



# CrossTalk

*We Will Rebuild Back Better!*

Issue 63:09

63 Years Of Service To Our Community

September 2022

## 2022 Club Officers

**President :** Anthony Starr, K3TS  
**Vice President :** Jonathan Pearce, WB2MNF  
**Treasurer :** Alan Arrison, KB2AYU  
**Recording Secretary :** Karl Frank, W2KBF  
**Corresponding Secretary :** Ronald Block, NR2B

### Trustees - 4 year term

**James Wright, N2GXJ** (2019-2022)  
**Mark Gottlieb, KK2L** (2020-2023)  
**Robert Fields, KC6AOH** (2021-2024)  
**Charles Lanard, KD2EIB** (2022-2025)

### Board of Directors - 3 year term

**Robert Durham, W2RAD** (2020-2022)  
**Herb Dyer, KT2Y** (2020-2022)  
**Charles Colabrese, WA2TML** (2021-2023)

**William Price, NJ2S** (2021-2023)  
**James Clark Sr, KA2OSV** (2022-2024)  
**Jeffrey Garth, WB2ZBN** (2022-2024)

### *This Month's Calendar*

#### **General Membership Meeting**

Wednesday, September 7, 2022 @ 1930 Hours  
**In-Person & ZOOM - Pfeiffer Community Center**

#### **License Testing Session**

Thursday, September 8, 2022 @ 1900 Hours  
**W2MMD Clubhouse**

#### **Tech Saturday Forum**

Saturday, September 10, 2022 @ 0900 Hours  
**W2MMD Clubhouse**

#### **ARRL SNJ Section Convention**

**44<sup>th</sup> Annual Hamfest**  
**Sunday, September 11, 2022**

#### **Board of Directors Meeting**

Wednesday, September 21, 2022 @ 1900 Hours  
**W2MMD Clubhouse**

**Tuesday Noon Day 2 Meter Rag Chew Net**  
 Every Tuesday @ 1200 Hours

**Tuesday Night 10 Meter Rag Chew Net**  
 Every Tuesday @ 2000 Hours - 28.465 MHz

**Thursday Night 2 Meter Rag Chew Net**  
 Every Thursday @ 2000 Hours

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# ARRL SNJ Section Convention and Hamfest

Presented By The



**Gloucester  
County  
Amateur Radio  
Club**  
W2MMD



*Celebrating Our 63<sup>rd</sup> Year*

[www.w2mmd.org](http://www.w2mmd.org)

Open to the public at 8:00 AM

## 44<sup>th</sup> Annual Hamfest - September 11, 2022

**ADMISSION : \$10.00**

*Non-Ham Spouses and Kids FREE*

*Vendors and Tailgaters of new and  
used radio and electronic equipment*

*Gates open at 6:00 am for vendors and tailgaters*

*Tailgating rules (open grassy areas only) :*

- ♦ **\$10.00** per vehicle space, up to 10 feet
- ♦ No reserving or holding spaces for tailgaters not yet present
- ♦ First come, first serve

*Table rules (covered pavilions only) :*

- ♦ **\$12.00** per table (yours), or table space up to 8 feet
- ♦ Tailgating under pavilions will fall under "Table Rules" rates

**Some pavilion spaces have electric. Space price does not include admission.**

**Programs will start at 9:00 am in the Classroom Building. See schedule on the 2022 Hamfest webpage.**

- ♦ 0900 Hours : Jon Pearce, WB2MNF : WinLink Gateway
- ♦ 1000 Hours : Tom Abernethy, W3TOM : What's New At The ARRL
- ♦ 1100 Hours : Ron Block, NR2B : Lightning Protection

**ARRL VEC License Testing starting at 9:00 am**

- ♦ Exam Testing @ W2MMD Clubhouse
- ♦ Exam Fee : \$15.00
- ♦ All testing candidates are required to have an FRN and a valid e-mail address

**Talk-In Station :**

**147.180 MHz + PL 131.8 Hz  
EchoLink : W2MMD-R**

**Food And Beverages Catered By**



**BSA Troop 9**

**West Deptford, NJ**

[www.bsatroop9.scoutlander.com](http://www.bsatroop9.scoutlander.com)

**Grand Prize : \$200.00**

**Plus Many More Prizes!  
Door Prize Drawings  
Throughout The Day!**

**Gloucester County 4-H Fairgrounds • [www.w2mmd.org](http://www.w2mmd.org)  
235 Bridgeton Pike (Route 77) • Mullica Hill, NJ 08062  
GPS : 39.715572°, -75.211944°**





## *President's Message*

### *Tony Starr, K3TS*



Greetings to all members and friends of GCARC. September is the month of our biggest event of the year, our annual Hamfest. Over the years, our hamfest has become one of the largest and most popular in the region. We look forward to seeing all of our friends and on-the-air acquaintances, and we work hard to make the event the best that it possibly can be. For our members, it is considered to be an all-hands event, and a large contingent shows up before, during, and after the event to make sure everything is done right. If you are a member who has not signed up to help out, and you are available either on Saturday evening or Sunday morning, please contact **Sheldon, K2MEN** as soon as possible, and find out where you can help. The more help we have, the better our hamfest will be.

We are also coming up on the one year anniversary of the tornado which took down our towers and destroyed several nearby homes. I am happy to see that the rebuilding process is well under way, and hopefully things will be better than before. It is amazing how much can be destroyed in just a matter of minutes, and yet take so long to painstakingly rebuild. And speaking of painstaking rebuilding, our new HF antenna, a **JK Mid-Tri 40**, is being expertly assembled by **Al, KB2AYU**, and will soon take its place atop our new tower. The tower itself looks great, having been carefully overhauled, but the HF antenna is an amazing work of fabrication. Never before have I seen such quality materials and ruggedness of design incorporated into an antenna. The builder, **W3JK**, must be a master craftsman to employ such a level of work. I heard a satisfied customer of his say on the air that the JK antenna line was designed in the aftermath of the terrible Hurricane Sandy, with the purpose of being nearly indestructible during severe weather events. If this is true, then I think we have made the right choice.

Walking around the Clubhouse grounds recently, I was pleased to see that the grounds and building are really looking good. Our volunteer workforce has done a great job with the front stairs and railings and the grass has been neatly cut and trimmed. Our old, dilapidated sign out front will soon be replaced, and when the new antenna goes up, the place will be looking like a proper Amateur Radio station. We are most fortunate as a Club to have such a nice setup, and I cannot thank our volunteer workers enough for the effort they have put into making it so nice. The best part is that with each year that goes by, the place looks even better. This shows that the efforts go far beyond just keeping up with the repairs. Making real improvements takes a lot of money and time, especially when we do most of the work ourselves. We rely on the talents of our members for much of this work, and they have been doing a great job lately. If you have not been out to the Clubhouse recently, then stop by and see for yourself.

Since the September meeting will be held just a few days before the hamfest, we will be giving top priority at the meeting to any hamfest related business. We want to make sure that every issue that we know of ahead of time has been addressed, and the general membership meeting is the place and time to get it done. For this reason, I am asking every member who can possibly make it, to please try to attend this meeting, especially if you have been away for the summer months and are not up to date on all of the hamfest details. While we seem to have a committee for everything in GCARC, when it comes to the hamfest, the committee really extends to the entire membership. It is a big event and requires a large staff. Let's keep the excellence going again this year. And don't forget to pray for good weather!

*President's Message - Continued on page 4*

*President's Message - Continued from page 3*

That is all I have for now. But before I say 73, please join me in welcoming new members **James Schreck-enbach, KC3CXU, of Clementon NJ**; and **John Borelli Jr, KD2ZXP, of Malaga NJ**. Because we are such an active Club, our membership just keeps growing. Let's keep it going that way. I look forward to seeing everyone at the **Wednesday, September 7, 2022 General Member Meeting**. Until then, 73 for now.

**Tony Starr K3TS**



September 2, 1945



Friday, September 16, 2022



September 18, 1947





## **General Membership Meeting**

**Wednesday, September 7, 2022  
@ 1930 Hours**



**Pfeiffer Community Center - Simulcast Live Via ZOOM**

**The presentation following the business meeting will concern the Gloucester County 2 Meter Data Network and include topics such as setting up a Signalink and answering the question : What is VARA?**

**The next monthly VE Testing session is set for Thursday, September 8, 2022.  
Regular test sessions are the second Thursday of each month at 1900 hrs.  
Testing is now done at the W2MMD Clubhouse!**

### **Welcome New Club Members :**

**James Schreckenbach, KC3CXU** who has a Technician Class license and lives in Clementon, NJ.

**John Borelli Jr, KD2ZXP**, who has a Technician Class license and lives in Malaga, NJ.

We are glad to have you as members of the Club and hope to see you regularly at Club meetings, events, and activities. We hope to hear you on the Tuesday Night 10M Rag Chew Net. Also on the semimonthly Digi-Net, the weekly Tuesday Noon Day and Thursday Night 2M Rag Chew Nets all on our 2M Repeater or EchoLink : W2MMD-R.

### **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**

**w2mmd.org**



**[www.facebook.com/W2MMD](http://www.facebook.com/W2MMD)**



**[twitter.com/w2mmd\\_gcarc](https://twitter.com/w2mmd_gcarc)**

**Facebook**



## **ARRL Southern New Jersey Section Convention and 44<sup>th</sup> Annual Hamfest** by Sheldon Parker, K2MEN

The annual GCARC Hamfest at the Gloucester County 4-H Fairgrounds is just a few weeks away on Sunday, September 11, 2022. This is our 44<sup>th</sup> Hamfest and one of the biggest Hamfest events in the tri-state area with more than 500 attendees and over 70 tailgaters and vendors. We are the official Southern New Jersey Section Convention as designated by the ARRL! That means, in addition to all the customary activities such as an array of large vendors, VEC testing, more than \$1000 in door prizes, and the ham social event of the year; we will continue with outstanding programs addressing current trend setting topics of interest to all. Our programs will begin at 0900 Hours in the building labeled Classroom just adjacent to the main pavilion.

Here is what we have planned :

### **0900 Hours : Jon Pearce, WB2MNF : WinLink Gateway**



At the W2MMD Clubhouse, we have implemented a WinLink gateway that provides both packet and VARA connection on 2 meters and VARA-HF connection on 40 meters. In case of an internet outage, it automatically switches to 40 meters, polling other stations for incoming email and sending outgoing email to distant stations that presumably still have internet coverage. This session will describe how we set all of that up.

### **1000 Hours : Tom Abernethy, W3TOM : What's New At The ARRL**



This session is our annual update on significant events and activities within the ARRL by :

- **Tom Abernethy, W3TOM : Atlantic Division Director**
- **Bob Famiglio, K3RF : Atlantic Division Vice Director**
- **Tom Preiser, N2XW : ARRL Southern New Jersey Section Manager**

This is your opportunity to ask questions and interact with ARRL leadership.

### **1100 Hours : Ron Block, NR2B : Lightning Protection**



After a brief review of lightning's characteristics, we will discuss the creation of a single ground for our radio station and the use of surge protectors to protect our equipment. We will then have a brief overview of the W2MMD Clubhouse grounding project as presented in the July issue of QST along with an invitation to visit the Clubhouse and see our implementation firsthand. I will be there to answer questions.

### **1200 Hours : W2MMD Clubhouse Visit**

The W2MMD Clubhouse will be open for visitation by all hamfest attendees, with an emphasis on the grounding project as described in the July 2022 QST article, and a chance to see the work in progress on improving the Clubhouse and the antenna farm.

**The Clubhouse will not be open for visitors between 0900 and 1200 Hours because of the License Testing Exams.**

I hope each of you will have an opportunity to visit our Hamfest on September 11<sup>th</sup>. Many Club members have volunteered to support this important event, and most will be wearing distinctive yellow shirts. So, mark the date on your calendar. See you there on Sunday morning, September 11<sup>th</sup> and bring your non-ham spouse and kids for free.





**Tech Saturday Forum**  
**September 10, 2022 @ 0900 Hours**  
**W2MMD Clubhouse**

**Implementing VARA-FM and packet radio in WinLink  
and other applications on 2 meters**

**Q&A Open Session and Socializing**

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.

Usually, the Club's HF station is reserved for local use on Tech Saturday. This month is no exception. However, the Clubhouse work efforts will come before any HF Elmering this month. We will be happy to work with the HF station after the chores are done!

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



## **New Jersey QSO Party**

Sponsored by  
Burlington County Radio Club  
K2TD



**Saturday, September 17, 2022 : 1200 to 2359 Hours**

<http://www.k2td-bcrc.org/njqp>



## GCARC Monthly VE Exam Testing Summary

**Gary Reed, N2QEE reports :**

The monthly VE session was held on Thursday, August 11, 2022 at the W2MMD Clubhouse. There were two candidates in attendance to take the Technician exam. Both candidates passed their exams and received their Technician licenses from the FCC on August 16, 2022 :

- **John Borelli Jr, KD2ZXP, of Malaga, NJ**
- **Lawrence Fisher Jr, KD2ZXQ, of Carneys Point, NJ**

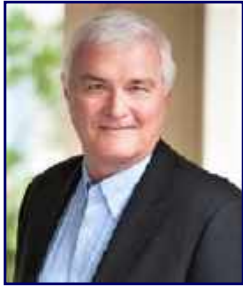
The participating VE's were :

- Chris Prioli, AD2CS
- Mike Thompson, KG4JYA
- Mike Harla, N2MHO
- Jerry Barnish, K2EAB
- Steven Farney, W2SEF
- Ed Champion, N2RO
- Courtney Smith, KD2SPJ
- Gary Reed, N2QEE

The next monthly VE session will be Thursday, September 8, 2022 at 1900 Hours at the W2MMD Clubhouse. There will be a VE testing session on September 11, 2022 at the GCARC Hamfest starting at 0900 Hours in the W2MMD Clubhouse. I have heard from candidates wanting to attend both sessions.







## Maybe YOU Can Work The ISS!

By Jon Pearce, WB2MNF

Recently three Club stations have worked NA1ISS, the International Space Station operated by **Dr. Kjell Lindgren** (<https://www.nasa.gov/astronauts/biographies/kjell-n-lindgren/biography>) **KO5MOS**. **Chris KC2IEB** and **Bob KD2GFL** each worked him over the past few weeks and I worked him on Field Day at the W2MMD station, so he's apparently frequently operating the rig. All three Club members were working from dedicated satellite stations, but you might be able to make a contact - or at least hear a QSO - using a regular FM rig or two. So if you'd like to give it a try here's some info on trying to talk to the space station. **DISCLAIMER** - I haven't done this and don't know anyone who has done it, but we know that SSTV signals from the ISS can easily be received on HTs so the repeater signals should be equally as accessible.

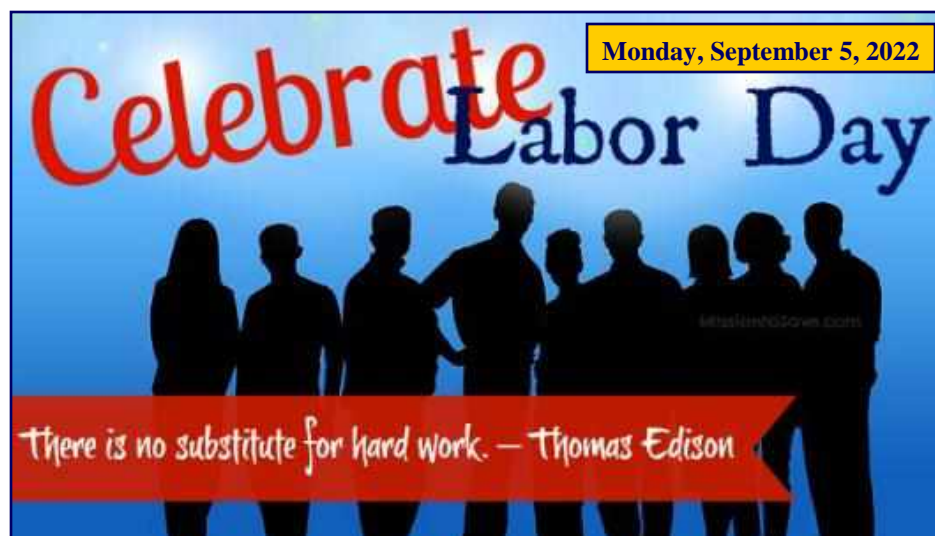
The ISS rig is a cross-band FM repeater with the uplink on 145.990 MHz (PL 67 Hz) and the downlink on 437.800 MHz. It's full-duplex so you can hear your transmitted signal if you have two separate radios, each set to one of the frequencies, but it will also work with one radio like a normal repeater. Using your mobile rig for the 2 meter uplink and an HT to monitor the 70 cm downlink might work. An HT may not have enough power to reach the ISS over other stations so use a mobile or home rig for the uplink if possible.

Ideally you want a circular polarized Yagi aimed at the ISS, and one of the Arrow handheld antennas would be useful if you have one. If not, a vertical antenna may be the next best bet. Verticals spread the signal horizontally and limit the signal vertically but the ISS is frequently at relatively low elevations (i.e., not directly overhead) so a vertical antenna may work well.

Finally you need to know when to listen for the ISS. The **Heavens-Above website** (<https://heavens-above.com>) shows upcoming ISS passes. Two things to note - first you need to enter your latitude and longitude into the upper-right user box to get the passes over your location. Also, the ISS page defaults to show only visible passes, but you want all passes so check that button.

Finally, if you ARE successful and you've heard those wonderful words "Welcome to the International Space Station" from Kjell you'll certainly want that ISS QSL card so send your card to the **ARISS** (<https://www.ariss.org/qsl-cards.html>) **QSL Manager**.

**Good luck hunting the ISS.**



## DA's and DIT's

>> **Bob Keogh, KD2NEC reports :** *"A day in the life of a communications crisis responder."* Katie Wilkes, an American Red Cross responder helping out with the Ukrainian humanitarian crisis. Here is her story :

<https://redcrosschat.org/2022/07/11/a-day-in-the-life-of-a-communications-crisis-responder> or <https://bit.ly/3BMIsRB>.

>> Kudos to **Ron Block NR2B**. The ARRL just release Episode #65 of the Eclectic Tech Podcast featuring an interview with Ron about the July QST article about our Club's lightning protection project. Great job, Ron! Thank you to **Charlie Olinda, N2SRQ** for the link.

<https://www.arrl.org/files/file/EclecticTech/2022/Episode%2065.mp3>

>> **Jerry Barnish K2EAB** donated a working Heathkit SB-200 HF linear amplifier to the Club.

>> Condolences to **Chuck WA2TML** and **Irma N2FNF Colabrese** with the passing of their dog **Petey**.

>> The **ARRL 2022 Simulated Emergency Test (SET)** is scheduled for Saturday, October 1 and Sunday, October 2, 2022.

>> **To all new or established Club members that would like to get involved as a Net Control Station for the Tuesday Noon Day Net or the Thursday Evening Net, please contact Steve Farney, W2SEF to be added to the Tuesday NCS schedule or Jeff Garth, WB2ZBN to be added to the Thursday NCS schedule. Even if you only want to try it once to see if you would like it before committing to scheduled net dates, we will work with you on scheduling. This is a way to be involved in our Club and you can do it from home. You will be provided with a sample script and check-in list.**

73

Steve W2SEF and Jeff WB2ZBN

>> **Tom Preiser, N2XW, reports :** To all operators in Southern New Jersey. The South Jersey Traffic Net will be off the air until September 1, 2022. The Net is usually held on the 145.43 repeater at Waterford Works. It will be held via Echolink Node 9385 or look for KB2RTZ. Net is held at 8:00 PM Local time. We still need more radio operators to check in to this net as well as serve as net control. Please contact me if you are interested. Remember to come out and support the Traffic Net on the Repeater after September 1, 2022

ARRL Southern New Jersey Section Manager Tom Preiser, N2XW, [n2xw@arrl.org](mailto:n2xw@arrl.org)



**Masonic Lodges On The Air**

**Saturday, September 24, 2022**

[www.cqmorelight.com](http://www.cqmorelight.com)

**Congratulations to Ron Block, NR2B for winning the July 2022  
QST Cover Plaque Award**

<http://www.arrl.org/news/ron-block-nr2b-wins-the-july-2022-qst-cover-plaque-award>

# Lightning Protection and Grounding Project at W2MMD



This ground system implements a single-point ground panel, followed by an external perimeter ground system.

An aerial view of the Gloucester County Amateur Radio Club, W2MMD, clubhouse. [Jon Pearce, WB2MNF, photo]







## *The Education Connection* *By Chris Prioli, AD2CS*

### September 2022

September is traditionally the back-to-school month around here, and GCARC is no exception to this rule. Our Amateur Radio Test Preparation Classes are set to start up again with Session III during the week of September 12, 2022, following the same schedule as before - Element 2 (Technician) on Mondays, Element 3 (General) on Tuesdays, and Element 4 (Amateur Extra) on Fridays.

The books are on order, and hopefully will have arrived by the time that you read this, and I am currently working on student enrollments, printing handouts, and copying bonus materials to thumb drives. I am also working on getting our instructor team lined up. E-mails have gone out to those instructors who have helped out in the past, with the hope that they will be able to continue to do so.

I am always looking for additional help in teaching these classes. As I write this, I am short an instructor for the Element 2 classes on Monday evenings. If anyone is interested in helping out, please reach out to me as soon as possible. My preference is for Club members holding Amateur Extra licenses and ARRL Instructor certificates. The ARRL Instructor certificate is extremely easy to obtain, and I can help any volunteers who may be interested in getting the certificate.

These classes are extremely rewarding and are actually fun to teach. I do almost all of the hard work, in preparing the slide shows and handouts. All that you would have to do is show up and help out with the teaching and questions that arise - easy-peasy!

Bear in mind that there are four full sessions scheduled between September 12, 2022 and June 30, 2023, so I can certainly use some additional instructional help, if only to give those already working a break.

On another topic, please feel free to reach out to me or to **Jon Pearce WB2MNF** with possible educational suggestions for future Tech Saturday Forums. We are always looking for topics of interest to the Club membership. The August meeting, covering NanoVNA devices, was a hugely popular session with near record turnout. It is topics like this one that are of general interest that make for good Tech Saturday Forums.

Finally, the DigiNet sessions will be returning to the airwaves on October 3, 2022 at 2000 Hours, with the intended topic being FLDIGI. **Steve Farney W2SEF** will be helping out with the instruction during these net sessions, which will run on the first and third Mondays of each month from October through June. Once again, please feel free to reach out to me with suggestions for future DigiNets as well.

That just about does it for this month... see you all next time!



## **GCARC Amateur Radio Test Preparation Class Session III**

**By Chris Prioli, AD2CS**

I hope that you have had a relaxing if not HOT summer. However, it is nearing the time for the famed GCARC Ham Exam Test Preparation Classes to resume with an all-new session, Session III.

This session will run as follows :

- Technician : Mondays from 1800 to 2100 Hours, starting September 12, 2022 and running for nine weeks (the ninth week is the review and exam)
- General : Tuesdays from 1800 to 2100 Hours, starting September 13, 2022 and running for nine weeks (the ninth week is the review and exam)
- Amateur Extra : Fridays from 1800 to 2100 Hours, starting September 16, 2022 and running for nine weeks (the ninth week is the review and exam)

The fee has gone up, unavoidably, but the \$30.00 fee now includes the loaded thumb drive and of course the book and handouts. I strongly recommend that each student also pick up a copy of the appropriate ARRL license manual for the element to be studied. The spiral-bound version is MUCH easier to work with, as it will lay flat and stay open to the desired page.

The classes are to be held at the W2MMD Clubhouse at the Gloucester County 4H Fairgrounds. However, I will consider ZOOM applicants who are legitimately too far away to make the drive to the Clubhouse.

Those wishing to enroll in the classes, at any level, should visit the **GCARC Website License Classes page** (<https://gloucestercountyarc.weebly.com/license-classes.html>) and complete the enrollment form found there. When I receive the enrollment form, I will send you payment instructions and confirm your seat in the selected class. See the schedule on the next page or on the web page.

**Thank you for your time, and I look forward to seeing many of you in the classes.**

## **W2MMD Remote HF Station : WSJT-X Virtual Audio Cable Issue resolved**

**By John Hill, W2HUV**

I have been having difficulty getting FT8 working properly on the Remote HF Station since the Icom IC-7300 was replaced with a Kenwood TS-480 so that the IC-7300 could be used locally. It took me a while, but I have finally determined the solution.

Use a VAC 4.66 Lite Virtual Audio Cable instead of the VB CABLE Virtual Audio Device that was recommended in the file “WSJT-X Operation 2021-08-02.PDF” that was on the Remote HF Station web page.

The current file “WSJT-X Operation 2022-06-07.PDF” that is on the web page recommends the use of the VAC 4.66 Lite Virtual Audio Cable.

The reason for the change is that the former includes an output gain control required for stable operation with the TS-480 that the latter does not include. The former is also FREE!

See the “WSJT-X Operation 2022-06-07.PDF” and “Virtual Audio Cable Issue Resolved 2022-07-26.PDF” articles for more information.

Go to : <https://gloucestercountyarc.weebly.com/remote-hf-station.html>.

**GCARC Amateur Radio Test Prep Class Schedule**  
**2022 Session III**  
**Class Times : 1800 - 2100 Hours**  
**Weeks 1 through 8 + VE Testing Week**

<b>Class Week</b>	<b>Class Date</b>	<b>License Class Study</b>
Week One	Monday, September 12, 2022	Technician Class
Week One	Tuesday, September 13, 2022	General Class
Week One	Friday, September 16, 2022	Amateur Extra Class
Week Two	Monday, September 19, 2022	Technician Class
Week Two	Tuesday, September 20, 2022	General Class
Week Two	Friday, September 23, 2022	Amateur Extra Class
Week Three	Monday, September 26, 2022	Technician Class
Week Three	Tuesday, September 27, 2022	General Class
Week Three	Friday, September 30, 2022	Amateur Extra Class
Week Four	Monday, October 3, 2022	Technician Class
Week Four	Tuesday, October 4, 2022	General Class
Week Four	Friday, October 7, 2022	Amateur Extra Class
Week Five	Monday, October 10, 2022	Technician Class
Week Five	Tuesday, October 11, 2022	General Class
Week Five	Friday, October 14, 2022	Amateur Extra Class
Week Six	Monday, October 17, 2022	Technician Class
Week Six	Tuesday, October 18, 2022	General Class
Week Six	Friday, October 21, 2022	Amateur Extra Class
Week Seven	Monday, October 24, 2022	Technician Class
Week Seven	Tuesday, October 25, 2022	General Class
Week Seven	Friday, October 28, 2022	Amateur Extra Class
Week Eight	Monday, October 31, 2022	Technician Class
Week Eight	Tuesday, November 1, 2022	General Class
Week Eight	Friday, November 4, 2022	Amateur Extra Class
VE Testing Session	Monday, November 7, 2022	Technician Class
VE Testing Session	Tuesday, November 8, 2022	General Class
VE Testing Session	Friday, November 11, 2022	Amateur Extra Class



## Regional (Atlantic & Hudson Divisions) Hamfests & Events

**September 11, 2022 :** Gloucester County Amateur Radio Club, ARRL SNJ Section Convention, 44<sup>th</sup> Annual Hamfest, Gloucester County 4-H Fairgrounds, 235 Bridgeton Pike, Mullica Hill, NJ. [www.w2mmd.org](http://www.w2mmd.org)

**September 11, 2022 :** Butler County Amateur Radio Association, BCARA SwapFest 2022, Unionville Fire Department, 102 Mahood Road, Butler, PA. [www.w3udx.org](http://www.w3udx.org)

**September 11, 2022 :** Saratoga County Amateur Radio Association, Saratoga County Hamfest, Saratoga County Fairgrounds, 162 Prospect Street, Ballston Spa, NY. [www.k2dll.org](http://www.k2dll.org)

**September 16-18, 2022 :** TAPR, 41<sup>st</sup> Anniversary ARRL/TAPR DCC (Digital Communications Conference), Charlotte, NC. <https://tapr.org/call-for-papers-2022-digital-communications-conference>

**September 17, 2022 :** Ocean-Monmouth Amateur Radio Club, OMARC Fall Hamfest, Spring Lake Volunteer Fire Company #1, 700 Sixth Avenue, Spring Lake, NJ. [www.n2mo.org](http://www.n2mo.org)

**September 17, 2022 :** Antietam Radio Association, Hagerstown Tailgate Fest, Maugansville Bible Brethren Church, 17904 Binkley Avenue, Maugansville, MD. [www.w2cwc.org](http://www.w2cwc.org)

**September 18, 2022 :** Eastern Pennsylvania Amateur Radio Association, EPARA Hamfest 2022, Moose Lodge 1336, 705 Stokes Mill Road, East Stroudsburg, PA. [www.qsl.net/n3is](http://www.qsl.net/n3is)

**September 18, 2022 :** Mt Beacon Amateur Radio Club, MBARC Fall Fest, Slater Chemical Company Glenham Fire House, 76 Old Glenham Road, Beacon, NY. [www.wr2abb.org](http://www.wr2abb.org)

**September 24, 2022 :** Garden State Amateur Radio Association Hamfest, MOESC Parking Lot, 100 Tornillo Way, Tinton Falls, NJ. [www.gsara.club](http://www.gsara.club)

**September 24, 2022 :** Amateur Radio Association of the Southern Tier, ARAST Hamfest, Chemung County Fairgrounds, Grand Central Avenue, Horseheads, NY. [www.arast.info](http://www.arast.info)

**October 4-8, 2022 :** Antique Wireless Association, 2022 AWA Annual Conference, RIT Inn and Conference Center, 5257 West Henrietta Road, Henrietta, NY. <https://www.antiquewireless.org>



### Route 66 On The Air Special Event

Saturday, September 10, 2022 to Sunday, September 18, 2022

[www.w6jbt.org](http://www.w6jbt.org)

## **The "DigiNet"**

**147.180 MHz & EchoLink W2MMD-R**

**First & Third Mondays of the Month**

**2000 Hours**

**Starting October 3, 2022**

**Tuesday Noon Day 2M Rag Chew Net @ 1200 Hours**

**Net Control Hosts : Steve W2SEF, Greg W5DO, & Chris AD2CS**

**147.180 MHz Repeater & EchoLink - W2MMD-R**

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

**Tuesday Night 10M Rag Chew Net @ 2000 Hours**

**Net Control Host : Jim Clark, KA2OSV**

**28.465 MHz or 28.475 MHz**



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

**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

**Gary Mirkin, WA3SVW : September 1, 2022**

**Greg Ciraula, W5DO : September 8, 2022**

**Mary Delemarre, W2TDS : September 15, 2022**

**Chris Prioli, AD2CS : September 22, 2022**

**Steve Farney, W2SEF : September 29, 2022**

**Gary Mirkin, WSA3SVW : October 6, 2022**

**Greg Ciraula, W5DO : October 13, 2022**

**Mary Delemarre, W2TDS : October 20, 2022**

**Chris Prioli, AD2CS : October 27, 2022**

**Steve Farney, W2SEF : November 3, 2022**

**Gary Mirkin, WA3SVW : November 10, 2022**

**Greg Ciraula, W5DO : November 17, 2022**

***Happy Thanksgiving : November 24, 2022***

**Mary Delemarre, W2TDS : December 1, 2022**





## ***At The Repair Bench...***

***A monthly column describing a recent repair bench event.***

***By Chris Prioli AD2CS***

### **Simpson 260 Series 5 Analog VOMM**

A few weeks ago, I received a carton in the mail, with a plea for help tucked into the carton alongside a Simpson 260 Series 5 analog VOMM. (Yes - VOMM is correct in this case, as the meter is a volts, ohms, and milliamperes meter.) The owner wrote that it had quit working in all modes and he had no idea why. Of course, I was up for the challenge, and it turned out to be quite interesting.

I first verified that there was no response in the meter on any function or scale. I then took off the rear cover - four screws and it was off. The first thing that I noticed was that there was no battery installed for the ohmmeter function. The 260 uses a total of five cells – four “AA” cells and one “D” cell to power the ohmmeter. Naturally, I installed a set of cells and tested the ohmmeter function again, to find that it was still inoperative.

I began a more thorough examination of the meter componentry, looking for burned components or broken wire solder points. What I found instead was quite surprising, and goes to show that you cannot always believe what people say. A close inspection revealed that the PCB on which most of the meter’s components are installed was cracked along its left (from the rear) side, about an inch in from the edge of the board and at an angle from the outer corner towards the center.

I removed the PCB to examine the opposite (foil) side, and found that five traces were broken along the crack. This might turn out to be a simple repair. I began by applying some cyanoacrylate glue to the crack to strengthen the board. When the glue had cured, I simply solder-bridged the cracks in the foil traces, a task made easier by the fact that the traces were solder-covered. I re-installed the “AA” and “D” cells, and tested the meter. Full operation was restored! I did some cleaning of the switches and pots inside the meter with some DeoxIT® Gold, cleaned up the exterior, and secured the back to the meter assembly.

The meter’s folding handle was quite misshapen (read : bent). I decided to remove it and repair it. The handle is secured by a shoulder bolt on either side of the case, so I removed those bolts. The handle itself is a sandwich of metal encased by a plastic covering, making it a simple task to straighten the handle completely, and then to re-bend it to its proper contour. I then re-installed the handle and the job was done.

I do not know how the PCB got broken, but it is quite obvious to me that the unit had been dropped at some point in its history, based upon the way the handle was bent. I also have a hard time believing that the owner was unaware of the broken PCB, especially as he had removed the battery for shipping the meter. He also did not take any care in packing the meter for shipment – he simply stuck it in a carton with its test leads, but with no wrapping or packing at all, leaving the meter free to bounce around in the carton. Needless to say, it did NOT go back to him the same way.







## **Amateur Radio Emergency Services Update - September 2022**

**By Bob Keogh, KD2NEC - Gloucester County Emergency Coordinator**

### **1. 2022 Simulated Emergency Test**

This Exercise will be conducted on the morning of Saturday, October 1, 2022, between the hours of 0830 and 1100 Hours.

It will be conducted in the comfort of your home or a location of your choice. There will NOT be any requirements to travel or operate your radios in the field. This is strictly an operational test of your radio equipment and your emergency operational capabilities.

You do not have to be a member of Amateur Radio Emergency Services (ARES) to participate in this exercise. Any licensed Amateur Radio Operator can enjoy the fun of being part of this exciting annual ARRL Nation Wide Exercise. If you have questions or would like to participate, simply send an email to Bob Keogh at [KD2NEC@QSL.NET](mailto:KD2NEC@QSL.NET).

Below is an overview of the Severe Weather Related Incident and the Objectives of the exercise.

This is why we Train and Practice our Emergency Radio Communications Skills every Sunday night on the GCARC 147.180 MHz repeater.

We all hope and pray that we never see this type of disaster in our communities but we all need to be prepared.

**"Hope for the best but be prepared for the worse"**

### **Simulated Emergency Test Overview**

**THIS IS A DRILL THIS IS A DRILL THIS IS A DRILL**

A band of Severe Thunderstorms with embedded tornadoes and Very Strong Winds are approaching Southern New Jersey from the Mid-West. To make matters worse, at the same time this storm reaches New Jersey, there is an astronomical high tide forecasted along the Atlantic Coast.

These severe storms have caused significant damage and disruption of transportation, power, internet, and other critical services in the Mid-West.

Preliminary weather predictions indicate, that severe storm bands will affect the entire region from Virginia to New Jersey. Forecasters are anticipating flash flooding from the rain fall, up to 3-5 inches per hour in isolated locations. Straight-line winds are predicted in the range of 70 to 90 mph, along with possible tornadoes/waterspouts.

### **National Objectives for ARRL Simulated Emergency Test**

1. To discover the strengths and weaknesses of ARES, NTS, RACES, AUXCOMM, and other groups providing emergency communications.

*ARES Update - Continued on page 19*

2. To test the full range of systems under realistic conditions.
3. To provide a demonstration to served agencies of Amateur Radio's value to the public in time of need.
4. To help operators gain experience using standard procedures and a variety of modes under simulated emergency conditions.

### **Local Southern New Jersey Section Objectives**

1. To be able to set up emergency radio communications and process tactical and formal messages, during simulated severe weather events.
2. To utilize multiple radio frequencies to send and receive messages via repeaters or simplex using multiple modes to support served agencies.
3. To maintain Incident Command System (ICS-214) Activity Logs for all activities, including message handling, significant events, and all operations.
4. To be able to adjust our plan in real time, throughout the simulated exercise, based on changing weather conditions of the storm.
5. To communicate Damage Assessments to simulated served agencies, such as National Weather Service and each of the local county Emergency Operations Centers (EOCs).
6. To send and receive messages, to and from the American Red Cross Headquarters, and at the same time, sending Health and Welfare messages to family members of those people who had to evacuate their homes and are now staying in simulated Red Cross Shelters, across Southern New Jersey.

## **2. Developing a partnership with the American Red Cross**

One of our Emergency Communicators, Doug KD2VQA, discovered a flyer from a Red Cross Recruiting Campaign, that has now led us into a viable opportunity to partner with the Southern New Jersey Chapter of the American Red Cross. The Red Cross is the organization that opens shelters for people who need to evacuate their homes during the threat of a severe storm.

We are proposing that we (ARES) partner with the ARC, to provide Radio Emergency Communications in those shelters. We will be providing Tactical Communications to and from the Shelters through out South Jersey, to the Chapter Headquarters. We will also provide Health and Welfare messages to and from Evacuees and their family members, when all other commercial communications system have been disrupted.

## L/C Meter Kit Build - Part Two

By Chris Prioli, AD2CS

### Calibration

There are several facets to the calibration of the meter. The first is to check the free-running frequency of the oscillator and the calibration frequency of the oscillator. The calibration frequency should be within  $71\% \pm 10\%$  of the free-running frequency. Calibration involves the use of the jumper pin cap and the four two-pin jumper headers on the main PCB. **Figure 12** shows the locations of the four jumper headers.

We can check the free-running oscillator frequency (F1) first by taking the jumper cap and placing it on the two pins of J2, the second pair of jumper pins from the top of the PCB. Turn the unit on and the display will show the frequency in Hertz. With the  $82\mu\text{H}$  inductor in circuit, the oscillator will run somewhere in the range of 58 kHz to 60 kHz. Mine runs right at 58.922 kHz - 0058922 on the meter display (**Figure 13**). To see the calibration frequency (F2) displayed, move the jumper cap to J1 - the first pair of pins from the top of the PCB. The display will now show the calibration frequency. Mine ran at 41.771 kHz (00041771 on the meter - **Figure 14**). This equates to 70.89% of the free-running frequency, and well within the  $\pm 10\%$  frequency tolerance. It should be noted that if there is an indication of "0000000" on the display while checking oscillator frequencies, the oscillator is not running and some investigative work is called for. Also, if the difference between the free-running frequency and the calibration frequency is less than 2%, the relay is suspect. The two frequencies were measured using my bench-top frequency counter and found to be within 5 hertz of the displayed values.

The jumper cap is also used to calibrate the capacitance meter, if calibration is needed. To make that determination, start out by setting the meter in capacitance mode (center switch out) and then zeroing the capacitance function by momentarily pressing the right-hand switch. The meter will go through its calibration routine and will display "C = 0.0pF". At this point, connect your standard capacitor - a device of a definite known value or a high-precision device - to the meter and read the display. If the meter reads within the tolerance of the capacitor, no calibration is required. For example, if your standard is a  $0.001\mu\text{F}$  (1000pF) capacitor with a  $\pm 10\%$  tolerance, the meter should read between 900 and 1100 picoFarads.

If the reading is outside the tolerance limits of your standard capacitor, calibration is accomplished by applying the jumper cap to either J3 or to J4. J3 is the third set of jumper pins from the top of the PCB, and J4 is the fourth set. Connecting the jumper cap to J3 will yield a decrease in indicated capacitance, while applying the jumper cap to J4 will produce an increase in displayed capacitance. The capacitance reading will continue to go up or down as long as the jumper is connected. When the reading gets to the value that you require for your capacitance standard, remove the jumper cap. The  $\mu\text{C}$  will remember the calibration value and use it in future measurements. Store the jumper cap by placing it on only one of the pins at J1 so that it is available if needed in the future.

Inductance calibration is automatically accomplished when the capacitance calibration is set.



AD2CS L/C Meter Kit Build - Continued on page 21



## Accessory Kit

The accessory kit assembly involves soldering alligator clips to the two test lead which are already terminated with banana pins, and the assembly of two miniature adapter circuit boards. One of the adapters - the LC adapter - gets only a four-pin SIP socket. The banana pins are already soldered in place as shipped. The second adapter is a varactor diode adapter, used for measuring the capacitance of a varactor diode. It has a pair of 100k $\Omega$  resistors and a 1 $\mu$ F monolithic ceramic capacitor in addition to the four-pin SIP socket. The assembled accessory kit is shown in **Figure 15**.

Final assembly requires that the LCD panel wires be plugged onto the main PCB right-angle headers, with the brown wires to the left on both plugs. Arrange the wires so that they will curl under the upper half of the enclosure cover, and install the end plate into the grooves in the enclosure end. Bring the two halves of the enclosure together, aligning the end plate into the slots in the second half and the three switches into their holes, and hold the two halves together while installing the four black securement screws provided for this purpose. Arrange the battery into the battery section and install the battery section cover to the lower half of the enclosure. If desired, print and affix a front panel label to the meter, and the job is complete (**Figures 16 and 17**).

## Backlit LCD Panel

As I mentioned earlier in this article, I opted to replace the supplied non-backlit LCD panel with a backlit one. The original LCD panel is a Crystalfontz CFAH0802A-NYG-JT# 8X2 sunlight readable LCD unit. The backlit unit that I used is a Crystalfontz CFAH0802-YYH-JT# unit, which includes a 5VDC yellow-green LED backlight.

In order to make the backlight work, some modifications are necessary to the backlit LCD panel. These modifications consisted of closing one jumper location with a solder bridge, and soldering in a current limiting resistor at another location.

Refer to **Figure 18** and note the locations identified as RA and J2 at the end of the LCD panel PCB opposite the end with the wire holes. One end of the RA location is connected through the PCB traces to Pin 2 of the PCB, which is the incoming 5VDC point. Similarly, one end of J2 is connected through the PCB traces to Pin 1 of the PCB, which is the 0VDC or ground pin. The opposite end of RA is tied to the A location, which is the anode of the backlight LED, and the second pin of J2 is tied to the K location, which is the backlight LED cathode.

Creating a solder bridge across J2 effectively grounds the cathode of the backlight LED. The requisite current-limiting resistor gets installed across the RA location, thus completing the power circuit for the backlight LED and providing for proper current limitation.

So now, the question becomes “What value resistor should be used at RA to provide for the proper current to the LED?” That answer comes from the Crystalfontz datasheet for the CFAH0802-YYH-JT# unit. According to the datasheet, the backlight LED current is typically 70mA, and the forward voltage is listed as 4.2VDC. OK - a 5.0VDC supply less 4.2V leaves 0.8 volts. Using Ohm’s Law and solving for resistance,  $R = E / I$  so R is equal to 0.8V / 0.07A - remember that we have to convert the 70mA to amperes. The resulting resistance would be 11.43 $\Omega$ .

By the way... the standard formula for finding an LED limiting resistor from voltage and current is to use the formula  $R = (V_S - V_F) / I_F$  which is really just another way of saying the same thing...  $R = (5.0 - 4.2) / 0.07 = 0.8 / 0.07$  which is equal to  $11.429\Omega$ . Ohm's Law through the back door!

I installed an  $18\Omega$  250mW resistor and called it a day. I also did not even bother to source a surface mount resistor for this, as I had the axial leaded  $18\Omega$  part in stock. It was an OK fit soldered to the PCB at the RA location. I could have gone with a  $15\Omega$  (or even a  $10\Omega$ ) resistor just as easily either one would have worked OK. I chose the  $18\Omega$  because it would reduce their current towards to lower end of the current range (63mA to 84mA), would dim the LED very slightly and would possibly slightly extend the LED life. The 250mW was overkill, as the resistor would consume a mere 56mW, but it was what I had on hand. **Figure 19** shows the modified LCD panel as installed into the meter enclosure.

## Conclusion

This meter will find a home on my test bench. Of that, there is no doubt. However, I won't really be happy with it until I have re-worked the software to give me English prompts. To that end, I already stock a few pieces of the PIC16F628A-I/P microcontroller, so I am ahead of the game, especially as Mouse and Digikey have no stock on these  $\mu C$ 's as of the date of this writing. I do not plan to overwrite the original; instead, I will work with another IC for my experimentation. I will find the time to do that in the not-too-distant future. Some time with MPLAB is called for.

Apart from the non-English prompts, my other complaints about this kit are the lack of a front panel label - an easy and inexpensive improvement that the kit maker should consider, especially as it would get his brand out there to be seen and remembered - and the complete lack of PCB legend screen prints. I mentioned this with the last HecKits build, and it is still a sore spot. I know that with my PCB manufacturer, there is no additional charge for the screen printing, so this is truly an egregious oversight in my opinion. It is one of the things that takes a first-class kit and relegates it to the lower levels, and certainly makes the build more onerous. My last gripe is that the parts actually shipped do not accurately match the parts list provided. Either provide the listed parts, or edit the parts list! I also think that a backlit LCD panel should be the standard equipment alternative rather than a builder-supplied upgrade.

So much for the cons... now for the pros. The meter is quick and responsive, and is more than adequately accurate. I like its compact size, and I appreciate the attention to detail expended in the mounting arrangements for the circuit boards. The fact that the maker provides the rudimentary nut driver says quite a bit. Someone thought about the limited clearance around some of the fastening hex nuts and provided a tool solution to make assembly simpler. The mounting studs or screws are locked in place, making installation of the boards a breeze. The battery compartment includes a rubber pad to keep the battery from rattling around, and the battery snap is of sturdy good quality. The kit maker's decision to pre-solder the test jacks and banana pins was a good choice, as they are critical points that could be difficult for a less-experienced kit builder. The fit and finish of the meter is good.

All things considered, this one is probably a B+, but it would not take much to make it an A+. As HecKits grows, I would expect that some of these issues will be addressed. They need to be, because they really keep this from being a first-rate kit.

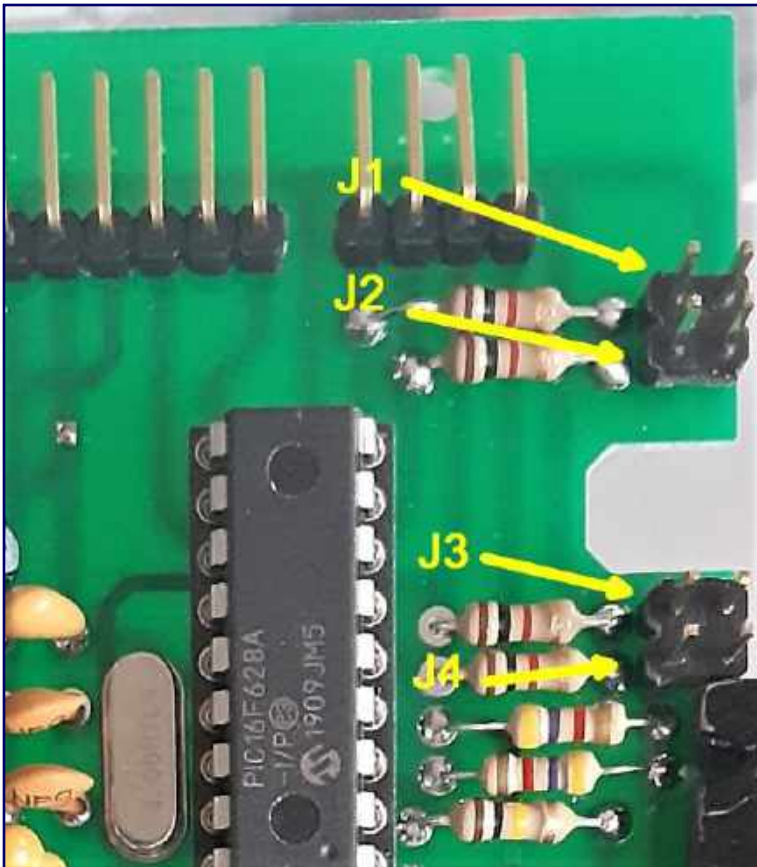


Figure 12 : Jumper Header Locations



Figure 13 : F1 Frequency Display

Figure 14 : F2 Frequency Display



Figure 16 : Assembled Unit Without Label



Figure 15 : Assembled Accessory Kit

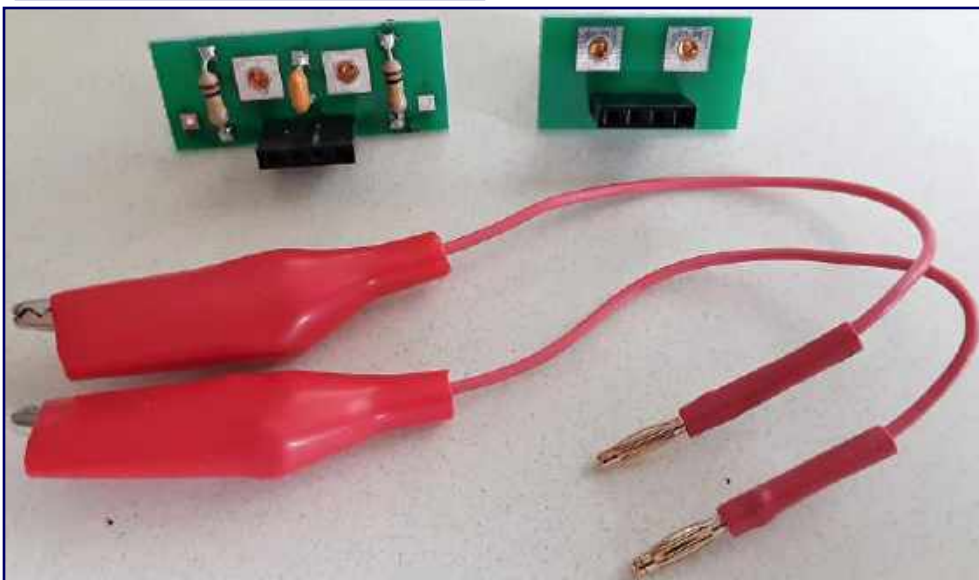






Figure 17 : Labeled Completed Meter



Figure 18 : LCD Panel Before Modification



Figure 19 : LCD Panel Modified



## September 1, 2022 : One Year Later - We Are Rebuilding!

By Al Arrison, KB2AYU - Clubhouse Site Chairman

As I write this, we are just a few days from the 1 year anniversary of the tornado damage to our Club station. Work has been ongoing since that day to restore the Club station to better performance than before. Everyone's generous financial donations have allowed us to purchase the "hardware" for the HF station. That's the (relatively) easy part. The hard part is the installation of that hardware. It requires the donation of equipment, expertise and especially time by Club members to complete successfully. Most of the work gets done on Saturdays. Since it is mostly outdoor work, we are at the mercy of the weather. Rain, no work. 100 degrees, no work. Below is a list of the hardware being used for the HF station rebuild.

The used **Tashjian Towers LM470 70' Crank-up Tower** we obtained saved us thousands of dollars by allowing us to use the existing tower base. However, the tower needed refurbishing. This included some fabrication and welding, new pulley bearings, new lift cables and a full painting with cold galvanize compound. The tower is motorized so it can easily be lowered if bad weather is forecast.

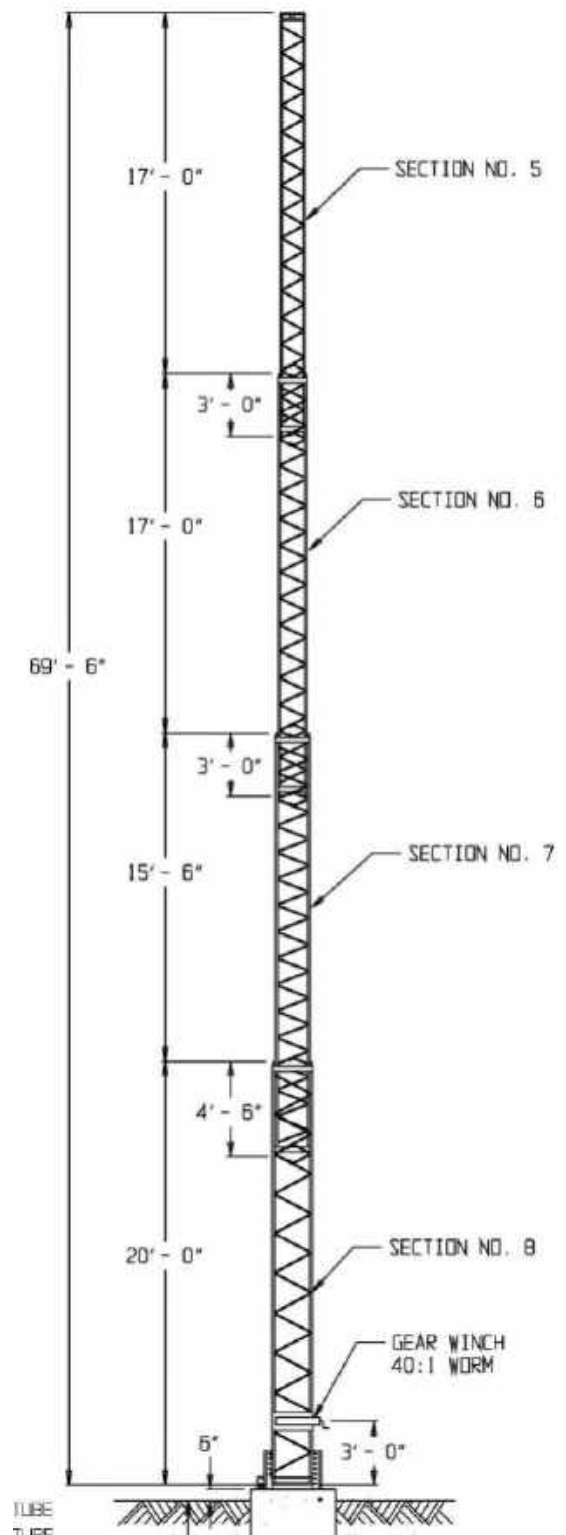
The new HF antenna is a **JK Antennas MidTri40**. This amazing antenna combines a 10-15-20 meter tri-bander with 2 elements on 40 meters on a single 26' boom.

A Club member generously donated a new **Yaesu G-2800 heavy duty rotator**. A **Green Huron rotator control box** was purchased to go with it.

An **Array Solutions 6 position remote coax switch** will be at the top of the tower so that only one coax will have to run down the tower.

The center of an 80 meter inverted V will be located at the top of the tower as well.

We are going to do our best to have the HF station done by our Hamfest. Then we will start the process all over for the VHF/UHF station. We have already received grant money for the electronics equipment through the **GCARF (Gloucester County Amateur Radio Foundation)**. We are currently waiting on the approval of another grant for the outdoor hardware. That project will most likely have to wait until next year. I hope to get some temporary VHF/UHF antennas up to get us through the winter.





## NanoVNA Tech Saturday was a Success

By Jon Pearce, WB2MNF

More than 15 hams attended the NanoVNA Workshop at the Tech Saturday event at the W2MMD Clubhouse on August 6, 2022. Many of the attendees had already purchased and worked with those devices; others were in their early stages of learning and were able to pick up some ideas and tips. **Chris AD2CS** and **Jon WB2MNF** reviewed the basic function and setup of the devices and then started working through some antenna measurements. They showed how to trim a 70 cm antenna to frequency using the VNA to continually measure the SWR at the desired frequency as the antenna was shortened, and then evaluated several other types of antennas including the 2 meter vertical that **Charlie Olinda, N2SRQ** had brought. A collaborative effort among the attendees was successful in using the VNA to measure the length of an “unknown” piece of coax, and then the group reviewed the effect of various circuits on a “demo” board built to show off how various electrical circuits can be viewed on these devices. Finally Chris demonstrated the VNA Saver program that runs on a PC connected to the VNA and displays the VNA output on a larger screen.

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.

The September Tech Saturday event will be held on September 10, 2022 (the day before the GCARC Hamfest) and will cover implementing VARA-FM and packet radio in Winlink and other applications on 2 meters.







# Basic Troubleshooting of Electronic Devices and Equipment - Part One

By Chris Prioli, AD2CS

Basic troubleshooting involves approaching a failure in a logical and consistent manner. In many cases, only the most rudimentary test equipment will be needed, while in other cases some more involved test equipment is called for. In any event, we always start with the basics. None of what follows is meant to describe high-level radio analysis and repair, but is designed instead to help the novice troubleshooter get started.

While an in-depth study of the complete range of test equipment is beyond the scope of this article, we will discuss the basics that anyone who does more than just occasional troubleshooting will want to have. A list of that equipment might look something like this :

- Digital Multimeter
- Analog Multimeter (VTVM or FET VOM)
- Continuity Tester
- Universal Component Tester
- Infrared Thermometer
- Signal Generator/Sweep Generator
- Signal Tracer - AF and RF
- Logic Probe
- RF Probe
- Frequency Counter
- Oscilloscope
- Digital Camera
- Test Leads and Jumper Wires
- 50 $\Omega$  100W Dummy Load

A more advanced list of test equipment might include the following additional items :

- Capacitance Meter
- Inductance Meter
- Capacitor Leakage Tester
- Capacitor ESR Meter
- Transistor Tester
- Tube Tester
- Logic Analyzer
- Curve Tracer

Not to be forgotten is the subject of troubleshooting safety. To that regard, an isolation transformer, a variable AC supply (often called a Variac<sup>®</sup>), and a series current limiter are all necessary items whenever any mains-powered equipment is being serviced or repaired. These three items, taken together, are called the “trinity” and are an absolute must-have for mains-powered equipment repairs. Bench repair of DC-powered equipment will often require the use of a regulated bench power supply, generally with adjustable output (both current and voltage) and a current capability of at least one ampere. If not adjustable, fixed outputs of 5VDC, 9VDC, 12VDC, 15VDC, and 18VDC are recommended - can you see why an adjustable supply is better? It is easy to cobble together a regulator for intermediate voltages such as 6 volts, 4.5 volts or 3 volts. Another good choice is a so-called “battery replacement box” such as the Elenco XP-100 Battery Eliminator. If you are planning to do transmitter output testing of ham radios, a power supply capable of delivering much higher current, often up to 40 amperes and generally at 13.8 volts, will be needed.

*Basic Troubleshooting - Continued on page 29*

Personal safety also includes the mandatory use of eye protection. There are many eye hazards in electronic repair work, ranging from flying clipped leads to exploding capacitors. You only get one set of eyes in your lifetime - protect them against avoidable injury.

Finally, the troubleshooter will want to have a decent set of basic electronics hand tools, including screwdrivers - both large and miniature (jeweler's), tweezers for SMT devices, pliers of various types but especially needle nose and diagonal cutting, wire cutter/stripper/crimper pliers, nut drivers in Imperial and metric sizes, and some small wrenches in both Imperial and metric sizes. Soldering and de-soldering equipment will also be necessary, as will some good lighting and magnification. Solder and rosin flux are also necessary - NEVER use acid-core solder or acid flux when working on electronics!

Of course, all of the things that we have already discussed means that a suitable workstation should be made available. A non-conductive workbench with an anti-static mat is best, and suitable mains power - with GFI receptacles or on a GFI breaker - should be available nearby the bench. Circuit board holders of some type are also a boon to the bench technician.

One more word of caution that is very important when working with mains power - DO NOT work alone! Always make sure that there is someone available in case of emergency, and preferably that person should be CPR trained and capable! Electricity can be very dangerous, even lethal. Take the proper precautions to preserve your life and safety.

OK - now that all of that is out of the way, let's get down to the meat of this article - ***Troubleshooting!***

The first step in any troubleshooting endeavor is to verify the problem and ascertain the operational status, if any, of the device. Take for example a recent problem that I encountered with one of my signal tracers. Upon switching it on, it appeared to come alive, that is the power LED lit up and the signal strength LED string went through their normal countdown sequence. All good, right? Not so fast... when we attempted to follow a signal with the unit, there was no response in the tracer, either from the speaker or from the signal strength LED string. So... how do we troubleshoot something like that, when the defective item is one of the tools that would normally be used in such a diagnosis? I started out by trying to verify what did and what did not operate as it was supposed to. In this case, it was apparent that the DC supply voltages were present, as the power pilot lamp LED came on, and the signal strength LEDS lit up as well. This would seem to indicate that the problem was in the signal path somewhere. I then employed a methodology that I like to call a system of halves, which is an effective means of locating a faulty stage or component.

The system of halves simply divides the failed device into rough halves - not exactly into two equal parts, but into two logical parts for troubleshooting. Select a logical dividing point somewhere in the unit and begin testing there. If the test shows a positive result, then everything from the dividing point forward through the signal path must be operational, and the problem exists somewhere between the input and the dividing point. Once you have identified which "half" of the unit has the failure, work deeper by dividing that section in half and repeating the test. This method is followed until the fault is isolated to a specific stage or component. The size and complexity of the unit is the governing factor as to how many steps it will be likely to take to find the failure.

*Basic Troubleshooting - Continued on page 30*



Going back to my signal tracer example, I injected a 1 kHz sine wave from a signal generator into the input of the audio amplifier, going through the coupling capacitor at the amplifier input pin. This did not produce any output at the signal tracer speaker, indicating that the audio path was defunct somewhere. The next logical division was at the output of the audio amplifier stage, which also failed to produce a tone in the loud-speaker. OK - now we are down to the audio driver or output, so I injected a signal there and still had no response. Hmmm... is it possible that a low-failure item like the speaker had failed? I then clipped a test speaker with alligator clips to the speaker wires right on the integral speaker, and voilà! A clean 1,000 hertz tone was emitted by the test speaker. Moving the signal injector back to the starting point - the input of the audio amplifier, I verified that the audio chain was intact and operational, including the volume or audio gain control. Job done! Right? ...Wrong! Just for completeness of testing, I wanted to verify the operation of the sensitivity control, which is in the signal input processing area. To do that, I injected the same 1 kHz sine wave signal directly into the input port of the signal tracer, and guess what? No response from the speaker, and no response from the signal strength indicator LED string. There was another problem with this puppy. I had to find it to call the job done for sure.

I went back to the last point at which I knew I had a working path, which was at the audio amplifier input. I then worked backwards toward the input BNC jack, one stage at a time, checking for signal passage through each stage. At each step of the way backwards through the signal tracer, I had a complete signal path. In other words, the injected signal was audible in the test speaker that was still clipped in place. Finally, I got to the last stop on the bus route, the BNC connector and its coupling capacitor. Because the capacitor was difficult to reach without disassembling the entire unit, I jumped over it to the BNC jack, which I tested at its solder point to the PCB. The path through the BNC jack had already been tested. Interestingly, when I injected the signal at the BNC jack center conductor solder pad on the PCB, I had no signal continuity. This meant that the fault had to be between that point and the input of the first transistor in the input processing chain. The only component in that short path was the BNC jack's input coupling capacitor.

OK - I have it narrowed down to a single component, I think. I dismantled the PCB from the housing so that I could get to the suspect capacitor, and then powered up the unit. Next, I injected the 1kHz signal at the downstream leg of the cap and the signal passed perfectly. Shifting the injector to the upstream leg of the cap showed that the signal was indeed being lost at that capacitor. Time to remove and replace it, which I did. Immediately after replacement of the capacitor, I injected the signal into the BNC jack again. This time, all functioned properly. I installed a replacement 40mm 8Ω 2W speaker to the unit cover as well as a new pair of speaker leads, reassembled the PCB into the housing, and buttoned it up. Job really done this time!

Let's analyze that repair a little bit. First of all, two concurrent failures like this are quite rare unless one is triggered by the other. There is no way that is the case here. In this situation, the speaker failure is most likely the result of disassembly of the two halves of the equipment enclosure and handling of the pieces once open. The speaker leads as built were 22 AWG solid wire, which is quite stiff. I believe that the stiff wires put undue stress on the speaker connection pad, causing it to move and break the tiny voice coil wires going into the speaker cone. In other words, the first failure identified was actually the second one that occurred, and it happened as a result of going in to diagnose the first failure. The stiffness of the solid wire is also what led me to replace those leads with equivalent stranded wire, which is much more flexible.

So let's talk about that first failure. Without testing the cap, I can be quite sure that the failure mode of the capacitor was that it went open, as that is how that cap, installed in the signal path, would have blocked the input signal. Not a very common occurrence, but it does happen from time to time. This cap was a low-value ceramic disc, which was also most likely a very low-cost part. There is truth in the saying that you get what you pay for.

What does all of this show us? It demonstrates that failures are not always what they may seem to be at first glance, and neither are the solutions. Sometimes it becomes necessary to re-engineer a unit to prevent future failures that are due to design features.

When troubleshooting an electronic circuit, it helps immensely to have some service literature, including a schematic diagram, a parts list, a PCB component map, and even "see-through" PCB diagrams that allow us to see the positions and shapes of the various lands and traces on the PCB and how they relate to the installed components. There are several sources of schematics available on the web, many of which - but certainly not all - are available at no charge. Also, when searching for schematics, don't limit your search to "schematic" - search also for "user manual" and "service manual". Always include the manufacturer name and the model number in your search string, such as "Majestic Radio 5A410 schematic" and then vet the hits to make sure that the returned pages apply to the unit on your bench. Sometimes the closest you can come is to a device family, such as the CSI 600/700 series for the CSI 710 handheld 2-meter radio. In such cases, be prepared for slight differences, or for multiple circuit iterations to be shown.

Another very useful piece of documentation is one that you might sometimes have to draw for yourself. It is called a block diagram. A block diagram breaks a device down into its logical or functional subsections. For example, a typical radio receiver block diagram might show the front end (antenna) and RF amplifier, the oscillator/mixer, the first IF amplifier, the second IF amplifier, the detector, the audio amplifier, the audio driver, and the loudspeaker. Each of these sections would be shown as a block in a chain of blocks that depicts the signal path through the unit. Feedback loops such as AFC or AGC would then be shown as a path from its source back to its target stage. Ancillary blocks like the power supply would also be shown, together with their attendant connections to the various stages.

The block diagram is your best resource when choosing the logical system of halves dividing line as your starting position as well as the other points at which to do your basic circuit testing.

So what then would the basic troubleshooting process look like? In most cases, it would look something like this :

1. Verify the complaint...
  - a. Ascertain what works and what does not work.
  - b. Do the panel illuminating lamps or LED's come on?
  - c. Is there any sound at all from the speaker?
  - d. Do front panel indicators (frequency, LCD, waterfall, etc.) work?
  - e. If a transceiver, does it switch between RX and TX (use a dummy load)?
2. How is the device powered?
  - a. Battery only?
  - b. DC from an external power supply?
  - c. AC from the mains powering an internal DC power supply?
3. Is the device solid state, or does it utilize vacuum tubes?

*Basic Troubleshooting - Continued on page 32*

*Basic Troubleshooting - Continued from page 31*

4. With the device unpowered and switched off, open the enclosure and do a thorough inspection for anything obviously burned, blown fuse, pinched wire, and so forth.
5. Take several detail-revealing photos before disturbing anything so that you can re-position leads etc. as the factory had placed them.
6. Take note of the apparent age and condition of the various problematic capacitors in the unit - particularly polarized capacitors.
7. ***Starting at this point, anything found to be other than correct during any of the testing done must be tracked down and corrected before moving on. For example, if an immediate short circuit is indicated on power-up, that fault MUST be located and cleared before any further steps are taken.***
8. Using proper precautions - isolation transformer and current-limited variable AC supply, slowly bring the voltage up on the unit. Watch the current drawn by the device. An immediate HIGH draw will usually indicate a direct short in the unit.
9. Assuming all is OK on startup, bring the unit to full line voltage and check the LOW VOLTAGE supplies for proper output. **DO NOT ATTEMPT TO MEASURE HIGH VOLTAGES!** Any low-voltage supply found to be dead or off by more than ten percent of its specified value **MUST** be corrected before continuing. Thus, a 5 volt supply reading 4.4 volts is too low and must be corrected. However, if the service manual provides different advice on this issue, the service manual values should prevail.
10. Using voltage indications from the schematic or service manual, begin checking voltages across the functional sections of the unit, testing the LOW voltages only.
11. Think about the symptoms. For example, does the unit consistently blow a fuse? If so, find the fuse on the schematic diagram and look to see what is protected by the fuse. The fault must lie somewhere in the protected circuits) after the fuse. Of course, if the fuse is a main fuse, there's a lot of ground to cover - the entire device.

**Part Two of Basic Troubleshooting of Electronic Devices and Equipment will be in the October 2022 CrossTalk**



Thursday, September 22, 2022 @ 2104 Hours



Tuesday, September 27, 2022

# A CALL TO ALL COMMUNICATORS

August 22, 2022

## I KNOW WE CAN DO THIS (I AM BEGGING AGAIN)

To all of you who have already volunteered, THANK YOU, THANK YOU. We are now just 5 weeks away from the event (September 24th and 25th, 2022) and we still need 20 + HAMS to reach our number to support the event in full fashion. We have volunteers coming from Florida, North Carolina, South Carolina, Ohio, and other far states. I truly believe that we can get another 20 from our tri-state area to fill the void. This may seem like a lot of volunteers, but when you consider up to 100 miles on Saturday (From Cherry Hill, NJ to Ocean City, NJ), and 75 miles on Sunday (the route in reverse), rest area, SAG, Command areas (North, South, and in Route) to name a few, we NEED the HELP.

As a Check Point volunteer, yes, we are asking for 4 to 6 hours each day (2 days), and this supports not only the HAMS that are putting in 14 to 16 hours for 3 days, but also the other 1000 volunteers, the up to 7000 riders, and of course - All those folks living in our area with this horrible disease called MS. (Of which I know of at least 4 HAMS with MS that work this event with us - all working at least 12 hours a day)

PLEASE - come out to support our public service responsibility, and be part of what is one of the largest (if not THE largest) HAM involved public service event in the country. Again, if you would like to see a little better what we do, please watch the YouTube episode of "WHAT HAMS DO" which showcased us last year, and hear the Chapter President of the Greater Delaware Valley Chapter of the National Multiple Sclerosis Society tell all : *"The HAMS are the backbone of the event, and they couldn't do it without us"*.

Everyone on our mailing list, and club mailing lists receive our recruitment emails. We ask you all to talk up the event, and pass along this email to any HAMS you may know. If you have already volunteered, you should have received a confirmation email. If you have not, please contact us so that we can straighten things out.

Thank you for your anticipated participation, and this is another year that I can say :  
***IT IS AN HONOR, PRIVLEDGE, AND PLEASURE, WORKING WITH ALL OF YOU.***

**With Much Appreciation**

73

EvComm

Msg. Phone : (609.795.0909)

N3MSSEVCOMM@gmail.com

Editor's Note : The on-line registration form, the downloadable paper form, and the YouTube video " What Hams Do", can be found on : <https://gloucestercountyarcs.weebly.com/bike-ms.html>.



**Bike MS : City To Shore Ride 2022**

**September 24 - 25, 2022**

<https://bit.ly/3APts4m>





## The QSO Today Virtual Ham Expo Returns September 17 -18, 2022

The next QSO Today Virtual Ham Expo, a full featured virtual ham radio convention, is September 17-18, 2022. The online event includes speakers and presentations, fully interactive video lounges where participants can meet each other and chat, and an exhibit hall full of vendors and organizations.

While the Ham Expo was originally created in August 2020 as an alternative to canceled in-person ham radio conventions due to the COVID-19 pandemic, it has evolved into a regularly-held event for amateur radio learning through peer submitted presentations on nearly every amateur radio subject, lively discussion, and interaction.



The Expo uses virtual event technology using platforms produced by vFairs and Kumospace. "The Kumospace lounges were a fantastic edition to the Expo last March and were full of hams and conversation during the entire Expo weekend", said Eric Guth, 4Z1UG, the founder of the QSO Today Virtual Ham Expo. Kumospace is a video chat platform for hosting and participating in immersive virtual events. Guth said there are new enhancements that will make the lounges even more enjoyable for attendees. Kumospace and vFairs are now supported by apps for Apple and Android. Expo personnel still recommend a fast internet connection and big screens for the best user experience.

New for this Ham Expo is a Poster Gallery Hall that includes a product showcase and interactive projects submitted by amateurs. The product showcase is as a way for vendors who may or may not have a booth to demonstrate individual products through videos, white papers, and slides. Each showcase is fully interactive through text chat and supports opportunities for vendors to follow-up with interested visitors. The Poster Gallery will also include an opportunity for individuals to submit papers, projects, and articles to be enjoyed by Expo delegates. Accepted gallery submission will include a free ticket to the expo.

Sponsor and exhibitor opportunities are still available. The \$10 ticket for the Expo will go on sale in August. Anyone can attend the Expo from anywhere in the world, over the internet. For more information go to : [www.qsotodayhamexpo.com](http://www.qsotodayhamexpo.com). ARRL The National Association for Amateur Radio® is a QSO Today Virtual Ham Expo Partner.

*Article Credit : The ARRL Letter for July 21, 2022 - [www.arrl.org](http://www.arrl.org)*



## Southern New Jersey Section

Thanks to an excellent relationship with the New Jersey South Region Healthcare Emergency Preparedness Coalition and member organization Cooper University Hospital, the Southern New Jersey ARES program has portable communications "pods." Custom built to specifications, the pods are essentially communications trailers - without the trailer.

*Article Credit : The ARES Letter for August 17, 2022 - [www.arrl.org](http://www.arrl.org)*



## Book News

By Chris Prioli, AD2CS

### Electronic Applications of the Smith Chart, 2<sup>nd</sup> Edition

Author : Phillip H. Smith

Published by SciTech Publishing

ISBN 978-11884932397

Copyright © 1995

264 pages

This month's installment of Book News has a rather lengthy title, with the full title being *Electronic Applications of the Smith Chart in Waveguide, Component, and Circuit Analysis* and is written by the inventor of the fabled Smith Chart.

According to Amazon.com : *"This is the second edition of Electronic Applications of the Smith Chart, written by Phillip H. Smith, the originator of the Smith Chart. It covers the history, development and applications of the Smith Chart. This classic reference book describes how the chart is used for designing lumped element and transmission line circuits. The text provides tutorial material on transmission line theory and behavior, circuit representation on the chart, matching networks, network transformations and broadband matching. This edition includes a new chapter with example designs and description of the winSMITH software accessory."*

The author holds some twenty patents in electronics and signal transmission areas, and is renowned for the development of this most useful but less understood tool.

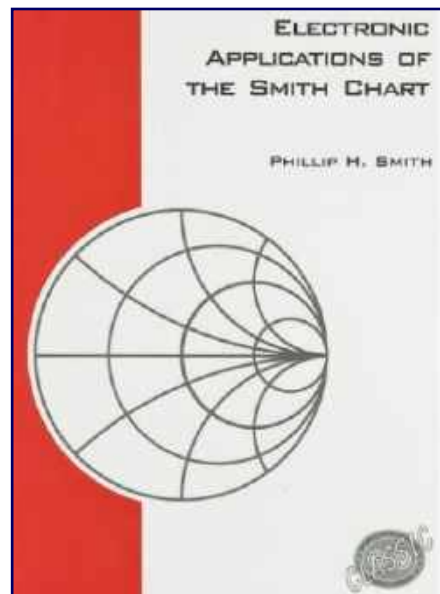
This book, widely available in .PDF format online, is a treasure-trove of information for any ham interested in learning more about the Smith Chart and how to implement it, as well as the many functions that can easily (or fairly easily) be performed through its use.

While I am still digesting this volume, I have read enough to give it my highest recommendation. It is well arranged, though the writing is rather technical in nature. The author does a good job, however, of explaining the esoteric topics that he covers.

In the authors words, *"The purpose of this book is to provide the student, the laboratory technician, and the engineer with a comprehensive and practical source volume on SMITH CHARTS and their related overlays. In general, the book describes the mechanics of these charts in relation to the guided-wave and circuit theory and, with examples, their practical use in waveguide, circuit, and component applications. It also describes the construction of boundaries, loci, and forbidden regions, which reveal overall capabilities and limitations of proposed circuits and guided-wave systems."*

This book is still available in hardcover print form from specialty book stores, with a price tag nearing two hundred dollars. Most folks will go for the electronic version, which is available at no cost if one looks enough. The original edition was two hundred and twenty-two pages in length and was published in January of 1969. Yes - the Smith Chart has been around for a long time and is still valid and viable in amateur radio circles.

If you do decide to try this one out, just take it slowly, allowing each portion to settle in before you go on. It will be easier to absorb the material if you follow that prescription.



# CQ Contest

## Across

1. Radiation pattern part
5. Contest off-time ender, possibly
10. The "Olympics" of contests
14. IOTA item
15. Unusual object
16. "Long \_\_\_\_" (DX)
17. VE8 mobile?
18. Hammerin' Hank
19. 1091 using 44-across
20. An advantage of being weak?
23. In early radio, some rotated and some didn't
24. Foot part
25. Wayward circuit paths
28. Knight neighbor
30. 3W holiday
33. QTH on the range
34. 160 meter Stew
35. The one with QTC
36. Sheltered, when /MM
37. They don't count, and may count against you
38. CW parts
39. Plating material
40. Typewriters (in ham speak)
41. Military cap
42. The only CW many people know
43. One way to stand by
44. Abbreviated figs. (abbr.)
45. AMSAT launch partner
46. Currency used by 45-across, mostly
47. Predatory contesting?
55. EI-land, in EI-speak
56. VQ9 first name
57. They make the 45, sometimes for big guns
58. Western competing org.
59. 3:1 dash to dot ratio, say
60. "Yikes!"

61. Biblical verb
  62. Prefix with -cotta
  63. Xtal filter replacements
- Down**
1. Daffy Duck's programming language?
  2. LA city
  3. A fuse maybe did this
  4. Many hams also have one
  5. Bidirectional flow
  6. KH6-fests
  7. June VHF QSO Party sponsor
  8. Funny one
  9. Non-op hams at 10-across stations
  10. Large cetacean
  11. Suffix with glitte- or lite-
  12. Twiddle the big knob

13. Yaesu front panel marking
21. Contesters try to maximize it
22. 21-down, for a first-time tester?
25. Test results figs.
26. Prefix with centric or sphere
27. A band sometimes does it at dawn
28. CQ answer
29. Valuable minerals
30. Region net for NNJ and others
31. Gourmand
32. NAQP, CQWW and others, briefly
34. Push-\_\_\_\_
37. Response to a contest exchange, say
38. Took an alternate route
40. Catchall abbr.
41. QSL handler, slangily
44. Vaulted roof
45. Construct, as a tower
46. "Nevermore" quote quoter, informally
47. Transmit
48. Kit maker, once
49. Ominous noises from the amp, maybe
50. Assistant
51. At no time, poetically
52. Holiday drinks
53. OM in G-land
54. High V points on a dipole

**Answers on Page 52**

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

## 2020-2024 Element 4 Amateur Extra Class License Question Quiz

This month we continue with Element 4 Amateur Extra Class license question pool, Subelement E1 : Commission Rules (6 exam questions out of 6 groups) (Answers on 'Last Page Calendar')

### E1B01

**Which of the following constitutes a spurious emission?**

- A. An amateur station transmission made without the proper call sign identification
- B. A signal transmitted to prevent its detection by any station other than the intended recipient
- C. Any transmitted signal that unintentionally interferes with another licensed radio station
- D. An emission outside the signal's necessary bandwidth that can be reduced or eliminated without affecting the information transmitted

### E1B02

**Which of the following is an acceptable bandwidth for Digital Radio Mondiale (DRM) based voice or SSTV digital transmissions made on the HF amateur bands?**

- A. 3 kHz
- B. 10 kHz
- C. 15 kHz
- D. 20 kHz

### E1B03

**Within what distance must an amateur station protect an FCC monitoring facility from harmful interference?**

- A. 1 mile
- B. 3 miles
- C. 10 miles
- D. 30 miles

### E1B04

**What must be done before placing an amateur station within an officially designated wilderness area or wildlife preserve, or an area listed in the National Register of Historic Places?**

- A. A proposal must be submitted to the National Park Service
- B. A letter of intent must be filed with the Environmental Protection Agency
- C. An Environmental Assessment must be submitted to the FCC
- D. A form FSD-15 must be submitted to the Department of the Interior

### E1B05

**What is the National Radio Quiet Zone?**

- A. An area in Puerto Rico surrounding the Arecibo Radio Telescope
- B. An area in New Mexico surrounding the White Sands Test Area
- C. An area surrounding the National Radio Astronomy Observatory
- D. An area in Florida surrounding Cape Canaveral

*Element 4 Amateur Extra Class Quiz - Continued on page 30*



**E1B06**

**Which of the following additional rules apply if you are installing an amateur station antenna at a site at or near a public use airport?**

- A. You may have to notify the Federal Aviation Administration and register it with the FCC as required by Part 17 of the FCC rules
- B. You must submit engineering drawings to the FAA
- C. You must file an Environmental Impact Statement with the EPA before construction begins
- D. You must obtain a construction permit from the airport zoning authority

**E1B07**

**To what type of regulations does PRB-1 apply?**

- A. Homeowners associations
- B. FAA tower height limits
- C. State and local zoning
- D. Use of wireless devices in vehicles

**E1B08**

**What limitations may the FCC place on an amateur station if its signal causes interference to domestic broadcast reception, assuming that the receivers involved are of good engineering design?**

- A. The amateur station must cease operation
- B. The amateur station must cease operation on all frequencies below 30 MHz
- C. The amateur station must cease operation on all frequencies above 30 MHz
- D. The amateur station must avoid transmitting during certain hours on frequencies that cause the interference

**E1B09**

**Which amateur stations may be operated under RACES rules?**

- A. Only those club stations licensed to Amateur Extra Class operators
- B. Any FCC-licensed amateur station except a Technician Class
- C. Any FCC-licensed amateur station certified by the responsible civil defense organization for the area served
- D. Any FCC-licensed amateur station participating in the Military Auxiliary Radio System (MARS)

**E1B10**

**What frequencies are authorized to an amateur station operating under RACES rules?**

- A. All amateur service frequencies authorized to the control operator
- B. Specific segments in the amateur service MF, HF, VHF and UHF bands
- C. Specific local government channels
- D. Military Auxiliary Radio System (MARS) channels

**E1B11**

**What does PRB-1 require of regulations affecting amateur radio?**

- A. No limitations may be placed on antenna size or placement
- B. Reasonable accommodations of amateur radio must be made
- C. Amateur radio operations must be permitted in any private residence
- D. Use of wireless devices in a vehicle is exempt from regulation

**E1B12**

**What must the control operator of a repeater operating in the 70 cm band do if a radiolocation system experiences interference from that repeater?**

- A. Cease operation or make changes to the repeater to mitigate the interference
- B. File an FAA NOTAM (Notice to Airmen) with the repeater system's ERP, call sign, and six-character grid locator
- C. Reduce the repeater antenna HAAT (Height Above Average Terrain)
- D. All these choices are correct

2022 Field Day DX  
QSL Cards



# Gloucester County Amateur Radio Club

## General Membership Meeting Minutes

### Wednesday, August 3, 2022



The meeting opened @ 1932 Hours by President Tony Starr K3TS with the Pledge of Allegiance to the Flag.

#### ATTENDACE :

- In person : 32
- ZOOM : 11

GUESTS : None

NEW MEMBERS : Courtney Smith, KD2SPJ

The minutes from the July General Meeting, as published in The Crosstalk, were approved.

TREASURER : Alan Arrison KB2AYU reported the following YTD Budgeted Items :

- Income : \$4,510
- Expenses : \$3,316
- Net Gain : \$1,193

The Treasurer's Report was accepted.

CLUBHOUSE : Alan Arrison KB2AYU said not much work has been done inside lately and weather conditions have made it difficult to work outdoors. However, the new HF tower was raised to a vertical position last weekend and extended to full height in order to test cables, pulleys and motor. A new rotator and control box have been ordered and a remote antenna switch will be ordered shortly.

CLUB NETS : Steve Farney W2SEF reported an average of 13 check-ins to the Tuesday Noon 2 Meter Nets (range of 7 to 17) and an average of 10 to the Thursday Evening 2 Meter Nets (range of 8 to 12). Jim Clark KA2OSV reported dwindling participation in the 10 Meter Net with only 3 check-ins to the most recent net.

DX & CONTEST COMMITTEE : Tony Starr K3TS noted that solar flux has fallen to less than 100 so DX contacts may be less easy than a few weeks ago. The NA QSO CW Party takes place this Saturday and the Phone contest follows in 2 weeks. Power limit is 100 watts and Tony considers this to be a relatively easy contest for stations that do not have great antennas.

REPEATERS : Alan Arrison KB2AYU is awaiting cooler weather before assembling a team to install new jumper cables and restore the 440 MHz repeater at the Pitman site.

EDUCATION : Chris Prioli AD2CS said that ARRL has now posted the upcoming GCARC Licensing Classes on its website. Also, the Monday Night DIGI Net is looking for a volunteer to teach FLDIGI, beginning in October.

*August 2022 General Membership Meeting Minutes - Continued on page 41*



**HAMFEST : Sheldon Parker K2MEN** reviewed the many background arrangements that go into running a Hamfest, e.g. Site Permission, ARRL Sanctioning, Inviting Forum Speakers, Food, Obtaining Door Prizes, Flyer Preparation, e-mailing past attendees and finding volunteers. The Hamfest is our biggest fundraiser and volunteers receive free admission (but must purchase a ticket if they want to be included in the drawing for prizes). **Ron Block NR2B** spoke briefly with **Jennifer Coles (4H Property Manager)** and obtained permission for us to begin Hamfest setup anytime on the Saturday before the event. We want to begin at 6 PM.

**FIELD DAY : Vinnie Sallustio N4NYY** and **Jim Wright N2GXJ** will provide an overview of our recent Field Day, including the claimed score, at the close of the meeting tonight.

**TECHNICAL COMMITTEE : Jonathan Pearce WB2MNF** said :

- A recent Tech Saturday was used as a workday. The shed was painted, stair railings were repaired and **Alan Arrison KB2AYU** prepared cables for the new HF tower, which allowed it to be raised last weekend.
- The W2MMD-3 Winlink Radio Message Server (RMS) on 145.030 MHz now supports 1200 baud Packet Radio in addition to VARA FM. While packet is slower than VARA FM, it allows W2MMD-3 to be accessed via the GBORO Packet Digipeater installed by **John Zaruba Jr K2ZA** at the Rowan University campus. This extends the range of W2MMD-3.
- The W2MMD Winlink RMS is now a Hybrid Station with HF forwarding. In the event that W2MMD-3 loses its internet connection, Winlink traffic received via 2 Meters can be forwarded to distant stations on 40 Meters.
- Jonathan will be one of the Hamfest speakers, describing the setup of this Hybrid Winlink RMS.
- The August Tech Saturday will explore use of a NanoVNA, starting at 9 AM. We are still experimenting with these and hope that we can learn from each other.
- The presentation following the September 7, 2022 General Membership Meeting will concern the Gloucester County 2 Meter Data Network and include topics such as setting up a Signalink and answering the question : What is VARA?

**CONSTITUTION COMMITTEE : Ron Block NR2B** provided the second reading of a proposed amendment to the GCARC Constitution, which would elevate the Education Committee from ad hoc status to become a permanent standing committee and eliminate the Repeater Business Committee as no longer needed (since we no longer have a repeater phone patch fee). This amendment was approved by vote of the attending membership.

**OLD BUSINESS : None**

**NEW BUSINESS : John Hill W2HUV** reminded those operating the Club station by remote to set the white noise generator to 12% when using FT-8, in order to improve signal quality.

**Herb Dyer KT2Y** called for operators to volunteer for the MS-150 City to Shore bike ride on September 24 and 25.

**Jim Wright N2GXJ** announced the next Foxhunt for some time in September, with **Frank Romeo N3PUU** as the Fox.

**Tony Starr K3TS** has a small pile of badges that Club members have not picked up. **Chris Prioli AD2CS** volunteered to mail these out at his own personal expense.

**Jerry Barnish K2EAB** donated a working Heathkit SB-200 HF linear amplifier to the Club.

Following the close of the meeting, **Vinnie Sallustio N4NYY** and **Jim Wright N2GXJ** provided an overview of our recent Field Day, including the claimed score.

**President Tony Starr K3TS** closed the meeting @ 2029 Hours.

Respectfully Submitted,  
**Karl Frank W2KBF,**  
GCARC Recording Secretary



# Gloucester County Amateur Radio Club

## Board of Directors Meeting Minutes

### Wednesday, August 17, 2022



Meeting opened @ 1909 Hours by President Tony Starr K3TS.

#### ATTENDANCE :

- President Tony Starr K3TS
- Vice President Jonathan Pearce WB2MNF
- Treasurer Alan Arrison KB2AYU
- Recording Secretary Karl Frank W2KBF
- Corresponding Secretary Ron Block NR2B
- Director Jim Clark KA2OSV
- Director Chuck Colabrese WA2TML
- Director Jeff Garth WB2ZBN (via ZOOM)
- Member John Hill W2HUV
- Member Frank Romeo N3PUU (via ZOOM)
- Member John O'Connell K2QA (via ZOOM)
- Member Chris Prioli AD2CS
- Member Lee Marino N2LAM

**MINUTES :** The minutes of the July BoD Meeting were approved.

#### NEW MEMBER APPLICATIONS :

The following applications was received and approved :

- **James Schreckenbach, KC3CXU**, who has a Technician Class license and lives in Clementon, NJ.
- **John Borelli Jr, KD2ZXP**, who has a Technician Class license and lives in Malaga, NJ.

**TREASURER :** Alan Arrison KB2AYU reported YTD Budgeted Items :

- Income : \$4,628
- Expenses : \$3,451
- Net gain : \$1,177

The Treasurer's Report was accepted.

**CLUBHOUSE :** Alan Arrison KB2AYU reported that several items have arrived, including a Yaesu 2800 rotator, cables and Green Heron rotator control. Other items including antenna switches, coax etc. are on order. The new HF beam antenna will be assembled soon. Parts of the hand rails for the front steps remain to be painted and **Chris Prioli AD2CS** said he would take care of this.

**CLUB NETS :** Chris Prioli AD2CS said we average 10 check-ins for the Tuesday Noon and Thursday Evening Nets. **Jim Clark KA2OSV** had 3 check-ins for the most recent 10 Meter Net and 9 the week before that.

**DX and CONTESTS :** Tony Starr K3TS noted that solar flux has been up to 130 recently and the MUF has been around 21 MHz during the day. The NAQP Phone Contest will take place this weekend and **John Hill W2HUV** commented that the European Digital Contest will take place during the last week of August.

*August 2022 Board of Directors Meeting Minutes - Continued on page 44*



**REPEATERS :** No report (waiting for cooler weather).

**EDUCATION COMMITTEE :** **Chris Prioli AD2CS** has ordered books for the upcoming licensing classes and could use help with the Technician Class, since **Gary Reed N2QEE** will not be available. Chris noted that the remote station has been receiving use from 3 recent course graduates and new Club members, which is good to see.

**HAMFEST :** **Jonathan Pearce WB2MNF** is working on handouts for Hamfest visitors that will invite them to tour the Clubhouse. **Tony Starr K3TS** will ask **Bill Price NJ2S** to find out if the Boy Scouts can help distribute these handouts. **Jim Clark KA2OSV** reminded the Treasurer that he will need small bills for change at the ticket booth.

**TECHNICAL COMMITTEE :** **Jonathan Pearce WB2MNF** said the most recent Tech Saturday was a great success, with over 15 people pooling knowledge concerning the use of Nano VNAs. The presentation following the September General Membership Meeting will concern Digital Networking and the September Tech Saturday will NOT be rescheduled (even though it will be on the day before the Hamfest) but will be a work session focusing on 2 Meter Digital Modes. Jonathan is working on the possibility of recording Tech Saturday sessions and Hamfest Talks for later uploading to YouTube. Jonathan will be away for the October Tech Saturday but will check with **Anthony Cerami N2OAC** to see if he can arrange a tour of the RCA Heritage Museum at Rowan University. As previously reported, the GCARC Grant Application to ARDC was funded and, furthermore, was so well received that ARDC would like to use it as a model for other applicants! We still await the decision from ARRL on the application for \$25k to fund the VHF tower. A decision is expected in September.

**OLD BUSINESS :** **Chuck Colabrese WA2TML** asked if there has been any clarification regarding grass mowing in our area. We know that the 4-H has declined to take care of this. **Alan Arrison KB2AYU** has not heard back from the person who has been mowing, so the matter still is unresolved. **Ron Block NR2B** circulated the current, recently-revised Constitution.

**NEW BUSINESS :** **Tony Starr K3TS** will be convening a Nominating Committee, probably by Zoom.

**The meeting was adjourned @ 2012 Hours.**

**Respectfully Submitted,**  
**Karl Frank W2KBF,**  
**GCARC Recording Secretary**



# September 2022 Word Search : General Radio Terms

## By Chris Prioli, AD2CS

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

AFAR	DIAL	ICOM	OWN	SWR BRIDGE
ALC	DIT	ICON	PADDLE	TREND
ANTENNA	DONE	KENWOOD	PEAK	TYT
ARROW	DRAKE	LINE	PHONE	VEE
AYES	DRIFT	LINEAR	PICKET FENCE	VFO
BAND	DUES	LOSE	PICO	WAVE
BFO	DX	MAX	POWER	WEAKEN
BUG	EME	MICRO	POWER SUPPLY	WPM
BUG	END FED	MICROPHONE	PROPAGATION	YAESU
CHARGE	FIND	MOD	RADIO	
COAX	FOIL	NEAR FIELD	RAW	
COIL	GAIN	NET	RFI	
COM	GAP	NOS	SKYWAVE	
CQ	GAS	NVIS	SPEAKER	
DAH	GROUND	ON AIR	SQUELCH	

Answers on page 52

**IARU HF World Championship  
July 9, 2022**

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

**Class : SOAB(A)CW HP**  
**QTH : SNJ**  
**Operating Time (hrs) : 8**  
**Location : USA**

**Summary :**

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

80 :	21	0	6	6
40 :	174	0	21	29
20 :	337	0	27	34
15 :	75	0	22	21

<b>Total :</b>	<b>607</b>	<b>0</b>	<b>76</b>	<b>90</b>
<b>Total Score : 324,198</b>				

**Club : Frankford Radio Club**

**23**

**Comments :**

*Rig: FTDX-9000D/OM Power 2000A+  
Antennas : all wires  
160 L (came down in storm)  
80m dipole @ 95ft  
40m dipole @ 90ft  
20m delta loop @ 70ft  
10/15m homebrew fan dipole @ 65ft*

*Operating time 8hrs*

*Gee, that was fun. This is my best score from home, and I rarely have much time for this contest, but I had more time this year than I thought I would. Great to hear the bands in such great condx, with the flux around 130 all weekend. Highlight was getting a number of Pacific zones on 40m, and getting 7Q5RU in the log on 20. I broke 600Qs, and there were plenty of HQ stations to work. As I like to promote CW, I never operate SSB in this contest.*

**Contest : IARU**

Band	QSOs	Pts	ITU	HQ	Pt/Q
3.5	21	41	6	6	2.0
7	174	438	21	29	2.5
14	337	1,239	27	34	3.7
21	75	235	22	21	3.1
<b>Total</b>	<b>607</b>	<b>1,953</b>	<b>76</b>	<b>90</b>	<b>3.2</b>

*Score : 324,198  
1 Mult = 3.7 Q's*

*73 Darrell AB2E*

**IARU HF World Championship  
July 9, 2022**

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

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

**Summary :**

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

40 :	53	0	17	25
20 :	57	0	25	30
15 :	67	0	21	27

<b>Total :</b>	<b>177</b>	<b>0</b>	<b>63</b>	<b>82</b>
<b>Total Score : 73,225</b>				

**Club : Frankford Radio Club**

**24**

**Comments :**

*A limited effort as time permitted, but wow, what a blast! Propagation was amazing at times, and my usually high local noise levels were surprisingly low. Worked all over Asia on 15m and Europe was pounding in at 20 dB over S9 late into Saturday evening. I have only been a serious DX contester since 2016, but I am starting to see what I missed during the first 40 years that I was licensed. Oh well... 73 to all.*

*de K3TS*



**2022 Field Day DX QSL Card**



**North American QSO Party, CW  
August 7, 2022**

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

**Class : Single Op Assisted LP**  
**QTH : NJ**  
**Operating Time (hrs) : 6.5**  
**Location : USA**

**Summary :**

Band	QSOs	Mults
------	------	-------

80 :	137	46
40 :	188	50
20 :	81	37
15 :	58	22
10 :	4	2

**Total : 468 157**  
**Total Score : 73,476**

**Club : Frankford Radio Club**

**25**

**Team : FRC Team Backscatter**

**Comments :**

Rig : Elecraft K4D  
Antennas : all wires  
160m - no antenna (storm took down the Inverted L)  
80m - dipole @ 95ft  
40m - dipole @ 90ft  
20m - delta loop @ 65ft  
15m/10m - homebrew fan dipole @ 65ft

Wow, that was fun. Almost a full-time effort this year. Managed 6.5 hours out of a possible 10. Great to catch VY0ERC (NU) on 20m around 0500GMT. Considering no mults for 160, I was pleased with the score. My best score for this contest since I'm usually busy this weekend each year it seems. Great to work so many friends, and reinforce the names in the exchange. See you in NAQP SSB ! Also Worked All EU CW!

73 Darrell AB2E

**Contest : NAQPCW**

Band	QSOs	Pts	Sec	Mt2	Pt/Q
3.5	137	137	44	2	1.0
7	188	188	46	4	1.0
14	81	81	34	3	1.0
21	58	58	20	2	1.0
28	4	4	2	0	1.0
<b>Total</b>	<b>468</b>	<b>468</b>	<b>146</b>	<b>11</b>	<b>1.0</b>

Score : 73,476  
1 Mult = 3.0 Q's

**North American QSO Party, CW  
August 7, 2022**

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

**Class : Single Op Assisted LP**  
**QTH : SNJ**  
**Operating Time (hrs) : 10:00**  
**Location : USA**

**Summary :**

Band	QSOs	Mults
------	------	-------

160 :	12	12
80 :	67	34
40 :	207	50
20 :	272	47
15 :	32	20
10 :	5	3

**Total : 595 166**  
**Total Score : 98,770**

**Club : Frankford Radio Club**

**26**

**Team : FRC Team Long Path**

**Comments :** *My highest score yet in any NAQP, CW or SSB. Conditions were OK, but not great. Rates were not all that high, but it was steady, with activity spread out across several bands at once, not all bunched up on one or two bands like in the past.*

*It was nice to work so many friends in the "off season". Hope to see everyone again in two weeks for phone, if I can fit it into my summer schedule.  
73 to all.  
de K3TS*



**2022 Field Day DX QSL Card**

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



Name/Callsign	DXCC
Bill Grim, W0MHK	352
Dave Strout, W2YC	349
Darrell Neron, AB2E	328
Ray Martin, W2RM	270
John Hill, W2HUV	252
Ken Denson, WB2P	248
Vinnie Sallustio, N4NYY	231
Tony Starr, K3TS	211
Dennis Sandole, K2SE	204
<b>Jim Wright, N2GXJ</b>	<b>194</b>
Sheldon Parker, K2MEN	176
Matt Wilson K2MFW	161
Christopher Wawak, KC2IEB	141
<b>Howard Marder, WA2IBZ</b>	<b>137</b>
Eric Morris, N2BRJ	127
Phil Nunzio, WA3RGY	123
Bart Kleczynski, AC2PT	106
Chuck Capasso, WB2PGE	103
Rich Subers, W2RHS	102
Harry Strahlendorf Jr W3DNQ	87
Curt Myers, K2CWM	80
Jim Clark, KA2OSV	68
Lee Marino, N2LAM	35
<b>Updated As Of 08/23/2022</b>	

September 1, 2021

## September Birthdays

Congratulations to our members who are celebrating a birthday this month

James Blose, KD2TAT  
Kenneth Bozarth, KN2U  
Robert Derderian Jr, N2IPH  
Harold Garron Jr, AC2BK  
Mark Gottlieb, KK2L  
Carl Hale, N2ZME  
John Hill, W2HUV  
Stephen Jordan, KB2RGZ  
Perry Mayer, W3MMR  
Robert Molloy, KD2UJ  
Bill Price, NJ2S  
Ralph Sangataldo, W2HVV  
Gene Schoeberlein, AA2YO



## In Memoriam - September Birthdays

### Silent Keys :

Mark Anthony, WA2WFZ  
Earl Bende, W2USG (Charter Member)  
Fred Bergmann, WB2BPX  
Harold Berry Sr, WA2QOY  
William Blakeley, WA2ADB  
William Burbage, N2QEB  
Wallace Cantoni, W2HVV  
Charles Coder, WA2UHQ  
Joseph Everhart, N2CX  
Sidney Gantz, WB2JRU  
Sonny Gutin, WB2DXB  
William Hansche Jr, W2ILL  
James Langworthy, KB2PAU  
Jack Layton, W9UK  
(Charter Member, President 1965)  
Jose Lopez Jr, WB2OZE  
Joseph Mitchell, KB2FRN  
Henry Nierzwicki, N2OIP  
Frank Ritter, K2UUY  
Samuel Rosenberg, N2DWK  
Jean Shisler, N2WRJ  
Horace Simpson, W2JOZ (Charter Member)  
Harry Spiece, NJ2B  
Russell Stafford, W3CH  
Melvyn Sulzburgh, W2NM  
Edward Wargo, WA2ED

## Crosstalk Submissions

*This is your Club Newsletter. 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 October 2022 issue : Tuesday, September 20, 2022

Club Website [www.w2mmd.org](http://www.w2mmd.org)

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



# September 2022 Contest Calendar

## WA7BNM Contest Calendar : [www.contestcalendar.com](http://www.contestcalendar.com)

### September 2022

+ CWops Test	0300Z-0400Z, Sep 1
+ CWops Test	0700Z-0800Z, Sep 1
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 1
+ NRAU 10m Activity Contest	1700Z-1800Z, Sep 1 (CW) and 1800Z-1900Z, Sep 1 (SSB) and 1900Z-2000Z, Sep 1 (FM) and 2000Z-2100Z, Sep 1 (Dig)
+ SKCC Sprint Europe	1900Z-2100Z, Sep 1
+ G3ZQS Memorial Straight Key Contest	2300Z, Sep 1 to 2300Z, Sep 3
+ NCCC RTTY Sprint	0145Z-0215Z, Sep 2
+ NCCC Sprint	0230Z-0300Z, Sep 2
+ K1USN Slow Speed Test	2000Z-2100Z, Sep 2
+ Russian RTTY WW Contest	0000Z-2359Z, Sep 3
+ CWops CW Open	0000Z-0359Z, Sep 3
+ All Asian DX Contest, Phone	0000Z, Sep 3 to 2400Z, Sep 4
+ Wake-Up! QRP Sprint	0600Z-0629Z, Sep 3 and 0630Z-0659Z, Sep 3 and 0700Z-0729Z, Sep 3 and 0730Z-0800Z, Sep 3
+ SARL Field Day Contest	0800Z, Sep 3 to 1000Z, Sep 9
+ CWops CW Open	1200Z-1559Z, Sep 3
+ RSGB SSB Field Day	1300Z, Sep 3 to 1300Z, Sep 4
+ AGCW Straight Key Party	1300Z-1600Z, Sep 3
+ IARU Region 1 Field Day, SSB	1300Z, Sep 3 to 1259Z, Sep 4
+ Colorado QSO Party	1300Z, Sep 3 to 0400Z, Sep 4
+ IARU Region 1 145 MHz Contest	1400Z, Sep 3 to 1400Z, Sep 4
+ CWops CW Open	2000Z-2359Z, Sep 3
+ PODXS-070 Club Jay Hudak Memorial 80m Sprint	2000Z, Sep 3 to 2000Z, Sep 4
+ WAB 144 MHz QRO Phone	1000Z-1400Z, Sep 4
+ Tennessee QSO Party	1800Z, Sep 4 to 0300Z, Sep 5
+ K1USN Slow Speed Test	0000Z-0100Z, Sep 5
+ ICWC Medium Speed Test	1300Z-1400Z, Sep 5
+ OK1WC Memorial	1630Z-1729Z, Sep 5
+ RSGB 80m Autumn Series, SSB	1900Z-2030Z, Sep 5
+ ICWC Medium Speed Test	1900Z-2000Z, Sep 5
+ MI QRP Labor Day CW Sprint	2300Z, Sep 5 to 0300Z, Sep 6
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Sep 6
+ ARS Spartan Sprint	0100Z-0300Z, Sep 6
+ ICWC Medium Speed Test	0300Z-0400Z, Sep 6
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 6
+ Phone Weekly Test	0230Z-0300Z, Sep 7
+ A1Club AWT	1200Z-1300Z, Sep 7
+ CWops Test	1300Z-1400Z, Sep 7
+ Mini-Test 40	1700Z-1759Z, Sep 7
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Sep 7
+ Mini-Test 80	1800Z-1859Z, Sep 7
+ CWops Test	1900Z-2000Z, Sep 7
+ UKEICC 80m Contest	2000Z-2100Z, Sep 7
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Sep 8 and 0200Z-0300Z, Sep 9
+ CWops Test	0300Z-0400Z, Sep 8
+ CWops Test	0700Z-0800Z, Sep 8
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 8
+ EACW Meeting	1900Z-2000Z, Sep 8
+ NCCC RTTY Sprint	0145Z-0215Z, Sep 9
+ NCCC Sprint	0230Z-0300Z, Sep 9
+ K1USN Slow Speed Test	2000Z-2100Z, Sep 9
+ FOC QSO Party	0000Z-2359Z, Sep 10
+ WAE DX Contest, SSB	0000Z, Sep 10 to 2359Z, Sep 11
+ YB7-DX Contest	0900Z, Sep 10 to 1400Z, Sep 11
+ SKCC Weekend Sprintathon	1200Z, Sep 10 to 2400Z, Sep 11
+ Ohio State Parks on the Air	1400Z-2200Z, Sep 10
+ Russian Cup Digital Contest	1500Z-1859Z, Sep 10 and 0600Z-0959Z, Sep 11
+ Alabama QSO Party	1500Z, Sep 10 to 0300Z, Sep 11
+ ARRL September VHF Contest	1800Z, Sep 10 to 0300Z, Sep 12
+ North American Sprint, CW	0000Z-0400Z, Sep 11
+ K1USN Slow Speed Test	0000Z-0100Z, Sep 12
+ 4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Sep 12
+ ICWC Medium Speed Test	1300Z-1400Z, Sep 12
+ OK1WC Memorial	1630Z-1729Z, Sep 12
+ ICWC Medium Speed Test	1900Z-2000Z, Sep 12
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Sep 13
+ ICWC Medium Speed Test	0300Z-0400Z, Sep 13
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 13
+ Phone Weekly Test	0230Z-0300Z, Sep 14
+ A1Club AWT	1200Z-1300Z, Sep 14
+ CWops Test	1300Z-1400Z, Sep 14
+ Mini-Test 40	1700Z-1759Z, Sep 14
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Sep 14
+ Mini-Test 80	1800Z-1859Z, Sep 14
+ RSGB 80m Autumn Series, CW	1900Z-2030Z, Sep 14
+ CWops Test	1900Z-2000Z, Sep 14
+ NAQCC CW Sprint	0030Z-0230Z, Sep 15
+ CWops Test	0300Z-0400Z, Sep 15
+ CWops Test	0700Z-0800Z, Sep 15

September 2022 Contest Calendar - Continued on page 51

# September 2022 Contest Calendar

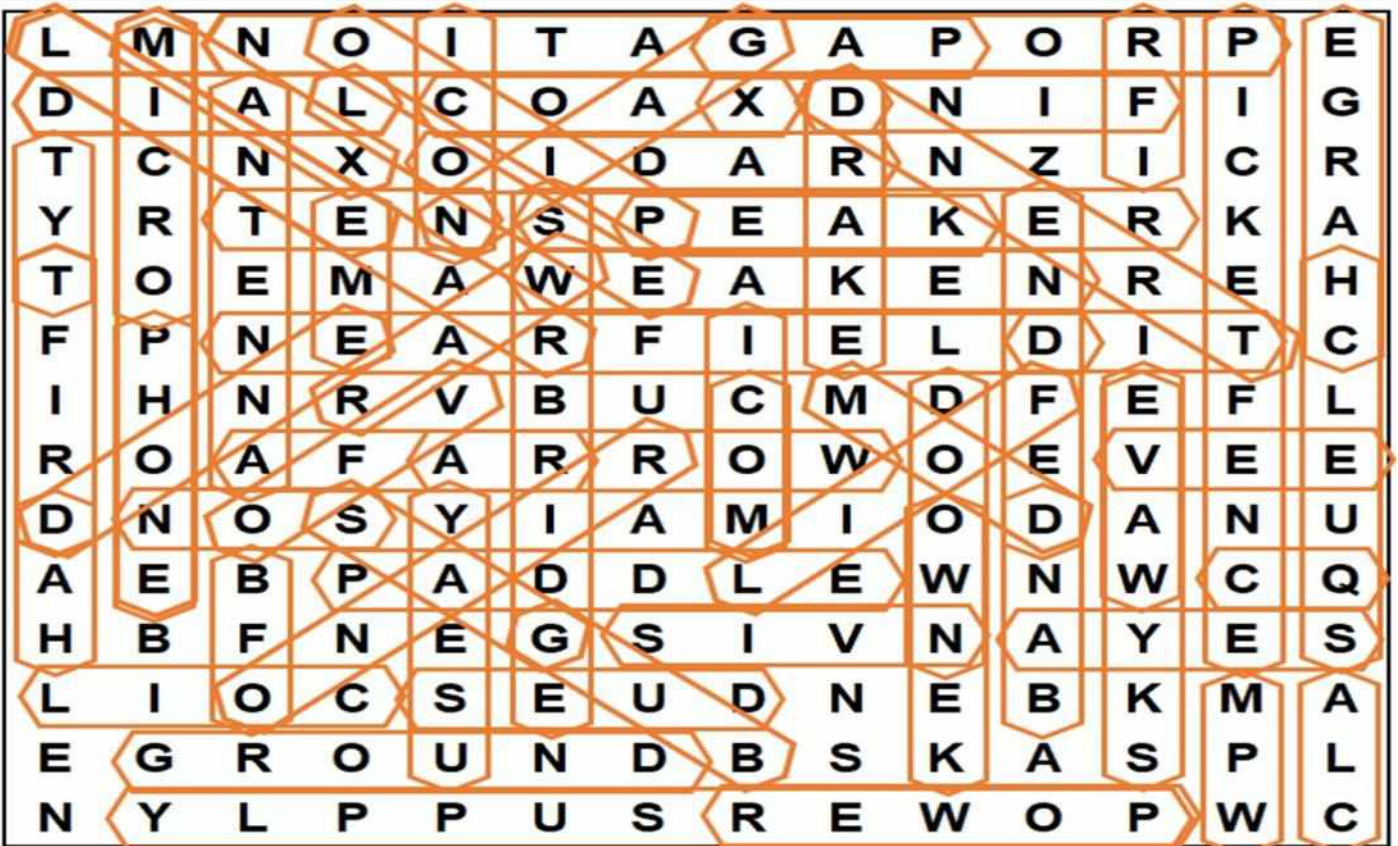
## WA7BNM Contest Calendar : [www.contestcalendar.com](http://www.contestcalendar.com)

September 2022 Contest Calendar - Continued from page 50

+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 15
+ BCC QSO Party	1800Z-1959Z, Sep 15
+ NTC QSO Party	1900Z-2000Z, Sep 15
+ NCCC RTTY Sprint	0145Z-0215Z, Sep 16
+ NCCC Sprint	0230Z-0300Z, Sep 16
+ K1USN Slow Speed Test	2000Z-2100Z, Sep 16
+ AGB NEMIGA Contest	2100Z-2400Z, Sep 16
+ ARRL EME Contest	0000Z, Sep 17 to 2359Z, Sep 18
+ SARL VHF/UHF Digital Contest	0300Z-0500Z, Sep 17 (6m) and 0500Z-0700Z, Sep 17 (2m) and 0700Z-0900Z, Sep 17 (70cm) and 0300Z-0500Z, Sep 18 (6m) and 0500Z-0700Z, Sep 18 (2m) and 0700Z-0900Z, Sep 18 (70cm)
+ ARRL 10 GHz and Up Contest	0600 local, Sep 17 to 2400 local, Sep 18
+ Scandinavian Activity Contest, CW	<b>Cancelled for 2022</b>
+ Iowa QSO Party	1400Z, Sep 17 to 0200Z, Sep 18
+ Texas QSO Party	1400Z, Sep 17 to 0200Z, Sep 18 and 1400Z-2000Z, Sep 18
+ QRP Afield	1500Z-2100Z, Sep 17
+ Wisconsin Parks on the Air	1600Z-2300Z, Sep 17
+ Washington State Salmon Run	1600Z, Sep 17 to 0700Z, Sep 18 and 1600Z-2400Z, Sep 18
+ New Jersey QSO Party	1600Z, Sep 17 to 0359Z, Sep 18
+ New Hampshire QSO Party	1600Z, Sep 17 to 0400Z, Sep 18 and 1600Z-2200Z, Sep 18
+ Feld Hell Sprint	1800Z-1959Z, Sep 17
+ North American Sprint, RTTY	0000Z-0400Z, Sep 18
+ BARTG Sprint PSK63 Contest	1700Z-2059Z, Sep 18
+ Run for the Bacon QRP Contest	2300Z, Sep 18 to 0100Z, Sep 19
+ K1USN Slow Speed Test	0000Z-0100Z, Sep 19
+ ICWC Medium Speed Test	1300Z-1400Z, Sep 19
+ OK1WC Memorial	1630Z-1729Z, Sep 19
+ ICWC Medium Speed Test	1900Z-2000Z, Sep 19
+ 144 MHz Fall Sprint	1900 local - 2300 local, Sep 19
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Sep 20
+ ICWC Medium Speed Test	0300Z-0400Z, Sep 20
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 20
+ Phone Weekly Test	0230Z-0300Z, Sep 21
+ A1Club AWT	1200Z-1300Z, Sep 21
+ CWops Test	1300Z-1400Z, Sep 21
+ Mini-Test 40	1700Z-1759Z, Sep 21
+ VHF-UHF FT8 Activity Contest	1700Z-2100Z, Sep 21
+ Mini-Test 80	1800Z-1859Z, Sep 21
+ CWops Test	1900Z-2000Z, Sep 21
+ Walk for the Bacon QRP Contest	0000Z-0100Z, Sep 22 and 0200Z-0300Z, Sep 23
+ CWops Test	0300Z-0400Z, Sep 22
+ CWops Test	0700Z-0800Z, Sep 22
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 22
+ RSGB 80m Autumn Series, Data	1900Z-2030Z, Sep 22
+ NCCC RTTY Sprint	0145Z-0215Z, Sep 23
+ NCCC Sprint	0230Z-0300Z, Sep 23
+ K1USN Slow Speed Test	2000Z-2100Z, Sep 23
+ CQ Worldwide DX Contest, RTTY	0000Z, Sep 24 to 2400Z, Sep 25
+ Maine QSO Party	1200Z, Sep 24 to 1200Z, Sep 25
+ Masonic Lodges on the Air	1400Z-2200Z, Sep 24
+ AGCW VHF/UHF Contest	1400Z-1700Z, Sep 24 (144) and 1700Z-1800Z, Sep 24 (432)
+ AWA Amplitude Modulation QSO Party	2200Z, Sep 24 to 2200Z, Sep 25
+ UBA ON Contest, 6m	0700Z-1000Z, Sep 25
+ K1USN Slow Speed Test	0000Z-0100Z, Sep 26
+ ICWC Medium Speed Test	1300Z-1400Z, Sep 26
+ QCX Challenge	1300Z-1400Z, Sep 26
+ OK1WC Memorial	1630Z-1729Z, Sep 26
+ RSGB FT4 Contest	1900Z-2030Z, Sep 26
+ ICWC Medium Speed Test	1900Z-2000Z, Sep 26
+ QCX Challenge	1900Z-2000Z, Sep 26
+ Worldwide Sideband Activity Contest	0100Z-0159Z, Sep 27
+ ICWC Medium Speed Test	0300Z-0400Z, Sep 27
+ QCX Challenge	0300Z-0400Z, Sep 27
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 27
+ 222 MHz Fall Sprint	1900 local - 2300 local, Sep 27
+ SKCC Sprint	0000Z-0200Z, Sep 28
+ Phone Weekly Test	0230Z-0300Z, Sep 28
+ A1Club AWT	1200Z-1300Z, Sep 28
+ CWops Test	1300Z-1400Z, Sep 28
+ Mini-Test 40	1700Z-1759Z, Sep 28
+ Mini-Test 80	1800Z-1859Z, Sep 28
+ CWops Test	1900Z-2000Z, Sep 28
+ UKEICC 80m Contest	2000Z-2100Z, Sep 28
+ CWops Test	0300Z-0400Z, Sep 29
+ CWops Test	0700Z-0800Z, Sep 29
+ RTTYOPS Weeksprint	1700Z-1900Z, Sep 29
+ NCCC RTTY Sprint	0145Z-0215Z, Sep 30
+ NCCC Sprint	0230Z-0300Z, Sep 30
+ K1USN Slow Speed Test	2000Z-2100Z, Sep 30



## Word Search Answers from Page 45



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

Crossword Puzzle Answers  
from Page 36



## 2022 Club Committees

Standing Committees	Committee Chairs
Budget Constitution & By-Laws <i>Education</i> Field Day Hamfest Health, Welfare, & Silent Keys Hospitality Membership Membership Badges Nominations Publicity Repeaters W2MMD Clubhouse Site	Al Arrison, KB2AYU Ron Block, NR2B <i>Chris Prioli, AD2CS</i> Vinnie Sallustio, N4NYY Sheldon Parker, K2MEN and Bill Price, NJ2S Bill Price, NJ2S Jeff Garth, WB2ZBN Bob Fields, KC6AOH Chuck Colabrese, WA2TML Tony Starr, K3TS Bob Fields, KC6AOH Herb Dyer, KT2Y Al Arrison, KB2AYU
Activity Committees	Committee Chairs
<i>Awards &amp; Certificates</i> Club Publications & Historian Contests <i>DX</i> <i>GCARC Family Picnic</i> GCARC Foxhunts GC-ARES Emergency Coordinator <i>Holiday Dinner Party</i> License Testing/VEC Liaison Membership Roster Database Programs : General Meetings & Tech Saturdays Radio Nets Technical W2MMD License Trustee W2MMD Special Event Station	<i>Open Chair</i> Jeff Garth, WB2ZBN Tony Starr, K3TS <i>Open Chair</i> <i>Open Chair</i> Jim Wright, N2GXJ Bob Keogh, KD2NEC <i>Open Chair</i> Gary Reed, N2QEE Jeff Garth, WB2ZBN Jon Pearce, WB2MNF 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 (TEMPORARILY OFF AIR)**

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

### **The “DigiNet”**

First / Third Mondays Of Every Month  
@ 2000 Hours

2 Meters & EchoLink

### **Tuesday Noon Day 2M Rag Chew Net**

Every Tuesday @ 1200 Hours

### **Tuesday Night 10M Rag Chew Net**

Every Tuesday @ 2000 Hours  
Tune in on 28.465 MHz or 28.475 MHz

### **Thursday Night 2M Rag Chew Net**

Every Thursday @ 2000 Hours

## Meeting Calendar

**General Membership Meeting**  
**Wednesday, September 7, 2022**  
**1930 Hours**

**Live & In-Person**  
**Pfeiffer Community Center**  
**Simulcast Live on ZOOM**

**Board of Directors Meeting**  
**Wednesday, September 21, 2022**  
**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 BadgeMan”**

**Chuck Colabrese, WA2TML**  
**colabrese <at> comcast <dot> net**