio for deliberate interference to a 10-meter net. The operator was informed that a net control may request anyone to refrain from operation on a net when net policies are not being followed.
- An advisory notice was issued to an Amateur Extra-class operator in Washington for excessively wide transmissions (over 10 kHz). The operator was reminded that FCC Rule 97.307(a) requires that no amateur station use more bandwidth than necessary for the information rate and emission type being transmitted.
- Advisory notices were issued to a Technician-class operator in Florida for operation on 40 meters with an expired license, and to a General-class licensee in Michigan for operation on 20 meters with an expired license.
- Good operator commendations were issued to licensees in South Carolina (for exemplary net procedure on the Greater Pee Dee 2-Meter Net), and North Carolina (for exemplary net procedure on 40 meters).
- A presentation on the ARRL/FCC Volunteer Monitoring Program was given to the Southern Pennsylvania Amateur Radio Club (SPARC) in Manheim, Pennsylvania, one of the oldest Amateur Radio clubs in Pennsylvania.

The totals for VM monitoring during March 2023 were 2,162 hours on HF frequencies, and 2,618 hours on VHF frequencies and above, for a total of 4,780 hours. For the quarter ending March 30, 2023, VMs filed 112 incident reports.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH

Regional (Atlantic & Hudson Divisions) Hamfests & Events

August 5, 2023 : Reading Radio Club, RRC Hamfest 2023, Heritage Park, 992 Clematis Street, Sinking Spring, PA. www.qsl.net/w3bn

August 5, 2023 : Tompkins County Amateur Radio Association, Ithaca Hamfest, Trumansburg Fairgrounds, 2150 Trumansburg Road, Trumansburg, NY. www.tcara-ny.org

August 12, 2023 : Northern New York Amateur Radio Association, *"Junk In The Trunk"*, Southern Adirondack Hamfest, Speculator Pavilion & Ball Field, 2834 State Road Route 30, Speculator, NY. www.adkhamfest.org

August 12, 2023 : Uniontown Amateur Radio Club, 73rd Annual Gabfest, 433 Old Pittsburgh Road, Uniontown, PA. www.w3pie.org

August 13, 2023 : Mid-Atlantic Amateur Radio Club, Valley Forge Hamfest, Kimberton Fire Company Fairgrounds, 762 Pike Springs Road, Phoenixville, PA. www.marc-radio.org

August 19, 2023 : Keuka Lake Amateur Radio Association, 15th Annual Hamfest, Howard Community Center, 7481 Hopkins Road, Howard, NY. www.klara.us

August 19, 2023 : Ramapo Mountain Amateur Radio Club, 43rd Annual RMARC Hamfest, Christ The King Lutheran Church, 50 Erskine Road, Ringwood, NJ. www.qsl.net/rmarc

August 26, 2023 : RocCityNet, 5th Annual Hamfest, The Log Cabin Restaurant, 2445 West Walworth Road, Macedon, NY. www.roccitynethamfest.com

August 27, 2023 : Skyview Radio Society, Swap N Shop, Skyview Radio Society Clubhouse, 2335 Turkey Ridge Road, New Kensington, PA. www.skyviewradio.net

San Max Special Event : Aug 1-Aug 31, 0000Z-2359Z, 4A2MAX, Diamond, MEXICO. San Max XE Operators. 7.220, 14.180, 21.275, 28.440. Certificate & QSL. 4A2MAX San Max Special Event, 5914 San Bernardo Ave, Suite 4-135, Laredo, TX 78041-2506. This is an annual event that radio amateurs in Mexico use for the patron saint celebrations of Saint Maximilian Maria Kolbe, patron saint of radio amateurs.

<https://www.grz.com/db/4A2MAX>



**Maximilian Kolbe, SP3RN
Patron Saint of Amateur Radio
Operators**

Saint Maximilian Maria Kolbe

(January 8, 1894 - August 14, 1941) was a Polish Conventual Franciscan friar who volunteered to die in place of a stranger in the German death camp of Auschwitz, located in German-occupied Poland during World War II. He was active in promoting the veneration of the Immaculate Virgin Mary, founding and supervising the monastery of Niepokalanów near Warsaw, *operating an amateur radio station (SP3RN)*, and founding or running several other organizations and publications. Kolbe was canonized on October 10, 1982 by Pope John Paul II, and declared a Martyr of charity. He is the *patron saint of amateur radio operators*, drug addicts, political prisoners, families, journalists, prisoners, and the pro-life movement. John Paul II declared him "The Patron Saint of Our Difficult Century".



**Bike MS : City To Shore Ride 2023
September 30, 2023 & October 1, 2023**

<https://bit.ly/3CRIXZS>

**Bike MS : Bike To The Bay (Delaware) 2023
October 7, 2023**

<https://bit.ly/3NVTcS3>

GREETINGS TO EVERYONE

I am sure that a lot of you thought you were lucky this year, and that you wouldn't hear from me. Welllllll, nobody is that lucky.

Welcome to the 2023 MS Bike Event season. This year things are a little extended. Along with our usual Bike MS City to Shore (09/30/23 and 10/01/23), we have been asked to also support the Bike MS Bike to the Bay. This is a 1 day event in Delaware on October 7, 2023. This does not mean that there will be twice as many emails you will be receiving, but our emails will be a little longer because of consolidation.

As you see, we are getting started very late this year. As always, this is because we are hitting many road blocks from the get go. From the loss of a lot of equipment due to circumstances beyond our control, to the loss of frequencies that we have been thankful for years, to even again the loss of some of our tried and true volunteers of the past. But these things will not stop us, because that is what HAMS do.

If you participated in Field Day, we hope you enjoyed yourselves, and we hope your contacts were many. We also hope everyone is rested up by now.

This is our introductory email for this 2023 Bike Season, and our follow up email will have our attachments and links to the sign up forms for each of the events. We will be looking to fill administrative positions, and enhancing some of your route locations.

With Much Appreciation

73

EvComm - n3mssevcomm@gmail.com

Msg. Phone : (609.795.0909)

Editor's Note : Go to : <https://www.n3mss.org> , N3MSS Amateur Radio Communication Bike MS Volunteer website. You will find links to the on-line communicator registration forms and to download the paper forms for both the Bike MS : City To Shore Ride (September 30 & October 1) and the Bike MS : Bike To The Bay (October 7, 2023).



**Tuesday Noon Day 2M Rag Chew Net
@ 1200 Hours
Net Control Hosts : Steve W2SEF,
Chris AD2CS, & Mike KG4JYA
147.180 MHz Repeater
EchoLink - W2MMD-R**



Here is the schedule for the upcoming weeks

Steve Farney, W2SEF : August 1, 2023
Chris Prioli, AD2CS : August 8, 2023
Mike Thompson, KG4JYA : August 15, 2023
Steve Farney, W2SEF : August 22, 2023
Chris Prioli, AD2CS : August 29, 2023

If you would like to be a control operator for this net, please contact Steve, W2SEF



**Thursday Night 2 Meter Rag Chew Net
147.180 MHz Repeater
EchoLink : W2MMD-R
Every Thursday @ 2000 Hours**



Here is the schedule for the upcoming weeks

Steve Farney, W2SEF : August 3, 2023
Mary Delemarre, W2TDS : August 10, 2023
Gary Mirkin, WA3SVW : August 17, 2023
Chris Prioli, AD2CS : August 24, 2023
Steve Farney, W2SEF : August 31, 2023

If anyone would like to be a net control operator, please contact Jeff, WB2ZBN

**Tuesday & Thursday Nights 10M Rag Chew Net @ 1930 Hours
Net Control Host : Jim Clark, KA2OSV
28.465 MHz or 28.475 MHz**

***"Dinner @ The Clubhouse"*
Wednesday, August 23, 2023 @ 1800 Hours
W2MMD Clubhouse**



At The Repair Bench...

A monthly column describing a recent repair bench event.

By Chris Prioli AD2CS : AD2CS.COM

Victoreen Geiger Counter August 2023

A fellow club member recently brought some of the strangest repairs that I have seen so far... a pair of 1960's vintage Geiger counters, neither of which was operational. The two devices were of different series, both of them Civil Defense standard survey units. One of them was a V-700 series unit while the other was a V-715 type.



Geiger counters, back in those days, were put out to a common specification for the basic outward design and operational standards, but were built by the various firms that got involved in the program each to its own design, electronically. This meant that any V-700 unit would look and function just the same as any other V-700 unit, regardless of the actual manufacturers, but under the skin, each maker had its own proprietary circuit design.



Figure 1 : PCB Before Repair

To make matters even more curious, certain manufacturers built multiple different models or design levels of specific devices. For example, from one manufacturer, there was a CD V-700 Model 6, Model 6A, and Model 6B. The circuits in these different design levels were not identical, with each successive sub-model having some sort of design advantage over its previous counterpart.

Of the units that were brought to me for repair, this article will discuss the Victoreen CD V-700 Model 6A Radiological Survey Meter. This unit is a two-transistor design that uses a Geiger tube as the sensing element, and originally used a corona discharge regulator tube in the high voltage power supply, which operated at about 900 volts. The unit is powered by four standard "D" cells as found in most flashlights at that time. The Geiger tube is mounted in a remote probe connected to the main unit via a thirty-six inch long cable. The probe is a nickel-plated brass tube with a window that can be opened to varying degrees to admit beta radiation. This unit will detect both beta and gamma radiation.

The high voltage power supply, operating from about 850 to 920 volts, consists of an oscillator, a flyback transformer, a rectifier and a filter capacitor, as well as the 900V corona discharge regulator tube mentioned earlier. This power supply is operated from only two of the four "D" cells installed in the unit.

At The Repair Bench - Continued on page 23

There is also a pulse shaping and metering circuit, supplied by the remaining two “D” cells, and using the second transistor for its oscillator. This circuit responds to output pulses from the Geiger tube, and forms amplified pulses that trigger the meter as well as the headphone circuit, where the characteristic “clicking” sound of the Geiger counter can be heard, as well as being seen on the meter.



Figure 2 : PCB After Repair

The most apparent problem with this unit was the fact that both transistors had failed, as had the corona discharge tube. I was able to source a kit that contained all of the necessary parts including a Zener diode stack on a small PCB that replaced the corona discharge tube and now serves as the 900V regulator.

While the ceramic capacitors in this unit had not failed, I replaced them with their counterparts from the kit, as the replacements were rated for considerably higher voltages, some of which were operating at voltages very near their rated limits. The sole electrolytic capacitor exhibited severe leakage, with an ESR off the high end of the scale on my ESR meter. It too was in the repair kit, and was thus easily replaced.

The range switch was severely oxidized and required extensive cleaning and restoration. This was a job for the DeoxIT® G100L (DeoxIT Gold) cleaner and lubricant. A quarter-hour with some cotton swabs and the DeoxIT® did the trick, and the switch was restored to a fully operational condition. This might be a good point for a word or two about the DeoxIT® products that I use. I regularly use the DeoxIT® D5 cleaner and lubricant, which I purchase in an aerosol can. This is my everyday go-to product for switch and pot cleaning and restoration. I also use the DeoxIT® X10S Precision Instrument Lubricant for lubri-

cation of such things as meter movements, tuning capacitor bearings and bushings, control shaft bushings, and so forth. However, when a really bad switch or pot shows up, I reach for the DeoxIT® G100L. This product is *expensive* (about \$50 for a 25ml bottle), and as a result I use it only when I really need to, but when it *is* needed, there is no substitute! Sales talk ended...

A thorough cleaning of the contacts in the battery boxes, and a general cleaning of the exterior of the unit, and it was time for final assembly, testing, and calibration.

Testing consisted of measuring the operating voltages and comparing them to those provided on the unit schematic, which is found in the instruction manual. Next up was a check of the pulse shaping and integrating circuit using an oscilloscope. A three-volt square wave of 150 microseconds duration, followed by a -20V flyback pulse, is what we were looking for and what we found.

Calibration is accomplished simply enough, as a radioactive sample is mounted directly to the outside of the unit lower housing. The instruction manual, readily obtainable online, has calibration instructions that are well-written and easy to follow, so calibration was a breeze.

This unit turned out to be a relatively simple repair, and it was fun working on something that had a place in our national history during the Cold War era. I will write up the second unit, the CD V-715, in another article. That was a little bit different...

See you next month.

Here's What I've Been Using For Learning CW

By Marc Federici, WM2Y

Morsecode.world's CW Academy section. It's free to use and open to everyone.

<https://morsecode.world/international/trainer/trainer.html>

I did this for about 7 weeks and I tried to do about 2 sessions per week. Starting with the characters T E A N and then I added O I S 1 4. I set the character speed to 25 WPM and spaced out the letters to as low as 4 WPM (Farnsworth) for the words.

CWPlayer

I also used another program called **CWplayer** to help quiz me on my ICR (instant character recognition). It's a free cheesy Windows application but it works well. <http://f6dqm.free.fr/soft/cwplayer/en/cwplayer.htm>

Start with a few characters like T E A N at first. When you get to 80% out of 100 at a 5 second timing interval add in the next group of letters and numbers like O I S 1 4. Once you get all of the letters, numbers, and ? / characters, start working on lowering your timing in **CWplayer**. Every time you hit 80% out of 100 lower the timer by a second until you get to a little under 2 seconds. This will help with your ICR.

Once you get to the 2 second mark in **CWplayer** you can then start using another windows program like **RufzXP** (<https://www.rufzxp.net>) for call signs. Start at something like 6 WPM min character speed 25 and a max WPM of 18. **RufzXP** (<https://www.rufzxp.net>) will auto increase the speed as you get better. It will also give you stats on which characters you are weak on. You can then quiz yourself in **CWplayer** to improve your ICR on those weak characters. **See the CWplayer dashboard on the next page.**

PercisionCW FistCheck

As for sending you can use another program called **PercisionCW Fistcheck** provided you can pipe your code oscillator's audio output back into your PC. Send your letters and numbers but don't look at the screen until you are done with that character set. You don't want to memorize dash dash dot or whatever else. You are just using it to confirm that you sent the correct letters and/or numbers. And practicing sending pangrams like THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK and other things like Mississippi sissies are sissier than Tennessee sissies to help with keying. <https://www.qsl.net/dj7hs/download.htm>

K1USN

You can K1USN's weekly SST's if you can send your Call sign, Name, and State for a quick easy QSO.

<http://www.k1usn.com/sst>

Panagram_Practice_Plus_Numbers.pdf (<https://gloucestercountync.weebly.com/learn-morse-code.html>)

Hopefully that should help. Give me a ring if you have any questions.

WM2Y Learning CW - Continued on page 25

WORD TO THE WISE

kcml

An abbreviation of "thousands of circular mils" which is a measurement of wire gauge. A "circular mil" is equal to the area of a circle with a diameter of one mil, or 0.0005067 square millimeters. Kcml is used for larger diameter wires, while AWG (American Wire Gauge) is used for smaller diameter wires.

CW_PLAYER Dashboard

Code	Played	Errors	Success (%)
p	1	1	0
3	2	2	0
-	2	2	0
8	4	3	25
2	4	3	25
5	5	3	40
s	2	1	50
7	2	1	50
f	2	1	50
/	6	3	50
d	2	1	50
?	2	1	50
1	3	1	67
2	4	1	75
h	4	1	75
q	3	0	100
r	3	0	100
b	2	0	100
t	2	0	100
u	3	0	100
v	3	0	100
w	2	0	100
x	1	0	100
y	4	0	100
g	2	0	100



(tr)uSDX QRP Transceiver Build - Part 1

By Chris Prioli, AD2CS

I was introduced to the concept of this five-band QRP transceiver by **Frank Romeo N3PUU**. When he first described the radio to me, I was intrigued by the design idea, and decided that I would have to investigate it. I went online and did some reading, then I watched a couple of videos, and I was hooked.

This is a compact little transceiver (**lead photo**), measuring a mere 90mm x 60mm x 30mm, and weighing in at about 140 grams. For those of us who are not metric-centric, that works out to 3.54" x 2.36" x 1.18" and about 5 ounces in weight, truly a pocket-sized transceiver. Of course, these dimensions are exclusive of any battery holder (that might be purchased and attached), representing only the basic radio.



In its standard configuration, the radio is a true QRP five-band multi-mode unit, boasting an 80-meter, 60-meter, 40-meter, 30-meter, and 20-meter band lineup, with CW, USB, LSB, AM, and FM mode capability. Alternate band lineups are available, though it is recognized that the radio is not as efficient on either of its alternative band sets. One of these alternative lineups includes 20m, 17m, 15m, 12m, and 10m while the other lineup offers 80m, 40m, 20m, 15m, and 10m.

The (tr)uSDX transceiver uses a high-efficiency power amplifier of a Class E design, reaching just about 85% efficiency when properly assembled and adjusted, at which point it will draw approximately 80mA in RX and about 500mA in TX to produce an output power of 5 watts, all from a 13.8VDC supply. The TX output power drops to 500mW when a 5VDC supply is used instead of the usual 13.8VDC supply.

The radio's display unit is a 128 x 64 pixel alphanumeric symbologic OLED panel having a viewing width of 0.96". This panel requires some modification from its factory configuration in order to be used in the radio. We will discuss this some more later on in this article. In addition to its onboard microphone, speaker, and push-to-talk switch, the (tr)uSDX has a Micro-USB port and provides a native CAT programming interface.

It occurred to me that it has been a while since I penned a build article, so I decided that I would write one about the build of this unique QRP transceiver, namely the (tr)uSDX device. This transceiver is a story of fives - five bands, five watts, and five modes of operation. To clarify that somewhat... the radio will produce at least five watts PEP when supplied with 13.8VDC power supply voltage and adequate current, it will operate (in its basic or native design) on 80m, 60m, 40, 30m, and 20m, and it will operate in CW, USB, LSB, AM, and FM modes. See... five by five by five! This transceiver, as mentioned, features a highly efficient ($\approx 85\%$ efficiency) Class E power amplifier, comprised of three BS-170 MOSFET's.

I did in fact purchase one of the two battery holders offered on the **DL2MAN website** (<https://dl2man.de>) - more about that later. The antenna connector is a standard SMA connector, to which I installed an SMA to BNC adapter. The basic radio kit does not include an enclosure, but an enclosure kit is offered at the DL2MAN website as well. Several colors are available; I ordered the "army green" because that was the only color that was in stock and ready to ship for both the enclosure and the battery holder that I wanted.

(tr)uSDX QRP Transceiver Build - Continued on page 27

Output power is, obviously, a function of the input power supply, with $\approx 0.5\text{W}$ anticipated on a 5VDC supply and $\approx 5\text{W}$ on a 13.8VDC supply, with the basic current draw being 500mA on TX with a 13.8VDC supply, and 80mA on RX. These values are published for the MS5351 version of the Programmable Clock Generator chip, with the note that these values are “less” for the Si5351 alternative chip. As it turns out, my kit has the Si5351 chip from Skyworks Solutions, judging by the chip markings. There is no way to know which chip you will get when you order one of these kits, as it most likely depends upon what parts are available when the boards are being made up.

So, let’s talk about that for a minute. The kit includes two boards, identified as the “**Main board**” (**Figures 2 & 3**) and the “**RF board**” (**Figures 4 & 5**). All surface mount components were pre-installed in the kit that I received, though there was a note in the build instructions about one of the SMT IC’s - a 74ACT00 - possibly needing to be installed by the kit builder due to a supply issue at **JLCPCB**, the board manufacturer (<https://jlcpcb.com>). A note is due here about JLCPCB. As a PCB manufacturing house, this firm does excellent work with great turnaround time and pricing. I use them for all of my own PCB manufacturing needs, and I highly recommend them to anyone who is looking to have boards made.

While the build of this kit does include the winding of about a dozen toroidal coils, this should not be a deal breaker for anyone, as the toroids are extremely easy to wind. Most of them are standard coils with turns counts going as high as the twenties, but a couple of them are transformers with dual windings. However, one of these transformers has a single turn as the primary winding – that is nothing more than a wire passing through the center of the toroid. Thirteen toroids in all need to be wound, but only two of them are transformers, one with a 7:1 turns count and the second with a 21:3 turns count. For the remaining eleven toroids, turns counts range from seven turns up to twenty-two turns, all easily wound in just a few minutes. As I said, the winding of the toroids should not be a deal breaker at all.

I started the build with the **Main board** (**Figures 2 & 3**). This meant installing, in no particular order other than shortest to tallest (as usual), the three phone jacks, the three tactile switches, the inter-board pin header strip, the ISP header, and the microphone. The inter-board pin header strip and the ISP header mount to the underside (component side) of the main board, while all of the other components mentioned are installed to the upper (foil) side of the PCB. I did not mention the OLED display or the speaker, for good reason.



Figure 2 : Main board foil side

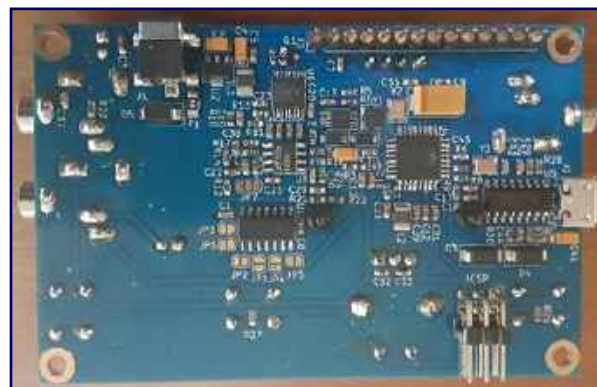


Figure 3 : Main board component side

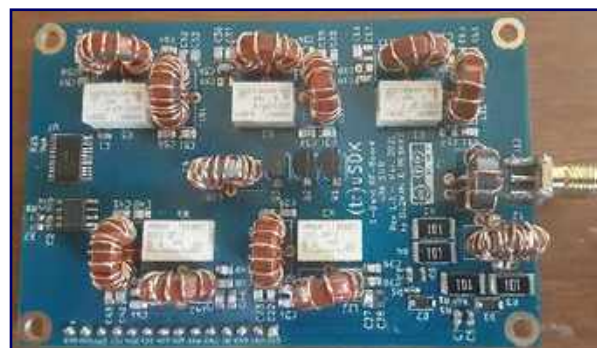


Figure 4 : RF board component side

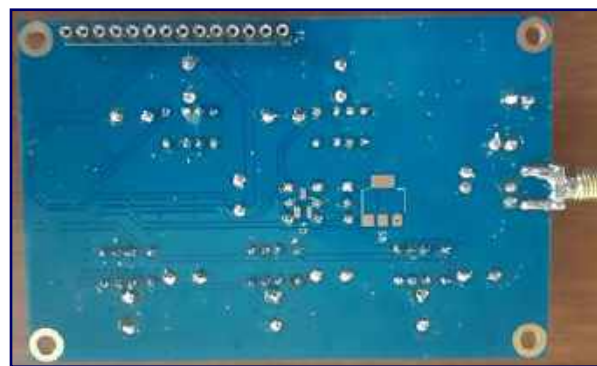


Figure 5 : RF board foil side

The OLED requires some modification before it can be installed. Specifically, two capacitors need to be removed (C3 and C4 on the OLED PCB), and a jumper wire must be installed from the “top” (collector) of transistor U2 to the “bottom” of capacitor C6. Top and bottom, in this case, are referenced with the OLED board held with the component side up and the Kapton cable towards you, putting the transistor U2 away from you and nearer the connector pin header holes. A short length of AWG 24 hook-up wire will suffice for the jumper if the wire is not included in the kit; my kit had the wire included.

After the modification of the OLED board has been performed, the four-pin header is soldered to the OLED PCB with the shorter end of the header pins going through the OLED PCB. The OLED PCB is then positioned on the main board and the provided spacer tubes are set in place under the OLED board. The provided hardware is then used to secure the OLED PCB to the main board, positioning the OLED board so that it is straight with reference to the upper edge of the main PCB. The OLED header pins can then be soldered to the main PCB.

I should take a minute here to talk about a problem that I had with the OLED board in my kit. On first power-up, the OLED in my transceiver failed to illuminate at all. Troubleshooting and repair of this issue required me to remove the OLED from the main board. The OLED board has a set of four solder jumpers in the upper right-hand corner of its underside, labeled J1, J2, J3, and J4. Some research led me to the fact that the jumpers were not configured as they should have been. Two of these jumpers, J2 and J3, should be closed in order for the OLED to power up properly. I tracked my problem down to jumper J2 being open rather than being shorted. Jumper J3 was shorted as it should have been, and jumpers J1 and J4 were open as they should have been. Applying a touch of solder to jumper J2 solved the problem for me. Make sure that you double-check these jumpers before installing the OLED to avoid having to remove it to repair the board. The funny thing is that I spent a few minutes re-doing the jumper wire installed between U2 and C6, as I wrongly assumed that the problem was due to something that I had done.

Installation of the speaker (**Figure 2**) requires the use of the adapter ring that is included in the enclosure kit (more about the enclosure kit later). The ring is placed on the speaker with the two pins on the ring periphery facing upwards, or in the same plane as the face of the speaker cone. The two (provided in my kit) speaker wires get soldered to the speaker pads, and then oriented in the notches provided in the underside of the adapter ring, and then are routed to the two speaker connections on the main board. Be sure to observe speaker polarity here.

Once the OLED and the speaker are installed, the **Main board** is complete and ready for use (**Figures 2 & 3**). Next up is to build up the **RF board** (**Figures 4 & 5**). This process involves installing five relays, installing the SMA antenna connector, winding and installing the thirteen toroids already mentioned, installing the inter-board pin socket header, and finally installing the three BS-170 PA transistors.

The relays included in your kit may be SMT devices, though mine were not. If your kit includes SMT relays, simply bend each relay terminal lead downward so that it projects downward from the body of the relay. Each of these terminal leads will then fit into the holes provided in the PCB at the relay locations and can be soldered from the foil side of the PCB. Of course, if your kit includes through-hole relays as mine did, it is simply a matter of inserting them into the PCB and soldering them in place, flush to the board.

Positioning the SMA jack on the RF board is almost self-explanatory. The PCB has three pads on one surface and two pads on the opposite surface. The SMA jack is equipped with four posts that are common to the connector body, and a fifth post which is common to the center pin of the jack. Place the jack on the edge of the PCB so that the two body posts and the center post align with the three pads on the PCB surface. This will automatically align the opposite two body posts with the two pads on the underside of the PCB. Be sure to align the jack on center to the pads so that it will fit properly into the enclosure later.

(tr)uSDX QRP Transceiver Build - Continued on page 29

Now let's get down to the part that most folks hate and therefore avoid buying kits like this one - winding the toroids. As mentioned earlier, there are a total of thirteen toroids to be wound, two of which are transformers. There are two different toroid cores supplied in the kit, ten of one type (T37-2) and three of another (FT37-43). The T37-2 cores get wound as 7 turns (one), 8 turns (one), 10 turns (two), 12 turns (two), 14 turns (one), 15 turns (one), 17 turns (one), and 19 turns (one). The FT37-43 coil is wound as 22 turns. The two transformers, also wound on FT37-43 cores, are wound as 7 turns / 1 turn and 21 turns / 3 turns. Note that the original instructions called for both of these transformers to be wound as 7:1 turns count transformers. Though the turns ratio remains the same at 7:1, transformer T2 is now wound at the 21:3 turns count. The reason for the transformer change is overall efficiency. In a move to validate the efficiency of the radio, thermal imaging of the working device was done, and it showed some heat losses in the vicinity of SWR transformer T2. The other SWR transformer, T1 was fine, but something needed to be done about T2. The designers toyed with the ideas of changing the turns ratio and modifying the firmware to match, but that idea was nixed because of software and memory limitations. Experimentation, however, showed that increasing the inductance of T2 while maintaining the same turns ratio would achieve the desired results without requiring any firmware changes. The change made was to take T2 from a 7:1 turns count to the current 21:3 turns count, which maintains the turns ratio while providing the requisite increase in inductance.

When winding the toroids, remember to strip the enamel from the wire right up to the body of the core, so that when the wire gets pulled tightly into the PCB, stripped wire will still be available for proper soldering. The enamel can be stripped either by scraping with the edge of a knife blade or by cleaning it off with some fine (400-grit) emery cloth or sandpaper. The magnet wire provided in my kit did not take well to being heat-stripped; I had to mechanically remove the enamel insulation from the wire.

The two transformers are best wound as single coils which are then installed to the PCB, that coil with the greater (either seven or twenty-one) turns count being the secondary winding. Once the toroid is soldered in place, the primary winding can be installed into the stationary toroid quite easily. In fact, in the case of T1, it is just a matter of stripping the ends of a length of wire, and then passing the wire through the center of the toroid. The single wire passing through the center of the core constitutes a single winding, even nothing is "wound". The T2 primary winding is installed in the same manner, with the exception that a longer length of wire is needed, and that it is passed three times through the center of the core. Again, take care with the stripping so that bare wire is in the right place for soldering.

The inter-board pin socket header is to be installed to the foil side of the PCB and gets soldered on the component side of the board. Make sure that the header is flush to the board when installing it. It will later align with and mate to the pin header on the main board when the radio is assembled.

The choice of transistors for the power amplifier in this unit is very astute, as these devices are readily available at low cost and are easily replaced if they should fail. The BS-170 is an internally diode-protected N-channel enhancement mode small signal MOSFET in a plastic TO-92P case. Because they are MOSFET's, special care should be taken against static electricity damage to the transistors during handling and installation. In addition, soldering heat time should be limited to prevent thermal damage to the transistors. Get in there, get the job done, and get out as quickly as is possible. When installing the three transistors, I recommend soldering one lead of each device at a time, moving to the next transistor each time, rather than simply soldering all three leads of a given device sequentially. This gives a little bit of cooling time between applications of heat to each device. Of course, a hemostat can be clipped on to each lead prior to soldering that lead so as to provide some soldering heat sink protection. Just be careful not to damage the transistor leads when doing so.

It is the use of the BS-170 transistors, which are quite robust, that makes this design so efficient, together with the manner in which these transistors are implemented. The truth of the matter is that this radio will output considerably more than the nominal five watts if the power supply voltage is increased, though there is a practical limit beyond which we begin to get into the region of diminished returns, at which point the PA's will begin to overheat and then to fail. Some user experimentation has shown that input voltages as high as 16VDC are acceptable, with resultant output power approaching ten watts. This is not within the claimed performance range of the radio, but none the less it has been documented.

Once the PA transistors are installed, the RF board is complete and ready for installation (**Figures 4 & 5**). The two boards will marry easily by aligning the pin header on the main board with the pin socket header on the RF board, and then simply pressing them together. At that point, the radio is ready for testing and use.

Each relay on the RF board has a pair of toroidal chokes associated with it, one of which has a "1" number and the other of which has a "2" number, e.g., L11 and L12 or L31 and L32. The "1" choke is the series resonance choke and controls the bandpass, while the "2" choke is the pi choke and controls, among other things, the second harmonic notch in the band response. For each of these coils, spreading the turns apart decreases the inductance while moving the coils closer together increases the coil's inductance. The chokes, and thus their associated relays, are so numbered that K1 (L11 & L12) is for 20 meters, K2 (L21 & L22) is for 30 meters, K3 (L31 and L32) is for 40 meters, K4 (L41 & L42) is for 60 meters, and K5 (L51 & L52) is for 80 meters.

The power and efficiency of each band can be read directly from the **OLED display** (**Figure 6**) while the radio is operating in CW TX mode, and each band's frequency response can easily be displayed on a NanoVNA set to sweep the proper frequency range. Be sure to include at least the band's center frequency and its second harmonic when setting the NanoVNA stimulus range.



Figure 6 : Power and efficiency displayed

(tr)uSDX QRP Transceiver Build - Part 2 will be in the September 2023 CrossTalk.

The full version and a downloadable PDF can be found on the "AD2CS Kit Build" webpage at : <https://gloucestercountync.weebly.com/trusdx.html>

WORD TO THE WISE

Zero-Beat

As a verb, changing one frequency to match another. In the old days, this was done by ear for carrier frequencies, and any frequency difference could be heard as a third tone, the difference between the two. For frequencies that are very close, the difference sounds like a thump or a beat. Eliminating the beat means the frequencies are the same. As an adjective, it describes a frequency that is the same as another. Nowadays, zero-beating a CW signal can be done by some radios with the press of a button - for example, the Auto-SPOT function in the Elecraft K3 (<https://bit.ly/450mSEw>).



Amateur Radio Emergency Services - August 2023

Resources - News - Updates

By Bob Keogh, KD2NEC - kd2nec@qsl.net
Gloucester County Emergency Coordinator



Federal Emergency Management Agency (FEMA)

Amateur Radio Included in the FEMA Guide for National Emergency Management

FEMA has released a final version (March 2023) of the National Incident Management System (NIMS) Information and Communications Technology (ICT) Functional Guidance. The guidance, which provides a framework for communications resources within incident management, officially includes support from amateur radio operations. The expanded Communications Unit (COMU) structure now includes the Auxiliary Communications (AUXC) role, which covers personnel from services that provide communications support to emergency management, public safety, and other government agencies; this includes amateur radio.

NIMS guides government, non-government organizations, and the private sector (i.e. American Red Cross) to work together to prepare for, response to, and recover from disasters and other emergencies. "This is a major step toward the recognition of the need and usefulness of amateur radio and other communications services in our national preparedness said ARRL director of Emergency Management Josh Johnston, KE5MHV. It also gives official guidance to pave the way for future training and education of volunteers in ARRL's ARES Program, Johnston added.

The NIMS ICT guide is available at : <https://bit.ly/40zSfDN>

(Copied from the June 2023 QST Magazine, page 66)

AMERICAN RED CROSS NJ REGION - AMATEUR RADIO EMERGENCY COMMUNICATIONS

PROJECT PLAN

This plan, although very thorough, will be revised as we receive more information regarding the current requirements and when we move into the second phase of planning a more permanent infrastructure, using some type of Mesh Network.



Because of the complexity of Red Cross Disaster Recovery Operations (DROs), there is a need to include how these incidents can scale up from a single location in one county, to many locations in NJ, i.e. Super Storm Sandy. Besides the structure of this plan, there is mention of training requirements, drills, and exercises.

The current GCARC team of 14 Radio Amateurs, have been attending a series of meetings to discuss the plan and how it will be implemented when we are activated by the Red Cross due to the disruption of normal communications systems.

Our partnership with the ARC included participation with the Red Cross in Field Day (bonus points) and the ARRL Annual Simulated Emergency Test on October 7, 2023.

If you have any questions, or wish to see the Project Plan, please don't hesitate to contact me by email.

2023 Clubhouse Projects

Shed : Build Ramp

Replace Back Steps

Clubhouse :

- Build Ramp
- Replace Interior Front Door
- Inventory “Stuff” in HF Room
- Dispose of “Stuff” in HF Room

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

Install 2 New VHF Towers

ARES Resources

Download the ARES Manual [PDF] : <https://bit.ly/3iUhJLQ>

ARES Field Resources Manual [PDF] : <https://bit.ly/3QT4PtY>

ARES Standardized Training Plan Task Book [Fillable PDF] : <https://bit.ly/3wg5kVt>

ARES Standardized Training Plan Task Book [Word] : <https://bit.ly/3ZTNDbR>

ARES Plan : <https://bit.ly/3XLokXH>

ARES Group Registration : <http://bit.ly/3XodGpX>

Emergency Communications Training : <http://bit.ly/3J2gMMf>

2022 National Preparedness Report : <https://bit.ly/3EnvcTW>

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)

*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.

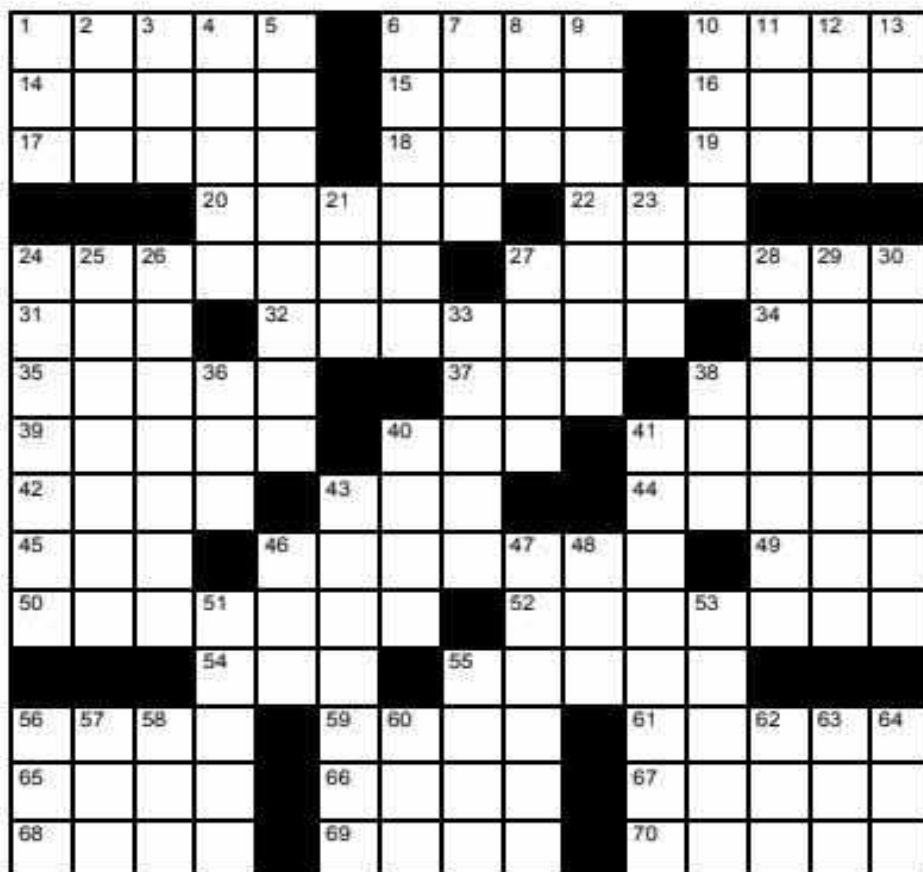
GCARC has been an ARRL Affiliated Club since February 1960 and an SSC since April 2010.



Radiogrammer - Part 1

Across

1. Rock band Los ____
 6. Polite XYL title
 10. Cooper maker
 14. Amplifier connector label, say
 15. Light beige
 16. Coax elbows
 17. Loop type
 18. Apple competitor
 19. Phony DX
 20. Sign in a radio station
 22. Packet ckt.
 24. NTS rock band?
 27. Clues
 31. Bamboozle
 32. SV letter
 34. B4, of yore
 35. CW shorthand item
 37. Single- or multi-, in propagation
 38. Gator's cousin
 39. Knight's need
 40. NTS unit
 41. Type of feed
 42. Globe ____ transmitter
 43. ARRL volunteer official
 44. Prefix with -single
 45. Good report, using 35-acrosses
 46. W7 city
 49. 76, 77 and 78 maker
 50. Expressionless
 52. Illicit rendezvous station?
 54. Area net for 55-across
 55. Region net for 12-down
 56. Staff
 59. Brain wave
 61. Soldering tools
 65. OOTC members
 66. Jamaica



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

67. Bigger than picos
 68. Bosses on 40-acrosses
 69. Small dwellings
 70. Isle of Man prefix

Down

1. Needer of too many fills
 2. New year's nr
 3. Traffic handling award
 4. Words before band, on an FCC citation?
 5. W6YX
 6. Noble I-land family name
 7. Tennis whiz
 8. Characters before seventy three
 9. Entry class
 10. Early radio parts maker
 11. 9RN place

12. A 30-down, in W2-land
 13. An end to perfection?
 21. Ready follower?
 23. Transistor type
 24. Long haul 52-across
 25. Common preamble item
 26. Where a radiogram enters the ether
 27. Fox or turkey follower
 28. Guy wire hardware items
 29. ____ back
 30. ARRL unit
 33. Word count
 36. Batt. term. label
 38. 7 MHz timer
 40. Pre-LED amber light
 41. Spreading, as with cream cheese

43. EA talk
 46. Health resort
 47. Forever
 48. Humor newspaper nameplate middle
 51. Places to find antenna restrictions
 53. Filter maker
 55. RTTY conveyance
 56. Area net for 11-down
 57. RX ckt.
 58. Old video game inits.
 60. Was CR8, once
 62. Band breaker
 63. Dahdit, in F-land
 64. Dir. from W2 to LU

Answers on Page 58

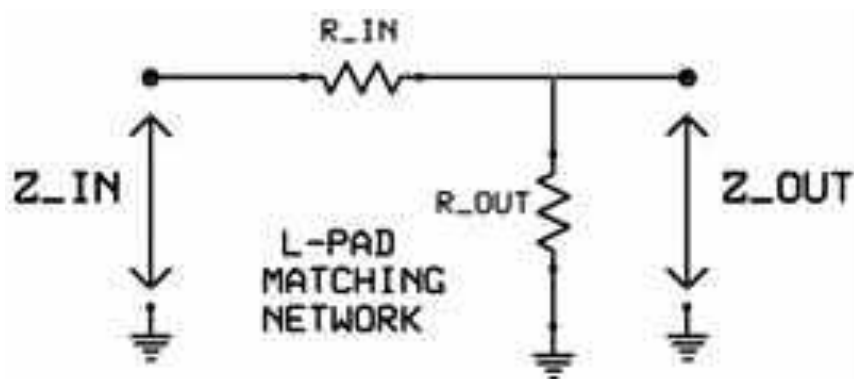
Impedance Matching

By Chris Prioli, AD2CS

When transferring energy from one circuit (or device) to another circuit (or device), maximum energy transfer will occur when the impedance of the circuits or devices is matched. There are several ways to accomplish this match, most notably the resistive match and the transformer match. In amateur radio, such impedance matching is important so as to limit voltage standing wave ratio or VSWR, and thereby reduce or limit power reflection from the target circuit back to the source circuit.

Impedance matching can impose losses in the circuit as a by-product of the matching process. These are often unavoidable, but they can be kept to a minimum with careful planning and design. We will begin our discussion with resistive matching networks.

Suppose we are faced with matching a 75Ω output to a 50Ω input, and we decide to do this using a resistive L-pad matching network. The L-pad, in this case, consists of a series input resistor and a shunt output resistor.



What values of resistors would be needed? The resistor values can be calculated arithmetically using the following formulas :

$$Z_{IN} = R_{OUT} (R_{IN} + Z_{OUT}) / R_{OUT} + (R_{IN} + Z_{OUT}); \text{ and}$$
$$Z_{OUT} = R_{IN} (R_{OUT} = Z_{OUT}) / R_{IN} + (R_{OUT} + Z_{IN})$$

These work out to the following formulas :

$$R_{IN} = Z_{IN} \times \alpha \text{ and } R_{OUT} = Z_{OUT} / \alpha \quad \dots \text{where } \alpha = \sqrt{(1 - (Z_{OUT} / Z_{IN}))}$$

So... let's put some actual values into place and see what happens. We were given earlier that the source circuit output impedance, which becomes the input impedance for our matching network, is 75Ω. We were also told that the input impedance of our target circuit, which becomes the output impedance of our matching network, is 50Ω.

This will give us the following :

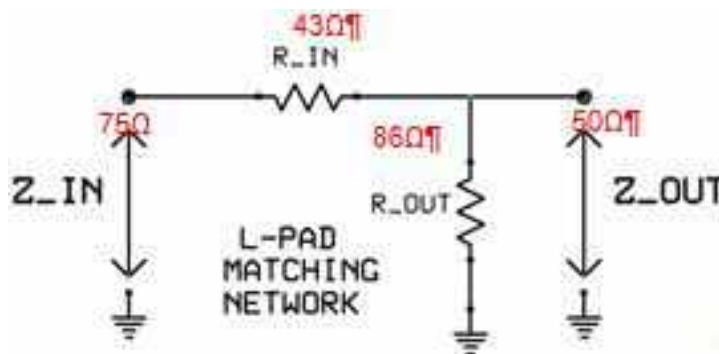
$$\begin{aligned} R_{IN} &= Z_{IN} \times \alpha \\ \text{or} \\ R_{IN} &= 75 \times \alpha \\ \text{or} \\ R_{IN} &= 75 \times \sqrt{(1 - (50/75))} \\ \text{or} \\ R_{IN} &= 75 \times \sqrt{(1 - (0.6667))} \end{aligned}$$
$$\begin{aligned} \text{or} \\ R_{IN} &= 75 \times \sqrt{(0.3333)} \\ \text{or} \\ R_{IN} &= 75 \times 0.57732 \\ \text{or} \\ R_{IN} &= 43.299\Omega \end{aligned}$$

Impedance Matching - Continued on page 35

This tells us that the series input resistor should be a 43Ω resistor. Now let's do the same thing to calculate the value of the shunt resistor. This is done using the following formula :

$$\begin{aligned}
 R_{OUT} &= Z_{OUT} / a && \text{or} \\
 &\text{or} && R_{IN} = 50 / \sqrt{(0.3333)} \\
 R_{OUT} &= 50 / a && \text{or} \\
 &\text{or} && R_{IN} = 50 / 0.57732 \\
 R_{OUT} &= 50 / \sqrt{(1-(50/75))} && \text{or} \\
 &\text{or} && R_{IN} = 86.607\Omega \\
 R_{IN} &= 50 / \sqrt{(1-(0.6667))}
 \end{aligned}$$

Now we know that the shunt resistor must have a value of 86Ω for this matching network to do the job as desired. Thus, if we go back to our original diagram, we get the following :



This process will work for any pair of impedance values. Simply plug in the necessary input and output impedance values and work the arithmetic to derive the series and shunt resistor values. Remember that when working at RF, non-inductive resistors are to be used so as not to introduce excessive parasitic inductance into the match. Also remember that the resistive network must be rated for the anticipated power levels that will be passed through the network.

Another common method of impedance matching is through the use of a transformer as the matching device. This is accomplished by manipulating the (design) turns ratio to achieve the match that is needed. The governing equation is expressed as :

$$Z_S / Z_P = (N_S / N_P)^2$$

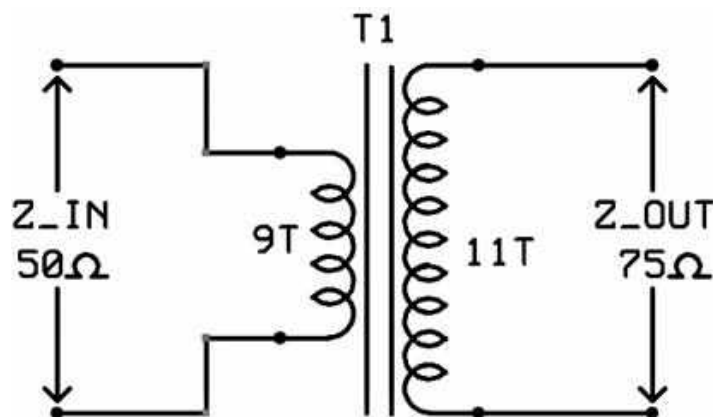
where Z_S is the secondary impedance, Z_P is the primary impedance, N_S is the turns count of the secondary winding, and N_P is the turns count of the primary winding.

Suppose we have that old combination again, 75Ω and 50Ω , except that now we are needing to match a 75Ω input impedance of one stage to the 50Ω output impedance of the previous stage. In every case, the impedance ratio is equal to the turns ratio squared. Remember that a ratio can be expressed in the format $x:y$ or in the format x/y . In this case, if we use the x/y format and input the numbers, we will get the following :

$$Z_S / Z_P = (N_S / N_P)^2 \text{ or } 75 / 50 = (N_S / N_P)^2 \text{ or } 1.5 = (N_S / N_P)^2$$

$$\text{or, arithmetically rearranged, } \sqrt{1.5} = N_S / N_P \text{ or } \sqrt{1.5} = 1.22$$

Thus, the turns ratio is 1:1.22 while the impedance ratio is 1:1.5. Starting somewhere, we need to decide upon a number of turns for one of the windings in order to determine the number of turns for the opposite winding. These turns values must, as shown by the equations above, have a 1:1.22 ratio between them. Suppose we started with 9 turns for the primary (50Ω) side of the transformer. What would that give us for the secondary (75Ω) winding? That can be calculated by multiplying 9 by 1.22, which would then give us 11 turns. Thus, an impedance matching transformer for the 50Ω to 75Ω pairing might be one having 9 turns on its primary winding and 11 turns on its secondary winding. This would also work with, say, 4.5 turns primary and 5.5 turns secondary, or 18 turns primary and 22 turns secondary. So long as the ratio is maintained, the impedance match will be valid. Diagrammatically, that circuit would look something like the diagram at right. Note that the actual turns counts may be widely divergent from those shown, but that the turns ratio must remain the same for the impedance values given.



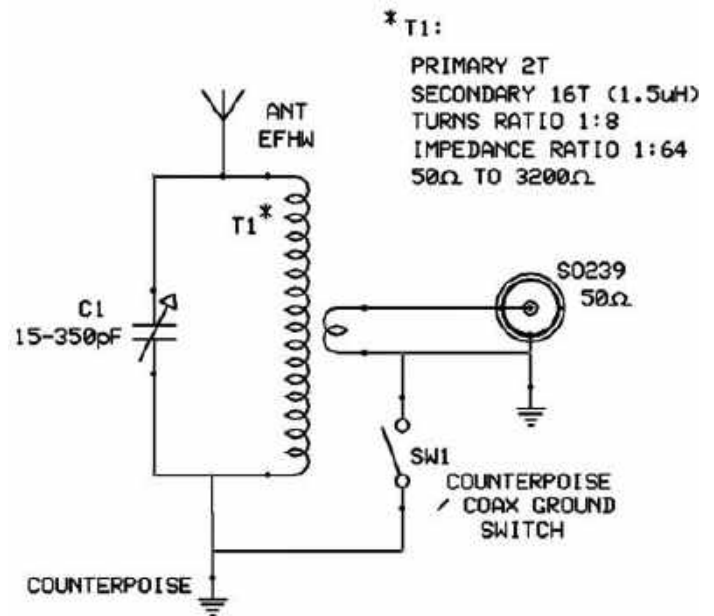
Transformer impedance matching is quite common and fairly simple to implement. The major drawback is that the transformer, depending upon its physical form factor and location, may cause inductive responses in other nearby components. Some methods of reducing that effect are to shield the transformer, or to position it away from and/or at right angles to potential inductive target components, or to utilize a toroidal core for the transformer. Again, the transformer must be capable of handling the power levels that will be passed through it. This will largely be a function of the diameter of the wire used in winding the coils.

A useful aspect of the matching transformer is that can also serve as a feedline type matching device. For example, an unbalanced coaxial input feedline to a matching transformer may be taken out as a balanced open wire line output feedline, and vice-versa. In amateur radio, these devices are called baluns, for their ability to match an unbalanced grounded 50Ω coaxial feedline to a balanced floating or ungrounded 450Ω feedline.

Shown on **Page 37**, is a homebrew implementation of a **transformer matching circuit (Figure 1)**, the work of British ham **M0UKD**. Note that the whole unit is self-contained in a weather-tight enclosure. This design makes use of a fairly large air gap “bread slicer” type of variable capacitor as well as what appears to be a homemade transformer wound on an air core. The accompanying schematic diagram gives us some insight into the transformer. The note indicates that while the turns ratio is 1:8, the impedance ratio is what we would expect... 1:64. **M0UKD** goes on to tell us that the secondary winding has an inductance of 1.5μH while the variable capacitor ranges between 15pF and 350pF. This impedance match device is intended to match the 50Ω output impedance of a modern radio to the 3200Ω input impedance of his half-wave end-fed dipole antenna. Looking carefully at the enclosure, one can just make out the counterpoise/coax ground toggle switch at the top to the left of the capacitor and next to the PL-259 connector. The ground terminal is located at the bottom of the enclosure. **M0UKD** has gone so far as to place a label containing the unit schematic on the inside of the enclosure cover for future reference. This is a well-implemented design in every visible way.



Figure 1 : M0UKD's Homebrew Transformer Matching Circuit



What would be the effective operational frequency range of this unit? That range can easily be calculated by using the data shown in the schematic to run a couple of quick equations. The basic equation that would apply here is $f = 1 / (2\pi \sqrt{LC})$ where f is the frequency of interest in Hertz, L is the circuit inductance in Henrys, and C is the circuit capacitance in Farads.

The calculation for the high end of the range (lowest capacitance value) is as follows :

$$f = 1 / (2\pi \sqrt{LC})$$

$$f = 1 / 6.2832 \times \sqrt{(15 \times 10^{-12}) \times (1.5 \times 10^{-6})}$$

$$f = 1 / 6.2832 \times \sqrt{(0.000000000015) \times (0.0000015)}$$

$$f = 1 / 6.2832 \times \sqrt{(0.000000000000000225)}$$

$$f = 1 / 6.2832 \times (4.7434 \times 10^{-9})$$

$$f = 1 / 0.00000002980373088$$

$$f = 33,352,846.2535 \text{ Hz}$$

$$f = 33.352846 \text{ MHz}$$

The calculation for the lower end of the range, or that using the highest capacitance value, is as follows :

$$f = 1 / (2\pi \sqrt{LC})$$

$$f = 1 / 6.2832 \times \sqrt{(350 \times 10^{-12}) \times (1.5 \times 10^{-6})}$$

$$f = 1 / 6.2832 \times \sqrt{(15 \times 10^{-12}) \times (1.5 \times 10^{-6})}$$

$$f = 1 / 6.2832 \times \sqrt{(0.000000000035) \times (0.0000015)}$$

$$f = 1 / 6.2832 \times \sqrt{(0.000000000000000525)}$$

$$f = 1 / 6.2832 \times (2.29128 \times 10^{-8})$$

$$f = 1 / 0.0000001439657$$

$$f = 6,946,098.9666 \text{ Hz}$$

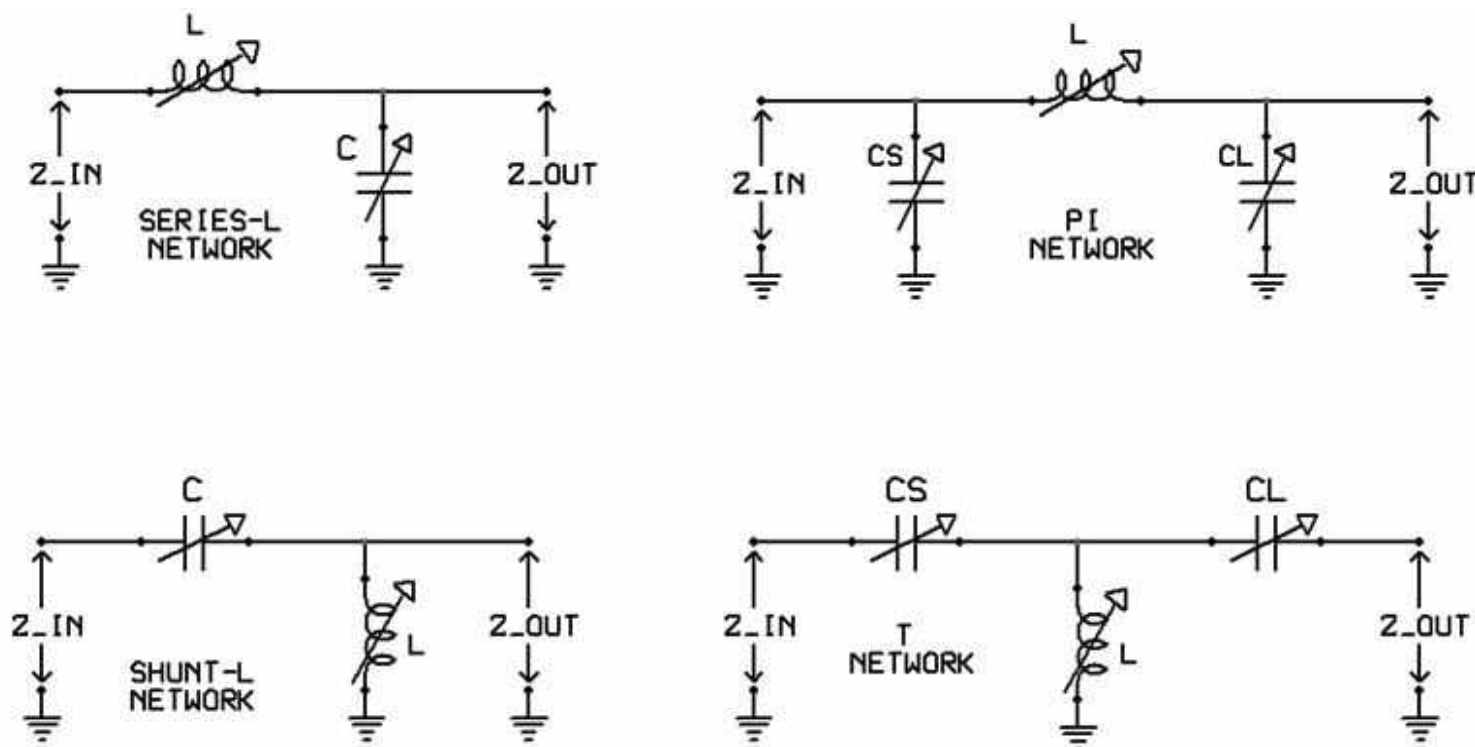
$$f = 6.946099 \text{ MHz}$$

Thus, this homebrewed transformer matching device will match the 50Ω impedance of the radio to the 3200Ω impedance of the end-fed half-wave dipole antenna for the frequency range from about 7 MHz to about 33 MHz - a good portion of the ham operating spectrum.

Impedance matching can also be accomplished via some other circuits. A good example of this is the so-called LC match. This matching circuit consists of various combinations of inductors and capacitors, and are typically one of four basic topographies :

- **The Series-L network**
- **The Pi network**
- **The Shunt-L network**
- **The T network**

Each of these basic LC matching topographies is illustrated below :



In these diagrams, all of the capacitive and inductive components are shown as being variable devices. In an actual working circuit, this may or may not be the case. Manufacturers may choose to install fixed components at some, or even most, of the component locations as a means of reducing construction costs. The use of variable capacitors and/or inductors vastly improves the capability to adjust the capacitance and inductance of the circuit, thereby gaining better control over the net circuit reactance. Improved reactance control yields more precise tuning and therefore better frequency control in both the transmit and receive modes of operation, though the transmit mode is where it is most important.

The naming conventions for these matching networks derive from the component arrangement or the layouts of the circuits. In the Series-L and Shunt-L, the “series” and “shunt” in the name refers to the position of the inductor, either in series with the matching network input, or across the output (or load) to ground. The “pi” arrangement refers to the positioning of the inductor in series with the input, between two shunt capacitors, forming a shape similar to the Greek letter *pi*. In a similar manner, the “T” topology is so named because of its unmistakable resemblance to the letter “T”. with the shunt inductor placed between the two series capacitors.

If it seems that these matching networks bear striking resemblances to certain filter circuits of which you may already be aware, it is because these circuits are in fact filter circuits at heart. As a general rule, a filter that uses a shunt inductance will often be a high-pass type of filter, while those that use shunt capacitances are most likely low-pass filters. Think of the shunt element as being a path to ground for certain frequencies contained in the signal imposed on the circuit. We know that capacitive reactance goes down as frequency goes up, meaning that the shunt capacitor will readily direct (or shunt) the higher frequencies to ground while the series inductor passes the lower frequencies through the circuit and on to the output. Similarly, with a shunt inductor, and the fact that inductive reactance goes down as the frequency goes down, the lower frequencies in the input signal are directed or shunted to ground, while the higher frequencies are allowed, by the series capacitor, to pass through the circuit to its output.

Another method used to achieve impedance matching is to use a stub of transmission line as the matching device. Described as $\lambda/4$ matching (λ , the Greek letter **Lambda**, is the symbol used to represent wavelength), this method uses a segment of transmission line that is 1/4-wavelength long at the frequency of interest. The key is that the characteristic impedance (Z_0) of the transmission line segment must be equivalent to $\sqrt{Z_{IN} \times Z_L}$. This is typically expressed as the equation $Z_0 = \sqrt{Z_{IN} \times Z_L}$. Let's take a look at how this would work if the antenna feed point impedance is 100 Ω and the coaxial cable impedance is 50 Ω :

$$\begin{aligned}Z_0 &= \sqrt{Z_{IN} \times Z_L} \\Z_0 &= \sqrt{50 \times 100} \\Z_0 &= \sqrt{5000} \\Z_0 &= 70.71\end{aligned}$$

The closest standard cable characteristic impedance available for use in this case would be 75 Ω cable, which is what would then be used. A segment of 75 Ω cable should be cut to the length that would equate to one-quarter of a wavelength at the desired transmission frequency and inserted between the existing feedline and the antenna terminals.

The bottom line is that although there are several means by which we can achieve an impedance match, the method chosen depends upon the circuit at hand and the needs of the circuit designer. Choose the method that best suits your needs and circumstances.



Military/Amateur
Crossband Test QSL Card
sent to Jim Wright, N2GXJ

F⁴, Fun Facts From Field Day

By Jim Wright, N2GXJ

Field Day was held on the June 24th weekend this year, as always, the 4th weekend in June.

The ARRL shows they have received 3 entries from our Club to add to the Gloucester Co ARC totals this year, one from **Club Life Member Howard Marder, WA2IBZ** who operated from his home station under commercial power (1D), one from Club member **Courtney Smith, KD2SPJ** who operated from his home station on emergency power (class 1E), and a combined entry from **W2MMD** for all our stations that set up off-the-grid at our field day site, including something new for us this year, which was a **Get On The Air station (GOTA)** operated under the callsign **K2ZA**, set up and supervised by Club member **John Zaruba Jr, K2ZA**.

Thank you **Tony Starr, K3TS**, for being our field day chairman, and to everyone who supported the event in one way or another this year! It was quite a group effort! At the W2MMD site, it looks like we had over 60 participants on site this year. That includes everyone from operators, set up and tear down helpers, those involved with food through donations or as part of the food staff, and, of course, everyone, not just Club members, but also family and friends, served agency officials, and other ham and non-ham visitors that came out to the W2MMD site this year. That's huge! Thank you everyone!

As for operating, W2MMD ran **7A** with multiple radios covering multiple bands and modes from 80 meters up through 10 meters, plus dedicated stations for chasing 2 meter and Satellite contacts. Special thanks to our station chairs **Sheldon Parker, K2MEN**, **Tony Starr, K3TS**, **Darrell Neron, AB2E**, **James Clark, KA2OSV**, **Herb Dyer, KT2Y**, **Karl Frank, W2KBF**, **John Zaruba Jr, K2ZA**, and **Jon Pearce, WB2MNF**, who, along with me, got radios on the air from our field day site this year. Thank you also to everyone who came out and helped in setting them up, in helped in operating them, and who helped in tearing them down at the end of the event. Well done everyone!

In addition to making radio contacts, there were bonus activities we participated in this year. One of the bonus activities was having a staffed public information table. Here, representatives from our Club would greet and answer questions from guests and visitors that had purposefully come out to see what our field day was all about, in addition to those that were curious on their way to the wine fest next door. Special thanks to **Lee Marino, N2LAM** and **Lee Hafele, WA2LH**, and to everyone else who helped make the info table happen!

On Saturday afternoon, the bonus activities continued, with **Jim Wright, N2GXJ** and **Marc Federici, WM2Y** having an educational program on Radio Direction Finding that ended in a field hunt which the kids (and kids at heart) appreciated participating in. That same afternoon, **Karl Frank, W2KBF** was able to use a portable Winlink station that he had set up to send and receive messages via RF from our field day site. Thank you Karl! Meanwhile, **Herb Dyer, KT2Y**, who also served as our site's safety officer, was making solar power contacts from the station he had set up after driving all the way up from Florida to join us on site. Great to see you, thanks for coming up Herb!

Bonus activities continued into Sunday, with **Jon Pearce, WB2MNF** scoring some early morning Satellite contacts. Later that morning **John Zaruba Jr, K2ZA** coached new Club members, and recent graduates from **Chris Prioli, AD2CS**'s license classes, **Melissa Seidner, KE2BEK** and **Ethan Yost, KE2AVA**, in making contacts from the GOTA station. By the way, Melissa and Ethan make a great "BBQ Crew"! Thank you for helping with the food prep too!

Field Day Fun Facts - Continued on page 41

Some fun facts about our W2MMD field day contacts this year. When the logs were combined, did you know that?

- We had made over 2,500 radio contacts in just 1 day from our field day site!
- We had logged contacts with all 50 states, including Alaska and Hawaii!
- We had logged contacts with 29 different countries, including Australia and New Zealand!

Maybe there were not as many contacts on the higher HF bands as we'd expected, but 20 Meters and 40 meters came through strong. In the end, we won't know officially how our efforts compared with those of other Clubs until the results are published by the ARRL in the December issue of QST magazine. Though we'll have to wait until then for the final scores, we don't have to wait until then to know one thing. And that is that we all learned some new things, while having fun!

Hope to see you all again next year. Until then, wishing everyone 73's and good DX! Jim



Volunteer Monitor Program Report - May 2023

The Volunteer Monitor (VM) Program is a joint initiative between ARRL and the FCC to enhance compliance in the Amateur Radio Service. This is the May 2023 activity report of the VM Program.

- An advisory notice was issued to an Amateur Extra-class operator in North Carolina for excessively wide transmissions (over 22 kHz). The operator was reminded that FCC Rule 97.307(a) requires that no amateur station use more bandwidth than necessary for the information rate and emission type being transmitted. This was the second advisory notice issued to the station, and the licensee was informed that the matter would be referred to the FCC.
- Commendations were issued to a licensee in Texas for work in locating and resolving a spurious emission from a cell tower, and to an operator in Georgia for exemplary work in assisting three operators with setting up their station adjustments to avoid interference on 75 meters.
- Commendations were issued to two operators in Pennsylvania for work as net control operators in assisting new licensees and in testing coverage for ARES operations on their repeaters. An operator in Florida received a commendation for work in resolving interference to an ongoing net on 20 meters.
- An operator in Indiana received a commendation for his work as net control operator on the 443.775 MHz repeater in assisting new licensees and new users of the repeater.
- An advisory notice was sent to an operator in Massachusetts for deliberately operating with a wide signal on AM to interfere with an ongoing net on 40 meters.
- Two presentations on the ARRL/FCC Volunteer Monitor Program were given at Dayton Hamvention®.

The totals for VM monitoring during April 2023 were 1,830 hours on HF frequencies, and 2,311 hours on VHF frequencies and above, for a total of 4,141 hours.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH

Bike MS : City to Shore Ride 2023

By Chris Prioli, AD2CS

Once again, it is time for those of us who are volunteering in nature to step up to the plate and do just that - volunteer! Seriously, it is time to start gathering folks who are willing to help out with the annual **Multiple Sclerosis Society's Bike MS : City to Shore Ride** bicycle event on **Saturday, September 30 and Sunday, October 1, 2023.**

This event, for those who don't know, is a two-day event in which riders depart from Woodcrest Station in Cherry Hill at the break of dawn on Saturday, heading out to Ocean City, some seventy-five miles away. On Sunday, the trip is repeated, except in the opposite direction, with the riders returning to Cherry Hill from an early morning Ocean City departure.

So... where do we as hams come in, you ask? It's like this... the event organizers need help in several areas, from driving or riding shotgun in the **Support and Gear (SAG)** vans, to helping out at the rest stops, to serving as roving motorcycle support, to working as checkpoint communicators.

That is where the greatest number of hams will be needed... as checkpoint communicators. This duty involves manning a checkpoint from the assigned report time until relieved from duty by the coordination team, warning the riders about specific hazards at or near the checkpoint, encouraging the riders, and reporting certain events to Command Central via... you guessed it... ham radio!

Ideally, each checkpoint communicator will have a mobile radio with plenty of reach as well as a portable (HT) for monitoring the air if you step away from the car. In many cases, the HT will also be able to reach the repeaters in use. Multiple repeaters are made available to the Society for this event, and radio coverage is generally good.

The length of the work day depends to some degree upon the pace of the riders, but you can figure on at least four and as many as six hours at a checkpoint. It is *easy* duty, and it is a very worthy cause. If you do not want to be directly on the air, you can serve in some of the other positions where help is needed, for example at the rest stops.

If you are interested in helping out with this event, please reach out to **Chris Prioli AD2CS**, who will put you in touch with the event coordination team or get you a volunteer enrollment form.

Full instructions, including your checkpoint assignment location and all of the radio frequencies to be programmed into your equipment will be provided by the event coordination team. They will also supply safety t-shirts and signs to use at your checkpoint as appropriate.

Come on out and join the party - it's a lot of fun!

Editor's Note : Go to : <https://www.n3mss.org> , N3MSS Amateur Radio Communication Bike MS Volunteer website. You will find links to the on-line communicator registration forms and to download the paper forms for both the Bike MS : City To Shore Ride (September 30 & October 1) and the Bike MS : Bike To The Bay (October 7, 2023).

2020-2024 Element 4 Amateur Extra Class License Question Quiz

**This month we start with Subelement E3 Radio Wave Propagation (3 exam questions out of 3 groups)
(Answers on ‘Last Page Calendar’)**

E3B01

What is transequatorial propagation?

- A. Propagation between two mid-latitude points at approximately the same distance north and south of the magnetic equator
- B. Propagation between points located on the magnetic equator
- C. Propagation between a point on the equator and its antipodal point
- D. Propagation between points at the same latitude

E3B02

What is the approximate maximum range for signals using transequatorial propagation?

- A. 1000 miles
- B. 2500 miles
- C. 5000 miles
- D. 7500 miles

E3B03

What is the best time of day for transequatorial propagation?

- A. Morning
- B. Noon
- C. Afternoon or early evening
- D. Late at night

E3B04

What is meant by the terms “extraordinary” and “ordinary” waves?

- A. Extraordinary waves describe rare long-skip propagation compared to ordinary waves, which travel shorter distances
- B. Independent waves created in the ionosphere that are elliptically polarized
- C. Long-path and short-path waves
- D. Refracted rays and reflected waves

E3B05

Which amateur bands typically support long-path propagation?

- A. Only 160 meters to 40 meters
- B. Only 30 meters to 10 meters
- C. 160 meters to 10 meters
- D. 6 meters to 2 meters

E3B06

Which of the following amateur bands most frequently provides long-path propagation?

- A. 80 meters
- B. 20 meters
- C. 10 meters
- D. 6 meters

Element 4 Amateur Extra Class Quiz - Continued on page 44

E3B07

What happens to linearly polarized radio waves that split into ordinary and extraordinary waves in the ionosphere?

- A. They are bent toward the magnetic poles
- B. They become depolarized
- C. They become elliptically polarized
- D. They become phase locked

E3B08

What is the term for the long path opening that exists between two points on the Earth which are simultaneously near sunrise and sunset?

- A. Transequatorial
- B. Sporadic E
- C. Long-path
- D. Grayline

E3B09

At what time of year is sporadic E propagation most likely to occur?

- A. Around the solstices, especially the summer solstice
- B. Around the solstices, especially the winter solstice
- C. Around the equinoxes, especially the spring equinox
- D. Around the equinoxes, especially the fall equinox

E3B10

Why is chordal hop propagation desirable?

- A. The signal experiences less loss compared to multi-hop using Earth as a reflector
- B. The MUF for chordal hop propagation is much lower than for normal skip propagation
- C. Atmospheric noise is lower in the direction of chordal hop propagation
- D. Signals travel faster along ionospheric chords

E3B11

At what time of day can sporadic E propagation occur?

- A. Only around sunset
- B. Only around sunset and sunrise
- C. Only in hours of darkness
- D. Any time

E3B12

What is the primary characteristic of chordal hop propagation?

- A. Propagation away from the great circle bearing between stations
- B. Successive ionospheric refractions without an intermediate reflection from the ground
- C. Propagation across the geomagnetic equator
- D. Signals reflected back toward the transmitting station

Gloucester County Amateur Radio Club

General Membership Meeting Minutes

Wednesday, July 5, 2023



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

ANNOUNCEMENTS : The next Tech Saturday will begin at 9 AM with the topics of Node -Red and Hamlib. These utilities facilitate "Hamshack Dashboarding". Soldering courses will take place July 15 and 22. The Board of Directors Meeting will take place July 19 and Dinner at the Clubhouse will take place July 26 at 6 PM. Free parking at the Clubhouse will not be available on Saturday, July 29 due to a car show during the Gloucester County 4-H Fair, but you can get in if you pay admission to the car show.

ATTENDANCE :

- 24 In-person
- 12 ZOOM

VISITORS :

- **Chuck White, KE2BPD**
- **Greg Sleet**
- **Dave Mitchell, WB2PJH**

NEW MEMBERS :

- **John Peterson, KD2ODE**

The minutes of the June General Membership Meeting were approved.

TREASURER : Alan Arrison KB2AYU reported YTD Budgeted items :

- Income : \$7,584
- Expenses : \$4,465
- Net Gain : \$3,119

Alan has not yet received all Field Day receipts for reimbursement. The Treasurer's Report was approved.

CLUBHOUSE : Alan Arrison KB2AYU said that a mini-split air conditioner will be installed in the VHF room soon. **Jonathan Pearce WB2MNF** noted that the combination to the front door lock has been changed, the VHF tower zoning permit has been approved, and that the building permit application has been submitted. The Club is looking for someone to act as project manager for construction of an access ramp for the Clubhouse.

FUTURE PROGRAMS : Ron Block NR2B provided a slide summarizing topics for the upcoming General Membership Meetings :

- **August 2 : Tony Starr K3TS on Mobile Radio Installation**
- **September 6 : Bob Heil K9EID on New Hams**
- **October 4 : Jim Wright N2GXJ on design of the Club's 160-meter loop antenna**
- **November 1 : Mike Thompson KG4JYA on Radio Astronomy**
- **December 6 : Len Rust W2LJR on logging**
- **January 3 : Robert Welsh N3RW on Astronomy and Amateur Radio**

July 2023 General Membership Meeting Minutes - Continued on page 46

DX and CONTESTS : Tony Starr K3TS noted the following contests :

- July 8 - 9 : IARU Contest
- July 8 - 9 : WRTC Contest
- July 15 - 16 : NA QSO Party, RTTY
- July 15 - 16 : CQ WW VHF Contest
- July 29 - 30 : RSGB IOTA Contest

Alan Arrison KB2AYU noted that W2MMD took first place in the Atlantic Division for the January VHF Contest.

FIELD DAY : Tony Starr K3TS thanked the 60 Field Day participants and noted the good times, good food, and the nice site layout provided by Jim Wright N2GXJ. Our unofficial score is 11,616 points with 2,542 contacts. Jim handed a Certificate of Appreciation between the American Red Cross and GCARC to Jonathan Pearce WB2MNF. This certificate was received when a Red Cross official visited our Field Day site and is worth 100 bonus points.

PUBLIC SERVICE : Gloucester County ARES Coordinator Bob Keogh KD2NEC noted :

- FEMA has recognized the role of Amateur Radio in its latest NIMS document
- Three EMCOMM training sessions have been completed by the 14 local hams who have signed up for American Red Cross Training
- The Annual Bike MS City to Shore event will take place September 30 and October 1
- The Annual Bike MS Bike To The Bay event will take place October 7
- Volunteer communicators are needed for both events
- The Annual ARES Simulated Emergency Test (SET) will take place October 7

TECHNICAL COMMITTEE : Jonathan Pearce WB2MNF set up a Discord discussion server for GCARC at <https://discord.gg/75Xg48WD>. Also, John Zaruba Jr K2ZA has recommended the website <https://www.zeroretries.org> to Jon.

EDUCATION : Chris Prioli AD2CS will partner with John Zaruba Jr K2ZA to conduct a 2-part Saturday "Learn to Solder" course. The first part, covering basic soldering, will take place July 15. The second part, to be held July 22, will involve building something useful such as a code oscillator, RF attenuator, dummy load, etc. Contact Chris at cpprioli@gmail.com for more information or to register.

The latest round of licensing classes produced 5 new Technicians and 4 General Class licensees. The next round will take place sometime after Labor Day.

CLUB NETS : Chris Prioli AD2CS reports 6 to 7 check-ins to the 2 Meter nets. Numbers may be down due to summer vacations and problems with Echolink. Bob Keogh KD2NEC reports approximately 15 check-ins to the Sunday Night ARES Net.

CONSTITUTION COMMITTEE : Ron Block NR2B said the committee has completed the first round of modifications and will continue to refine the document during the next meeting on July 12. Once the Committee is satisfied with a draft it will be sent to the Board of Directors for review and eventually to the General Membership for adoption.

OLD BUSINESS : None

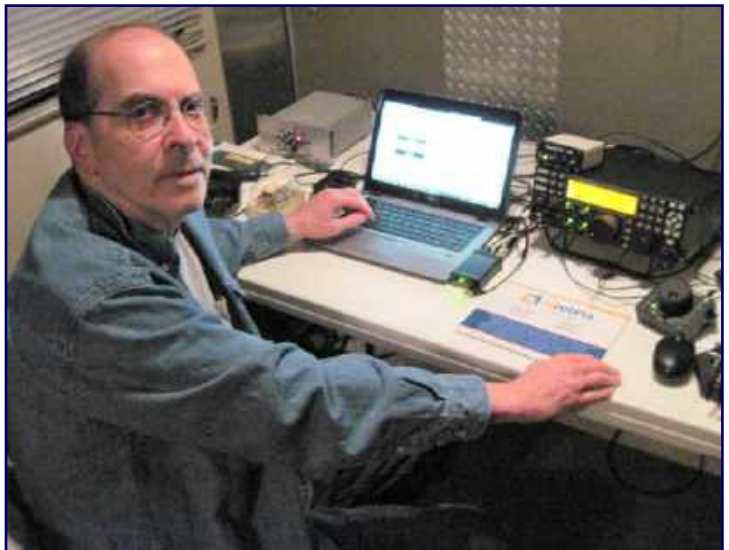
NEW BUSINESS : None.

MISCELLANEOUS :

Jonathan Pearce WB2MNF purchased a QSL card on EBAY that **Alan Arrison KB2AYU** had sent in 1986. Jon presented this card to Alan.

The Business Meeting concluded @ 2016 Hours and was followed by our Annual Pizza Party.

Respectfully Submitted,
Karl Frank W2KBF,
GCARC Recording Secretary



Darrell Neron, AB2E with Dave Mitchell, WB2PJH, operating on 80M CW, 20M CW, and 15M CW during Field Day. Dave lives in Bridgewater, NJ, and later joined the Club. Welcome Dave!



Happy Birthday Coast Guard
August 4, 1790

Gloucester County Amateur Radio Club

Board of Directors Meeting Minutes

Wednesday, July 19, 2023



Meeting opened @ 1901 Hours by President Jonathan Pearce WB2MNF.

ATTENDANCE :

- President Jonathan Pearce WB2MNF
- Vice President Ron Block NR2B
- Treasurer Alan Arrison KB2AYU
- Recording Secretary Karl Frank W2KBF
- Corresponding Secretary Frank Romeo N3PUU
- Director Jeff Garth WB2ZBN
- Director Jim Clark KA2OSV
- Director Chris Prioli AD2CS
- Director Jim Wright N2GXJ
- Director Bill Price NJ2S
- Trustee John O'Connell K2QA
- Trustee Carl Wittig N2CRW
- Member Tony Starr K3TS

The minutes of the June BoD Meeting were approved.

TREASURER : Alan Arrison KB2AYU reported YTD Budgeted Items :

- Income : \$7,149
- Expenses : \$4,465
- Net Gain of \$2,684

Receipts for Field Day food still are outstanding. Approximately \$4,500 remains in the VHF tower fund. Additional funds may need to be raised before construction can begin. The Treasurer's report was accepted.

CLUBHOUSE : Frank Romeo N3PUU said that installation of the mini-split air conditioner for the VHF room will be finished this weekend. Frank will be contacting US tower in order to obtain certified drawings for the planned installation of the two VHF towers. **Bill Price NJ2S** will replace the motion sensor in the HF room that has experienced false triggering.

NEW MEMBER APPLICATIONS : Chris Prioli AD2CS received the following nine New Member Applications. All were approved by the BoD :

- **Dionisios (Dan) Goulianos KE2BPK**, Technician from Wenonah, NJ
- **Beth Kraus KE2BPE**, Technician from Vineland, NJ
- **David Mitchell WB2PJH**, Amateur Extra from Bridgewater, NJ
- **Sergei Nenasheff KE2BLO**, Technician from Vineland, NJ
- **Richard Nicholas IV KC3WIR.**, Technician from Swarthmore, PA
- **Aimee Ortiz KE2BPJ**, Technician from Clementon, NJ
- **Gregory Sleet** (no license, for Associate Membership) from Somerdale, NJ
- **Charles White IV, KE2BPD**, Technician from Sewell, NJ
- **Michael Zerby W2EFR**, General from Thorofare, NJ

July 2023 Board of Directors Meeting Minutes - Continued on page 49

FIELD DAY : Tony Starr K3TS expressed appreciation for the over 60 participants at our recent Field Day.

FUTURE PROGRAMS : Ron Block NR2B noted that the speaker for the General Membership Meeting on August 2 will be **Tony Starr K3TS** on Mobile Radio Installation. Our speaker in September will be **Bob Heil K9EID**.

EDUCATION COMMITTEE : The first soldering class lead by **Chris Prioli AD2CS** and **John Zaruba Jr K2ZA** was well attended with 14 participants, consisting of old timers as well as new people.

CONSTITUTION COMMITTEE : Ron Block NR2B sent a draft of the revised GCARC Constitution to the BoD. This draft which will be considered at the next BoD meeting.

FOX HUNT : Jim Wright N2GXJ is looking forward to the next Foxhunt, to be scheduled in Fall.

GCARF : Jonathan Pearce WB2MNF initiated contact with **Robert Famiglio K3RF** regarding a proposal to form a collaboration with Rowan University to design and install a solar power system for the Clubhouse. Jon will report back to the foundation once Bob has had enough time to give the matter some consideration.

OTHER COMMITTEES : There were no reports from the Repeater, DX/Contesting, Technical, Hamfest, or Public Service Committees. **Frank Romeo N3PUU** noted that, in the past, **Herb Dyer KT2Y** had been an advocate for the Bike MS : City to Shore event and asked if we could find someone to fill that role. Frank also suggested that an event organizer could be invited to speak at a GCARC meeting in order to stimulate participation. **Jeff Garth WB2ZBN** will contact **Joe DiBartolo KC2SFB**, the event coordinator, asking if someone can come to our meeting to speak about the Bike MS.

OLD BUSINESS :

Chris Prioli AD2CS presented the BoD with a revised draft of W2MMD Clubhouse Rules for consideration. This was approved, following addition of text that will require conditions needing attention to be reported to the Clubhouse Committee.

NEW BUSINESS :

Chris Prioli AD2CS proposed to follow-up the current soldering instruction sessions with a class on Surface Mount Soldering sometime in Fall. This was endorsed by the BoD and Chris accepted an invitation from **Ron Block NR2B** to present a session on thru-hole and Surface Mount Soldering as one of the forum speakers at our Hamfest in September.

MISCELLANEOUS :

Ron Block NR2B reported that Comcast has lowered the charge to run cable to a 4H building to \$1,088.50. If this is acceptable to the 4-H then GCARC will assist with Wi-Fi and security cameras.

Nobody has volunteered to coordinate construction of an entrance ramp to the Clubhouse so **Jonathan Pearce WB2MNF** will take this project off the table until someone steps forward.

Jonathan is looking for ideas to make the Club business meetings more interesting by having members report on their activities, such as contesting, new equipment etc.


July 2023 Board of Directors Meeting Minutes - Continued on page 50

The following Club members are hospitalized or in poor health :



- Charlie Wahl KC2STO
- David Paster AC2IQ
- Chuck Colabrese WA2TML

The BoD meeting was adjourned @ 2018 Hours.















Respectfully Submitted,
Karl Frank W2KBF,
GCARC Recording Secretary



15th Annual 13 Colonies  Special Event
JULY 1ST - 7TH 2023

73'






SIGNERS OF THE DECLARATION OF INDEPENDENCE

 KCA/NY *Hon. Bloyd	 K21 U/MA *John Hancock
 KCB/VA *Thos. Jefferson	 K21 U/MA *John Hancock
 KRC/RI *Stephen Hopkins	 K21 U/MA *John Hancock
 KED/CT *Hon. Williams	 K21 U/MA *John Hancock
 K21/DE *Francis Pickens	 K21 U/MA *John Hancock
 K21/MD *Hon. Fane	 K21 U/MA *John Hancock
 K21/GA *Hon. Hudson	 K21 U/MA *John Hancock

 Lord Frederick North  Marquis De Lafayette

THIS CERTIFICATE CERTIFIES THAT AKA WA2IBZ HAS PARTICIPATED IN THIS ON - AIR AMATEUR RADIO EVENT HONORING THE ORIGINAL THIRTEEN COLONY STATES, OUR INDEPENDENCE, & OUR ACTIVE MILITARY VETERANS.

13 CONTACTS

CQWW WPX Contest, SSB
March 25, 2023

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SOAB HP
QTH : SNJ
Operating Time (hrs) :
Location : USA

Summary :

Band	QSOs
------	------

80 :	50
40 :	55
20 :	75
15 :	105
10 :	70

Total : 355 Prefixes : 330
Total Score : 325,050

Club : Frankford Radio Club **20**

Comments :

Very casual part time effort, all S&P. Nice weather on Sunday drove me outdoors and away from the shack. Maybe next year I will get serious again. Until then, 73 for now.

de K3TS

SP DX Contest
April 1, 2023

Call : AB2E
Operator (s) : AB2E
Station : AB2E

Class : SO 3B and HP
QTH : SNJ
Operating Time (hrs) : 4
Location : USA

Summary :

Band	CW Qs	Ph Qs	Mults
------	-------	-------	-------

40 :	30	0	14
20 :	89	0	16
15 :	26	0	12

Total : 145 0 42
Total Score : 18,270

Club : Frankford Radio Club **21**

Comments :

Rig : FTDX-9000D/Acom 2000A

Antennas :

40m dipole @ 85ft

20/15/10m Force 12 C3S Tribander @ 52ft

Fun contest, only had 4 hours total so missed many of the optimal times. Clean sweep of mults on 20 and near sweep on 40. Great to work many SP friends!

73 Darrell AB2E

Contest : SPDX

Band	QSOs	Pts	Mul	Pt/Q
7	30	90	14	3.0
14	89	267	16	3.0
21	26	78	12	3.0
Total	145	435	42	3.0

Score : 18,270

1 Mult = 3.5 Q's

SP DX Contest
April 1, 2023

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SOABCW HP
QTH : SNJ
Operating Time (hrs) :
Location : USA

Summary :

Band	CW Qs	Ph Qs	Mults
------	-------	-------	-------

40 :	8	0	8
20 :	16	0	13
15 :	31	0	14

Total : 55 0 35
Total Score : 5,775

Club : Frankford Radio Club **22**

Comments :



**Florida QSO Party
April 29, 2023**

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SOAB (A) Mixed LP
QTH : SNJ
Operating Time (hrs) :
Location : Out of State/Province

Summary :

Band	CW Qs	Ph Qs
------	-------	-------

40 :	22	15
20 :	78	47
15 :	17	9

Total : 117 71 CW Mults : 44 Ph Mults : 38
Total Score : 50,020

Club : Frankford Radio Club 23

Comments :

Limited part time effort in between household chores, but conditions were a disappointment. Never heard a thing on 10 meters, even when asked to go there. Also missing about 17 counties for a sweep. Maybe I just wasn't on at the right times. 73 for now.

de K3TS

**IARU HF World Championship 2023
July 8, 2023**

Call : K3TS
Operator (s) : K3TS
Station : K3TS

Class : SOAB (A) CW HP
QTH : SNJ
Operating Time (hrs) : 3.02
Location : USA

Summary :

Band	CW Qs	Ph Qs	Zones	HQ Mults
------	-------	-------	-------	----------

20 :	63			
15 :	1			

Total : 64 0 2 0
Total Score : 640

Club : Frankford Radio Club 30

Comments :

Very limited effort. A 20m sweep of the WRTC stations, and not much else. Only when I got down to just one or two left did I find out that they had a real time online log to help me see who I still needed. I guess I really didn't need it.

73 de K3TS

**CWops Test (CWT) 2023 0300Z
May 25, 2023**

Call : AB2E/VP9
Operator (s) : AB2E
Station : AB2E/VP9

Class : Single Op LP
QTH :
Operating Time (hrs) :
Location : Other North America

Summary :

Band	QSOs
------	------

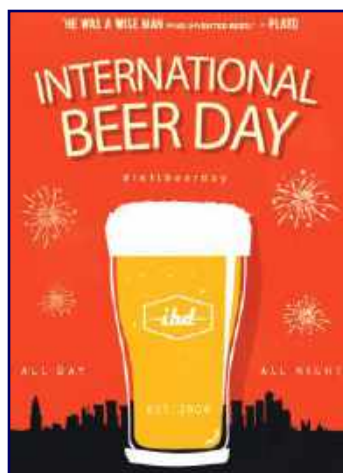
40 :	22
------	----

Total : 22 Mults : 22
Total Score : 484

Club : 24

Comments :

Checking antenna. All good for 40m & 80m.

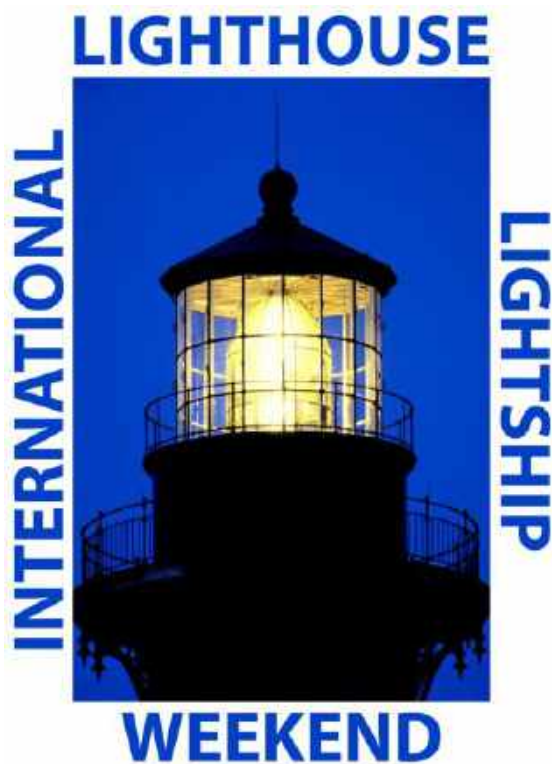


Sunday, August 6, 2023

Monday, August 7, 2023



To be added to the DX HONOR ROLL,
Please contact Ernest Kraus, KD2EAV
meanddelcanotc@verizon.net



International Lighthouse Lightship Weekend

August 19 - 20, 2023

<https://www.illw.net>

Name/Callsign	DXCC
Bill Grim, W0MHK	352
Dave Strout W2YC	349
Darrell Neron, AB2E	330
John Hill, W2HUV	266
Ken Denson, WB2P	248
Vinnie Sallustio, N4NYY	246
Tony Starr, K3TS	223
Jim Wright, N2GXJ	215
Dennis Sandole, K2SE	204
Sheldon Parker, K2MEN	204
Matt Wilson, K2MFW	201
Howard Marder, WA2IBZ	146
Christopher Wawak KC2IEB	141
Phil Nunzio, WA3RGY	129
Eric Morris, N2BRJ	127
Rich Subers, W2RHS	119
Steve Farney, W2SEF	111
Bart Kleczynski, AC2PT	106
Chuck Capasso, WB2PGE	103
Curt Myers, K2CWM	91
Harry Strahlendorf Jr, W3DNQ	87
Jim Clark, KA2OSV	71
Lee Marino, N2LAM	62
Updated As Of 07/22/2023	

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!)



August Birthdays

Congratulations to our members who are celebrating a birthday this month

Robert Bleattler Jr, KC3ROB
Paul Hart, KD2WKL
Carl Jackson, KE2BEE
Harry Jackson, WB2GSF (President 1982)
Gary Kinney, KC2ULS
Jacques Latoison, KC3VYU
Charles Lessley, KC3TZR
Daniel McCormick III, KD2TUS
Curtis Myers, K2CWM
Jonathan Pearce, WB2MNF (President 2023)
Adam Sigmund
Courtney Smith, KD2SPJ
Harry Strahlendorf Jr, W3DNQ
Leonid Surnin
Brett Waller, K2BKW
Carl Wittig, N2CRW

In Memoriam - August Birthdays

Silent Keys :

Paul Bergstrom, N2GIB
James Bray Sr, N2AKI
Edward Bubelis, N2LCN
Vernon Byrd, N2DRD
Edward Egolf, WA2ZMS
Charles Emmel Sr, KT2ZZ
Steven Fidler III, N2GVR
Richard Fitch, WA2YLC
Thomas Gordon Sr, KB2GI (President 1985)
Seth Horen, K1LOM
John Koch Jr, K2CR
John Lachenmayer, KB2RGX
James Mollica Sr, K2OWE
Bruce Painter, N2ASN
Charles Pennington, K3NMF
Salvatore Scibilia, WA2LKF
Donald Smith, WB2ZJF
Rev James Thompson III, N2EDK
Harry Wolf, KC2THV



Full Sturgeon Moon : August 1, 2023 @ 1433 Hours.

Lake sturgeon, found in the Great Lakes and Lake Champlain, as well as in several rivers, were once much more abundant. These large (some more than 6 feet long!) migratory fish were an important staple for Native American peoples living in the area. Captain Jonathan Carver came across this term for the lunar month during his travels in the 1760s. Flying Up Moon is a Cree term describing the time when young birds are ready to fly. Corn Moon (Algonquin, Ojibwe), Harvest Moon (Dakota), and Ricing Moon (Anishinaabe) signify the time to gather mature crops. The Assiniboine people named this period Black Cherries Moon, referring to when chokecherries were ripe. The Tlingit called this time of season the Mountain Shadows Moon.

In August, there is also a Blue Moon (the second full moon of the month) occurring on August 30, 2023 @ 2137 Hours. The next time a Blue Moon will occur is in May 2026.

Old Farmer's Almanac - www.almanac.com



Ocean City Boardwalk Parades

7PM - 9PM

6TH ST. - 10TH ST.

THURSDAY JULY, 6TH

TUESDAY AUGUST, 1ST

TUESDAY AUGUST, 15TH

TUESDAY AUGUST, 22ND



August 2023 Contest Calendar

WA7BNM Contest Calendar : www.contestcalendar.com

August 2023	
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Aug 1
+ ICWC Medium Speed Test	0300Z-0400Z, Aug 1
+ QCX Challenge	0300Z-0400Z, Aug 1
+ ZL Sprint	0800Z-0829Z (CW), Aug 1 and 0830Z-0859Z (SSB), Aug 1
+ Phone Weekly Test	0230Z-0300Z, Aug 2
+ A1Club AWT	1200Z-1300Z, Aug 2
+ CWops Test	1300Z-1400Z, Aug 2
+ Mini-Test 40	1700Z-1759Z, Aug 2
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Aug 2
+ Mini-Test 80	1800Z-1859Z, Aug 2
+ CWops Test	1900Z-2000Z, Aug 2
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Aug 3 and 0200Z-0300Z, Aug 4
+ CWops Test	0300Z-0400Z, Aug 3
+ CWops Test	0700Z-0800Z, Aug 3
+ NRAU 10m Activity Contest	1700Z-1800Z, Aug 3 (CW) and 1800Z-1900Z, Aug 3 (SSB) and 1900Z-2000Z, Aug 3 (FM) and 2000Z-2100Z, Aug 3 (Dig)
+ SKCC Sprint Europe	2000Z-2200Z, Aug 3
+ NCCC FT4 Sprint	0100Z-0130Z, Aug 4
+ QRP Fox Hunt	0100Z-0230Z, Aug 4
+ NCCC RTTY Sprint	0145Z-0215Z, Aug 4
+ NCCC Sprint	0230Z-0300Z, Aug 4
+ K1USN Slow Speed Test	2000Z-2100Z, Aug 4
+ Batavia FT8 Contest	0000Z, Aug 5 to 2359Z, Aug 6
+ HARC Anniversary QSO Party	0001Z, Aug 5 to 2359Z, Aug 6
+ 10-10 Int. Summer Contest, SSB	0001Z, Aug 5 to 2359Z, Aug 6
+ European HF Championship	1200Z-2359Z, Aug 5
+ ARRL 222 MHz and Up Distance Contest	1800Z, Aug 5 to 1800Z, Aug 6
+ North American QSO Party, CW	1800Z, Aug 5 to 0559Z, Aug 6
+ SARL HF Phone Contest	1400Z-1700Z, Aug 6
+ K1USN Slow Speed Test	0000Z-0100Z, Aug 7
+ ICWC Medium Speed Test	1300Z-1400Z, Aug 7
+ OK1WC Memorial	1630Z-1729Z, Aug 7
+ ICWC Medium Speed Test	1900Z-2000Z, Aug 7
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Aug 8
+ ARS Spartan Sprint	0100Z-0300Z, Aug 8
+ ICWC Medium Speed Test	0300Z-0400Z, Aug 8
+ ZL Sprint	0800Z-0829Z (CW), Aug 8 and 0830Z-0859Z (SSB), Aug 8
+ NAQCC CW Sprint	0030Z-0230Z, Aug 9
+ Phone Weekly Test	0230Z-0300Z, Aug 9
+ A1Club AWT	1200Z-1300Z, Aug 9
+ CWops Test	1300Z-1400Z, Aug 9
+ Mini-Test 40	1700Z-1759Z, Aug 9
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Aug 9
+ Mini-Test 80	1800Z-1859Z, Aug 9
+ CWops Test	1900Z-2000Z, Aug 9
+ CWops Test	0300Z-0400Z, Aug 10
+ CWops Test	0700Z-0800Z, Aug 10
+ EACW Meeting	1900Z-2000Z, Aug 10
+ NCCC FT4 Sprint	0100Z-0130Z, Aug 11
+ QRP Fox Hunt	0100Z-0230Z, Aug 11
+ NCCC RTTY Sprint	0145Z-0215Z, Aug 11
+ NCCC Sprint	0230Z-0300Z, Aug 11
+ K1USN Slow Speed Test	2000Z-2100Z, Aug 11
+ ARRL EME Contest	0000Z, Aug 12 to 2359Z, Aug 13
+ FISTS Saturday Sprint	0000Z-2359Z, Aug 12
+ WAE DX Contest, CW	0000Z, Aug 12 to 2359Z, Aug 13
+ MMMonVHF/DUBUS 144 MHz Meteorscatter Sprint Contest	0400Z, Aug 12 to 0359Z, Aug 14
+ SARL Youth QSO Party	1200Z-1300Z, Aug 12
+ SKCC Weekend Sprintathon	1200Z, Aug 12 to 2400Z, Aug 13
+ Kentucky State Parks on the Air	1400Z-2200Z, Aug 12
+ Maryland-DC QSO Party	1400Z, Aug 12 to 0400Z, Aug 13
+ SARL HF Digital Contest	1400Z-1700Z, Aug 13
+ K1USN Slow Speed Test	0000Z-0100Z, Aug 14
+ 4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Aug 14
+ ICWC Medium Speed Test	1300Z-1400Z, Aug 14
+ OK1WC Memorial	1630Z-1729Z, Aug 14
+ ICWC Medium Speed Test	1900Z-2000Z, Aug 14
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Aug 15
+ ICWC Medium Speed Test	0300Z-0400Z, Aug 15
+ ZL Sprint	0800Z-0829Z (CW), Aug 15 and 0830Z-0859Z (SSB), Aug 15
+ Phone Weekly Test	0230Z-0300Z, Aug 16
+ A1Club AWT	1200Z-1300Z, Aug 16
+ CWops Test	1300Z-1400Z, Aug 16

August 2023 Contest Calendar - Continued on page 57

August 2023 Contest Calendar

WA7BNM Contest Calendar : www.contestcalendar.com

August 2023 Contest Calendar - Continued from page 56

+ Mini-Test 40	1700Z-1759Z, Aug 16
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Aug 16
+ Mini-Test 80	1800Z-1859Z, Aug 16
+ CWops Test	1900Z-2000Z, Aug 16
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Aug 17 and 0200Z-0300Z, Aug 18
+ CWops Test	0300Z-0400Z, Aug 17
+ CWops Test	0700Z-0800Z, Aug 17
+ NTC QSO Party	1900Z-2000Z, Aug 17
+ NCCC FT4 Sprint	0100Z-0130Z, Aug 18
+ QRP Fox Hunt	0100Z-0230Z, Aug 18
+ NCCC RTTY Sprint	0145Z-0215Z, Aug 18
+ NCCC Sprint	0230Z-0300Z, Aug 18
+ K1USN Slow Speed Test	2000Z-2100Z, Aug 18
+ SARTG WW RTTY Contest	0000Z-0800Z, Aug 19 and 1600Z-2400Z, Aug 19 and 0800Z-1600Z, Aug 20
+ ARRL 10 GHz and Up Contest	0600 local, Aug 19 to 2400 local, Aug 20
+ Russian District Award Contest	0800Z, Aug 19 to 0800Z, Aug 20
+ Keyman's Club of Japan Contest	1200Z, Aug 19 to 1200Z, Aug 20
+ Feld Hell Sprint	1600Z-1759Z, Aug 19
+ North American QSO Party, SSB	1800Z, Aug 19 to 0559Z, Aug 20
+ CVA DX Contest, CW	2100Z, Aug 19 to 2100Z, Aug 20
+ FISTS Sunday Sprint	0000Z-2359Z, Aug 20
+ ARRL Rookie Roundup, RTTY	1800Z-2359Z, Aug 20
+ Run for the Bacon QRP Contest	2300Z, Aug 20 to 0100Z, Aug 21
+ K1USN Slow Speed Test	0000Z-0100Z, Aug 21
+ ICWC Medium Speed Test	1300Z-1400Z, Aug 21
+ OK1WC Memorial	1630Z-1729Z, Aug 21
+ ICWC Medium Speed Test	1900Z-2000Z, Aug 21
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Aug 22
+ ICWC Medium Speed Test	0300Z-0400Z, Aug 22
+ ZL Sprint	0800Z-0829Z (CW), Aug 22 and 0830Z-0859Z (SSB), Aug 22
+ SKCC Sprint	0000Z-0200Z, Aug 23
+ Phone Weekly Test	0230Z-0300Z, Aug 23
+ A1Club AWT	1200Z-1300Z, Aug 23
+ CWops Test	1300Z-1400Z, Aug 23
+ Mini-Test 40	1700Z-1759Z, Aug 23
+ Mini-Test 80	1800Z-1859Z, Aug 23
+ CWops Test	1900Z-2000Z, Aug 23
+ CWops Test	0300Z-0400Z, Aug 24
+ CWops Test	0700Z-0800Z, Aug 24
+ NCCC FT4 Sprint	0100Z-0130Z, Aug 25
+ QRP Fox Hunt	0100Z-0230Z, Aug 25
+ NCCC RTTY Sprint	0145Z-0215Z, Aug 25
+ NCCC Sprint	0230Z-0300Z, Aug 25
+ K1USN Slow Speed Test	2000Z-2100Z, Aug 25
+ Hawaii QSO Party	0400Z, Aug 26 to 0400Z, Aug 28
+ ALARA Contest	0600Z Aug 26 to 0559Z, Aug 27
+ World Wide Digi DX Contest	1200Z, Aug 26 to 1200Z, Aug 27
+ YO DX HF Contest	1200Z, Aug 26 to 1200Z, Aug 27
+ W/VE Islands QSO Party	1200Z, Aug 26 to 0300Z, Aug 27
+ Kansas QSO Party	1400Z, Aug 26 to 0200Z, Aug 27 and 1400Z-2000Z, Aug 27
+ Ohio QSO Party	1600Z, Aug 26 to 0400Z, Aug 27
+ CVA DX Contest, SSB	2100Z, Aug 26 to 2100Z, Aug 27
+ 50 MHz Fall Sprint	2300Z, Aug 26 to 0300Z, Aug 27
+ SARL HF CW Contest	1400Z-1700Z, Aug 27
+ NJQRP Skeeter Hunt	1700Z-2100Z, Aug 27
+ K1USN Slow Speed Test	0000Z-0100Z, Aug 28
+ QCX Challenge	1300Z-1400Z, Aug 28
+ ICWC Medium Speed Test	1300Z-1400Z, Aug 28
+ OK1WC Memorial	1630Z-1729Z, Aug 28
+ ICWC Medium Speed Test	1900Z-2000Z, Aug 28
+ QCX Challenge	1900Z-2000Z, Aug 28
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Aug 29
+ ICWC Medium Speed Test	0300Z-0400Z, Aug 29
+ QCX Challenge	0300Z-0400Z, Aug 29
+ ZL Sprint	0800Z-0829Z (CW), Aug 29 and 0830Z-0859Z (SSB), Aug 29
+ Phone Weekly Test	0230Z-0300Z, Aug 30
+ A1Club AWT	1200Z-1300Z, Aug 30
+ CWops Test	1300Z-1400Z, Aug 30
+ Mini-Test 40	1700Z-1759Z, Aug 30
+ Mini-Test 80	1800Z-1859Z, Aug 30
+ CWops Test	1900Z-2000Z, Aug 30
+ CWops Test	0300Z-0400Z, Aug 31
+ CWops Test	0700Z-0800Z, Aug 31

L	O	B	O	S		M	A	A	M		M	I	N	I
I	N	P	U	T		E	C	R	U		E	L	L	S
D	E	L	T	A		D	E	L	L		S	L	I	M
			O	N	A	I	R		T	N	C			
T	R	A	F	F	I	C		T	I	P	O	F	F	S
C	O	N		O	M	I	C	R	O	N		E	R	E
C	U	T	N	R			H	O	P		C	R	O	C
S	T	E	E	D		N	E	T		S	H	U	N	T
K	I	N	G		S	E	C			M	U	L	T	I
E	N	N		S	P	O	K	A	N	E		E	T	O
D	E	A	D	P	A	N		L	I	A	I	S	O	N
			E	A	N		T	W	O	R	N			
C	A	N	E		I	D	E	A		I	R	O	N	S
A	G	E	D		S	I	X	Y		N	A	N	O	S
N	C	S	S		H	U	T	S		G	D	O	N	E

Crossword Puzzle Answers
From Page 33

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 September 2023 issue : Sunday, August 20, 2023

Club Website www.w2mmd.org

Club E-Mail Reflector: GCARC <at> Mailman <dot> QTH <dot> Net

2023 Club Committees

Standing Committees

Committee Chairs

Budget

Constitution & By-Laws

Education

Field Day

Hamfest

Health, Welfare, & Silent Keys

Hospitality

Membership

Membership Badges

Nominations

Publicity

Repeaters

W2MMD Clubhouse Site

Al Arrison, KB2AYU

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 (Temporary Assignment)

Jon Pearce, WB2MNF

Tony Starr, K3TS

Open Chair

Al Arrison, KB2AYU

Activity Committees

Committee Chairs

Awards & Certificates

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

Open Chair

Jeff Garth, WB2ZBN

Tony Starr, K3TS

Open Chair

Open Chair

Jim Wright, N2GXJ

Bob Keogh, KD2NEC

Open Chair

Gary Reed, N2QEE

Jeff Garth, WB2ZBN

Ron Block, NR2B

Jim Clark, KA2OSV

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 Meeting

1st & 3rd Mondays Every Month @ 2000 Hours

GCARC HelpNet ZOOM Meeting

Sporadic Mondays @ 1930 Hours

Tuesday Noon Day 2M 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 2M Net

Every Thursday @ 2000 Hours

Meeting Calendar

General Membership Meeting

Wednesday, August 2, 2023

1930 Hours

Live & In-Person

Pfeiffer Community Center

Simulcast Live on ZOOM

Board of Directors Meeting

Wednesday, August 16, 2023

1900 Hours

W2MMD Clubhouse

*“Ask not what your Club can do for you,
Ask what you can do for your Club”
- KA2OSV*

*“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 Interim Badge Man”*

Chris Prioli, AD2CS
ad2cs <at> arrl <dot> net
(Temporary Assignment)

Question Pool Answers : E3B01:A; E3B02:C; E3B03:C; E3B04:B; E3B05:C; E3B06:B; E3B07:C; E3B08:D; E3B09:A; E3B10:A; E3B11:D; E3B12:B