February 2024	The service To Am	S ateur I	s adio & Our Community	I k Issue 65 : 02		
Α	2024 Clul	b Of	ficers			
President : Vice President : Treasurer : Recording Secretary : Corresponding Secretary :	Jonathan Pearce, WB2 Ronald Block, NR2B John O'Connell, K2QA John Zaruba Jr, K2ZA Frank Romeo, N3PUU	MNF	erm (2021-2024) (2022-2025) (2023-2026) (2024-2027)			
	Directors - 3	S Year	Ferm			
James Clark Sr, KA2OSV Jeffrey Garth, WB2ZBN Chris Prioli, AD2CS	(2022-2024) (2022-2024) (2023-2025)	Ja Al Bil	nes Wright, N2GXJ Arrison, KB2AYU l Price, NJ2S	(2023-2025) (2024-2026) (2024-2026)		
General Members Wednesday, February 7, 2 In-Person & ZOOM : 943 License Testing	hip Meeting 2024 @ 1930 Hours 3 0211 9674, 843147 3 Session	Pres Febi Febi Weld	Inside This Issue ident's Letter uary 7 th General Membership uary 10 th Tech Saturday Forum come New Members	Page 3 Page 7 Page 8 Page 9		
Thursday, February 8, 2 W2MMD Clu Tech Saturday	024 @ 1900 Hours bhouse 7 Forum	Mon DA' Regi The	thly VE Session Summary s & DIT's onal Hamfest & Events Education Connection	Page 10 Page 11 Page 13 Page 14		
GCARC TechNet Z	024 @ 0900 Hours bhouse OOM Forum	At The Repair BenchPage 1SNJ ARES UpdatePage 2Element 4 Question QuizPage 3Electronic Tool Tip #4Page 3				
ZOOM Meeting ID : 960 Board of Directo	8543 6644, 964974 rs Meeting	Scra ARL ARL ARL	nton Amateur Radio Club B035 Bulletin B036 Bulletin B034 Bulletin	Page 33 Page 34 Page 35 Page 37		
Wednesday, February 21, W2MMD Clu Dinner @ The W2M	2024 @ 1900 Hours bhouse MD Clubbouse	October 2023 VMPRPage 37November 2023 VMPRPage 38December 2023 VMPRPage 39				
Wednesday, February 28, Tuesday AfterNoon 2M	2024 @ 1800 Hours Net @ 1200 Hours	Gen Boar Club DXC	eral Membership Meeting Minutes of of Directors Meeting Minutes Member Contest Scores CC Honor Roll	S Page 40 Page 43 Page 47 Page 49		
Tuesday & Thursday 10 Me	ter Net @ 1930 Hours	Febi Febi 2024	uary Birthdays uary Contest Calendar Club Committees	Page 50 Page 51 Page 53		
Thursday 2M Net @	2000 Hours	Last	Page Calendar	Page 54		





President's Letter Jon Pearce, WB2MNF



February 2023

Our Club was off to a great start this January. **Ron Block NR2B** gave a fascinating presentation on the characteristics of lightning strikes and how various aspects of tower design affect the characteristics of a lightning strike. More than a dozen participants showed up for the antenna building session at the W2MMD Clubhouse, drop-ins at the Clubhouse on Saturdays have been numerous, and other activities continued even with significant interruptions by bad weather.

Member Renewals

Club leaders and other members of the Club worked diligently throughout the year to provide activities, resources and opportunities for Club members. Now it's up to the members to provide the financial support necessary for all of those activities to occur. Many members have already renewed, but others are still lagging and without a large proportion of our members renewing the Club is not financially viable. If you're attending meetings or coming to the Clubhouse the easiest way to renew is to give cash or a check to **Treasurer John O'Connell K2QA**, which avoids the Club incurring credit card or PayPal charges; however, those options are both open if they're easier for you. If you're not coming to Club events you can mail your check to the **PO box at PO Box 370, Pitman, NJ 08071 or use the "Pay Dues Here" tab on the w2mmd.org website**.

It's also gratifying to see the number of members who have included an additional amount with their dues payment to assist in covering the Clubhouse expenses that most other Clubs don't incur. About two-thirds of members who have renewed to date have contributed an additional \$10 or more with their dues payment. Thanks to those who have done so, and we hope that others will follow the same trend.

February General Membership Meeting and Tech Saturday Forum

The February General Membership Meeting will include a presentation on the 2024 Solar Eclipse and how hams can assist in understanding the effects of the eclipse by making contacts during its pass. This rare event promises to be a unique opportunity for hams to contribute to the body of knowledge on this topic.

At the February Tech Saturday session **Len Rust W2LJR** will present an introduction to voice over IP (VOIP) technology. Although not directly related to ham radio this topic is of interest because of the increasing use of digital techniques for voice communications within the hobby, and a knowledge of the underpinnings of the technology may be useful in understanding how new digital voice protocols work. Len works professionally in this area and will bring some of his cool work toys to show off.

The typical Tech Saturday Forum schedule involves a presentation starting at 9 AM and running for about 60-90 minutes depending on the volume of questions and discussion. Following that session the Clubhouse is open for informal conversations, ad-hoc assistance on technical issues, operation of the various stations and small group project work. Members who aren't interested in the presentation topic can generally arrive around between 10 and 10:30 for the latter part of the day. Unfortunately the January session went significantly overtime leaving many later-arriving members with no opportunity for other activities. This won't occur in the future, so please feel free to come at whatever time meets your interest.

President's Letter - Continued on page 4

President's Letter - Continued from page 3

Upcoming Activities

Many members have suggested topics of interest for potential presentations at Club events, and the program team has pulled together several sessions on those topics. At the April meeting **John Zaruba Jr K2ZA**, a frequent Parks On The Air (POTA) participant, will present on his activities and experiences. He'll follow up on Tech Saturday bringing his POTA gear and answering questions on POTA operations. POTA is a fast-growing area of ham radio and John is an excellent presenter so these sessions should be fascinating.

Other members have asked for more information on antenna-building, so the May and June sessions will be focused there. At the May general meeting we're planning a ZOOM session with a well-known antenna specialist who will overview many antenna-related topics, with the June meting covering easy-to-construct antennas for beginners or portable operation. Both of these sessions are being set up now with more details later.

The Tech Saturday Forum sessions in those months will also target antenna-building with the May session focused on using a Nano VNA analyzer to tune a simple 70 cm ground plane antenna. Participants will solder a simple ground plan antenna mounted on an SMA connector and will then use the VNA to tune it to a specific frequency. The VNA will also show different characteristics about the antenna including its bandwidth and resonance at different frequencies.

At the June session participants will build a dual-band J-pole twinlead antenna for 2 meters and 70 cm based on a February 2023 article by **Ed Fong WB6IQN**. Several members have asked for a simple home-based dual-band antenna, and this will fill that need.

Direction-Finding Equipment Build Session

About a dozen participants filled the Clubhouse with solder fumes as they built the first part of the directionfinding kit that **Chris Prioli AD2CS** designed. In this session they constructed an attenuator device that can be used with an HT to reduce sensitivity to assist in locating a nearby signal source. Subsequent sessions will build a tape-measure Yagi antenna to be used in conjunction with the attenuator to provide a toolkit for fox hunting. These sessions will be followed by an "Intro to Fox Hunting" session by **Jim Wright N2GXJ** and then by an actual fox hunt on the next weather-permitting weekend.

VHF Contest Operations

The intrepid VHFers, **Al KB2AYU**, **John K2QA**, and **Frank N3PUU** operated the VHF station over the weekend of January 20-21. Conditions weren't ideal but they did make a significant number of contacts on 6 meters using SSB and FT8. This contest also gave the opportunity to start working with the new Flex 6400 radio in conjunction with the 6 meter amplifier and to understand how all of the contest software components (the Flex software, N1MM logging and WSJT) all fit together and how to display them on screens for optimal operation. Once the VHF room furniture refinishing is done the complete VHF station obtained from the ARDC grant can be installed giving capabilities for all ham bands from 6 meters to 1269. Unfortunately antennas for some of those bands will need to wait until the UHF and VHF towers are installed later this year.

As always please feel free to reach out to me or any of the Club leaders with any comments or suggestions for Club activities. We look forward to seeing you at the meetings and other activities.

73 de Jon WB2MNF

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

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

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

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

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

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







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

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

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

GCARC TechNet ZOOM Forum

Monday, February 12, 2023 @ 1930 Hours

Forum Topic : Interfacing Amateur Radio To Computers

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

Meeting ID : 960 8543 6644 ; Passcode : 964974

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

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

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

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

6

General Membership Meeting

Wednesday, February 7, 2024 @ 1930 Hours

Pfeiffer Community Center

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

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

2024 Solar Eclipse

Our speaker this month is **Ed Efchak**, **WX2R**, the Public Information Officer for HamSCI. HamSCI stands for Ham Radio Science Citizen Investigation which has been actively engaged in the October 14, 2023, annular solar eclipse and the upcoming April 8, 2024, total eclipse.

Their major activities around this year's solar events are The Solar Eclipse QSO Party (SEQP) and the Gladstone Signal Spotting Challenge (GSSC) part of the HamSCI Festivals of Eclipse Ionospheric Science program. They will collect propagation data that should inform researchers how the ionosphere reacted to the eclipse. The data will be compared to existing computer models of the ionosphere, potentially improving the accuracy of those models. Researchers will also be looking at how the ionosphere's refractive properties varied during the phases of the eclipse.

The presentation will provide an overview of Amateur Radio's role and its importance to better understanding ionospheric propagation and hopefully encourage you to take part in the April 8th event as either a club activity or as an individual. You may participate using : 160, 80, 40, 20, 15, 10, and 6 meter bands using CW, SSB, and any digital mode.

This should be an interesting program as well as an opportunity to actually contribute to radio science.









Tech Saturday Forum February 10, 2024 @ 0900 Hours W2MMD Clubhouse

Forum Topic : Len Rust, W2LJR : Introduction To VOIP

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

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

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

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

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

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



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

8

"Dinner @ The Clubhouse" Wednesday, February 28, 2024 @ 1800 Hours W2MMD Clubhouse

Welcome New Club Members :

James Anderson, N2DQG, a General Class who lives in Mount Royal, NJ. Matthew Carango, N3QB, an Amateur Extra Class who lives in Springfield, PA. Fred Munzenmayer, K2DX, (Returning Member), an Amateur Extra Class who lives in Grenloch, NJ.

Michael Pentimall, KC3VTF, a General Class who lives in Folsom, PA.

We are glad to have you as members of the Club and hope to see you regularly at Club meetings, events, and activities. Hope to see you at the February 7th General Membership Meeting, either in-person or on ZOOM, the February 10th Tech Saturday Forum, the February 12th GCARC TechNet ZOOM Forum, the Dinner @ The Clubhouse on February 28th.

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

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

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

Gloucester County Amateur Radio Club Elmers

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

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

GCARC Monthly VE Exam Testing Summary - January 11, 2024

Gary Reed, N2QEE, Reports : We had one candidate for the January VE session. The candidate **Melissa Guenther KE2BWZ** of Sewell upgraded to General. The upgrade was posted Friday afternoon on the FCC ULS data base.

The participating VE's were :

- Court KD2SPJ
- Rich W2RHS
- Mike KG4JYA
- Mike N2WOQ
- Greg W5DO
- Chris AD2CS
- Gary N2QEE

A big thank you to the participating VE's

The new question pool for the Amateur Extra exams has been released. The pool questions are on the ARRL website for review. These questions will be in effect starting July 1 2024 for the exam sessions. Of course the exam study will require new Q&A manuals.

The next monthly VE session will be Thursday, February 8, 2024 at 7 PM at the W2MMD Clubhouse.



I would like to thank Jeff and Karl for the nice emails about the band show on New Years Day. As you may know by now the band finished in 14th place this year, but they had a lot of fun putting on our show and we got a real nice surprise when we arrived back at our meeting place at the Woodbury Heights Firehouse after the parade. We were welcomed back by a big crowd of people which really made the band happy, this being our first year meeting at the firehouse.

We have gotten a lot of positive feedback from the judges. So, we know what we have to work on to get better scores for next year. The band is looking into a program that a lot of

10

the high schools and colleges use for their competitions which will help us do a better show next year.

The band is basically in their winter break and we have no jobs until Saturday, March 9, 2024 when we march in Hamilton NJ for their St Patrick's Day Parade. Then on Sunday, March 10th we travel up to New Heaven Ct. for another parade. On Saturday, March 16th we have a parade in Sussex County. That takes care of March.

We already have parades lined up for April. So far, we have the DoDah Parade in Ocean City NJ. That is the parade where they dress up all the Basset Hounds in costumes. Then on April 20th the String Band Association will have their Second Annual Haddon Ave Parade in Haddonfield NJ.

Well, that's all I have for this report. Please check out our Facebook and Instagram pages for any updates or if anyone would like to have us at your event.

Glenn Dougherty, N2YIO

DAs and DITs

>> Congratulations to Joseph Gadoury N2JJG (ex. KE2AKT) on his new vanity callsign.

>> Congratulations to Melissa Guenther, KE2BWZ, for upgrading to General Class.

>> A Big Club Get Well to all the Club Members who are recovering from various surgeries and medical issues.

>> A hearty salute to Chris Prioli, AD2CS and several other Club members who volunteered their time to do a street-by street damage assessment assisting the Pitman OEM following the January 9th wind storm.

ARES Resources

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

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

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

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



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

ZOOM Protocols For GCARC Meetings

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

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

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



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

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

So here is the ask :

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

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

Thank you

Regional (Atlantic & Hudson Divisions) Hamfests & Events

February 3, 2024 : Keuka Lake Amateur Radio Association, Groundhog Hamfest, Almond Community Building, 1 Marvin Lane, Almond, NY. <u>www.klara.us</u>

February 24, 2024 : New Providence Amateur Radio Club, NPARC Auction, Salt Brook School Cafeteria, 40 Maple Street, New Providence, NJ. <u>www.nparc.org</u>

February, 25, 2024 : Wireless Association of South Hills Amateur Radio Club, WASHFest 2024, Home Economics Building, South Park, 3735 Buffalo Drive, South Park Township, PA. <u>www.n3sh.org</u>

February 25, 2024 : Long Island Mobile Amateur Radio Club, Hamfest and Electronics Fair, Levittown Hall, 201 Levittown Parkway, Hicksville, NY. <u>www.limarc.org</u>



HamCation 2024 February 09 - 11, 2024 Central Florida Fairgrounds and Expo Park Orlando, FL <u>www.hamcation.com</u>

13



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

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

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

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



The Education Connection By Chris Prioli, AD2CS - chris@ad2cs.com www.ad2cs.com



14

February 2024

As you all know by now, the weather caused a cancellation in the start of the GCARC Fox Hunt Antenna and Attenuator Build Class. Hopefully, by the time that you read this column, the class will be well underway, but right this minute, as I write this, I have my share of questions in that regard. It is snowing again, and quite heavily. There is already a four-inch blanket on top of the icy layer of snow that accumulated last week, and it does not look like it is going to stop anytime soon.

For some strange reason, all of that got me thinking about the willingness and dedication of the individuals who come out to the W2MMD Clubhouse to attend the various training and educational classes that are held there, as well those who regularly participate in the GCARC TechNet ZOOM Forums. It does not matter who the instructor or the session presenter may be. It seems that when we offer a training or educational opportunity, we have interested parties to take advantage of those opportunities. Now, all of that brings me to the topic of this month's column... the future of education and training at GCARC.

That future is dependent in large part upon the membership, and just what it is that the membership would like to see presented in upcoming sessions, whether they be classroom events, hands-on events, ZOOM sessions, presentations at General Membership Meetings, or Tech Saturday Forum presentations. This is *your* club, and the educational offerings should in large part be driven by the membership.

As Chair of the Education Committee, I am willing to develop training or educational material in any area that you decide is appropriate and that would benefit the Club at large. I know that **Jon Pearce WB2MNF**, who heads of the Tech Committee feels the same way. What we need, though, is to know what it is that you want or need to learn about. We are always open to suggestions, and several of our recent offerings have been driven by suggestions made by Club members. We need for you to keep it up and to keep on bringing your ideas to us.

There are several good programs coming up in the near future, and I hope that they will be well-attended and well received. Let's not let it stop there. Tell us what you want, and we will do our very best to deliver it. Drop a note to either Jon or me - our email addresses are on the Club roster - and we will do what we can to make it happen.

I would also like to take this opportunity to mention a new feature that I have added to my website, <u>http://</u><u>ww.ad2cs.com</u>, that will make finding the new content much easier to locate. I talk about the website here because of the fact that the site holds a repository of almost all of my educational and informative writings, which I know are enjoyed by many of our members.

The new feature is the <u>What's New page</u>. On this page, I will be listing the linked titles of any new articles, together with the linked page where the article is located and the date that the article was posted. This precludes the need to browse every page looking for new content, and the links will take the visitor directly to that new content.

I am frequently amazed that so many people have found my website, and that so many of those folks have had very nice things to say about the content that I post. I post that material for the benefit of the readers, and I hope that it is useful to any of you who happen to visit the site. That just about wraps it up for this column.

See you next month!

Tuesday AfterNoon Net @ 1200 Hours



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

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

Here is the schedule for the upcoming weeks

Greg Ciraula, W5DO : February 6, 2024 Chris Prioli, AD2CS : February 13, 2024 Mike Thompson, KG4JYA : February 20, 2024 Steve Farney, W2SEF : February 27, 2024 Greg Ciraula, W5DO : March 5, 2024 Chris Prioli, AD2CS : March 12, 2024 Mike Thompson, KG4JYA : March 19, 2024 Steve Farney, W2SEF : March 26, 2024

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

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

Thursday Night Rag Chew Net @ 2000 Hours





15

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

Here is the schedule for the upcoming weeks

Chris Prioli, AD2CS : February 1, 2024 Mary Delemarre, W2TDS : February 8, 2024 Gary Mirkin, WA3SVW : February 15, 2024 Steve Farney, W2SEF : February 22, 2024 Greg Ciraula, W5DO : February 29, 2024

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

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

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



Gloucester County Skywarn Net

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

All Are Welcome To Participate

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

Gloucester County ARES Net



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

All are welcome to participate

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



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

Discover how to make Amateur Radio your own.

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

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



Sunday, February 11, 2024



At The Repair Bench...

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

LF & C Survey Meter - February 2024

Not long ago, I wrote in this column about a geiger counter repair that I was asked to take on. As you may (or may not) recall, I wrote at that time that the Club member for whom I was making these repairs actually brought two "geiger counters" in for repair. The previous article described the operation and repair of a Victoreen CD V-700 Model 6A Radiological Survey Meter. Now, I am telling the rest of the story, as Paul Harvey used to say. This month, I am describing the operation of and repairs to a Landers, Frary & Clark CD V-715 Model 1A Radiological Survey Meter (Figure 1).

As I explained in the previous article, these geiger counters and radiological survey meters were manufactured under the auspices of the federal Civil Defense program, each being made to a specific standard for its CD type designation, but with the specific circuitry and operational design left up to the individual manufacturers of the equipment. Thus, there were several different makers of the CD type V-715 meter. Landers, Frary & Clark (LF&C) was just one of those manufacturers.

While the V-700 meter described in the earlier article is a geiger tube instrument, the V-715 utilizes an ionization chamber as the sensing element instead of a geiger tube. As a result, the V-715 is not *really a "geiger counter"*, though that term has been loosely used to describe meters of this type as well.





Figure 2 : LF&C V-715 Schematic Diagram

At The Repair Bench - Continued on page 18

One thing that sets this type of instrument apart from the others is that it uses some resistors having *extremely* high through resistances. Connected to the range switch in this unit (**refer to Figure 2 and Figure 4**) are resistors having the following values, all of which are specified as 500mW 20% metal film types as below :

- 2 pieces, series connected, of 1 x 1011 ohms (100,000,000,000Ω) each;
- 1 piece of 2 x 1010 ohms (20,000,000,000Ω);
- 1 piece of 2 x 109 ohms (2,000,000,000 Ω); and
- 1 piece of 2 x 108 ohms (200,000,000Ω).

The *lowest* of these values is 200 megohms, well above the capability of most ohmmeters to measure. This poses a bit of a problem when attempting to validate the condition of such a resistor. One method of determining the resistance would be to apply a fixed voltage source to the resistor and then to measure the current flowing through it. But, at 200 megohms, a testing voltage of 100V will cause only 500 nanoamperes (0.0000005A) to flow - well below the measurement range of most typical ammeters. So... how is the resistance measured? One method that often works is to first isolate the resistor under test, and then to place a resistor of known value in parallel with the resistor under test. Measure the parallel resistance and work the arithmetic backwards to determine the value of the resistor under test. However, even this method is not useful in this circumstance due to the sheer magnitude of the resistances of the resistors to be tested. Placing a $1M\Omega 0.1\%$ tolerance resistor in parallel with the smallest of these high-value resistors, the 200,000,000 Ω one, gave me a measured resistance of 994,130 Ω . This value is outside the tolerance range of the 1M Ω 0.1% resistor (100,100,000 Ω to 999,000 Ω), but would be a resultant value that is well within the tolerance range of the 200,000,000 Ω 20% resistor (240,000,000 Ω to 160,000,000 Ω) and 1M Ω resistor placed in parallel, so the arithmetic would be meaningless in determining the actual value of the high-value resistor. It should be noted that the 994,130 Ω reading obtained is pretty close to what would be expected with a 200M Ω and a 1M Ω resistor of close tolerances in parallel with each other - (200,000,000 x 1,000,000) / (200,000,000 + $1,000,000) = 995,025\Omega.$

My everyday RLC bridge is capable of only 10 megohms, while my HP4284A laboratory RLC bridge tops out at 99.99 megohms in its resistance mode, well beneath the lowest value used in the range selector section of this unit. I decided that I could not measure these resistors by any practical method, so I would have to assume that they

were acceptable until some operating condition of the unit showed me otherwise. In reality, based upon the resistor types in place and the age of the unit, I would have to believe that these resistors were replaced at some point in the history of this unit, which belief is reinforced by the fact that one range position (the x 0.1 position) that called for two series resistors now has a single wire-wound tubular glass device instead.

OK - on to the general description of the unit. This meter is powered by a single standard "D" cell at 1.5VDC, but generates a maximum potential of -60V from the secondary of the power transformer. The primary of that transformer is in the oscillator circuit, which includes a GI 1459 PNP germanium transistor (more about this later).



At The Repair Bench - Continued on page 19

As mentioned previously, the sensing element is a hermetically sealed plated steel ionization chamber. This chamber (**Figure 3**) consists of a shell and an insulated center electrode called a collector, which is mounted to a high-resistance insulated feed-through connector. A strong voltage potential is applied to the collector and ionization chamber shell, which makes the shell (with respect to electrical common) negative by about a sixty-volt differential. This negative charge attracts the positively-charged ions that are formed by gamma radiation passing through the air that is contained within the ionization chamber. The ions striking the ionization chamber shell cause a current to flow in the collector. This current is proportional to the number of ions striking the shell, and therefore proportional to the strength of the radiation field. What appears to be a date (June of 2011) is penciled on the top of the ionization chamber. It is a possible surmise that this is an historical replacement date for the ionization chamber.

Depending upon which range has been selected by the range selector switch, this very small collector current flows through and develops a measurable voltage across one of the extremely high value resistors discussed earlier and clearly visible, attached to the range switch in the Figure 4 photo. This voltage is applied to the grid of the triode-connected 5886 Electrometer Tube, causing a small current to flow in the grid circuit. To give some idea of just how small this grid current really is, I took a quick look at the Tung-Sol 5886 Pentode Electrometer Vacuum Tube Datasheet. The maximum grid current, in accordance with the datasheet limitations, is 2.5 x 10-13 amperes when the tube is used as a triode, as it is in this circuit. Written in another form, this current we are talking about measures a mere 0.000000000025 amperes! The grid current causes a proportional plate current to flow in the tube, with any change in the plate current being shown on the 0-50µA meter movement that

is the user's indication of a detected radiation source.

In this unit, there is a transformer that has a pair of primary windings, one of which has a through resistance of 1.4Ω while the other has a through resistance of 60Ω . The secondary's are also isolated, having through resistances of 890Ω and 85Ω , with the 890Ω secondary paired with the 1.4Ω primary and the 890Ω secondary paired with the 60Ω primary. Used as a step-up transformer, the 1.4Ω primary has a 1:635.7 turns ratio, yielding a very high-voltage output pulse compared to the input pulse voltage in that winding pair.

The remainder of the circuitry uses a handful (seven to be exact) of 500mW resistors of common standard values, easily tested and sourced for replacement, all but one of which are 5% tolerance types. I found one difference between the schematic and



parts list and the physical unit, in that R16, a bleeder resistor for capacitor C1, a 5μ F electrolytic type, was installed as a 4.7M Ω resistor while the documentation called for R16 to be a of 1M Ω value. Due to the fact that these seven resistors were all of a type - carbon composition - known to exhibit resistance changes over extended time and use, I decided to isolate and measure each of these resistors. In doing so, I found that several of them had varied by well more that their labeled tolerances.

At The Repair Bench - Continued on page 20

For example, one of the 1K Ω resistors was down to about 400 ohms, while the other was higher than its nominal value, measuring out at 1345 ohms. At 5% tolerance, these resistors should have been no less than 950 Ω nor more than 1050 Ω . I had all of the required values in stock as modern carbon film 5% tolerance 500mW rated types, so I replaced all of these resistors with new ones, maintaining the 4.7M Ω value as installed for R16.

Next up were the capacitors. Both of the ceramic capacitors tested out as being within specifications and were therefore usable, so they were left in place. The sole electrolytic, on the other hand, had an ESR that was off the top end of the meter scale on my ESR meter, and measured out as about 31.25μ F instead of its nominal 5μ F as regards capacitance. The top of the ESR meter scale is five ohms, so that capacitor was at least somewhat leaky. It is this leakiness that leads to a higher-than-normal capacitance measurement, as current continues to flow into the capacitor long after it should have stopped if the capacitor had been in good condition. Left alone long enough, that capacitance meter reading would have increased even more - I stopped the test at that point as it was obvious that the capacitor was non-suitable for use. It was replaced with a modern 4.7μ F 50V 5% 105°C axial aluminum electrolytic capacitor. Such tight tolerance was not really necessary in this capacitor used as a filtering device, but that is what I had on hand, so I used it. The 4.7μ F 50V capacitor is an acceptable replacement for the original 5μ F 25V component.

The LC&F meter circuit uses three semiconductor devices - one transistor (mentioned earlier) and two rectifier diodes. The only information provided about the rectifier diodes is that they were "rectifiers", meaning that they were intended for use in a power supply to convert the AC into DC, and that one had a 50V PIV rating, while the other had a 100V PIV rating. It is unclear why two different diodes were chosen here, as the 100PIV diode should have worked in either location. The original diodes had heavy oxidation on their leads, compromising the lead integrity to the point where they both broke off easily when moved slightly during de-soldering. Through test measurements, I was able to determine that they were both of silicon composition, so I replaced them with a 1N5400 50V PIV 3A diode and a 1N5401 100V PIV 3A diode, both of which were in stock. These rectifier diodes are visible in the **Figure 4** photo at the bottom right corner of the PCB.

The transistor was a different story. It was obviously defunct, as it failed each and every test to which I submitted it. I could not make any determinations as to type or specifications from the transistor itself other than the fact that it had gold leads, and its markings were of no help at all. The schematic showed it to be a PNP type. However, what I *did* find, in the LF&C manual for the unit, was that the original transistor supplier was General Instruments, and that it was a GI part number 1459 device. You might think that having a manufacturer's name and his part number for the transistor would make it easy to obtain more information about it, right? Not so much, as it turns out. I could not find *anything* resembling specifications for this transistor anywhere on the internet. I then had a brainstorm and turned to my NTE Electronics QUICKCrossTM cross-reference software, where the first item turned up in a text search using "1459" as the search string was the NTE-102 transistor. The datasheet for this device showed it to be a PNP germanium type rated as below :

- Collector-Base Voltage (VCBO)25V
- Continuous Collector Current (IC)150mA
- Collector-Emitter Voltage (VCES)24V
- Emitter Current (IE)100mA
- Emitter-Base Voltage (VEBO)12V
- Total Device Dissipation (PD)150mW

At The Repair Bench - Continued on page 21

This looked like a good possibility. I mentioned the gold leads because germanium transistors most often have gold leads. I went looking to see who might have stock on this transistor, and I found that **Digikey** (www.digikey.com) had availability of a direct-ship from NTE with about a five-day lead time. On a whim, I punched "NTE102" into an Amazon search box, and to my surprise, Amazon not only had it, but they had it at about half of the Digikey price. To clinch the deal, the Amazon item order page said that I would have it the next day! What a no-brainer! I ordered it in from Amazon and set everything aside overnight.

OK - so the next day came and with it came the transistor, as promised. Of course, as this point, I really had nothing to go by, that is, nothing saying that this was the correct part other than the NTE cross-reference. On the other hand, I have found the *QUICKCross*TM software to be quite accurate and reliable with its interchange information. As expected, the leads on the new transistor were in fact gold, and also as expected, based on the datasheet information, was the fact that the transistor was in the same case type, a TO-39 metal can with a tab on its circumference. So far, so good...

Working from the orientation of the original transistor in the PCB and the schematic diagram, the transistor pinout was also correct. The "*pinout*" is the assignment of specific terminals of the transistor to specific pins on the physical device. In the schematic, the emitter is connected directly to the "D" cell positive terminal. The base is connected to one end of the 1.4Ω transformer primary winding, while the collector is connected to the opposite end of the transformer 60Ω primary winding. Having this connection information, it is easily seen which pin of the original transistor was which terminal of the transistor, which then easily translated to a match with the terminal versus pin assignments of the new transistor. Seeing that everything matched up, I was very confident that I had located a proper replacement for the failed transistor in this unit. I went ahead and installed the new transistor, which can be seen at the lower left area of the PCB in the **Figure 4** photo, just to the right of the meter "zero" control potentiometer.

Figure 5 shows a close-up view of the 5886 Pentode Electrometer vacuum tube. I illustrate this tube simply for its curiosity value, as it is somewhat different from those devices that we customarily recognize as *vacuum tubes*. None the less, it *is* a vacuum tube. Earlier in this article, reference was made to the fact that the current from the collector of the ionization chamber is directed to both the high-value resistors) via the range selector switch and to the (control) grid of the triode-connected vacuum tube. Note the bare wire lead from the vacuum tube, from the right side of the tube as shown in the **Figure 5** photo. This lead ties directly to the common terminal of one deck of the range selector switch, and then also connects directly to the collector lead of the ionization chamber. Note that apart from that one wire, which is soldered, the vacuum tube is connected into the circuit by use of a vacuum tube base socket as are most vacuum tubes. A quick look at the schematic in **Figure 2** shows that the cathode is directly heated, and that the cathode is tied directly to the emitter of the transistor.



At The Repair Bench - Continued on page 22

Once the repairs were made and all operational checks were made in accordance with the manual and the schematic diagram voltage callouts, it was time to button this one up. Field calibration is not really feasible – or even possible in most cases - due to the fact that calibration requires the use of a calibrated radioactive field into which the unit is placed. Then, based upon the strength of the calibrated RA field, the unit is placed into its each of its various operating ranges in turn and each successive calibration potentiometer, one for each range, is adjusted to bring the meter reading into agreement with the known field strength. This requires the use of some equipment not generally available to the field user or maintainer of this device. The manual does indicate which potentiometer is related to which range switch position for actually making the calibration adjustments, but the complete adjustment process requires the use of an X-ray or gamma ray field.

One of the more important factors in the successful operation of this radiological survey meter is the fact that it is sensitive to moisture, including local air humidity. Humidity can and will affect the values of the high-resistance resistors used in the range selection stage as well as the operation of the ionization chamber's center collector assembly. The high value resistors, the vacuum tube, and the collector assembly are all also subject to problems from handling, as skin oil contamination on the surfaces of these components can cause leakage currents to flow across the component surfaces. When handled, these components must be properly cleaned of all skin oil residue through the use of residue-free alcohol and a soft cloth or cotton swab. To aid in the moisture reduction inside the closed unit, a bag of dry desiccant granules is placed in the bottom of the lower enclosure, which is sealed to the upper body assembly via the use of a rubberized gasket under the cover and O-rings on the control shafts. A rubber cushion is installed in the lower enclosure in the proper location to aid in keeping the "D" cell in its holder. When the unit is assembled, the "D" cell rests on this rubber pad, keeping the cell securely in place.

To close, a few quick words about the manual are actually overdue. I found two different copies of the factory user and maintenance manual for this unit online with a little bit of searching, one more easily readable than the other. The only catch is that care must be taken to ensure that the manual matches the device at hand. Bear in mind that there were multiple manufacturers who produced V-715 radiological survey meters, and each manufacturer may have produced multiple versions of their device. Just make sure that the manual selected is the correct manual for the device at hand, by manufacturer and by specific model number.

All things considered, this was a pretty typical repair of an unusual device. Apart from the fact that the high-value resistors can not easily be measured, the remainder of this repair was pretty straight-forward and required nothing out of the ordinary in either skills or equipment. This was a repair that any reasonably-skilled technician should, be able to handle with ease.

See you next month!



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

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

CrossTalk Submissions

This is your Club Magazine. Make use of it.

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

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

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

Submission deadline for the March 2024 issue : Tuesday, February 20, 2024

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

DMR Configuration Sequence

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



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





Tuesday, February 13, 2024



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

Blood Shortage Continues, Please Give Blood Now

Red Cross declares an emergency blood shortage, as number of donors hits 20-year low

The Red Cross says that the number of people donating blood has dropped by 40% over the last two decades, and that the shortage could worsen in coming months if winter weather or seasonal respiratory illnesses like the flu or COVID-19 cause people to cancel their blood donation appointments.

How You to donate blood :

To make an appointment, simply download the American Red Cross Blood Donor App, visit <u>RedCrossBlood.org</u>, call 1-800-RED CROSS (1-800-733-2767) or

enable the Blood Donor Skill on any Alexa Echo device to make an appointment or for more information. A blood donor card or driver's license or two other forms of identification are required at check-in. Individuals who are 17 years of age in most states (16 with parental consent were allowed by state law), weigh at least 110 pounds and are in generally good health may be eligible to donate blood. High school students and other donors 18 years of age and younger also must meet certain height and weight requirements.

You Can also Help the Red Cross by Volunteering with Amateur Radio Emergency Services

As we look out the window at the snow coming down, we urge everyone to be prepared and consider becoming a volunteer to help people affected by the growing number of climate-driven disasters.

Support impacted communities by using your Amateur Radio License at Red Cross shelters or becoming a member of both ARES and the Red Cross Disaster Relief Services. For more information, email Bob Keogh KD2NEC@QSL.NET

About the American Red Cross :

The American Red Cross shelters, feeds and provides comfort to victims of disasters; supplies about 40% of the nation's blood; teaches skills that save lives; distributes international humanitarian aid; and supports veterans, military members, and their families. The Red Cross is a nonprofit organization that depends on volunteers and the generosity of the American public to deliver its mission.











Announced DX Operations <u>www.ng3k.com/Misc/adxo.html</u> From The Shack of Bill Feidt, NG3K : <u>www.ng3k.com</u>										
2024 Feb02	2024 Feb07	Norfolk I	VK9N		DXW.Net 20240122	By GM4DLG as VK9N/GM4DLG; 80 40 20m; SSB; 100w; 100w				
2024 Feb03	2024 Apr16	Senegal	6W7	Club Log OQRS	425DXN 20240119	By ON4AVT as 6W7/ON4AVT fm Warang; 80-10m; FT8 NG3K				
2024 Feb04	2024 Feb09	Philippines	NCDU3	LoTW	<u>425DXN</u> 20240119	By WA7WJR as DU3/WA7WJR fm Pampanga; 20-10m; CW SSB + digital; spare time operation; QSL via WA7WJR (B/d)				
2024 Feb04	2024 Feb11	Reunion	V FY4JI <u>New</u>	EA5GL	<u>425DXN</u> 20240127	By FY4JI fm IOTA AF-016; HF				
2024 Feb04	2024 Feb11	Vanuatu	NG3K YJ	LoTW	JH3QFL 20231212	By JH3QFL as YJ0AA and JH3VAA as YJ0MN; HF; mainly FT8; QSL via JH3QFL w/SASE (as in QRZ.com				
2024 Feb06	2024 Feb20	Antigua & Barbuda	<u>V26CV</u>	LoTW	<u>TDDX</u> 20231222	By KG9N; HF; CW; QSL via KG9N				
2024 Feb07	2024 Feb29	Senegal	NG3K 6W7	Club Log OQRS	DXW.Net 20230115	By ON4AVT as 6W7/ON4AVT fm Warang; 80-10; SSB + digital; QSL via ON4AVT; operation to continue until Apr 13				
2024 Feb10	2024 Feb18	Georgia	NG3K <u>4L</u> NC2K	LoTW	NG3K <u>TDDX</u> 20231201	By K6VHF as 4L/K6VHF fm Rustavi; 80-6m; CW SSB FT8 RTTY; 1kw; QSL via K6VHF direct				
2024 Feb10	2024 Feb24	Juan Fernandez	<u>CB0ZA</u>	LoTW	<u>DXW.Net</u> 20230605	By NP4G HI3R XQ3SK AB5EB AD5A W8HC N2IC fm IOTA SA-005; 160-6m; SSB CW RTTY FT8 + EME; QSL via N2OO direct w/ 2USD + SASE; dates subject to change; see Web for full QSL details				
2024 Feb10	2024 Feb28	Solomon Is	NG3K H44MS	LoTW	<u>TDDX</u> 20231111	By DL2GAC fm Ql01hp; 160-6m; SSB FT8; 800w; QRV for CQ 160m SSB; QRV holiday style until Apr 29				
2024 Feb14	2024 Feb24	Guyana	<u>8R7X</u> NG3K	LoTW	DK6SP 20230611	By M0SDV DK6SP DJ4MX HA8RT; 160-6m; CW SSB FT8 RTTY; QSL via M0OXO OQRS NG3K				

Also for your convenience, there is a direct link to NG3K of our website. Click on the NG3K DX Page.

Announced DX Operations <u>www.ng3k.com/Misc/adxo.html</u> From The Shack of Bill Feidt, NG3K : www.ng3k.com

2024 Feb17	2024 Feb27	St Kitts & Nevis	V47JA NEW	LoTW	W5JON 20240124	By W5JON fm Calypso Bay; 160-6m; SSB FT8; yagi, verticals; QSL also OK via W5JON direct
2024 Feb17	2024 Mar03	Madagascar	NG3K 5R	S53BV Direct	<u>TDDX</u> 20240104	By S53BV as TBD fm Nosy Be I; 80 40m; CW SSB; 300w
2024 Feb19	2024 Mar09	Wallis & Futuna	NG3K FW8	LoTW	DXW.Net 20231227	By LZ1GC as FW8GC and LZ5QZ and TX8GC fm Wallis I (IOTA OC-054); 160- 10m; CW SSB RTTY FT8 FT4
2024 Feb20	2024 Feb27	Mauritius	3B8	LoTW	<u>TDDX</u> 20230725	By OK6DJ as 3B8/OK6DJ; 40-10m; CW; QSL via Club Log OQRS
2024 Feb22	2024 Mar07	Temotu	NG3K H40WA NG3K	LoTW	NG3K N6PSE 20230126 NG3K	By N7QT N6PSE VE7NY OE1JUN DJ9RR HA0NAR W7XU N6XG fm IOTA OC-065 (RH29vg); 160-10; CW SSB FT8 (f/h); QSL via M0URX; QRV for CQWW SSB
2024 Feb25	2024 Mar04	St Kitts & Nevis	NG3K	K1ZN	K1ZN 20230925	By K1ZN as V44/K1ZN fm St Kitts; HF
2024 Feb26	2024 Mar15	Cambodia	XU7GNY	LoTW	<u>TDDX</u> 20240109	By DL7BO; 160-6m; CW SSB FT8; QSL via DJ6TF or Club Log OQRS
2024 Feb27	2024 Mar03	Lord Howe I	VK9L		DXW.Net 20240122	By GM4DLG as VK9L/GM4DLG; 80 40 20m; SSB; 100w; 100w
2024 Feb27	2024 Mar04	US Virgin Is	NP2R	LoTW	<u>TDDX</u> 20240110	By K4BEN W3MLJ KC1KUG fm St Thomas I; 160-10m; CW SSB, perhaps FT8; 100w; Spiderbeam, dipoles, sloper; QSL via KC3UII

Also for your convenience, there is a direct link to NG3K of our website. Click on the NG3K DX Page.



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

Be A Club Volunteer!

Club Technical Volunteer Projects :

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

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

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

Clubhouse Construction Volunteer Projects :

Shed : Build Ramp

Replace Back Steps

Clubhouse :

- Build Ramp
- Replace Interior Front Door

Install 2 New VHF Towers

Lightning Protection Project :

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

Install New Light Pole

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



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

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



by Chris Codella, W2PA

Vintage Ham Radio

12/11/2007

Answers on Page 49

Across

1. Radio named for a bird 5. Lake swing 9. An SB-220, very broadly speaking 14. Oscar's follower 15. In the middle of EME 16. Tough, durable wood 17. Times past 18. Fine tuning, on some vintage receivers 20. Presses the upper left key 22. They get disqualified in a contest, probably 23. Vibroplex manual item 24. Iowa ham equipment maker, informally 25. Cartoonist Schultz, on CW maybe? 26. generator 28. A step lower in frequency than Re's 29. Proof ender, maybe on CW too 32. Meadow sound 34. Volatile computer storage 35. Four digits of nothing. on CW, for short 36. An R-390 on a carrier? 41. Part of S.R.O. 42. What log entries were often written in, before computers 43. Sixty-one-forty-44. Foxhunt (abbr.) 45. Delight 46. Pertaining to a point of connection, in a circuit or network 50. Base predecessor? 51. W2 summer time 53. Dir. beaming Billings from Boise 54. Bad, if a tire ...; good, if SWR 57. Desk Kilowatt maker 59. Lots of Hertz, in the early days 62. ARRL Op-(dupe

sheets were #6)

1	2	3	4		5	6	7	8	ï	9	10	11	12	13
14					15	1	1		Ĩ	16	1		\mathbf{T}	1
17	T				18		Г		19				Ħ	
20	3 8 5		1	21	2010	i	-		22		240	ini tep	9 0 - 6	240
23		1		24	+	ř	-	25		-	+			
26			27				28			-		29	30	31
			32	8 a	33	ï	34	-	ing.	-	35	ing.	9 0 - 6	240
36	37	38			+	39		1	2	40	-	2	+	1
41		-			42		-		43	-	-	1		
44		1		45		7	3 . - 5			46	-	47	48	49
			50		+			51	52	-		53	+	+
54	55	56	A		1	-		57	-		58	<u>.</u>		
59			iş.		-	60	61	e 60	4		62	4		-
63		1	-			64	-	+	2		65	-	1	+
66		-	2			67			1		68	1		

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

63. Receiver maker in HPM's time
64. Walk back and forth
65. Natural antenna support
66. A YL, after getting an X
67. Jet-setters' jets, once
68. Wisdom says that sometimes it's more

Down

 20 WPM, 300 Baud, and others
 SP capital
 To AMers it's the scratchy one from Heath
 AMSAT partner
 Glowing remnant
 Effect of 5-down on a hot dog
 Sometimes it's plus sometimes minus
 AR, on CW Some amplifiers, starting. around 1970 10. "Who ?" 11. Part of EAN, CAN, PAN 12. Future doc's exam 13. Docs of another kind 19. Arrangements or organizations - in databases 21. Like a ruling in HV-land 25. Layer, as with paint 50. 27. Pac, div. ARRL sect. 28. Their dials are greenishblue 29. Miamisburg, to 28-down 30. Maker of 9-down, once 31. Serial port pin 33. Code proficiency, say 35. Extra stable freq. ref. 36. Kind of logic gate

 Another kind of logic gate 38. What the original ham band is called today 39. Linear (but not an amp), briefly 40. IN district 45. Honored or favored 47. Covet, as a big antenna farm 48. Collectors' ancestors? 49. Contacts (but not QSOs) King 500 5L VCR button 52. Prescribed amounts 54. Italy, No. Ireland, in prefixes 55. McCartney, Lancelot and others 56. Took a 707 58. Mfgr. of HRO revrs 60. Hz, to Hertz 61. A step higher in frequency than so's

2020-2024 Element 4 Amateur Extra Class License Question Quiz

This month we finish up with Subelement E4 Amateur Practices (5 exam questions out of 5 groups) (Answers on 'Last Page Calendar')

E4E01

What problem can occur when using an automatic notch filter (ANF) to remove interfering carriers while receiving CW signals?

- A. Removal of the CW signal as well as the interfering carrier
- B. Any nearby signal passing through the DSP system will overwhelm the desired signal
- C. Received CW signals will appear to be modulated at the DSP clock frequency
- D. Ringing in the DSP filter will completely remove the spaces between the CW characters

E4E02

Which of the following types of noise can often be reduced with a digital signal processing noise filter?

- A. Broadband white noise
- B. Ignition noise
- C. Power line noise
- D. All these choices are correct

E4E03

Which of the following signals might a receiver noise blanker be able to remove from desired signals?

- A. Signals that are constant at all IF levels
- B. Signals that appear across a wide bandwidth
- C. Signals that appear at one IF but not another
- D. Signals that have a sharply peaked frequency distribution

E4E04

How can conducted and radiated noise caused by an automobile alternator be suppressed?

A. By installing filter capacitors in series with the DC power lead and a blocking capacitor in the field lead

B. By installing a noise suppression resistor and a blocking capacitor in both leads

C. By installing a high-pass filter in series with the radio's power lead and a low-pass filter in parallel with the field lead

D. By connecting the radio's power leads directly to the battery and by installing coaxial capacitors in line with the alternator leads

E4E05

How can radio frequency interference from an AC motor be suppressed?

- A. By installing a high-pass filter in series with the motor's power leads
- B. By installing a brute-force AC-line filter in series with the motor leads
- C. By installing a bypass capacitor in series with the motor leads
- D. By using a ground-fault current interrupter in the circuit used to power the motor

E4E06

What is one type of electrical interference that might be caused by a nearby personal computer?

- A. A loud AC hum in the audio output of your station receiver
- B. A clicking noise at intervals of a few seconds
- C. The appearance of unstable modulated or unmodulated signals at specific frequencies
- D. A whining type noise that continually pulses off and on

Element 4 Amateur Extra Class Quiz - Continued on page 31

Element 4 Amateur Extra Class Quiz - Continued from page 30

E4E07

Which of the following can cause shielded cables to radiate or receive interference?

- A. Low inductance ground connections at both ends of the shield
- B. Common-mode currents on the shield and conductors
- C. Use of braided shielding material
- D. Tying all ground connections to a common point resulting in differential-mode currents in the shield

E4E08

What current flows equally on all conductors of an unshielded multi-conductor cable?

- A. Differential-mode current
- B. Common-mode current
- C. Reactive current only
- D. Return current

E4E09

What undesirable effect can occur when using an IF noise blanker?

- A. Received audio in the speech range might have an echo effect
- B. The audio frequency bandwidth of the received signal might be compressed
- C. Nearby signals may appear to be excessively wide even if they meet emission standards
- D. FM signals can no longer be demodulated

E4E10

What might be the cause of a loud roaring or buzzing AC line interference that comes and goes at intervals?

- A. Arcing contacts in a thermostatically controlled device
- B. A defective doorbell or doorbell transformer inside a nearby residence
- C. A malfunctioning illuminated advertising display
- D. All these choices are correct

E4E11

What could cause local AM broadcast band signals to combine to generate spurious signals in the MF or HF bands?

- A. One or more of the broadcast stations is transmitting an over-modulated signal
- B. Nearby corroded metal joints are mixing and re-radiating the broadcast signals
- C. You are receiving skywave signals from a distant station
- D. Your station receiver IF amplifier stage is defective

WORD TO THE WISE

CQ

"Calling any station" is the general call when requesting a conversation with anyone. Like many other telegraph terms that originated on the landlines, CQ was brought over into radio and used as a general call to all ships by the Marconi Company. Other companies used "KA" until the London Convention of 1912, which adopted CQ as the international general call or "attention" signal.

But why the letters CQ? From the French, sécurité (which means "safety" or, as intended here, "pay attention"). The pronunciation of the first two syllables sounds like the English letters C and Q, which led to "CQ" becoming a call to attention for all stations.

Electronic Tool Tip #4 - Desoldering Pump By Chris Prioli, AD2CS - chris@ad2cs.com - www.ad2cs.com

Every electronics hobbyist will eventually find the need to desolder components, whether from point-to-point "dead bug" wired devices or from a printed circuit board (PCB). It will also come to pass that the solder wick, the squeeze bulb, and the stand-alone plunger pump will no longer fill the bill. The reason for this is that by the time that you remove the soldering iron and properly place the vacuum tool on the joint, the solder will have solidified again. What is needed is the ability to suck the solder out while still heating it.

Not every hobbyist will have the need or even the budget for a highdollar electric vacuum pump type of desoldering tool. This is where this pump comes in. The tool is a combination of a soldering iron and an integrated plunger pump in a single assembly. Use of this tool very quickly becomes familiar and routine. The only problem



that I had was making myself remember to point the tip of the tool upward while resetting the plunger, so as to avoid forcing solder balls down into the tip of the tool.

The tool works best on PCB's, but it performs acceptably on dead bug wiring as well. It will take some getting used to, but the "heating while sucking" action is the ticket. As the user's needs grow, it may be appropriate to move up to a higher-level desoldering pump, but for most hobbyists, this tool is a good choice.

The barrel lifts directly off the frame of the iron for cleaning of the accumulated waste solder from within the barrel. Re-assembly is simple - just align the end of the barrel with the opening in the base of the iron's frame, and then press the barrel down onto its locating tabs in the upper end of the frame.

The desoldering pump, Yihua model #929D-V, comes complete with a stand, and extra tip, and a cleaning tool used to keep the tip clear.

The tool shown above is available at \$39.99 (USD). It can be ordered directly from the Yihua store at **www.amazon.com**, where the many high-quality offerings of this company are showcased. Yihua manufacturers a wide line of soldering and desoldering tools and equipment, suitable for anyone from the hobbyist to the professional.

Go to https://www.amazon.com/gp/product/B094ZCRXMN to investigate this tool for yourself.

QUOTABLES

Ward Silver, N0AX, shared :

"Here's an 1844 quote sent by postal mail from Samuel Morse to his partner, Alfred Vail, regarding telegraphy: '... there is one defect in your writing [sending] which I wish you would pay particular attention to -Make a longer space between each letter, & a still longer space between each word, The letters and words are often confounded for want of this simple attention.'

Even at the beginning, nearly 180 years ago, running characters together was a problem!"

The University of Scranton Amateur Radio Club, W3USR, Got a Facelift



With a grant from **Amateur Radio Digital Communications** (**ARDC** - <u>https://www.ardc.net</u>) for almost \$200,000 and private donations of more than \$20,000, the University of Scranton Amateur Radio Club in Scranton, Pennsylvania, has installed new amateur radio equipment and antennas for its station, W3USR.

The station is now located on the fifth floor of the university's Loyola Science Center and features state-of-the-art operating positions with heavy-duty controllers, all-mode transceivers, speakers, desktop microphones, and other components that allow students to operate on amateur radio frequencies. A 40-foot tower with a high-frequency antenna for 14, 21, and 28 MHz has been installed, as well as VHF/ UHF satellite and microwave antennas -- some with rotating mounts.

The ARDC grant was awarded to the university's Physics and Engineering Department Assistant Professor Nathaniel Frissell,



A crane lifts an antenna into place for W3USR's new location. [Photo courtesy of Byron Maldonado, University of Scranton]

33

W2NAF, and the private donations were made by Dr. Mary Lou West, KC2NMC; Ed Hayes, N6XEM, and Jeff DePolo, WN3A.

Dr. Frissell said the impact of the new station means everything to the club. "When you can bring a group of students into a new facility like this one, the impact makes a lasting impression that will allow them to fully experience amateur radio," he said.

Dr. Frissell added that the first radio contacts have been made, and the station is working on 10, 15, and 20 meters with additional installation work remaining. An additional room on the same floor holds equipment and antenna connections and, will be used as a lab for controlled **HamSCI** (<u>https://hamsci.org</u>) space research projects. The new capabilities of W3USR will also allow for ongoing and future HamSCI research projects to be undertaken by Dr. Frissell and university students.

W3USR was founded in the spring of 2020 with a mission to educate students on the ionosphere and the importance of radio communication. The club regularly participates in the **ARRL Collegiate Amateur Radio Program** (https://www.arrl.org/collegiate-amateur-radio).

Article Credit : The ARRL Letter for November 16, 2023 - <u>www.arrl.org</u>

QST de W1AW ARRL Bulletin 35 ARLB035 From ARRL Headquarters Newington CT December 11, 2023 To all radio amateurs

SB QST ARL ARLB035 Bandwidth Limits Replace Symbol Rates on the HF Bands, Other Bands Open for Comment

The Federal Communications Commission (FCC) published new rules adopted last month that replace the symbol rate restrictions on the HF bands with a bandwidth limit of 2.8 kHz. The new rules go into effect January 8, 2024.

Please see : <u>https://bit.ly/3w2Nf0t</u>, for further details.

The bands and band segments affected by the rules change are those authorized for data transmission between 160 and 10 meters, exclusive of 60 meters (where no change was made).

In adopting a bandwidth limit in place of the baud rate limit the FCC agreed with ARRL that some limitation is necessary because "without a baud rate or bandwidth limit, data stations using a large amount of spectrum for a single emission could do so to the detriment of simultaneous use by other stations using narrowband emission modes."

ARRL has advocated for this change for a long time. The move opens amateur data communications to faster and more modern modes and restores the incentive for amateurs to experiment with and develop faster and more efficient data methods. Previously, ARRL obtained waivers to the symbol rate rules on a case-by-case basis to facilitate communications during situations like hurricane responses. These delays will now be removed, permitting drills to be conducted with the faster modes and more timely responses when needed.

The FCC also requested comment on removing similar symbol rate restrictions in the rules governing 135.7 - 137.8 kHz (2200-meter band), 472 - 479 kHz (630-meter band), and the very high-frequency (VHF) and ultra-high frequency (UHF) bands.

The VHF bands with baud rates are the 6-meter band, 2-meter band, and the 1.25-meter band. The single UHF band with a baud rate is the 70-centimeter band (420 - 450 MHz). The Further Notice of Proposed Rule Making (FNPRM) proposes to maintain the existing bandwidth limits in the Commission's rules for these VHF and UHF bands but seeks comment on whether they should be kept, and if so, whether the bandwidths should be changed. The Commission also sought comment on whether bandwidth limits should be adopted for application to the 2200 and 630-meter bands, and if so, what an appropriate bandwidth limit would be.

Public comments on these additional issues are sought in the FNPRM. The comment period is open until January 8, 2024. Replies to comments are due no later than January 22, 2024. If changes are later adopted, the rules will go into effect in the same manner as they did for the other bands - after notice and publication in the Federal Register.

"Ask not what your Club can do for you, Ask what you can do for your Club" - KA2OSV

QST de W1AW ARRL Bulletin 36 ARLB036 From ARRL Headquarters Newington CT December 19, 2023 To all radio amateurs

SB QST ARL ARLB036 WRC-23 Concludes with Wins for Amateur Radio and Agenda Items Designated for the Next Two Events

The following report comes from International Amateur Radio Union Secretary Joel Harrison, W5ZN:

After 4 hectic weeks of the 2023 World Radiocommunication Conference (WRC-23), and a preceding week of Radiocommunication Assembly meetings, WRC-23 concluded on Friday, December 15. Amateur radio fared very well overall, despite the enormous pressures across the radio spectrum from LF to terahertz. This is a tribute to the effort of the International Amateur Radio Union (IARU) team, who at times had to work from 8:00 AM to as late as 2:00 AM the next morning, as well as on the weekends.

At the top of the amateur radio priority list was Agenda Item (AI) 9.1b, regarding the coexistence of the secondary amateur and amateur-satellite allocation with the primary radio navigation satellite service in the 1240 - 1300 MHz band. This had seen 4 years of strenuous effort prior to WRC and resulted in a recommendation being agreed upon at the Radiocommunication Assembly, followed by WRC-23 participants agreeing to mention the recommendation in a new footnote for the allocation. Both the recommendation and the footnote are an excellent outcome for the amateur services.

Other items were relevant to the amateur service and were prioritized beforehand :

- AI 1.12 : 40 50 MHz radar sounders. These are now largely limited to the polar area.
- AI 1.14 : 231.5 252 GHz re-allocations for Earth sensing. Fortunately, our secondary 241 248 GHz allocation is unchanged, and the primary allocation of 248 250 GHz is unaffected.
- AI 9.1a : Space weather sensors was an item of major interest. A clear definition for such sensors was confirmed, with frequency protection being agreed upon as an agenda item for WRC-27.
- AI 1.2 : More broadband in the 3.3 GHz and 10 GHz bands (in Region 2). This is a difficult challenge, as the amateur services are secondary with numerous (mainly South American) countries allocating mobile broadband by way of footnotes. Instead of a region-wide designation for IMT at 10.0 10.5 GHz in Region 2, there is a footnote limited to a dozen countries.

Every WRC agreed to an agenda for the next conference under AI 10. This AI had an unprecedented number of proposals for WRC-27 and preliminary ones for WRC-31. Following the relatively quick agreement on AI 9.1b, the IARU team switched most of its efforts to the following future proposals to reduce the impact on the amateur services, as numerous amateur bands were under consideration.

WRC-27

The WRC-27 agenda will have 19 items. The following are the most relevant to the amateur services :

- 1300 1350 MHz : A previous proposal for this band, adjacent to 23 centimeters, was suppressed, providing certainty for our secondary allocation.
- Space Weather : This potential AI was initially very concerning, as the 0.1 20 MHz and 28 and 50 MHz bands were initially under consideration, until concerns were raised, and a team effort resulted in these allocations being removed from the topic.

ARLB036 Bulletin 36 - Continued on page 36

ARLB036 Bulletin 36 - Continued from page 35

- Lunar Communications : This future agenda item initially included 70 centimeters and other bands where Earth-moon-Earth could be restricted. Fortunately, the UHF aspect of this AI was modified to exclude 430 440 MHz.
- 10 GHz : We were fortunate that this band was withdrawn from another round of consideration for mobile broadband, especially in Region 1.

WRC-31

A record number of preliminary item resolutions were agreed on. The following two are especially relevant :

- Wireless Power Transmission (WPT) : Both near-field and beamed are being considered as part of the International Telecommunication Union radio regulations, whilst minimizing the impact from interference.
- 275 325 GHz Allocations : This will include an opportunity for the amateur and amateur-satellite service.

The IARU team worked effectively to minimize the amateur bands from future studies, which is a great result for amateur radio.

IARU is very pleased with the overall result of WRC-23. The IARU team has already started to discuss and consider how to engage and resource for the next cycle leading up to WRC-27. IARU WRC Coordinator and Vice President Ole Garpestad, LA2RR, expressed his pleasure with the results and complimented the extraordinary effort of the dedicated team of IARU volunteers who worked long hours to achieve the results that will benefit all amateurs.

The IARU team includes ARRL Technical Relations Specialist Jon Siverling, WB3ERA. WRC-23 ran from November 20 - December 15, 2023.



QST de W1AW ARRL Bulletin 34 ARLB034 From ARRL Headquarters Newington CT December 6, 2023 To all radio amateurs

SB QST ARL ARLB034 NCVEC Question Pool Committee Removes Two General-Class License Questions

The National Conference of Volunteer Examiner Coordinators (NCVEC) Question Pool Committee (QPC) has removed two General-class license questions. Pursuant to the November 13, 2023, FCC rule change to remove symbol rate restrictions on amateur radio digital emissions, the QPC of the NCVEC has deleted two questions from the General-class question pool because they are no longer correct. The web article on the symbol rate restrictions can be find at, http://www.arrl.org/news/arrl-hails-fcc-action-to-remove-symbol-rate-restrictions.

General-class questions G1C08 and G1C10 are withdrawn from the pool effective immediately and should be removed from examinations as soon as possible. Updated question pool files, including the errata and new information, have been posted on the NCVEC General-class question pool web page at : <u>http://www.ncvec.org</u>.

The current Element 3 General question pool became effective on July 1, 2023, and it is valid through June 30, 2027. The ARRL VEC advises the community to regularly check the NCVEC website at <u>http://www.ncvec.org</u> for updates to the question pools, which may include errata and withdrawn questions.



Volunteer Monitor Program Report - October 2023

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

- As a result of his operation on 14.265 MHz, an operator in Texas was sent an advisory notice cautioning him of the FCC power limits in the Amateur Radio Service.
- An advisory notice was issued to a licensee in Texas cautioning him about broadcasting and failure to share the frequency on 10 meters. The operator was using an automatic device calling CQ with no interval between transmissions, resulting in complaints of monopolizing the frequency.
- An advisory was issued to an operator in Georgia as a result of his playing music on 3.927 MHz.
- Technician-class operators in Georgia and Missouri were issued advisories concerning FT8 operation on 15, 17, and 20 meters. Technicians have no operating privileges on 17 or 20 meters, and only CW privileges on 15 meters.
- Amateur Extra-class operators in Kentucky and Virginia were issued advisory notices concerning long transmissions on 40 meters with no call sign identification.
- An operator in Wisconsin was sent an advisory notice concerning deliberate interference to the Lakeshore Repeater Association's operation on 442 MHz. The operator was informed that the case was being referred to the FCC, and that the FCC would enforce the request by the repeater owner that he stay off the repeater.
- The VM Program Administrator participated in one meeting with the FCC.

The totals for September monitoring were 2,133 hours on HF frequencies, and 2,703 hours on VHF frequencies and above, for a total of 4,836 hours.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH

Volunteer Monitor Program Report - November 2023

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

- As a result of his operation on 28.277 MHz from St. Kitts and Nevis, during which he engaged in contacts with numerous US stations, an operator in New Jersey received an advisory notice cautioning him that US stations have no voice privileges on 28.277 MHz. Voice privileges for US stations on 10 meters start at 28.300 MHz.
- Advisory notices were sent to operators in North and South Carolina concerning excessive bandwidth on 75 meters. Section 97.307(a) of Commission rules states that no station shall occupy more bandwidth than necessary for the information rate and emission being transmitted.
- A Technician-class operator in Kentucky was sent an advisory notice concerning FT8 operation on 14.074 MHz. Technician licensees have no data privileges on 20 meters. A Technician-class licensee in California was issued an advisory notice for FT8 operation on 40 meters. Technicians have only CW privileges on that band.
- A Technician-class licensee in Michigan received an advisory notice for FT8 operation on 15 meters. Technicians have only CW privileges on that band.
- An advisory notice was issued to an operator in Virginia for operation with an expired license on 10 meters. A repeater operator in West Virginia received an advisory notice for operating with an expired license and causing interference to a coordinated repeater.
- Good operator commendations were issued to a licensee in Texas for operating the N5VET Special Event station and making special effort to contact students from various elementary schools, and to an operator in Conway, South Carolina, for sustained dedication to the Grand Strand Amateur Radio Club repeater, having served as net control for 2,000 sessions.
- The VM Program Administrator participated in one meeting with the FCC.

The totals for VM monitoring during October 2023 were 2,598 hours on HF frequencies, and 3,145 hours on VHF frequencies and above, for a total of 5,743 hours.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH



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

Volunteer Monitor Program Report - December 2023

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

- An advisory notice was sent to an operator in Florida for abuse of the GreenCube satellite operating on 435.310 MHz, and the operator was reminded that all frequencies are shared under FCC rules.
- An advisory notice was issued to an operator in California for deliberate interference on 28.425 MHz, and to an operator in Kentucky for operation on DSB with a bandwidth of 14 kHz for the purpose of interfering with existing communications. The Kentucky operator, as well as an operator in Georgia using 3.965 MHz with a 10 kHz bandwidth, were advised that Section 97.307(a) of Commission rules states that no station shall occupy more bandwidth than necessary for the information rate and emission being transmitted. Both operators were informed that FCC forfeitures for such operation normally start at \$7,000.
- An advisory notice was sent to an operator in Missouri for lengthy transmissions up to 45 minutes without identification, and the operator was reminded that Rule 97.119(a) requires station identification at the end of transmissions and every 10 minutes during transmissions.
- Technician-class operators in Texas, Maryland, and Michigan were sent advisory notices concerning FT8 operation on 7.074 MHz. Technicians have no data privileges on 40 meters, but are allowed to operate CW. A Technician-class licensee in Illinois was issued an advisory notice tor FT8 operation on 20 meters. Technicians have no privileges on that band.
- A Technician-class licensee in Michigan received an advisory notice for FT8 operation on 15 meters. Technicians have only CW privileges on that band.
- An advisory notice was issued to an operator in Texas for operation on 17 meters and claiming in a net check-in that he held General-class privileges. The matter was reported to the FCC.
- A repeater user in Illinois was informed that the request to stay off the repeater operated by the Six Meter Club of Chicago would be enforced by the FCC.

The totals for November monitoring were 2,124 hours on HF frequencies, and 2,817 hours on VHF frequencies and above, for a total of 4,941 hours.

Thanks to Volunteer Monitor Program Administrator Riley Hollingsworth, K4ZDH

Operating Tip

When calling a running station, the goal is to obtain a contact as quickly as possible. The contact should look like this :

- Running station : CQ TEST N9ADG N9ADG TEST
- Calling station : W7XYZ
- Running station : W7XYZ 599 WA
- Calling station : 599 ID
- Running station : TU N9ADG TEST

And that's it. Don't add anything else. Specifically, don't call the running station with their call sign. Don't bother with 'DE' in front of your call sign when calling. Don't send any call signs with the exchange. Don't send 599 twice. These guidelines, to omit all information except that which is absolutely required, can also apply in any pileup situation.

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

Gloucester County Amateur Radio Club General Membership Meeting Minutes Wednesday, January 3, 2024

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

ATTENDANCE :

- 37 In Person
- 13 Zoom

Visitors :

- Michael Pentimall KC3VTF, Folsom, PA
- James Anderson N2DQG, Mt Royal, NJ via zoom
- Victor Trumper, Lakewood NJ
- Jack Gordon WA2RHJ, Tabernacle, NJ

New Members :

- Ronald Jackson KE2CJB
- Calvin Miller N2YMS
- John Murrow KD2NHK
- Joe Gadoury N2JJG first meeting as a Club member

Announcements :

- Club Leaders Introduction
- Jon Pearce WB2MNF discussed Club Resources and Activities
- Dues are \$30/year, optional \$40 and \$50 tiers to enhance the Club. Can pay cash, check, or PayPal. 160 members eligible to renew, approximately 80 already have.
- Hamfest coordinator understudy needed, Sheldon Parker, K2MEN last hamfest as coordinator.

Upcoming Events :

- Tech Saturday Forum : January 6, 2024 at 9AM. Chris Prioli AD2CS on Repairing the Yaesu Az/El Rotator.
- GCARC TechNet ZOOM Forum : Monday, January 8, 2024 at 7:30PM Raspberry Pi and Open forum.
- Monday, January 15, 2024 at 6:30PM at the Clubhouse **Chris Prioli AD2CS** Class on building a 4 MHz offset attenuator and tape measure Yagi.
- Wednesday, January 17, 2024 at 7:00 PM Board of Directors Meeting at the Clubhouse.
- Wednesday, January 24, 2024 Dinner at the W2MMD Clubhouse

Upcoming Tech Saturday Programs :

- February open looking for topics
- March Direction Finding workshop
- April open, looking for topics
- May Using a VNA to tune your antenna
- June Building a ladder line collinear antenna

January 2024 General Membership Meeting Minutes - Continued on page 41



January 2024 General Membership Meeting Minutes - Continued from page 40

Member current activities :

- Lance Appel, KE2UC listening to QSO Today and Absolute Tech podcasts
- Vinnie Sallustio, N4NYY got a new Yaesu FT5 HT, talked about using the W2MMD-Skunkworks room on Brandmeister, recommended it to members to check out.

Business Meeting :

Minutes of December 2023 General Membership Meeting as published in CrossTalk were approved by voice vote of members present.

TREASURER'S REPORT :

2023 Operating Profit and Loss

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

Non-Operating Revenue and Expenses :

- Revenue : \$5,029
- Expenses : -\$23,698

Remarks : John O'Connell, K2QA reported non-operating revenue are things like the VHF Tower Fund and the dinner. Non-operating expenses were all \$20,000 for the new towers and another \$10,000 or so for the rebuild fund, the grounding project, field day filters and other various things that the Club approved.

Annual audit and 2024 Budget to be accomplished this month.

GLOUCESTER COUNTY AMATEUR RADIO CLUB FOUNDATION : Report : None.

CLUBHOUSE REPORT :

Report : Al Arrison KB2AYU reported the Clubhouse is in pretty good shape. January VHF contest coming up 1/20-23/2024. Chris Prioli AD2CS reported that he repaired a Yaesu azimuth rotator giving yielding a full set of spares. John WB2MNF discussed the upcoming tower projects slated for spring. Jon WB2MNF noted the increased use of the Clubhouse in 2023 as well as use figures for the remote HF station.

FUTURE PROGRAMS :

Report :

- February 2024 Solar Eclipse
- March "Everything You Always Wanted to Know About ARRL Affiliation"
- April TBD
- May Antenna design overview
- June Best Home Built Antennas
- July Pizza Night
- August NJ State QSO Party

January 2024 General Membership Meeting Minutes - Continued on page 42

DX AND CONTESTS :

Report : **Tony Starr K3TS** reported 1/6-7 ARRL RTTY Roundup, 1/13 NAQP CW, 1/20 NAQP SSB, 1/27-28 CQWW 160m CW, 1/27-28 Winter Field Day

PUBLIC SERVICE :

Report: **Karl Frank W2KBF** relayed a report from **Bob Keogh KD2NEC** on ARES goals for 2024 with the following points:

- Continue to focus on the NJ Red Cross, building on the success in 2023, to become a more Strategic Partner.
- Leverage the relationship with the Red Cross and the Office of Emergency Management to provide real value.
- Develop partner relationships with other Emergency Service Providers that provide Mobile, Wide Area Voice and Data Networks (i.e. Information Technology Disaster Resource Center).

GCARC TechNet ZOOM Forum :

- Meets second Monday of the month.
- Links to meeting sign on information available at w2mmd.org
- Topic Open discussion on Raspberry Pi projects

OLD BUSINESS : None

NEW BUSINESS :

- Technical Committee is looking for members.
- Planning technical sessions for both Tech Saturday and TechNet.
- Coordinating interesting projects.
- Planning for new resources.
- Designing projects for funding.

PRESENTATION : "Antenna Placement and Vulnerability" by Ron Block NR2B

Meeting adjourned @ 2025 Hours

Respectfully submitted, John Zaruba Jr, K2ZA, Recording Secretary

Dad Jokes @ Two antennas g	Dadsaysjokes · J ot married	an 5		Thanks to N3PU	IJ
The ceremony v	ellent.				
Q 10	1 , 56	♡ 688	ı ₁ 105K		₾

Gloucester County Amateur Radio Club Board of Directors Meeting Minutes Wednesday January 17, 2024

Meeting opened @ 1900 Hours by President Jonathan Pearce WB2MNF

Attendance :

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

New Member Applications (Approved)

- Jim Anderson N2DQG, Mt. Royal, NJ
- Matthew Carango. N3QB, Springfield, PA
- Fred Munzenmayer K2DX, Grenloch, NJ (Returning Member)
- Michael Pentimall KC3VTF, Folsom, PA

Treasurer :

- Income : \$4,061.50
- Expense : \$226.25
- Net : \$3,835.25

Detailed financial statements are available for review upon request.

Clubhouse :

- HF offline due to weather (high winds, towers lowered).
- VHF Contest 1/20/2024, members welcome to come out. Winlink and Echolink stations may be taken offline if they are causing inter-station interference during the contest.

Repeaters :

• Factory reset and reprogramming performed on the 2m repeater. Repeater will still not operate in automatic switching mode (AMS), staying in analog continuously. John K2ZA and Chris AD2CS believe there is a hardware problem with the internal repeater controller. Due to site access issues and shipping expense to send the repeater to Yaesu, and the repeater is still usable for the analog users, the consensus is to leave it alone for the time being.

January 2024 Board of Directors Meeting Minutes - Continued on page 44



January 2024 Board of Directors Meeting Minutes - Continued from page 43

- Yaesu FTM-100/HRI-200 donated to the Club for use as a WIRES-X link station for the 70cm repeater to allow members with System Fusion capable radios to experiment with linking.
- Frank N3PUU and John K2ZA will be working on adding an MMDVM controller to the Glassboro 70cm repeater (440.10625/445.10625) to allow multi-mode access to the W2MMD-Skunkworks room on Brandmeister.

Programs and Activities Committee :

February :

- General Membership Meeting : 2024 Solar Eclipse
- Tech Saturday Forum : Introduction to VOIP Len Rust, W2LJR
- TechNet ZOOM Forum : Interfacing radio to computer
- **Other :** Yagi build session

March :

- General Membership Meeting : Everything You Always Wanted to Know About ARRL Affiliation
- Tech Saturday Forum : Direction finding workshop
- TechNet ZOOM Forum :
- **Other :** Fox Hunt

April :

- General Membership Meeting : POTA John Zaruba Jr, K2ZA
- Tech Saturday Forum : POTA
- TechNet ZOOM Forum :
- Other :

May :

- General Membership Meeting : Antenna design overview
- Tech Saturday Forum : Use a VNA to tune your 70 cm ground plane
- TechNet ZOOM Forum : Open session on antennas
- Other :

June :

- General Membership Meeting : Best home-built antennas
- Tech Saturday Forum : Build a ladder-line collinear
- TechNet ZOOM Forum :
- **Other :** Field Day

July :

• General Membership Meeting : Pizza Night

August :

• General Membership Meeting : New Jersey State QSO Party

September :

October :

January 2024 Board of Directors Meeting Minutes - Continued on page 45

January 2024 Board of Directors Meeting Minutes - Continued from page 44

November : December :

Education Committee :

- Chris Prioli, AD2CS Fox Hunt Antenna / Attenuator construction class starts Monday 1/22/24, runs for 4 weeks.
- There are enough prospective students signed up to run Technician and General classes starting in April.

Club Nets :

- Jim Clark, KA2OSV plans to start a 40m SSB net when he gets established in his new QTH.
- December 2023 2M nets averaged 10.25 check-ins on Tuesdays and 8.5 Check-ins on Thursdays.

Old Business : None

New Business :

- John K2ZA discussed making Club logo merchandise (stickers, t-shirts, mugs, etc.) to use as a fund raiser. He will purchase the materials needed and produce the items, donating a share of the sales net to the Club for using the Club logo.
- Pfeiffer Community Center notified the Club of it's intent to take over the 1st Wednesday of the for a Township business meeting. BoD discussion followed, Jon WB2MNF to draft a response to attempt to dissuade them from taking this action.

The BoD Meeting adjourned @ 2015 hours

Respectfully Submitted, John Zaruba K2ZA, Recording Secretary



W2MMD Clubhouse Test & Repair Bench Equipment and Supplies



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

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

- CMS Dim Bulb Current Limiter 100 Watt
- CMS BDST-01 Signal Tracer
- CMS CRTT-01 Gas-charged Voltage Regulator Tube Tester
- Conar 224 Tube Tester
- GW LCR-814 LCR Meter
- Siglent SDS-1102CML+ Digital Storage Oscilloscope
- DX Engineering Coaxial Cable Gripper and Stripper (RG-8U / RG-213)
- DX Engineering Coaxial Cable Cutter,
- Trimmer, and Crimper (RG-8U / RG-213)
- DX Engineering RG-8X Die Set for Coaxial Cable Crimper
- Adjustable Wrench Set for Slotted/Recessed Round Nuts
- Speedwox Miniature Box Wrench Sets, Metric and SAE
- 69238 Nut Driver Set, Metric
- 69239 Nut Driver Set, SAE
- Velleman K-8115 Universal Component Tester

- Anderson Powerpole[®] Connector Assortment
- Anderson Powerpole[®] Crimping Tool
- Heat Shrink Tube Assortment, cut lengths
- Ring Terminal Assortment
- Alignment Tool Set
- Craftsman Wire Cutter/Crimper
- Craftsman 6-piece Pliers Set
- Laptop PC
- Programming Cable Sets (2)
- Test Lead Set
- Oscilloscope Probe Set

WAE DX Contest, SSB	New Jersey QSO Party
September 9, 2023	September 16, 2023
Call : AB2E	Call : AB2E
Operator (s) : AB2E	Operator (s) : AB2E
Station : AB2E	Station : AB2E
Class : Single Op HP	Class : Single Op HP
QTH : SNJ	QTH : SNJ
Operating Time (hrs) : 13	Operating Time (hrs) : 6
Location : USA	Location : In State/Province
Summary :	Summary :
Band QSOs QTCs Mults	Band CW Qs Ph Qs Dig Qs
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Total : 567 555 244 Total Score : 276,208	Total : 143 286 0 Mults : 65 Total Score : 36,790
Club : Frankford Radio Club 50	Club : Frankford Radio Club 51
Comments :Rig : FTDX-9000D/OM Power 2000A+ Antennas :75m dipole @ 90ft 40m dipole @ 85ft 10/15/20m C3S Force 12 Yagi @ 52ftLots of fun. Spent more time than I usually would in this contest 	$ \begin{array}{c} \mbox{Comments:}\\ \mbox{Rig:} FTDX-9000D/OM Power 2000A+\\ \mbox{Antennas:}\\ \mbox{80m dipole @ 95ft}\\ \mbox{75m dipole @ 90ft}\\ \mbox{40m dipole @ 85ft}\\ \mbox{10m/15m/20m C3SS Force 12 tribander @ 52ft}\\ \mbox{0ptime:} 6 hours\\ \mbox{Thanks to all who called in. At my sunset on 40SSB, I had a nice}\\ \mbox{EU gray line run. Maybe 25 EU stations in a row, all 59+ 10-20db.}\\ \mbox{Missed 3 NJ counties.}\\ \mbox{73 Darrell AB2E}\\ \mbox{Contest: NJ QSOPARTY}\\ \mbox{Band Mode QSOs Pts Mul Pt/Q}\\ \mbox{3.5 CW 42 84 0 2.0}\\ \mbox{3.5 LSB 40 40 0 1.0}\\ \mbox{7 CW 63 126 5 2.0}\\ \mbox{7 LSB 119 119 22 1.0}\\ \mbox{14 USB 114 114 26 1.0}\\ \mbox{24 CW 3 6 1 2.0}\\ \mbox{21 CW 3 6 1 2.0}\\ \mbox{21 USB 12 12 4 1.0}\\ \mbox{28 CW 3 6 2 2.0}\\ \mbox{28 USB 1 1 1 1 1.0}\\ \mbox{Total Both 426 566 65 1.3}\\ \mbox{Score: 36,790}\\ \mbox{1 Mult = 6.6 Q's}\\ \end{array} $

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

New Jersey QSO Party	Texas QSO Party
September 16, 2023	September 16, 2023
Call : WB2PJH	Call : WB2PJH
Operator (s) : WB2PJH	Operator (s) : WB2PJH
Station : WB2PJH	Station : WB2PJH
Class : Single Op LP	Class : SO CW LP
QTH :	QTH :
Operating Time (hrs) : 1	Operating Time (hrs) : 3
Location : In State/Province	Location : Out of State/Province
Summary :	Summary :
Band CW Qs Ph Qs Dig Qs	Band CW Qs Ph Qs Dig Qs
Total : 12 0 0 Mults : 11	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Total Score : 528 53 Club : Frankford Radio Club 53	Total : 2500Mults : 20Total Score : 1,50055Club : Frankford Radio Club55
Iowa QSO Party	Washington State Salmon Run 2023
September 16, 2023	September 16, 2023
Call : WB2PJH	Call : WB2PJH
Operator (s) : WB2PJH	Operator (s) : WB2PJH
Station : WB2PJH	Station : WB2PJH
Class : SO Fixed LP	Class : SOCW LP
QTH :	QTH :
Operating Time (hrs) : 1	Operating Time (hrs) : 3
Location : Out of State/Province	Location : Out of State/Province
Summary :	Summary :
Band CW Qs Ph Qs Dig Qs	Band CW Qs Ph Qs
20: 2 0 0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
Total: 2 0 0 Mults: 2 Total Score: 8	Total : 13 0 Mults : 6 Total Score : 234
Club : Frankford Radio Club 54	Club : Frankford Radio Club 56

Word to the Wise

Diversity reception is the technique of using two or more receivers with differences in direction, antenna phase, or other characteristics to provide more consistent reception in the face of changing propagation conditions.

The use of different antennas can reduce signal fading, especially on the 80- and 160-meter bands.

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

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



S	W	А	Ν		Е	R		Е		А	С	А	М	Ρ
Ρ	А	Ρ	А		М	0	0	Ν		L	А	R	С	Н
Е	R	А	S		В	А	Ν	D	S	Ρ	R	Е	А	D
Е	S	С	А	Ρ	Е	S			С	Н	Е	А	Т	S
D	А	Н		А	R	Т		С	Н	А	S			
S	W	Е	Е	Ρ			D	0	Е	S		Q	Е	D
			В	А	А		R	А	М		Т	Т	Т	Т
Ν	А	۷	А	L	В	0	А	Т	А	Ν	С	Н	0	R
0	Ν	L	Υ		Ι	Ν	Κ		S	Ι	Х			
R	D	F		G	L	Е	Е			Ν	0	D	А	L
			G	R	Ι	D		Е	D	Т		Е	Ν	Е
Ι	S	F	L	А	Т			J	0	Н	Ν	S	0	Ν
Κ	Ι	L	0	С	Y	С	L	Е	S		А	Ι	D	S
G	R	Е	В	Е		Ρ	А	С	Е		Т	R	Е	Е
Ι	S	W	Е	D		S	S	Т	S		L	Е	S	S
	(ros	swo	ord	Puz	zle	Ans	wei	s F	rom	Pa	ge 2	29	

Name/Callsign	DXCC
Bill Grim, W0MHK	352
Edward De Fonzo, W2DE	339
Darrell Neron, AB2E	333
John Hill, W2HUV	270
Vinnie Sallustio, N4NYY	255
Gary Castellini, N2IEC (New Entry)	250
Ken Denson, WB2P	248
Jim Wright, N2GXJ	235
Tony Starr, K3TS	226
Sheldon Parker, K2MEN	222
Dennis Sandole, K2SE	204
Matt Wilson, K2MFW	201
Howard Marder, WA2IBZ	151
Eric Morris, N2BRJ	137
Phil Nunzio, WA3RGY	136
Rich Subers, W2RHS	124
Marc Federici, WM2Y	116
Steve Farney, W2SEF	111
Bart Kleczynski, AC2PT	106
Chuck Capasso, WB2PGE	103
Harry Strahlendorf Jr, W3DNQ	87
Jim Clark, KA2OSV	71
Lee Marino, N2LAM	62
Updated As Of 01/27/2024	

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

W2MMD Clubhouse : (856) 244-6914

(Please, no car warranty calls!)



February Birthdays

Congratulations To Our Members Who Are Celebrating A Birthday This Month

Bob Castellini, N2IEC Todd Cecilio, KA2YNT Greg Ciraula, W5DO Ed De Fonzo, W2DE Keith Evans, KC3PAA Todd Foster, W2TEF Felicia Jackson, KE2BED Bob Kay, KE2CEG Dan Lenco, WA2BPH Jim McCullough. KE2BEL Vinnie Sallustio, N4NYY Bill Szkromiuk, W4WCS Mario Tagliaferri, W3CGS Jean Wilson-Kinney, KE2AHV



In Memoriam : February Birthdays

Philip Bakanowsky, WB2ONS Barbara Bielecki, N2SBP Marla Bozarth, N2DWR (President 1992, 1995) Charles Colabrese, WA2TML Thomas Cusack, KC2THO Salvatore Di Amore, WA2JCT Milton Goldman, K3WIL (President 1963, Charter Member)

Robert Grimmer Sr, KN2QWO Richard Harkins, N3RYO Harry Lauer, N3ISO William Lewitt, N2NLK Harold Mathis, NJ2C Harry McCormick Sr, WA2SEA George Munns Jr, KB2GW Richard Munyan Sr, W2RCM Herbert Schuler, K2HPV (President 1977) William Uhland, K4IDJ (Charter Member) John Yeager Jr, N2PKF Alvin Zipkin, KZ2N





Full Snow Moon - February 24, 2024 @ 0731 Hours

In the 1760s, Captain Jonathan Carver, who had visited the Naudowessie (Dakota) and others, wrote that the name used for this period was the Snow Moon, "because more snow commonly falls during this month than any other in the winter." The Cree called this the Bald Eagle Moon or Eagle Moon. Bear Moon (Ojibwe) and Black Bear Moon (Tlingit) refer to the time when bear cubs are born. The Dakota called this the Raccoon Moon, and certain Algonquin peoples named it the Groundhog Moon. The Haida named it Goose Moon.

The Cherokee names of "Month of the Bony Moon" and "Hungry Moon" give evidence to the fact that food was hard to come by at this time.

Old Farmer's Almanac - www.almanac.com

CWops Test 03002-04002, Feb 1 CWops Test 07002-08002, Feb 1 (CW) and 10002-20002, Feb 1 (SS) and 20002-21002, Feb 1 (SS) and 20002-21002, Feb 1 (SS) and 20002-21002, Feb 2 SKCC Sprint Europe 20002-21002, Feb 2 OWERLY STATE 01002-0102, Feb 3 OWERLY STATE 01002, Feb 3 10, 22002, Feb 4 OWERLY STATE 00002, Feb 3 10, 22002, Feb 4 OWERLY THERSTON 00002, Feb 3 10, 22002, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 22002, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, Feb 3 10, 2302, Feb 4 OWERLY THERSTON 10002, 70002, Feb 5	F	February 2024 Contest Calendar - WA7BNM Co	ontest Calendar : <u>www.contestcalendar.com</u>
C. Wops Test 07002-08002, Feb 1 NRAU 10m Activity Contest 10002-08002, Feb 1 SKCC Sprint Europe 10002-01302, Feb 1 NCC F14 Sprint 01002-01302, Feb 2 QRP Fox Hunt 02002-0302, Feb 1 QRP Fox Hunt 02002-0302, Feb 2 QRP Fox Hunt 02002-03302, Feb 2 QRP Fox Hunt 02002-03302, Feb 2 QRP Fox Hunt 02002-03302, Feb 2 QRP Fox Hunt 02002-71002, Feb 3 QRP Fox Hunt 02002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 3 10 23502, Feb 4 Parage Context 12002, Feb 5 Parage Context 12002, Feb 5 Parage Context	÷	CWops Test	0300Z-0400Z, Feb 1
NRAD 10m Activity Contest 11022-15002, Feb 1 (CW) and 2002-21002, Feb 1 (CH) and 2002-21002, Feb 1 (CH) 2002-21002, Feb 2 (CH) 2002-21002, Feb 2 (CH) 2002-21002, Feb 2 (CH) 2002-21002, Feb 2 (CH) 2002-21002, Feb 3 (CH) 2002-21002, Feb 3 (CH) 2002-21002, Feb 4 (CH) 2002-21002, Feb 3 (CH) 2002, Feb 3 (CH) 2002-21002, Feb 4 (CH) 2002, Feb 3 (CH) 2002,	+	CWops Test	0700Z-0800Z, Feb 1
120002_21002_FB1 (FM) and 21002_22002, FB 1 (FM) 21002_22002, FB 1 21002_22002, FB 1 2007 <t< td=""><th>+</th><td>NRAU 10m Activity Contest</td><td>1800Z-1900Z, Feb 1 (CW) and</td></t<>	+	NRAU 10m Activity Contest	1800Z-1900Z, Feb 1 (CW) and
SMCCC Sprint Europe 21002-22002, Feb 1 SMCCC Sprint Landberg 2002-22002, Feb 1 Weekly RTTY Test 01032-02002, Feb 2 RTCCC Sprint Ladder 02020, 760, 760, 200,			2000Z-2100Z, Feb 1 (FM) and
SKCC Sprint Europe 20002-22002, Feb 1 NKCC FT4 Sprint 01002-01302, Feb 2 NKCC Sprint Ladder 02007-03302, Feb 2 NKCC Sprint Ladder 02007-03302, Feb 2 NKCC Sprint Ladder 02002-03302, Feb 2 NKCC Sprint Ladder 02002-03302, Feb 3 NKCC Sprint Ladder 02002-03302, Feb 3 NKCC Sprint Ladder 02002-768 3 NKCC Sprint Ladder 02002, Feb 3 NKCK Sprint Ladder 12002, Feb 3 Nexto RTY International Contest 12002, Feb 3 European Union DX Contest 12002, Feb 3 North American Sprint 14002 24002, Feb 3 Infilish Columbia QSD Party 16002, Feb 3 ICWC Medium Speed Test 13002 14002, Feb 3 ICWC Medium Speed Test 12002, Feb 5 ICWC Medium Speed Test 02002 04002, Feb 6 ICWC Medium Speed Test 02002 04002, Feb 7 ICW			2100Z-2200Z, Feb 1 (Dig)
DCCC FT4 Sprint 01002-01302, Feb 2 Weakly RTT 1 01322-02132, Feb 2 Weakly RTT 1 01322-02132, Feb 2 RCCC Sprint Ladder 02002, Feb 3 to 24002, Feb 4 Weakly RTT 1 00012, Feb 3 to 24002, Feb 4 Weakly RTT 1 00002, Feb 3 to 24002, Feb 4 Weakly RTT 1 00012, Feb 3 to 24002, Feb 4 Weakly RTT 1 00012, Feb 3 to 24002, Feb 4 Purpose Number Ontest 12002, Feb 3 to 23502, Feb 4 Purpose Number Ontest 12002, Feb 3 to 23502, Feb 4 Prob Winter QRP Sprint 14002-24002, Feb 3 Philnesota QSO Party 16002, Feb 3 Didish Columbia QSO Party 16002, Feb 3 Onth American Sprint, CW 00002, O1302, Feb 3 North American Sprint, CW 00002, Feb 3 North American Sprint, CW 01002-01022, Feb 5 North American Sprint, C	+	SKCC Sprint Europe	2000Z-2200Z, Feb 1
Weekly RTY Test 01452:02152; Feb 2 Vict Case Number 02302:02102; Feb 2 Vermont QSD Party 00002; Feb 3 to 24002; Feb 4 PAAC Log, CW 100012; Feb 3 to 24002; Feb 4 PAAC Log, CW 100012; Feb 3 to 24002; Feb 4 PAAC Log, CW 100012; Feb 3 to 24002; Feb 4 PAAC Log, CW 10002; Feb 3 to 12002; Feb 4 PAAC Log, CW 10002; Feb 3 to 12002; Feb 4 PAAC Log, CW 10002; Feb 3 to 12002; Feb 4 PAAC Log, CW 10002; Feb 3 to 12002; Feb 4 PAAC Log, CW 10002; Feb 3 to 12002; Feb 4 British Columbia QSD Party 10002; Feb 3 to 12002; Feb 4 A SCCW Straight Key Party 10002; Feb 3 ONOTA Merican Sprint, CW 00002: 01002; Feb 5 OKLWC Hemorial 10002; Feb 5 OKLWC Hemorial 10002; Feb 5 OKLWC Hemorial 00002: 01002; Feb 6 ICVC Medium Speed Test 01002: 01002; Feb 6 ICVC Medium Speed Test 02002: 01002; Feb 6 ICVC Medium Speed Test 02002: 01002; Feb 7 ICVC Medium Speed Test 02002: 01002; Feb 7 ICVC Medium Speed Test 02002: 010	+	NCCC FT4 Sprint	0100Z-0130Z, Feb 2
QPD Pos Hunt 0000-03302, Feb 3 QPD Pos Hunt 00002, Feb 31 024002, Feb 4 Vermont QSO Party 00002, Feb 31 024002, Feb 4 Vermont QSO Party 00002, Feb 31 024002, Feb 4 PAA Cup, CW 12002, Feb 31 02302, Feb 4 PAA Cup, CW 12002, Feb 31 012302, Feb 4 PAA Cup, CW 12002, Feb 31 012302, Feb 4 Prob Winter QRP Sprint 14002-24002, Feb 3 Hinnesota QSO Party 10002, Feb 31 012302, Feb 4 AGCW Straight Key Party 10002, Feb 31 00230, Feb 4 AGCW Straight Key Party 10002, Feb 31 ICWC Hedium Speed Test 13002-14002, Feb 5 ICWC Hedium Speed Test 00002-03302, Feb 4 Verdidum Speed Test 00002-03302, Feb 5 ASS& Staftan Sprint 00002-14002, Feb 5 ICWC Hedium Speed Test 00002-01592, Feb 5 ASS& Spartan Sprint 02002-01002, Feb 7 Verdiduk Sideband Activity Contest 00002-03302, Feb 7 INF Staftan Sprint 02002-03002, Feb 7 Verdiduk Sideband Activity Contest 00002-03002, Feb 7 INF Staftan Sprint 02002-03002, Feb 7 Verdiduk Sideband Act	+	Weekly RTTY Test	0145Z-0215Z, Feb 2
Intel-spinie statistic 0002-01002, Feb 3 Feb 3 Vermont QSD Party 00002, Feb 3 10-2002, Feb 3 10-2002, Feb 3 I O-10 Int. Winter Contest, SSB 00012, Feb 3 10-2002, Feb 4 PSAC Lop, CW 12002, Feb 3 10-2002, Feb 4 Mexico RTTY International Contest 12002, Feb 3 10-2002, Feb 4 Mexico RTTY International Contest 12002, Feb 3 10-2002, Feb 4 Mexico RTTY International Contest 12002, Feb 3 10-2002, Feb 3 British Columbla QSD Party 16002, Feb 3 10-0002, Feb 3 Bottish Columbla QSD Party 10002-20102, Feb 3 10-00002, Feb 3 ICVCC Medium Speed Test 00002-01002, Feb 5 10-00002, Feb 5 ICVC Medium Speed Test 01002-01002, Feb 5 10-00002, Feb 5 ICVC Medium Speed Test 02002-01002, Feb 6 10-0002, Feb 5 ICVC Medium Speed Test 02002-01002, Feb 6 10-0002, Feb 6 ICVC Medium Speed Test 02002-01002, Feb 6 10-0002, Feb 7 Worldwide Sideband Activity Contest 02002-01002, Feb 7 10-0002, Feb 7 INDE Speed Test 02002-01002, Feb 7 10-0000000, Feb 7	+	QRP Fox Hunt	0200Z-0330Z, Feb 2
Nummer QSD party 00002, Feb 3 to 23502, Feb 4 10-10 III. Winter Contest, SSB 00012, Feb 3 to 23502, Feb 4 19AA Cup, CW 12002, Feb 3 to 23502, Feb 4 12002, Feb 3 to 23502, Feb 4 12002, Feb 3 to 23502, Feb 4 10-10 III. Winter Contest 12002, Feb 3 to 23502, Feb 4 10-10 III. Winter Contest 12002, Feb 3 to 23502, Feb 4 11000, Feb 3 to 23502, Feb 4 10002, Feb 3 to 23502, Feb 4 11000, Feb 3 to 23502, Feb 4 10002, Feb 3 to 23502, Feb 4 11000, Feb 3 to 23502, Feb 4 10002, Feb 5 11000, Feb 3 to 23502, Feb 4 10002, Feb 5 11000, Feb 5 10002, Feb 5 11000, Feb 7 10002, Feb 5 11000, Feb 7 10002, Feb 7 11000, Feb 7 10002, Feb 7 11000, Feb 7 10002, Feb 7 11000, Feb 7 <td< td=""><th>+</th><td>NUCC Sprint Ladder</td><td>02302-03002, Feb 2</td></td<>	+	NUCC Sprint Ladder	02302-03002, Feb 2
10-10 Int. Winter Contest, S5B 00012, Feb 3 to 23092, Feb 4 PBAA Cup, CW 12002, Feb 3 to 12002, Feb 4 Mexico RTTY International Contest 12002, Feb 3 to 12002, Feb 4 FVDO Winter QRP Sprint 14002-24002, Feb 3 PINA Cup, CW 14002-24002, Feb 3 PINE Status 14002-24002, Feb 3 PINE Status 14002-24002, Feb 3 PINE Status 16002-23392, Feb 4 International QSD Party 16002-23392, Feb 4 North American Sprint, CW 00002-03392, Feb 4 INCK Hedium Speed Test 10302-49022, Feb 5 INCK Hedium Speed Test 10302-49002, Feb 5 INCK Hedium Speed Test 00002-20302, Feb 6 ASS Spartan Sprint 02002-01302, Feb 7 INCK Hedium Speed Test 02002-01302, Feb 7 INCK Hedium Speed Test 02002-01302, Feb 7 INCK Hedium Speed Test 02002-13002, Feb 7 INCK Hedium Speed Test 02002-13002, Feb 7 ING Test 40 12002-13002, Feb 7 ING Test 40 12002-13002, Feb 7 VHI-UIF FTB Activity Contest 12002-13002, Feb 7 INIAI-TEst 40 12002, Feb 7		Vermont OSO Party	00007 Eeb 3 to 24007 Eeb 4
PAA Cup, CW 12002, Feb 3 to 12002, Feb 4 European Union DX Contest 12002, Feb 3 to 12002, Feb 4 European Union DX Contest 12002, Feb 3 to 12002, Feb 4 Minnesota QSO Party 14002-24002, Feb 3 British Columbia QSO Party 14002-24002, Feb 3 AGCW Straight Key Party 16002-19002, Feb 3 AGCW Straight Key Party 16002-19002, Feb 4 ILUSN Slow Speed Test 00002-01002, Feb 5 OKIM Merican Sprint 00002-01002, Feb 5 ICVCC Medium Speed Test 00002-01002, Feb 5 ICVC Medium Speed Test 00002-01002, Feb 5 ICVC Medium Speed Test 01002-01592, Feb 6 ICVC Medium Speed Test 02002-04002, Feb 7 ICVC Medium Speed Test 02002-04002, Feb 7 ICVC Medium Speed Test 02002-0302, Feb 7 ICVC Medium Speed Test 02002-0302, Feb 7 IPhone Weekly Test 02002-0302, Feb 7 IPhone Weekly Test 02002-14002, Feb 7 IPhone Weekly Test 02002-14002, Feb 7 IPhone Weekly Test 02002, Feb 7 IPhone Weekly Test 02002, Feb 7 IPhone Weekly Test 02	+	10-10 Int. Winter Contest, SSB	00017, Feb 3 to 23597, Feb 4
Period RTTY International Contest 12002, Feb 3 to 12392, Feb 4 F FURO Winter QR P Sprint 14002-24002, Feb 3 to 12002, Feb 4 F YBO Winter QR P Sprint 14002-24002, Feb 3 Billine Columbia QSO Party 14002-24002, Feb 3 Billine Columbia QSO Party 16002-2332, Feb 4 Contrast QSO Party 16002-2332, Feb 4 North American Sprint, CW 00002-01002, Feb 5 I CWC Heddum Speed Test 00002-20102, Feb 5 I CWC Heddum Speed Test 10002-13002, Feb 5 I CWC Heddum Speed Test 00002-21002, Feb 5 I CWC Heddum Speed Test 00002-21002, Feb 6 I CWC Heddum Speed Test 02002-01002, Feb 6 I CWC Heddum Speed Test 02002-01002, Feb 6 I CWC Heddum Speed Test 02002-01002, Feb 7 I CWC Hedum Speed Test 02002-01002, Feb 7	+	F9AA Cup, CW	1200Z, Feb 3 to 1200Z, Feb 4
European Union DX Contest 1200Z, Feb 3 to 1200Z, Feb 4 PYBD Winter QRP Sprint 1400Z-2400Z, Feb 3 Minnesota QSO Party 1400Z-2400Z, Feb 3 ACCW Straight Key Party 1600Z, Feb 10039Z, Feb 4 and 1600Z-1909Z, Feb 1 ACCW Straight Key Party 1600Z-1909Z, Feb 3 Morth American Sprint, CW 0000Z-0359Z, Feb 4 North American Sprint 0000Z-0135Z, Feb 5 CKUK Memorial 1830Z-1792Z, Feb 5 CKUK Medum Speed Test 1000Z-0103Z, Feb 6 OKHWC Memorial 0200Z-0102Z, Feb 7 Worldwide Sideband Activity Contest 0200Z-0400Z, Feb 7 ALCLD AWT 1200Z-1300Z, Feb 7 Phone Weekly Test 0200Z-0400Z, Feb 7 ORF Fox Hunt 0200Z-0400Z, Feb 7 ORF Fox Hunt 0200Z-030Z, Feb 7 Phone Weekly Test 0200Z-030Z, Feb 7 ALCLD AWT 1200Z-1302Z, Feb 7 VHF-UHF FT8 Activity Contest 1200Z-1302Z, Feb 7 VHF-UHF FT8 Activity Contest 1200Z-2100Z, Feb 7 WHI-UHF FT8 Activity Contest 1200Z-2100Z, Feb 7 WHI-UHF FT8 Activity Contest 1200Z-2100Z, Feb 7 WHIC UHF FT8 Activity Co	+	Mexico RTTY International Contest	1200Z, Feb 3 to 2359Z, Feb 4
FYBO Winter QRP Sprint 14002-24002, Feb 3 Minnesot QSO Party 16002-24002, Feb 3 British Columbia QSO Party 16002-24002, Feb 3 ACCW Straight Key Party 16002-24002, Feb 3 Month American Sprint, CW 00002-03022, Feb 4 North American Sprint, CW 00002-03022, Feb 5 ICWC Medium Speed Test 13002-14002, Feb 5 ICWC Medium Speed Test 00002-03022, Feb 4 Winfwide Sideband Activity Contest 01002-03022, Feb 6 Winfwide Sideband Activity Contest 02002-03002, Feb 7 Phone Weekly Test 02002-03002, Feb 7 Other Munt 02002-03002, Feb 7 Phone Weekly Test 02002-03002, Feb 7 Other Fest 13002-14002, Feb 7 Mini-Test 40 17002-17022, Feb 7 VHF-UH-F 6 12002-13002, Feb 7 VHF-UH-F 6 10002-20002, Feb 7 UKEIC Common American Commental CW Contest 10002-21002, Feb 7 VWF-UH-F 6 10002-21002, Feb 7 VWF-UH-F 6 10002-01002, Feb 7 VWF-UH-F 6 10002-01002, Feb 7 VWF-UH-F 6 10002-21002, Feb 7 <t< td=""><th>+</th><td>European Union DX Contest</td><td>1200Z, Feb 3 to 1200Z, Feb 4</td></t<>	+	European Union DX Contest	1200Z, Feb 3 to 1200Z, Feb 4
• Minnesota QSO Party 14002-24002, Feb 3 • MacCW Straight Key Party 16002, Feb 3 003502, Feb 4 and 16002-33502, Feb 4 • North American Sprint, CW 10002-30002, Feb 3 • North American Sprint, CW 00002-01002, Feb 5 • ICWC Meendum Speed Test 00002-20102, Feb 5 • OKUM Memorial 16302-17922, Feb 5 • ICWC Meendum Speed Test 0002-20102, Feb 5 • Worldwide Sideband Activity Contest 01002-01392, Feb 6 • MacKum Speed Test 02002-21302, Feb 7 • AKS Spartan Sprint 02002-13002, Feb 7 • Aktour Meekly Test 02002-13002, Feb 7 • Aktour Meekly Test 02002-13002, Feb 7 • Aktour Meekly Test 12002-13002, Feb 7 • Mini-Test 40 12002-13002, Feb 7 • Mini-Test 40 12002-13002, Feb 7 • Weekly Test 03002-1002, Feb 7 • Wini-Test 80 18002-1852, Feb 10 • Wak for the Bacon QRP Contest 20002-21002, Feb 7 • Wak for the Bacon QRP Contest 02002-01002, Feb 8 • Wak for the Bacon QRP Contest 02002-03002, Feb 9 • Wak for the Bacon QRP Contest 02002-03002, Feb 9	+	FYBO Winter QRP Sprint	1400Z-2400Z, Feb 3
Bittish Columbia QSO Party 16007, Feb 3 to 03592, Feb 4 and 1607, Feb 3 to 03592, Feb 4 ACCW Straight Kay Party 16007, Feb 3 to 03592, Feb 4 Notch American Sprint, CW 00002-03102, Feb 3 ICWC Medium Speed Test 00002-03102, Feb 5 ICWC Medium Speed Test 13002-11002, Feb 5 ICWC Medium Speed Test 0002-03102, Feb 5 ICWC Medium Speed Test 01002-01302, Feb 5 Wordwide Sideband Activity Contest 01002-01302, Feb 6 OW Module Sideband Activity Contest 0002-03002, Feb 7 OW Fox Hunt 02002-03002, Feb 7 Phone Weekly Test 02002-03002, Feb 7 CWop Test 13002-14002, Feb 7 CWops Test 10002-21002, Feb 7 VirF-UnF FT8 Activity Contest 17002-11922, Feb 7 VirF-UnF FT8 Activity Contest 10002-2002, Feb 7 VWrp Test 100002-20002, Feb 7 VWrp Test 00002-03002, Feb 7 VWrp Test 00002-03002, Feb 8 and 20002, Feb 7 Wak for the Bacon QRP Contest 20002, Feb 7 to 23002, Feb 8 Wak Linc Cundail Memorial CW Contest 00002-03002, Feb 9 Weakly RTTY Test 00002-03002, Feb 9	+	Minnesota QSO Party	1400Z-2400Z, Feb 3
ACCW Straight Key Party 10002-23392, F8b 4 North American Sprint, CW 0002-13392, F8b 4 ILUSN Show Speed Test 0002-13022, F8b 5 ICWC Medium Speed Test 13002-14002, F8b 5 OKIWC Memorial 16302-1292, F8b 5 ICWC Medium Speed Test 01002-01592, F8b 5 Worldwide Sideband Activity Contest 02002-04002, F8b 6 ICWC Medium Speed Test 02002-04002, F8b 7 ICWC Medium Speed Test 02002-04002, F8b 7 ICWC Medium Speed Test 02002-04002, F8b 7 ICWC Medium Speed Test 02002-14002, F8b 7 ICWC Medium Speed Test 02002-14002, F8b 7 ILICWC Medium Speed Test 12002-13002, F8b 7 VHIN-Test 40 17002-1752, F8b 7 VHIN-Test 40 17002-1752, F8b 7 VMINT 584 02002-20002, F8b 7 VWAR 57 0002-1002, F8b 7 VWAR 57 0002-1002, F8b 7 VWAR 57 00002-1002, F8b 7 VWAR 57 <th>+</th> <td>British Columbia QSO Party</td> <td>1600Z, Feb 3 to 0359Z, Feb 4 and</td>	+	British Columbia QSO Party	1600Z, Feb 3 to 0359Z, Feb 4 and
Addition 10002-19002, Feb 3 Notes 10002-01002, Feb 3 Notes 10002-01002, Feb 5 ICWC Medium Speed Test 10002-11002, Feb 5 ICWC Medium Speed Test 19002-20102, Feb 5 ICWC Medium Speed Test 19002-20102, Feb 5 ICWC Medium Speed Test 01002-011592, Feb 6 Worldwide Sideband Activity Contest 03002-04002, Feb 6 ICWC Medium Speed Test 03002-04002, Feb 7 Phone Weekly Test 02002-03302, Feb 7 Phone Weekly Test 02002-13002, Feb 7 Phone Weekly Test 02002-1502, Feb 7 Winf-Test 40 17002-11002, Feb 7 Winf-Test 80 18002-11552, Feb 7 Winf-Test 80 18002-11552, Feb 7 Wak for the Bacon QRP Contest 20002-01002, Feb 7 Wak for the Bacon QRP Contest 03002-01002, Feb 8 Ox002-1002, Feb 10 to 23002, Feb 11 01002-01002, Feb 9 Wak for the Bacon QRP Contest 03002-01002, Feb 9 Wak for the Bacon QRP Contest 03002-01002, Feb 19 Ox002-01002, Feb 10 to 23002, Feb 11 01002-01302, Feb 10 VWep Staturday Sprint 01002-02302,		ACCW Straight Koy Party	1600Z-2359Z, Feb 4
Texter and status spin to the set 000005 0352, Feb 5 CKUX Meedium Speed Test 13002-14002, Feb 5 OKHWC Memorial 16302-11002, Feb 5 ICWC Medium Speed Test 01002-01592, Feb 6 ARS Spartan Sprint 02002-04002, Feb 5 ICWC Medium Speed Test 02002-04002, Feb 6 ICWC Medium Speed Test 02002-04002, Feb 6 ICWC Medium Speed Test 02002-04002, Feb 7 ICWC Medium Speed Test 02002-03002, Feb 7 ICWO Test 12002-14002, Feb 7 IMIn-Test 40 12002-14002, Feb 7 IWHF-UHF FT8 Activity Contest 12002-21002, Feb 7 IWH FUHF FT8 Activity Contest 23002, Feb 10 to 23002, Feb 17 IWHI-Test 40 19002-21002, Feb 7 IWHI WE FT8 Activity Contest 23002, Feb 10 to 23002, Feb 11 IWAE Kor the Bacon QRP Contest 20002-21002, Feb 8 ICWC STest 02002-01002, Feb 8 ICWOP Test 01022-01302, Feb 9 IWHE WI TY Test		North American Sprint CW	00007-02507 Eeb 4
ICWC Medium Speed Test 13002-14002, Feb 5 ICWC Memoral 16302-17252, Feb 5 ICWC Medium Speed Test 19002-201002, Feb 5 RSGB 800 Club Championship, SSB 20002-21302, Feb 5 Worldwide Sideband Activity Contest 01002-01502, Feb 6 ICWC Medium Speed Test 03002-04002, Feb 6 ICWC Medium Speed Test 03002-04002, Feb 7 Phone Weekly Test 02302-03002, Feb 7 AltClub AVT 12002-13002, Feb 7 Phone Weekly Test 02302-03002, Feb 7 Wini-Test 40 17002-17582, Feb 7 Whini-Test 80 18002-17582, Feb 7 Walk for the Bacon QRP Contest 20002, Feb 7 Walk for the Bacon QRP Contest 03002-01002, Feb 7 Walk for the Bacon QRP Contest 03002-01002, Feb 8 OKCCC F14 Sprint 01002-01302, Feb 9 Weekly TTY Test 01032-01302, Feb 9 MCCC Sprint Ladder 02302-3302, Feb 10 ORP Fox Hunt 02002-23302, Feb 11 OBM Contest 03002-01002, Feb 8 OKCCC F14 Sprint 01002-23002, Feb 9 VWeekly RTTY Test 01032-02302, Feb 10	+	K1USN Slow Speed Test	00007-01007. Feb 5
OKLWC Memorial 15302-7292, Fab 5 ICWC Medium Speed Test 19002-2002, Fab 5 RSGB 80m Club Championship, SSB 20002-21302, Fab 5 ARS Spartan Sprint 01002-01592, Fab 6 ICWC Medium Speed Test 03002-04002, Fab 6 QRP Fox Hunt 02002-03032, Fab 7 Phone Weekly Test 02302-1302, Fab 7 CWopt Statt 12002-1302, Fab 7 ALClub AWT 12002-1302, Fab 7 CWopt Stest 13002-14002, Fab 7 Mini-Test 40 17002-217592, Fab 7 CWR Test 12002-1302, Fab 7 CWR Test 12002-1302, Fab 7 CWR Test 12002-1302, Fab 7 CWR Test 12002, Fab 7 CWR Test 12002, Fab 7 CWR Test 20002, Fab 7 Walk for the Bacon QRP Contest 20002, Fab 8 CWr Stest 03002-04002, Fab 8 CWR Test 01452-0302, Fab 9 CWR Test 02002-23002, Fab 9 <td< td=""><th>+</th><td>ICWC Medium Speed Test</td><td>1300Z-1400Z. Feb 5</td></td<>	+	ICWC Medium Speed Test	1300Z-1400Z. Feb 5
ICWC Medium Speed Test 19002-20002, Feb 5 RSGB 80m Club Championship, SSB 20002-21302, Feb 5 Worldwide Sideband Activity Contest 01002-01592, Feb 6 ICWC Medium Speed Test 02002-04002, Feb 6 ICWC Medium Speed Test 02002-03002, Feb 7 Phone Weekly Test 02002-03002, Feb 7 Alclub AWT 12002-13002, Feb 7 CWops Test 13002-14002, Feb 7 VHIPUHF FTB Activity Contest 17002-11752, Feb 7 VHIPUHF FTB Activity Contest 19002-20002, Feb 7 VHIPUHF FTB Activity Contest 20002-20002, Feb 7 VWAS Test 19002-20002, Feb 7 VWAS Test 20002-20002, Feb 7 VWAS Test 02002-0002, Feb 8 CWops Test 02002-01002, Feb 8 CWops Test 02002-03002, Feb 9 Weekly RTTY Test 01002-01002, Feb 9 VKUS Sow Speed Test 20002-21002, Feb 9 VKUS Sow Speed Test 20002-21002, Feb 9 VKUS Sow Speed Test	+	OK1WC Memorial	1630Z-1729Z, Feb 5
RSGB 80m Club Championship, SSB 2002-2130Z, Feb 5 Worldwide Sideband Activity Contest 0102-0130Z, Feb 6 ARS Spartan Sprint 0202-0400Z, Feb 6 ICWC Medium Speed Test 0302-0400Z, Feb 7 QRP Fox Hunt 0202-0300Z, Feb 7 Phone Weekly Test 0202-1300Z, Feb 7 CWopS Test 1300Z-1100Z, Feb 7 Mini-Test 40 1700Z-21759Z, Feb 7 VHF-UHF FT8 Activity Contest 1900Z-1000Z, Feb 7 Mini-Test 40 1900Z-2000Z, Feb 7 UKEICC 80m Contest 2000Z, Feb 7 to 2300Z, Feb 7 UKEICC 80m Contest 2000Z, Feb 7 to 2300Z, Feb 8 and Walk for the Bacon QRP Contest 0000Z-0100Z, Feb 8 and Vexter Cor 80m Contest 0000Z-0100Z, Feb 8 CWops Test 0140Z-0130Z, Feb 9 CWops Test 0000Z-0130Z, Feb 9 CWops Test 0000Z-0130Z, Feb 9 CWops Test 0140Z-0130Z, Feb 9 CWops Test 0000Z-0130Z, Feb 9 CWops Test 0	+	ICWC Medium Speed Test	1900Z-2000Z, Feb 5
Worldwide Sideband Activity Contest 01002-01552, Feb 6 ARS Spartan Sprint 02002-04002, Feb 6 ICWC Medium Speed Test 03002-04002, Feb 6 QRF For Hunt 02002-03002, Feb 7 AlClub AWT 12002-13002, Feb 7 AlClub AWT 12002-13002, Feb 7 CWops Test 13002-14002, Feb 7 Mini-Test 40 13002-14002, Feb 7 VHF-UHF FTB Activity Contest 17002-17592, Feb 7 VHIN-Test 40 13002-1602, Feb 7 VMINT 1002-21002, Feb 7 10002-2002, Feb 7 VMINT 1002-2002, Feb 7 10002-2002, Feb 7 VMA Linc Cundall Memorial CW Contest 20002, Feb 7 Wak Kor the Bacon QRP Contest 02002-03002, Feb 8 and CWops Test 07002-08002, Feb 8 CWops Test 07002-08002, Feb 8 CWops Test 07002-03002, Feb 9 Veskly RTTY Test 01452-02152, Feb 9 Veskly RTTY Test 02002-03002, Feb 10 NCCC Sprint Ladder 02002-03002, Feb 10 CQ WR WR TWY WX Contest 00002, Feb 10 SARL Field Day Contest 00002, Feb 10 CQ WW WR TY WX Contest <th>+</th> <td>RSGB 80m Club Championship, SSB</td> <td>2000Z-2130Z, Feb 5</td>	+	RSGB 80m Club Championship, SSB	2000Z-2130Z, Feb 5
ARS Spartan Sprint 02002-04002, Feb 6 ICWC Medium Speed Test 02002-03302, Feb 7 QRP Fox Hunt 02002-03302, Feb 7 ALClub AWT 12002-13002, Feb 7 ALClub AWT 12002-13002, Feb 7 CWops Test 13002-14002, Feb 7 Mini-Test 40 17002-17592, Feb 7 VHF-UHF FT8 Activity Contest 19002-20002, Feb 7 CWops Test 19002-20002, Feb 7 UKEICC 80m Contest 20002, Feb 7 Valk for the Bacon QRP Contest 20002, Feb 7 Walk for the Bacon QRP Contest 03002-04002, Feb 8 CWops Test 03002-04002, Feb 8 PR Fox Hunt 02002-213002, Feb 9 PR Fox Hunt 02002-21002, Feb 9 PR Fox Hunt 02002-21002, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 SALL Field Day Contest 00002, Feb 10 SALL Field Day Contest 100002, Feb 10 Dutch Pac	+	Worldwide Sideband Activity Contest	0100Z-0159Z, Feb 6
ICWC Medium Speed Test 03002-04002, Feb 6 QRP Fox Hunt 02002-03002, Feb 7 A1Club AWT 12002-13002, Feb 7 CWops Test 13002-14002, Feb 7 Mini-Test 40 13002-14002, Feb 7 VHF-UHF FT8 Activity Contest 17002-17592, Feb 7 VHF-UHF FT8 Activity Contest 18002-18592, Feb 7 VWest Sest 19002-20002, Feb 7 VWest Sest 20002-21002, Feb 7 VWest Sest 02002-03002, Feb 9 CWops Test 03002-04002, Feb 8 CWops Test 03002-04002, Feb 9 CWops Test 03002-03002, Feb 9 QR Prox Hunt 02002-03302, Feb 9 VWest W RTY Test 023002-23002, Feb 9 VUSS Source Sprint Ladder 02002-23302, Feb 10 CQ WW RTTY WPX Contest 00002-23992, Feb 10 SAL Field Day Contest <th>+</th> <td>ARS Spartan Sprint</td> <td>0200Z-0400Z, Feb 6</td>	+	ARS Spartan Sprint	0200Z-0400Z, Feb 6
QRP Fox Hunt 02002-03302, Feb 7 Phone Weekly Test 02302-03002, Feb 7 AlClub AWT 12002-13002, Feb 7 CWops Test 13002-14002, Feb 7 Mini-Test 40 17002-17592, Feb 7 VHF-UHF FT8 Activity Contest 17002-17592, Feb 7 Mini-Test 80 18002-18592, Feb 7 CWops Test 19002-20002, Feb 7 JKEICC 80m Contest 20002-21002, Feb 7 Walk for the Bacon QRP Contest 00002-01002, Feb 8 and CWops Test 00002-01002, Feb 8 CWops Test 00002-03002, Feb 9 Veckly RTTY Test 011022-01302, Feb 9 Weekly RTTY Test 01002-03002, Feb 9 K1USN Slow Speed Test 20002-23002, Feb 9 K1USN Slow Speed Test 00002-23592, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 12002, Feb 11 SARL Field Day Contest 10002, Feb 10 to 12002, Feb 11 SASL Field Day Contest 10002, Feb	+	ICWC Medium Speed Test	0300Z-0400Z, Feb 6
Phone Weekly Test 02302-03002, Feb 7 A ACLOB AWT 12002-13002, Feb 7 CWops Test 13002-14002, Feb 7 Mini-Test 40 17002-21002, Feb 7 Mini-Test 40 18002-18992, Feb 7 Mini-Test 40 19002-20002, Feb 7 VHF-UHF FT8 Activity Contest 19002-20002, Feb 7 VWops Test 20002-21002, Feb 7 VWA Linc Cundall Memorial CW Contest 23002, Feb 10 to 23002, Feb 11 Walk for the Bacon QRP Contest 00002-01002, Feb 8 and 00002-01002, Feb 10 02000-3002, Feb 10 CWops Test 07002-00002, Feb 8 00002-01002, Feb 8 00002-01002, Feb 8 00002-01002, Feb 8 00002-01002, Feb 8 00002-01002, Feb 9 10002, Feb 10 CWops Test 07002-00002, Feb 8 00002-01002, Feb 9 100002, Feb 9 100002, Feb 10 10002, Feb 9 100002, Feb 11 01452-02152, Feb 9 100002, Feb 11 00002, Feb 11 10002, Feb 10 10002, Feb 11 10002, Feb 11 00002, Feb 11 10002, Feb 10 100002, Feb 11	+	QRP Fox Hunt	0200Z-0330Z, Feb 7
A Long A Wil 12002-13002, Feb 7 C Wups Test 13002-14002, Feb 7 Mini-Test 40 17002-17592, Feb 7 VHF-UHF FT8 Activity Contest 17002-17592, Feb 7 C Wups Test 18002-18592, Feb 7 C Wups Test 19002-20002, Feb 7 C Wups Test 20002-70002, Feb 7 UKEICC 80m Contest 20002-71002, Feb 8 and AWA Linc Cundall Memorial CW Contest 20002-01002, Feb 8 Walk for the Bacon QRP Contest 00002-01002, Feb 8 OCWops Test 00002-01002, Feb 8 C CWops Test 001002-01002, Feb 8 C CWops Test 001002-01002, Feb 8 C CWops Test 001002-01002, Feb 9 Veekly RTTY Test 011022-01302, Feb 9 Q RP Fox Hunt 02002-03002, Feb 9 KIUSN Slow Speed Test 20002-21002, Feb 9 KIUSN Slow Speed Test 00002-2392, Feb 10 C Q WR PTWPX Contest 00002, Feb 10 to 12002, Feb 11 SARL Field Day Contest 10002, Feb 10 to 12002, Feb 11 SARL Field Day Contest 10002, Feb 10 to 12002, Feb 11 SARL Field Day Contest 10002, Feb 10 to 12002, Feb 11 <th>+</th> <td>Phone Weekly Test</td> <td>0230Z-0300Z, Feb 7</td>	+	Phone Weekly Test	0230Z-0300Z, Feb 7
Elevips rest 13002-17592, Feb 7 Mini-Test 40 17002-17592, Feb 7 WHI-UHF FT8 Activity Contest 17002-12592, Feb 7 Wini-Test 80 19002-20002, Feb 7 CWops Test 19002-20002, Feb 7 UKEICC 80m Contest 20002, Feb 7 AWA Linc Cundall Memorial CW Contest 23002, Feb 10 to 23002, Feb 7 Walk for the Bacon QRP Contest 00002-01002, Feb 7 CWops Test 00002-01002, Feb 9 Veekly RTTY Test 01452-02152, Feb 9 QRP Fox Hunt 02002-03002, Feb 10 NCCC FI4 Sprint 00002, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 SARL Field Day Contest 10002, Feb 10 Vintry WPX Contest 00002, Feb 10 SARL Field Day Contest 10002, Feb 10 Musi Solos Speed Test 10002, Feb 10 SKCC Weekend Sprint, CW 11002-13002, Feb 11	-	CWops Test	12002-13002, Feb 7
WHF UHF FTB Activity Contest 17002-21002, Feb 7 Mini-Test 80 18002-18592, Feb 7 CWops Test 19002-20002, Feb 7 UKEICC 80m Contest 20002-21002, Feb 7 Walk Ion Cundall Memorial CW Contest 23002, Feb 7 to 23002, Feb 8 and 23002, Feb 10 to 23002, Feb 8 Walk for the Bacon QRP Contest 00002-01002, Feb 8 CWops Test 00002-01002, Feb 8 CWops Test 03002-04002, Feb 9 Weekly RTTY Test 01452-02152, Feb 9 QRP Fox Hunt 02002-03002, Feb 10 NCCC Sprint Ladder 02002-03002, Feb 9 NLCC Sprint Ladder 02002-03002, Feb 9 NLCC Sprint Ladder 02002-03002, Feb 10 SALL Field Day Contest 00002-21502, Feb 9 SKLUSN Slow Speed Test 00002, Feb 10 to 12002, Feb 11 SALF Field Day Contest 10002, Feb 10 to 12002, Feb 11 SACC Weekend Sprint, CW 11002-13002, Feb 10 Dutch PACC Contest 10002, Feb 10 to 12002, Feb 11 KUST SQS OP Party 12002, Feb 10 to 12002, Feb 11 SKC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 KUSN Slow Speed Test 10002-03002, Feb 12		Mini-Test 40	1700Z-17597 Feb 7
Mini-Test 80 18002-1859Z, Feb 7 CWops Test 19002-2000Z, Feb 7 UKEICC 80m Contest 20002-2100Z, Feb 7 Walk for the Bacon QRP Contest 2300Z, Feb 7 to 2300Z, Feb 11 Walk for the Bacon QRP Contest 00002-0100Z, Feb 8 and 1 Walk for the Bacon QRP Contest 03002-0100Z, Feb 7 2 CWops Test 03002-0100Z, Feb 7 1 Walk for the Bacon QRP Contest 03002-0100Z, Feb 7 2 CWops Test 03002-0400Z, Feb 8 2 CWops Test 03002-0400Z, Feb 8 2 CWops Test 01002-0130Z, Feb 9 3 NCCC F14 Sprint 01002-0130Z, Feb 9 4 K1USN Slow Speed Test 20002-330Z, Feb 9 5 FISTS Saturday Sprint 00000Z, Feb 10 to 1200Z, Feb 11 5 SARL Field Day Contest 1000Z, Feb 10 to 1200Z, Feb 11 6 SCC Weekend Sprintathon 1200Z, Feb 10 to 1200Z, Feb 11	+	VHE-UHE ET8 Activity Contest	1700Z-2100Z, Feb 7
CWops Test 19002-20002, Feb 7 UKEIC 80m Contest 2002, Feb 7 to 23002, Feb 7 AWA Linc Cundall Memorial CW Contest 23002, Feb 7 to 23002, Feb 8 and 23002, Feb 10 to 23002, Feb 8 Walk for the Bacon QRP Contest 0002-01002, Feb 8 and 2002, Feb 8 CWops Test 03002-04002, Feb 8 CWops Test 03002-04002, Feb 9 CWops Test 03002-04002, Feb 8 NCCC FI4 Sprint 0102-01302, Feb 9 Weekly RTTY Test 01452-02152, Feb 9 NCCC Sprint Ladder 02302-03002, Feb 9 K1USN Slow Speed Test 02002-03002, Feb 9 KNCC Sprint Ladder 02002-23002, Feb 9 CQ WW RTTY WPX Contest 00002, Feb 10 to 23092, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 10002, Feb 11 Asia-Pacific Spring Sprint, CW 11002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 KUSS QSO Party 15002, Feb 10 to 12002, Feb 11 KUSN Slow Speed Test 10002-20302, Feb 10 MISS QSO Party 15002, Feb 10 KKUSN Slow Speed Test 10002-20302, Feb 10 CQC Winter QSO Party 10002-20302, Feb 10 <th>+</th> <td>Mini-Test 80</td> <td>1800Z-1859Z, Feb 7</td>	+	Mini-Test 80	1800Z-1859Z, Feb 7
UKETCC 80m Contest 20002-21002, Feb 7 AWA Linc Cundall Memorial CW Contest 23002, Feb 7 to 23002, Feb 8 and 23002, Feb 10 to 23002, Feb 8 Walk for the Bacon QRP Contest 00002-01002, Feb 8 and 02002-03002, Feb 8 CWops Test 03002-04002, Feb 8 CWops Test 03002-04002, Feb 8 NCCC FT4 Sprint 01002-01302, Feb 9 Weekly RTTY Test 01452-02152, Feb 9 QRP Fox Hunt 02002-03002, Feb 9 NCCC Sprint Ladder 02002-03002, Feb 9 K1USN Slow Speed Test 20002, Feb 10 to 23592, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 Asia-Pacific Spring Sprint, CW 11002-13002, Feb 10 Dutch PACC Contest 10002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 RSGB 1.8 MHz Contest 13002-17002, Feb 11 OUSC-20002, Feb 11 5002, Feb 11 Balkan HF Contest 13002-17002, Feb 11 CQC Winter QSO Party 13002-17002, Feb 12 ICWC Medium Speed Test 13002-17002, Feb 12 ICWC Medium Speed Test	+	CWops Test	1900Z-2000Z, Feb 7
AWA Linc Cundall Memorial CW Contest 23002, Feb 7 to 23002, Feb 8 and 23002, Feb 10 to 23002, Feb 11 Walk for the Bacon QRP Contest 00002-01002, Feb 8 and 02002-03002, Feb 9 CWops Test 03002-04002, Feb 8 NCCC FT4 Sprint 01002-01302, Feb 9 NCCC FT4 Sprint 01002-01302, Feb 9 Weekly RTTY Test 01452-02152, Feb 9 QRP Fox Hunt 02002-03002, Feb 9 NCCC Sprint Ladder 02002-03002, Feb 9 KIUSN Slow Speed Test 02002-23592, Feb 10 CQ WR TTY WPX Contest 00002, Feb 10 to 12002, Feb 11 Asia-Pacific Spring Sprint, CW 11002-13002, Feb 10 Dutch PACC Contest 12002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprint Strutton 12002, Feb 10 to 12002, Feb 11 KCC Topband Contest 12002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprint Strutton 12002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprint Strutton 12002, Feb 10 to 12002, Feb 11 KUSN Slow Speed Test 01002-02502, Feb 11 Balkan HF Contest 13002-17002, Feb 10 CQ Winter QSO Party 01002-03002, Feb 12 KUSN Slow Speed Test 03002-10002, Feb 12	+	UKEICC 80m Contest	2000Z-2100Z, Feb 7
23002, Feb 10 to 23002, Feb 11 00002-01002, Feb 8 and 02002-03002, Feb 8 CWops Test 03002-04002, Feb 8 CWops Test 07002-08002, Feb 8 NCCC FT4 Sprint 01002-03302, Feb 9 Weekly RTTY Test 01452-02152, Feb 9 QRP Fox Hunt 02002-03302, Feb 9 NCCC Sprint Ladder 02002-03302, Feb 9 K1USN Slow Speed Test 20002-21002, Feb 9 FISTS Saturday Sprint 00002, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 12002, Feb 11 SARL Field Day Contest 00002, Feb 10 to 12002, Feb 11 SARC Contest 10002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 MSG B 1.8 MHz Contest 10002-23502, Feb 11 OC CW Winter QSO Party 11002-13002, Feb 10 to 12002, Feb 11 RSGB 1.8 MHz Contest 19002-23502, Feb 11 Balkan HF Contest 13002-17002, Feb 12 GC Winter QSO Party 10002-03002, Feb 12 ICWC Medium Speed Test 13002-17002, Feb 12 ICWC Medium Speed Test 13002-17002, Feb 12 ICWC Medium Speed Test 13002-17002, Feb 12	+	AWA Linc Cundall Memorial CW Contest	2300Z, Feb 7 to 2300Z, Feb 8 and
Walk for the Bacon QKP Contest 00002-01002, Feb 9 CWops Test 03002-04002, Feb 8 NCCC FT4 Sprint 01002-03002, Feb 9 Weekly RTTY Test 01452-02152, Feb 9 QRP Fox Hunt 02002-03002, Feb 9 NCCC Sprint Ladder 02002-03002, Feb 9 K1USN Slow Speed Test 02002-03002, Feb 9 KINS Slow Speed Test 02002-21002, Feb 9 CQ WR TTY WPX Contest 00002, Feb 10 to 23592, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 SARL Field Day Contest 10002, Feb 10 to 12002, Feb 11 SARL Field Day Contest 10002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 KXI Sopband Contest 12002, Feb 10 to 12002, Feb 11 KKI Sopband Contest 12002, Feb 10 to 12002, Feb 11 KKI SOP Party 15002, Feb 10 to 12002, Feb 11 KXI Sop Party 15002, Feb 10 to 12002, Feb 11 KINS Sop Speed Test 00002-02002, Feb 11 KINS Sop Speed Test 13002-17002, Feb 11 KINS Sop Speed Test 13002, 14002, Feb 12 KINS Sop Speed Test 13002, 14002, Feb 12		Wells for the Desser ODD Contest	2300Z, Feb 10 to 2300Z, Feb 11
2 CWops Test 03002-04002, Feb 8 4 CWops Test 07002-08002, Feb 8 5 NCCC FT4 Sprint 01002-01302, Feb 9 6 Weekly RTTY Test 01452-02152, Feb 9 7 Weekly RTTY Test 02002-03302, Feb 9 9 QRP Fox Hunt 02002-03302, Feb 9 9 NCCC Sprint Ladder 02002-21002, Feb 9 9 K1USN Slow Speed Test 20002-21002, Feb 10 6 CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 7 SARL Field Day Contest 00002, Feb 10 to 12002, Feb 11 7 SARL Field Day Contest 10002, Feb 10 to 12002, Feb 11 8 SKCC Weekend Sprint, CW 11002-13002, Feb 10 to 12002, Feb 11 9 Dutch PACC Contest 12002, Feb 10 to 12002, Feb 11 10 Duts S QSO Party 15002, Feb 10 to 12002, Feb 11 10 MISS QSO Party 10002-02302, Feb 11 10 MRIS Slow Speed Test 13002-14002, Feb 12 10 CQC Winter QSO Party 01002-03002, Feb 12 10 CQC Winter QSO Party 10002-03002, Feb 12<	+	walk for the Bacon QRP Contest	02002-01002, Feb 8 and 02002-03002 Feb 9
t CWops Test 07002-08002, Feb 8 t NCCC FT4 Sprint 01002-01302, Feb 9 t Weekly RTTY Test 01452-02152, Feb 9 t QRP Fox Hunt 02002-03302, Feb 9 t XIUSN Slow Speed Test 02002-21002, Feb 9 t KIUSN Slow Speed Test 20002-21002, Feb 9 t KIUSN Slow Speed Test 00002, Feb 10 to 23592, Feb 10 t CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 SARL Field Day Contest 00002, Feb 10 to 2002, Feb 10 t Asia-Pacific Spring Sprint, CW 10002, Feb 10 to 12002, Feb 11 t Asia-Pacific Spring Sprint, CW 12002, Feb 10 to 12002, Feb 11 t KCT Orphan Contest 12002, Feb 10 to 12002, Feb 11 t KCT Orphan Contest 12002, Feb 10 to 12002, Feb 11 t KCT Orphan Contest 12002, Feb 10 to 15002, Feb 11 t KUSN Slow Speed Test 10002-03002, Feb 11 t KIUSN Slow Speed Test 00002-01002, Feb 12 t KIUSN Slow Speed Test 01002-03002, Feb 12 t Astates QRP Group Second Sunday Sprint 01002-03002, Feb 12 t ARRL School Club Roundup 13002, Feb 12 to 23592, Feb 16 t OKIWC Meemorial 163002-17022, Feb 12 <td< td=""><th>+</th><td>CWops Test</td><td>0300Z-0400Z, Feb 8</td></td<>	+	CWops Test	0300Z-0400Z, Feb 8
NCCC FT4 Sprint 01002-0130Z, Feb 9 Weekly RTTY Test 0145Z-0215Z, Feb 9 QRP Fox Hunt 0200Z-0330Z, Feb 9 NCCC Sprint Ladder 0230Z-0300Z, Feb 9 K1USN Slow Speed Test 2000Z-210Z, Feb 9 FISTS Saturday Sprint 0000Z-7359Z, Feb 10 CQ WW RTTY WPX Contest 0000Z, Feb 10 to 2359Z, Feb 11 SARL Field Day Contest 1000Z, Feb 10 to 1000Z, Feb 11 Asia-Pacific Spring Sprint, CW 1100Z, Feb 10 to 1200Z, Feb 11 Dutch PACC Contest 1200Z, Feb 10 to 1200Z, Feb 11 SKCC Weekend Sprintathon 1200Z, Feb 10 to 1200Z, Feb 11 OMISS QSO Party 1500Z, Feb 10 to 1200Z, Feb 11 OMISS QSO Party 1500Z, Feb 10 to 1200Z, Feb 11 MISS QS Party 0100Z-0259Z, Feb 11 Balkan HF Contest 1300Z-1700Z, Feb 11 KUSN Slow Speed Test 0000Z-0100Z, Feb 12 4 States QRP Group Second Sunday Sprint 0100Z-0300Z, Feb 12 5 ICWC Medium Speed Test 1300Z, Feb 12 6 OKIWC Memorial 1630Z-1700Z, Feb 12 7 ICWC Medium Speed Test 0100Z-0300Z, Feb 12 8 ICWC Medium Speed Test 1300Z, Feb 12 <	+	CWops Test	0700Z-0800Z, Feb 8
• Weekly RTTY Test 01452-02152, Feb 9 • QRP Fox Hunt 02002-03002, Feb 9 • NCCC Sprint Ladder 02302-03002, Feb 9 • KIUSN Slow Speed Test 02002-21002, Feb 9 • FISTS Saturday Sprint 00002-23592, Feb 10 • CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 • SARL Field Day Contest 00002, Feb 10 to 10002, Feb 11 • Asia-Pacific Spring Sprint, CW 11002-13002, Feb 10 • Dutch PACC Contest 12002, Feb 10 to 12002, Feb 11 • SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 • KCJ Topband Contest 12002, Feb 10 to 12002, Feb 11 • KCJ Topband Contest 19002-23002, Feb 10 • MISS QSO Party 15002, Feb 10 to 12002, Feb 11 • RSGB 1.8 MHz Contest 19002-23002, Feb 11 • KUSN Slow Speed Test 01002-03002, Feb 12 • A States QRP Group Second Sunday Sprint 01002-03002, Feb 12 • A States QRP Group Second Sunday Sprint 01002-14002, Feb 12 • A States QRP Group Second Sunday Sprint 01002-03002, Feb 12 • OKWC Medium Speed Test 13002-14002, Feb 13 • OKWC Medium Speed Test 010002-03002, Feb 13	+	NCCC FT4 Sprint	0100Z-0130Z, Feb 9
QRP Fox Hunt 02002-03302, Feb 9 NCCC Sprint Ladder 02302-03002, Feb 9 + K1USN Slow Speed Test 20002-21002, Feb 9 + FISTS Saturday Sprint 00002, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 + SARL Field Day Contest 10002, Feb 10 to 10002, Feb 11 + Asla-Pacific Spring Sprint, CW 11002-13002, Feb 10 to 12002, Feb 11 + Asla-Pacific Spring Sprint, CW 12002, Feb 10 to 12002, Feb 11 + SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 + KCJ Topband Contest 12002, Feb 10 to 12002, Feb 11 + KGT Sphand Contest 19002-23002, Feb 10 - C Q Winter QSO Party 15002, Feb 10 to 15002, Feb 11 + RSGB 1.8 MHz Contest 13002-17002, Feb 11 + Balkan HF Contest 13002-17002, Feb 12 + Astaes QRP Group Second Sunday Sprint 01002-03002, Feb 12 + KIUSN Slow Speed Test 13002-14002, Feb 12 + ARL School Club Roundup 13002-14002, Feb 12 + ICWC Medium Speed Test 13002-04002, Feb 12 + ICWC Medium Speed Test 03002-04002, Feb 13 + ICWC Medium Speed Test 03002-04002, Feb 13	+	Weekly RTTY Test	0145Z-0215Z, Feb 9
• NCCC Sprint Ladder 02302-0300Z, Feb 9 • K1USN Slow Speed Test 20002-2100Z, Feb 9 • FISTS Saturday Sprint 0000Z, Feb 10 to 2359Z, Feb 11 • CQ WW RTTY WPX Contest 0000Z, Feb 10 to 2359Z, Feb 11 • SARL Field Day Contest 1000Z, Feb 10 to 1200Z, Feb 10 • Asia-Pacific Spring Sprint, CW 1100Z-1300Z, Feb 10 to 1200Z, Feb 11 • Asia-Pacific Spring Sprint, CW 1100Z-1300Z, Feb 10 to 1200Z, Feb 11 • Dutch PACC Contest 1200Z, Feb 10 to 1200Z, Feb 11 • SKCC Weekend Sprintathon 1200Z, Feb 10 to 1200Z, Feb 11 • KCJ Topband Contest 1900Z-2300Z, Feb 10 • OMISS QSO Party 1900Z-200Z, Feb 10 • CQC Winter QSO Party 0100Z-0259Z, Feb 11 • CQC Winter QSO Party 0100Z-0259Z, Feb 11 • CQC Winter QSO Party 0100Z-0300Z, Feb 12 • CQC Winter QSO Party 1300Z, Feb 12 • CQC Winter QSO Party 1300Z, Feb 12 • CQC Win	+	QRP Fox Hunt	0200Z-0330Z, Feb 9
KIUSN Slow Speed Test 2000Z-2100Z, Feb 9 FISTS Saturday Sprint 00002, 23592, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 SARL Field Day Contest 1000Z, Feb 10 to 1000Z, Feb 11 Asia-Pacific Spring Sprint, CW 1100Z-1300Z, Feb 10 Dutch PACC Contest 1200Z, Feb 10 to 1200Z, Feb 11 SKCC Weekend Sprintathon 1200Z, Feb 10 to 1200Z, Feb 11 KCJ Topband Contest 1200Z, Feb 10 to 1200Z, Feb 11 OMISS QSO Party 1500Z, Feb 10 to 1500Z, Feb 11 CQC Winter QSO Party 0100Z-0259Z, Feb 11 Balkan HF Contest 1900Z-2300Z, Feb 11 KUSN Slow Speed Test 0300Z-100Z, Feb 12 4 States QRP Group Second Sunday Sprint 0100Z-0300Z, Feb 12 ICWC Medium Speed Test 1300Z-1700Z, Feb 12 ICWC Medium Speed Test 1300Z-1729Z, Feb 12 ICWC Medium Speed Test 0100Z-0300Z, Feb 13 ICWC Medium Speed Test 0300Z-0400Z, Feb 13 PODXS 070 Club Valentine Sprint	+	NCCC Sprint Ladder	0230Z-0300Z, Feb 9
FISTS saturday sprint 00002-23592, Feb 10 CQ WW RTTY WPX Contest 00002, Feb 10 to 23592, Feb 11 SARL Field Day Contest 10002, Feb 10 to 10002, Feb 11 Asia-Pacific Spring Sprint, CW 11002-13002, Feb 10 to 12002, Feb 11 Dutch PACC Contest 12002, Feb 10 to 24002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 KCJ Topband Contest 12002, Feb 10 to 15002, Feb 11 KCJ Topband Contest 19002-23002, Feb 10 OMISS QSO Party 15002, Feb 10 to 15002, Feb 11 RSGB 1.8 MHz Contest 19002-23002, Feb 10 CQC Winter QSO Party 01002-02592, Feb 11 Balkan HF Contest 13002-17002, Feb 12 KIUSN Slow Speed Test 00002-01002, Feb 12 ICWC Medium Speed Test 13002, Feb 12 to 23592, Feb 16 OK1WC Memorial 16302-17292, Feb 12 ICWC Medium Speed Test 19002-20002, Feb 13 ICWC Medium Speed Test 03002-04002, Feb 13 ICWC Medium Speed Test 03002-04002, Feb 13 ICWC Medium Speed Test 03002-03002, Feb 14 PODXS 070 Club Valentine Sprint 02002-03302, Feb 14 PADOX 070 Club Valentine S	+	K1USN Slow Speed Test	2000Z-2100Z, Feb 9
GQ WW RTH WAX Contest 00002, Feb 10 to 23592, Feb 11 SARL Field Day Contest 10002, Feb 10 to 10002, Feb 11 Asia-Pacific Spring Sprint, CW 11002-13002, Feb 10 Dutch PACC Contest 12002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 SKCC Weekend Sprintathon 12002, Feb 10 to 12002, Feb 11 OMISS QSO Party 15002, Feb 10 to 12002, Feb 11 OMISS QSO Party 01002-02592, Feb 11 RSGB 1.8 MHz Contest 13002-17002, Feb 11 CQC Winter QSO Party 01002-01002, Feb 12 Balkan HF Contest 13002-17002, Feb 12 K1USN Slow Speed Test 01002-01002, Feb 12 4 States QRP Group Second Sunday Sprint 01002-01002, Feb 12 4 KRL School Club Roundup 13002-14002, Feb 12 4 NARL School Club Roundup 13002-14002, Feb 13 900X2 OND, Feb 13 10002-01592, Feb 13 1CWC Medium Speed Test 01002-01592, Feb 13 900X3 OT Club Valentine Sprint 00002-23002, Feb 13 1CWC Medium Speed Test 01002-03302, Feb 14 900X5 OTO Club Valentine Sprint 00002-03302, Feb 14 90X02 COW Sprint </td <th>+</th> <td>CO WWW RTTY WRY Contact</td> <td>0000Z-2359Z, Feb 10</td>	+	CO WWW RTTY WRY Contact	0000Z-2359Z, Feb 10
Asia-Pacific Spring Sprint, CW11002, Feb 10 to 10002, Feb 10Dutch PACC Contest12002, Feb 10 to 12002, Feb 11SKCC Weekend Sprintathon12002, Feb 10 to 24002, Feb 11SKCC Weekend Sprintathon12002, Feb 10 to 12002, Feb 11OMISS QSO Party15002, Feb 10 to 12002, Feb 11RSGB 1.8 MHz Contest19002-23002, Feb 10CQC Winter QSO Party01002-01592, Feb 11RSGB 1.8 MHz Contest13002-17002, Feb 11KUSN Slow Speed Test00002-01002, Feb 12KUSN Slow Speed Test13002, Feb 12CWC Medium Speed Test13002, Feb 12 to 23592, Feb 16OKIWC Memorial16302-17292, Feb 12ICWC Medium Speed Test19002-20002, Feb 13Vorldwide Sideband Activity Contest01002-01592, Feb 13Vorldwide Sideband Activity Contest01002-01592, Feb 14NAQCC CW Sprint01302-03302, Feb 14QRP Fox Hunt02002-03302, Feb 14Phone Weekly Test02302-03002, Feb 14CWops Test12002, Feb 14CWops Test12002, Feb 14		SARL Field Day Contest	10007 Feb 10 to 10007 Feb 11
India FunctionIndia Function• Dutch PACC Contest12002, Feb 10 to 12002, Feb 11• SKCC Weekend Sprintathon12002, Feb 10 to 12002, Feb 11• KCJ Topband Contest12002, Feb 10 to 12002, Feb 11• KCJ Topband Contest12002, Feb 10 to 12002, Feb 11• RSGB 1.8 MHz Contest19002-23002, Feb 10• RSGB 1.8 MHz Contest19002-23002, Feb 10• CQC Winter QSO Party01002-02592, Feb 11• Balkan HF Contest13002-17002, Feb 12• KIUSN Slow Speed Test00002-01002, Feb 12• A States QRP Group Second Sunday Sprint01002-03002, Feb 12• ICWC Medium Speed Test13002, Feb 12• ARRL School Club Roundup13002, Feb 12• ICWC Medium Speed Test19002-20002, Feb 12• OKIWC Memorial16302, Feb 12• ICWC Medium Speed Test03002-04002, Feb 13• Worldwide Sideband Activity Contest01002-01592, Feb 13• PODXS 070 Club Valentine Sprint00002-23592, Feb 14• NAQCC CW Sprint01302-03302, Feb 14• QRP Fox Hunt02302-03302, Feb 14• Phone Weekly Test02302-03302, Feb 14• Alclub AWT12002-13002, Feb 14• CWops Test13002-14002, Feb 14	+	Asia-Pacific Spring Sprint CW	11007-13007 Feb 10
• SKCC Weekend Sprintathon 12002, Feb 10 to 24002, Feb 11 • KCJ Topband Contest 12002, Feb 10 to 12002, Feb 11 • OMISS QSO Party 15002, Feb 10 to 15002, Feb 11 • RSGB 1.8 MHz Contest 19002-23002, Feb 10 • CQC Winter QSO Party 01002-02592, Feb 11 • Balkan HF Contest 13002-17002, Feb 11 • K1USN Slow Speed Test 00002-01002, Feb 12 • A States QRP Group Second Sunday Sprint 01002-03002, Feb 12 • ICWC Medium Speed Test 13002, Feb 12 to 23592, Feb 16 • ARRL School Club Roundup 13002, Feb 12 to 23592, Feb 16 • OK1WC Memorial 16302-17292, Feb 12 • ICWC Medium Speed Test 01002-01592, Feb 13 • ICWC Medium Speed Test 03002-04002, Feb 13 • ICWC Medium Speed Test 03002-04002, Feb 13 • ICWC Medium Speed Test 03002-03302, Feb 14 • ICWC Medium Speed Test 03002-04002, Feb 13 • ICWC Medium Speed Test 03002-03302, Feb 14 • ICWC Medium Speed Test 02002-03302, Feb 14 • <th>+</th> <td>Dutch PACC Contest</td> <td>1200Z, Feb 10 to 1200Z, Feb 11</td>	+	Dutch PACC Contest	1200Z, Feb 10 to 1200Z, Feb 11
+ KCJ Topband Contest 1200Z, Feb 10 to 1200Z, Feb 11 • OMISS QSO Party 1500Z, Feb 10 to 1500Z, Feb 11 • RSGB 1.8 MHZ Contest 1900Z-2300Z, Feb 10 • RSG D Party 0100Z-0259Z, Feb 11 • CQC Winter QSO Party 0100Z-0259Z, Feb 11 • Balkan HF Contest 1300Z-1700Z, Feb 11 • K1USN Slow Speed Test 0000Z-0100Z, Feb 12 • K1USN Slow Speed Test 0100Z-0300Z, Feb 12 • ARL School Club Roundup 1300Z-1400Z, Feb 12 • ARRL School Club Roundup 1300Z, Feb 12 • ICWC Medium Speed Test 1900Z-2000Z, Feb 12 • OK1WC Memorial 1630Z-1729Z, Feb 12 • ICWC Medium Speed Test 0100Z-0159Z, Feb 13 • Vorldwide Sideband Activity Contest 0100Z-0159Z, Feb 13 • Worldwide Sideband Activity Contest 0100Z-0330Z, Feb 14 • ICWC Medium Speed Test 0300Z-0400Z, Feb 13 • PODXS 070 Club Valentine Sprint 0000Z-2359Z, Feb 14 • NAQCC CW Sprint 0230Z-0330Z, Feb 14 • Phone Weekly Test	+	SKCC Weekend Sprintathon	1200Z, Feb 10 to 2400Z, Feb 11
• OMISS QSO Party 1500Z, Feb 10 to 1500Z, Feb 11 • RSGB 1.8 MHz Contest 1900Z-2300Z, Feb 10 • CQC Winter QSO Party 0100Z-0259Z, Feb 11 • Balkan HF Contest 1300Z-1700Z, Feb 12 • K1USN Slow Speed Test 0000Z-0100Z, Feb 12 • 4 States QRP Group Second Sunday Sprint 0100Z-0300Z, Feb 12 • ARRL School Club Roundup 1300Z-1400Z, Feb 12 • ARRL School Club Roundup 1630Z-1729Z, Feb 12 • OK1WC Memorial 1630Z-1729Z, Feb 12 • Vorldwide Sideband Activity Contest 0100Z-0105Z, Feb 12 • NAQCC CW Sprint 0300Z-0400Z, Feb 13 • PODXS 070 Club Valentine Sprint 0000Z-2359Z, Feb 14 • NAQCC CW Sprint 0130Z-0330Z, Feb 14 • Phone Weekly Test 0230Z-0300Z, Feb 14 • A1Club AWT 1200Z-1300Z, Feb 14 • CWops Test 0230Z-0300Z, Feb 14	+	KCJ Topband Contest	1200Z, Feb 10 to 1200Z, Feb 11
+ RSGB 1.8 MHz Contest 19002-23002, Feb 10 + CQC Winter QSO Party 01002-02592, Feb 11 + Balkan HF Contest 13002-17002, Feb 11 + Balkan HF Contest 00002-01002, Feb 12 + K1USN Slow Speed Test 00002-03002, Feb 12 + 4 States QRP Group Second Sunday Sprint 01002-03002, Feb 12 + ICWC Medium Speed Test 13002-14002, Feb 12 + ARRL School Club Roundup 13002, Feb 12 to 23592, Feb 16 + OK1WC Memorial 16302-17292, Feb 12 + IVWC Medium Speed Test 19002-2002, Feb 12 + Worldwide Sideband Activity Contest 01002-01592, Feb 13 + ICWC Medium Speed Test 03002-04002, Feb 13 + ICWC Medium Speed Test 03002-04002, Feb 13 + ICWC Medium Speed Test 03002-03002, Feb 14 + ICWC Medium Speed Test 01002-03302, Feb 14 + ICWC Medium Speed Test 02002-03302, Feb 14 + ICWC Medium Speed Test 02002-03302, Feb 14 + ICWC Medium Speed Test 02002-03302, Feb 14 + ICWC Medium Speed	+	OMISS QSO Party	1500Z, Feb 10 to 1500Z, Feb 11
CQC Winter QSO Party 01002-02592, Feb 11 Balkan HF Contest 13002-17002, Feb 11 K1USN Slow Speed Test 00002-01002, Feb 12 4 States QRP Group Second Sunday Sprint 01002-03002, Feb 12 ICWC Medium Speed Test 13002-14002, Feb 12 ARRL School Club Roundup 13002, Feb 12 to 23592, Feb 16 OK1WC Memorial 16302-17292, Feb 12 ICWC Medium Speed Test 19002-20002, Feb 12 Worldwide Sideband Activity Contest 01002-01592, Feb 13 ICWC Medium Speed Test 03002-04002, Feb 13 ICWC Medium Speed Test 03002-04002, Feb 14 Vorldwide Sideband Activity Contest 01002-03302, Feb 14 ICWC Medium Speed Test 03002-04002, Feb 13 PODXS 070 Club Valentine Sprint 00002-23392, Feb 14 QRP Fox Hunt 02002-03302, Feb 14 Phone Weekly Test 02302-03002, Feb 14 A1Club AWT 12002-13002, Feb 14 CWops Test 13002-14002, Feb 14	+	RSGB 1.8 MHz Contest	1900Z-2300Z, Feb 10
+ Balkan HF Contest 13002-17002, Feb 11 + K1USN Slow Speed Test 00002-01002, Feb 12 + 4 States QRP Group Second Sunday Sprint 01002-03002, Feb 12 + ICWC Medium Speed Test 13002-14002, Feb 12 + ARRL School Club Roundup 13002, Feb 12 to 23592, Feb 16 + OK1WC Memorial 16302-17292, Feb 12 + ICWC Medium Speed Test 19002-20002, Feb 12 + ICWC Medium Speed Test 01002-01592, Feb 13 + ICWC Medium Speed Test 01002-01592, Feb 13 + ICWC Medium Speed Test 03002-04002, Feb 13 + ICWC Medium Speed Test 03002-04002, Feb 14 + PODXS 070 Club Valentine Sprint 00002-23592, Feb 14 + QRP Fox Hunt 02002-03302, Feb 14 + QRP Fox Hunt 02002-03302, Feb 14 + Phone Weekly Test 02302-03002, Feb 14 + A1Club AWT 12002-13002, Feb 14 + CWops Test 13002-14002, Feb 14	+	CQC Winter QSO Party	0100Z-0259Z, Feb 11
• K1USN Slow Speed Test 00002-01002, Feb 12 • 4 States QRP Group Second Sunday Sprint 01002-03002, Feb 12 • ICWC Medium Speed Test 13002-14002, Feb 12 • ARRL School Club Roundup 13002, Feb 12 to 23592, Feb 16 • OK1WC Memorial 16302-17292, Feb 12 • ICWC Medium Speed Test 19002-20002, Feb 12 • Worldwide Sideband Activity Contest 01002-01592, Feb 13 • ICWC Medium Speed Test 03002-04002, Feb 13 • ICWC Medium Speed Test 03002-04002, Feb 13 • PODXS 070 Club Valentine Sprint 00002-23592, Feb 14 • NAQCC CW Sprint 01302-03302, Feb 14 • QRP Fox Hunt 02002-03302, Feb 14 • Phone Weekly Test 02302-03002, Feb 14 • CWops Test 13002-14002, Feb 14	+	Balkan HF Contest	1300Z-1700Z, Feb 11
4 States QRP Group Second Sunday Sprint 01002-03002, Feb 12 ICWC Medium Speed Test 1300Z-14002, Feb 12 ARRL School Club Roundup 1300Z, Feb 12 to 23592, Feb 16 OK1WC Memorial 1630Z-17292, Feb 12 ICWC Medium Speed Test 1900Z-20002, Feb 12 Worldwide Sideband Activity Contest 0100Z-01592, Feb 13 ICWC Medium Speed Test 0300Z-04002, Feb 13 PODXS 070 Club Valentine Sprint 0000Z-23592, Feb 14 NAQCC CW Sprint 0130Z-03302, Feb 14 QRP Fox Hunt 0200Z-03302, Feb 14 Phone Weekly Test 0230Z-03002, Feb 14 A1Club AWT 1200Z-13002, Feb 14 CWops Test 1300Z-14002, Feb 14	+	K1USN Slow Speed Test	0000Z-0100Z, Feb 12
i CWC Medium Speed Test 13002-14002, Feb 12 4 ARRL School Club Roundup 13002, Feb 12 to 23592, Feb 16 • OK1WC Memorial 16302-17292, Feb 12 • ICWC Medium Speed Test 19002-20002, Feb 12 • Worldwide Sideband Activity Contest 01002-01592, Feb 13 • ICWC Medium Speed Test 03002-04002, Feb 13 • ICWC Medium Speed Test 03002-04002, Feb 13 • PODXS 070 Club Valentine Sprint 00002-23592, Feb 14 • NAQCC CW Sprint 01302-03302, Feb 14 • Phone Weekly Test 02302-03002, Feb 14 • A1Club AWT 12002-13002, Feb 14 • CWops Test 13002-14002, Feb 14	+	4 States QRP Group Second Sunday Sprint	12007-14007 Feb 12
AKt WC Memorial 15002,172,92, Feb 12 OK1WC Medium Speed Test 16302-172,92, Feb 12 Worldwide Sideband Activity Contest 01002-01592, Feb 13 ICWC Medium Speed Test 03002-04002, Feb 13 PODXS 070 Club Valentine Sprint 00002-23592, Feb 14 NAQCC CW Sprint 01302-03302, Feb 14 QRP Fox Hunt 02002-03302, Feb 14 Phone Weekly Test 02302-03002, Feb 14 A1Club AWT 12002-13002, Feb 14 CWops Test 13002-14002, Feb 14		ARRI School Club Roundun	13002 Feb 12 to 23597 Feb 16
+ ICWC Medium Speed Test 1900Z-2000Z, Feb 12 • Worldwide Sideband Activity Contest 0100Z-0159Z, Feb 13 • ICWC Medium Speed Test 0300Z-0400Z, Feb 13 • PODXS 070 Club Valentine Sprint 0000Z-2359Z, Feb 14 • NAQCC CW Sprint 0130Z-0330Z, Feb 14 • QRP Fox Hunt 0200Z-0330Z, Feb 14 • Phone Weekly Test 0230Z-0300Z, Feb 14 • A1Club AWT 1200Z-1300Z, Feb 14 • CWops Test 1300Z-1400Z, Feb 14	+	OK1WC Memorial	1630Z-1729Z. Feb 12
• Worldwide Sideband Activity Contest 0100Z-0159Z, Feb 13 • ICWC Medium Speed Test 0300Z-0400Z, Feb 13 • PODXS 070 Club Valentine Sprint 0000Z-2359Z, Feb 14 • NAQCC CW Sprint 0130Z-0330Z, Feb 14 • QRP Fox Hunt 0200Z-0330Z, Feb 14 • Phone Weekly Test 0230Z-0300Z, Feb 14 • A1Club AWT 1200Z-1300Z, Feb 14 • CWops Test 1300Z-1400Z, Feb 14	+	ICWC Medium Speed Test	1900Z-2000Z, Feb 12
+ ICWC Medium Speed Test 0300Z-0400Z, Feb 13 + PODXS 070 Club Valentine Sprint 0000Z-2359Z, Feb 14 + NAQCC CW Sprint 0130Z-0330Z, Feb 14 + QRP Fox Hunt 0200Z-0330Z, Feb 14 + Phone Weekly Test 0230Z-0300Z, Feb 14 + A1Club AWT 1200Z-1300Z, Feb 14 + CWops Test 1300Z-1400Z, Feb 14	+	Worldwide Sideband Activity Contest	0100Z-0159Z, Feb 13
+ PODXS 070 Club Valentine Sprint 0000Z-2359Z, Feb 14 + NAQCC CW Sprint 0130Z-0330Z, Feb 14 + QRP Fox Hunt 0200Z-0330Z, Feb 14 + Phone Weekly Test 0230Z-0300Z, Feb 14 + A1Club AWT 1200Z-1300Z, Feb 14 + CWops Test 1300Z-1400Z, Feb 14	+	ICWC Medium Speed Test	0300Z-0400Z, Feb 13
+ NAQCC CW Sprint 0130Z-0330Z, Feb 14 + QRP Fox Hunt 0200Z-0330Z, Feb 14 + Phone Weekly Test 0230Z-0300Z, Feb 14 + A1Club AWT 1200Z-1300Z, Feb 14 + CWops Test 1300Z-1400Z, Feb 14	+	PODXS 070 Club Valentine Sprint	0000Z-2359Z, Feb 14
+ QRP Fox Hunt 0200Z-0330Z, Feb 14 + Phone Weekly Test 0230Z-0300Z, Feb 14 + A1Club AWT 1200Z-1300Z, Feb 14 + CWops Test 1300Z-1400Z, Feb 14	+	NAQCC CW Sprint	0130Z-0330Z, Feb 14
Phone Weekly Test 0230Z-0300Z, Feb 14 + A1Club AWT 1200Z-1300Z, Feb 14 + CWops Test 1300Z-1400Z, Feb 14	+	QRP Fox Hunt	0200Z-0330Z, Feb 14
ATCIUD AW1 1200Z-1300Z, Feb 14 + CWops Test 1300Z-1400Z, Feb 14	+	Phone Weekly Test	0230Z-0300Z, Feb 14
	+	ALCIUD AWI	1200Z-1300Z, Feb 14
fratework (1991) / frankisk fratework and a second s	-	Chiops lest	Fabruary 2024 Contest Calendary Continued on and 52

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

February 2024 Contest Calendar - WA7BNM Contest Calendar : <u>www.contestcalendar.com</u>

February 2024 Contest Calendar - Continued from page 51		
+ Mir	ni-Test 40	1700Z-1759Z, Feb 14
+ VH	F-UHF FT8 Activity Contest	1700Z-2100Z, Feb 14
Mir	ni-Test 80	1800Z-1859Z, Feb 14
	/ops lest RC ET4 Contost	19002-20002, Feb 14
BS	GB 80m Club Championship, Data	20007-21307, Feb 14
- CV	/ops Test	0300Z-0400Z, Feb 15
+ CW	/ops Test	0700Z-0800Z, Feb 15
+ NT	C QSO Party	1900Z-2000Z, Feb 15
+ NC	CC FT4 Sprint	0100Z-0130Z, Feb 16
+ We	eekly RTTY Test	0145Z-0215Z, Feb 16
QR	P Fox Hunt	02002-03302, Feb 16
	USN Slow Speed Test	20007-21007 Feb 16
- YL	RL YL-OM Contest	0000Z, Feb 17 to 2359Z, Feb 18
AR	RL Inter. DX Contest, CW	0000Z, Feb 17 to 2400Z, Feb 18
+ Ru	ssian PSK WW Contest	1200Z, Feb 17 to 1159Z, Feb 18
Fel	d Hell Sprint	1900Z-2059Z, Feb 17
+ FIS	STS Sunday Sprint	0000Z-2359Z, Feb 18
Ru	n for the Bacon QRP Contest	2300Z, Feb 18 to 0100Z, Feb 19
	USN Slow Speed Test	12007-14007 Feb 10
	(1WC Memorial	16307-17297 Feb 19
- IC	WC Medium Speed Test	1900Z-2000Z, Feb 19
+ Wo	orldwide Sideband Activity Contest	0100Z-0159Z, Feb 20
- IC	WC Medium Speed Test	0300Z-0400Z, Feb 20
- QR	P Fox Hunt	0200Z-0330Z, Feb 21
- Ph	one Weekly Test	0230Z-0300Z, Feb 21
- A1	Club AWT	1200Z-1300Z, Feb 21
	/ops Test	1300Z-1400Z, Feb 21
Mir	ni-Test 40	17002-21002, Feb 21
Mir	ni-Test 80	1800Z-1859Z, Feb 21
AG	CW Semi-Automatic Key Evening	1900Z-2030Z, Feb 21
- CW	/ops Test	1900Z-2000Z, Feb 21
• Wa	ilk for the Bacon QRP Contest	0000Z-0100Z, Feb 22 and 0200Z-0300Z, Feb 23
CV	/ops Test	0300Z-0400Z, Feb 22
RS	GB 80m Club Championship, CW	20007-21307 Feb 22
	CC FT4 Sprint	0100Z-0130Z, Feb 23
We	ekly RTTY Test	0145Z-0215Z, Feb 23
QR	P Fox Hunt	0200Z-0330Z, Feb 23
+ NC	CC Sprint Ladder	0230Z-0300Z, Feb 23
- K1	USN Slow Speed Test	2000Z-2100Z, Feb 23
CQ	160-Meter Contest, SSB	2200Z, Feb 23 to 2200Z, Feb 25
RE	A DX Contest, SSB	12007 Feb 24 to 12007 Feb 25
50	uth Carolina OSO Party	15002, Feb 24 to 15002, Feb 25
- No	rth American QSO Party, RTTY	1800Z, Feb 24 to 0559Z, Feb 25
- NA	Collegiate Championship, RTTY	1800Z, Feb 24 to 0559Z, Feb 25
- Hig	h Speed Club CW Contest	1400Z-1700Z, Feb 25
- No	rth Carolina QSO Party	1500Z, Feb 25 to 0100Z, Feb 26
K1	USN Slow Speed Test	0000Z-0100Z, Feb 26
	V Challenge	13002-14002, Feb 26
	1WC Memorial	16307-17297. Feb 26
		1900Z-2000Z, Feb 26
- IC	WC Medium Speed Test	1900Z-2000Z, Feb 26
- RS	GB FT4 Contest	2000Z-2130Z, Feb 26
+ Wo	orldwide Sideband Activity Contest	0100Z-0159Z, Feb 27
- IC	WC Medium Speed Test	0300Z-0400Z, Feb 27
QC	X Challenge	0300Z-0400Z, Feb 27
SK	CC Sprint	02007-02002, Feb 28
Ph	one Weekly Test	02307-03007 Feb 28
A1	Club AWT	1200Z-1300Z, Feb 28
- CV	/ops Test	1300Z-1400Z, Feb 28
E Mir	ni-Test 40	1700Z-1759Z, Feb 28
+ Mir	ni-Test 80	1800Z-1859Z, Feb 28
CN	/ops Test	1900Z-2000Z, Feb 28
UK	EICC 80m Contest	2000Z-2100Z, Feb 28
CV	lops Test	03002-04002, Feb 29 07007-08007, Eab 20
	Topa reat	07002-0600Z, FED Z9

2024 Club Committees

Standing Committees

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

Committee Chairs

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

Activity Committees

Awards & Certificates Club Photographer Club Publications & Historian Contests *DX GCARC Family Picnic* GCARC Foxhunts GC-ARES Emergency Coordinator Holiday Dinner Party

Holiday Dinner Party License Testing/VEC Liaison Membership Roster Database Programs : General Membership Meetings Radio Nets Technical & Tech Saturday Programs W2MMD License Trustee W2MMD Special Event Station

Committee Chairs

GCARC Board of Directors Phil Nunzio, WA3RGY Jeff Garth, WB2ZBN **Tony Starr, K3TS Open Chair Open Chair** Jim Wright, N2GXJ **Bob Keogh, KD2NEC** Frank Romeo, N3PUU & Kathy Romeo Gary Reed, N2QEE Jeff Garth. WB2ZBN **Ron Block, NR2B** Jim Clark, KA2OSV Jon Pearce, WB2MNF **Darrell Neron. AB2E** Mark Gottlieb, KK2L

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

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

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

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

4. URLs/Hyperlinks are acceptable on the reflector.

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

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

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

The W2MMD Repeaters

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

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

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

1.25 Meter Repeater

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

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

Gloucester County ARES Net Sunday @ 2000 : 147.180 MHz Repeater

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

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

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

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

Meeting Calendar

General Membership Meeting Wednesday, February 7, 2024 1930 Hours Pfeiffer Community Center Simulcast Live on ZOOM Meeting ID : 943 0211 9674 Passcode : 843147

Board of Directors Meeting Wednesday, February 21, 2024 1900 Hours W2MMD Clubhouse

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

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

*** Badges ***

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

> Chris Prioli, AD2CS chris@ad2cs.com

E4E03:C; E4E10:D; E4E11:B Gastion Pool Answers : E4E01:A; E4E02:D; E4E03:B; E4E04:D; E4E02:B; E4E06:C; E4E07:B; E4E08:B;

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