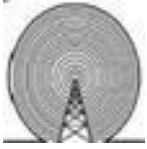


# The Ham Arundel News

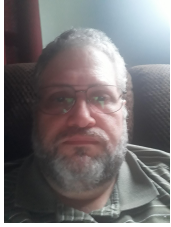


Providing Fellowship and Community Service through  
Amateur Radio since 1951



March 2021

43rd Year of Publication



**Prez  
Sez**

As we start into March we see that spring is just around the corner. But the usual activities which we have become accustomed to are not going to take place. Most of the Hamfests have been canceled and Field Day will be similar to last year. To help fill your need to get some new (at least to you) equipment, we will be continuing the sale in the Clubhouse. An updated list will be sent out soon.

Also to help with getting to check out other equipment, we have made several changes to the Ham Shack.

Here is the current station equipment

- Station #1 IC 7300 and IC 7610
- Station #2 Yashu 991A
- Station #3 Collins "S" line
- Station #4 Flex 6400

If you are interested in checking any of these radios out, please contact our station manager Joe Conover at <[vp@w3vpr.org](mailto:vp@w3vpr.org)>.

Joe is able to open the Ham Shack but you will need to contact him at least a day in advance. Due to County restrictions we have to limit the number of people that can be in the shack .

The plans to get another tower installed at the clubhouse is moving forward. We will need to wait until the weather gets a little better before we can make arrangements to get the tower to the clubhouse.

73

Eric KC3GDV

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**The Ham Arundel News and  
W3VPR.org are the official  
publications of  
The Anne Arundel Radio Club**  
(ARRL Club No.0484)

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Davidsonville, MD 21035-0308

**Meetings:**  
Business Meeting 1st Thursday at 7:30 PM  
Program/Activity 3rd Thursday at 7:30 PM  
Board Meeting - see calendar

**Dues:**  
\$30 per year, payable December 1st  
Discounts available for family members and  
students

World Wide Web: [www.w3vpr.org](http://www.w3vpr.org)

## **Ham Arundel News April Deadline**

The deadline for the April 2021 issue of the newsletter will be Saturday, March 27. If you have something you wish to share or contribute, please email [newsletter@w3vpr.org](mailto:newsletter@w3vpr.org) and include "NEWSLETTER" in the subject line.

Other members may appreciate hearing of your experiments, projects and ideas. Consider sharing.

## **Editorial Notes**

### **More Repeater Information**



Just after the February issue was posted, I was asked to include Echolink information for a repeater. While it is something that may be of interest, we had not included it. There was a question as to information as some repeaters are linked from a host independent of the actual repeater owner.

Then there is an issue that eventually we would be asked to include Allstar and IRLP capable repeaters/nodes. And there are other bands that have these protocols.

For the information we consumed the coordination body, The Mid-Atlantic Repeater Council (T-MARC), RepeaterBook.com, *The ARRL Repeater Directory*, Echolink as well as the repeater owners which have individuals hosting the site. Hosts are listed with the call sign identified in parentheses.

Please note the repeaters may be off-line in the Echolink system but may be on-line over the air.

### **Timely News Distribution**

Occasionally, news on upcoming activities may be presented after the Ham Arundel News has been released for the month. Time sensitive material will be posted to the AARC Facebook page if it pertains to either the whole or part of the month after the monthly issue has been published.

# AARC News

## Membership and Licensing Updates

Martin Cisna, KC3QXZ Amateur Extra  
David Cohen, W3DWC, Amateur Extra  
Steven Gozzo, KC3RDZ, Technician  
Mark A. Swank, N2MAS, Technician

Michael G. Vogeler, N7GUY, Technician  
David Watson, KC3QQT, General  
Robert O. Wilson, KO4KGC, Technician

## Volunteer Needed

The club has a need for a member to help develop a Microsoft Access application and interface (form) to assist in cataloging and tracking club equipment and property. To volunteer, contact Jim at [<service.hours@w3vpr.org>](mailto:service.hours@w3vpr.org)

## Inclement Weather Delays

The recent snows have delayed or cancelled some scheduled activities.

Surprise box sale continues due to inclement weather impacting sale dates. Two for the price of one. To purchase contact Ike Lawton at [<club.sale@w3vpr.org>](mailto:club.sale@w3vpr.org). *Note, as these are surprise boxes the contents will be unknown until purchased.*

Plans for clearing the grounds where the new collapsible tower from the NASA Goddard Radio Club has been postponed until the weather is better.

## Clubhouse

A high speed internet connection has been installed that will allow for remote access for maintenance of some club equipment.

The county has installed a new toilet in the building. Other sources of repairs are being considered.

## Testing

Testing remains an issue due to the pandemic. The building capacity during the crisis is limited to 10 people and this is the size of the VE team alone. The club is considering the possibility of on-line testing.

## Service Hours Logging

To claim credit for volunteer activities provided to the club, the link is at [<www.w3vpr.org/service>](http://www.w3vpr.org/service). You must be logged in in order to post service hours.

## AARC Clothing



You can show your pride in being an amateur radio operator and even display your name and call sign with clothing from Hamthreads. They offer shirts, hats, jackets, and vests.

Four different club logos are available (one shown to the left). You can purchase directly and not have to wait for minimum orders before fulfillment. Full display of available items at <https://www.hamthreads.com/>.

## Training

The Winter Technician class is currently underway. A Spring class for General will start on April 24 and a second Technician class will be held in the Fall beginning on October 2. Help promote these classes.

Planning is underway for an Extra class for the future. If it comes to fruition then it will likely be held twice a week.

## Observations

The announcement that Josh B. Nass, KI6NAZ, received the Bill Leonard Professional Media Award for Video Reporting highlights his YouTube efforts to spread information to thousands of people. Nass currently has 700,000 followers as he provides information on training, issues, a live Q&A, new equipment as well as experiments in building antennas with not-so-common items such as curtain rods (already hung, and hopefully not creating issues with his XYL) <https://youtu.be/7LPg7bP9Mc8> or even a toy magician's cane <https://youtu.be/MuvMBnpm3MI>.

Another person providing support is Dave Casler, KE0OG. I used Casler's videos on license topics as a supplement for all three exams. Casler is a retired engineer and provides not only videos on the topics for individual licenses but also product reviews, general information and live Q&A videos. He has also built a reference station as a proposal for new amateur operators.

A third YouTube content provider I regularly listen to is Michael Marten whose videos are at KB9VBR Antennas. Like the other people here, his work involves providing equipment reviews, information on building antennas and other tutorials. Marten is very involved in Parks On The Air (POTA) and has several videos relating to this. Monthly, he has answers to questions he has received.

Jason Johnston, KC5HWB, hosts the Ham Radio 2.0 videos on YouTube. He offers product reviews as well not only for amateur radio but includes other radio services. One aspect of his reviews, at least for HT units, is actually testing the output power to verify the manufacturer's claims.

The last YouTube provider here today is The Radio Prepper out of France. Like the others he focuses on equipment reviews and antenna building, mostly for QRP equipment and CW although he does delve into other areas.





## Calendar

### Club

Due to social distancing requirements, club meetings are being held on Zoom and there have been some changes. The meeting schedule for March - May is:

March 4 - Membership Meeting, 7:30 PM

March 11 - Board meeting

March 18 - Membership Presentation Meeting, 7:30 PM

April 1 - Membership Meeting, 7:30 PM

April 8 - Board meeting

April 15 - Membership Presentation Meeting, 7:30 PM

April 15 - Taxes due (Federal, Maryland)

May 6 - Membership Meeting, 7:30 PM

May 13 - Board meeting

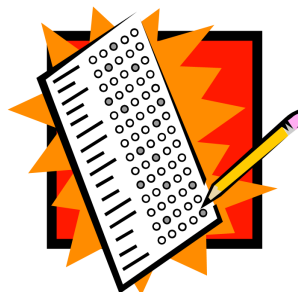
May 20 - Membership Presentation Meeting, 7:30 PM

Invitations to the membership meetings will be emailed to the membership before the meetings. You must request meeting information from the President for Board meetings or the Rules Committee Chairman for the committee meeting

### Training

Spring Technician Class continues thru March 27.

### Testing



**The dates below are tentative due to potential restrictions on certain meetings because of COVID social distancing. Pre-registration is suggested as no testing is scheduled as of the news deadline..**

March 13 - 1:00 PM. Anne Arundel Radio Club, Davidsonville Family Recreation Center. Registration begins at 12:30 PM. <https://www.w3vpr.org/node/353>

March 20 - 9 AM. Laurel Amateur Radio Club, Women's Club of Laurel. <https://www.larcmd.org/conc/index.php/exams-lau-rel>

March 23 - 6:30 AM. Maryland Mobileers Amateur Radio Club, National Electronics Museum, Linthicum Heights. <https://sites.google.com/site/marylandmobileers/v-e-testing>

You **must have** a photo identification, FRN number, as well as copies and originals of your amateur license and CSCE if your license does not show your current license status. The exams are free but the newly announced FCC fee may be in force.

## ARRL News

### ARRL Board Confers Awards on Skip Jackson, KS0J, and Josh Nass, KI6NAZ

During its Annual Meeting on January 14 - 15, the ARRL Board of Directors announced recipients of the ARRL Knight Distinguished Service Award and the 2020 ARRL Bill Leonard Professional Media Award. The Board also recognized several ARRL-affiliated clubs.



ARRL Minnesota Section Manager Richard "Skip" Jackson, KS0J, is the recipient of the ARRL Knight Distinguished Service Award. During his 16-year tenure, Jackson "has actively promoted ARRL activities in his Section, including visiting hundreds of Field Day

operations over the years, represented the League at numerous hamfests, and attended countless club meetings in his state, promoting the League," the Board's resolution read. The Board credited Jackson's leadership for developing "a strong working cadre of volunteers" in the Section, calling him "a model to ARRL Section Managers across the country as a strong supporter of ARRL and its activities."

The Award's namesake is longtime veteran New Mexico Section Manager Joe T. Knight, W5PDY, who was the first recipient of the award in 2003. The Award carries a \$250 honorarium and a plaque.

The Board also approved, as recommended by the ARRL Public Relations Committee, Josh B. Nass, KI6NAZ, as the winner of the 2020 Bill Leonard Professional Media Award for Video Reporting. The Board cited Nass "for his outstanding YouTube channel, 'Ham Radio Crash Course,' which has garnered almost 170,000 subscribers." The Board resolution observed that Nass generated "productions of high levels of content -- and



effective and entertaining instruction of that content." The resolution also cited Nass for his use of "new modes of learning and information conveyance that enhance further education of amateur radio operators everywhere." The Leonard Award includes a \$250 honorarium and a plaque.

The Board approved a change to the timing of the Philip J. McGan Memorial Silver Antenna Award and the Bill Leonard Professional Media Award. The nomination deadline for both awards has been changed to March 31 each year. This brings the cycle of the two media awards into alignment with five other prominent ARRL awards. The change is effective with the March 31, 2022 nomination application, covering the period January 1 - December 31, 2021.

*ARRL Letter*, February 4, 2021



### ARISS and Partners Investigating Ham Radio Anomaly Following Spacewalk

ARISS and Partners Investigating Ham Radio Anomaly Following Spacewalk  
Amateur Radio on the International Space Station (ARISS) and its partners are troubleshooting what's keeping the NA1SS amateur station off the air. ARISS became aware of the problem after an attempted contact with a school in Wyoming, between ON4ISS on Earth and astronaut Mike Hopkins, KF5LJG, at NA1SS, had to abort when no downlink signal was heard. ARISS has determined that the problem is not with the radio equipment on board the ISS *Columbus* module.

ARISS-International Chair Frank Bauer, KA3HDO, explained that during a January 27 spacewalk to install exterior cabling on the ISS *Columbus* module, the coax feed line installed 11 years ago was replaced with another built by the European Space Agency (ESA) and Airbus. It included two additional RF connectors to support the Bartolomeo payload-hosting platform installed last spring on *Columbus*.

*ARRL Letter*, February 4, 2021

## FT8 and the Other *WSJT-X* Digital Modes are "Tools," K1JT Says



According to *WSJT-X* software co-developer Joe Taylor, K1JT, the very popular FT8 and the other digital modes in the software suite "are tools, freely available to hams who want to use them. They are very good at some things, not so good at others." Nonetheless, FT8 -- and, by extension, its contest-mode variation, FT4 -- especially have become game-changers on the HF bands, although, as Taylor has explained, FT8 "was explicitly designed" for making contacts during weak, multi-hop, sporadic-E openings on 6 meters.

"It's extremely good at that," he added, and noted that transcontinental and intercontinental DX on 6 meters has greatly benefited from the use of FT8 over the past several years. Developed in 2017, FT8 is named after its developers -- Taylor, and Steven Franke, K9AN. The numeral designates the mode's eight-frequency shift-keying format.

Taylor said that while the development team knew that FT8 would be very useful for weak-signal DXing on HF as well as on 6 meters, it did not foresee that it would have the sort of impact it's had on HF operating.

Taylor agreed that FT8 is "a mature mode," with the protocol's details published in *QEX*. "Details of message structure, in particular, will not change in a way that is not backward compatible," he said.

Although some FT8 fans may feel the mode is running out of room on some bands, Taylor said that as far as he and his fellow *WSJT-X* developers are concerned, the 3 kHz slices of spectrum suggested for FT8 use are just that -- suggestions.

"There is no reason why additional slices should not be used when over-occupancy requires it," he told ARRL. "We don't attempt to dictate such usage patterns; band planning is best done by committees created for that purpose."

Many radio amateurs are taking advantage of the FT8 and FT4 modes all the time. FT8 watering holes are sometimes the only places to find signals on bands that otherwise might be considered dead.

The *WSJT* Development Group this week announced the general availability release of *WSJT-X* Version 2.3.0. It includes a new Q65 mode but does not involve any changes to the FT8 protocol. A summary of new features can be found in the *WSJT-X 2.3 User Guide*. The *Release Notes* offer additional information, including a list of important program changes since the *WSJT-X 2.2*. Upgrading from earlier versions of *WSJT-X* should be seamless. Installation packages for Windows, Linux, and Macintosh are available.

*ARRL Letter*, February 4, 2021

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## ARRL to Extend Field Day Rule Waivers from 2020, Add Class D and E Power Limit

The COVID-19 pandemic-modified ARRL Field Day rules from 2020 will continue this June with the addition of a power limit imposed on Class D (Home Stations) and Class E (Home Stations-Emergency Power) participants. The news from the ARRL Board's Programs and Services Committee comes as many clubs and groups are starting preparations for Field Day in earnest. Field Day 2021 will take place June 26 - 27.

"This early decision should alleviate any hesitancy that radio clubs and individual Field Day participants may have with their planning for the event," said ARRL Contest Program Manager Paul Bourque, N1SFE.

For Field Day 2021, Class D stations may work *all other* Field Day stations, including other Class D stations, for points. This year, however, Class D and Class E stations will be limited to 150 W PEP output.

*ARRL Letter*, February 4, 2021

## Plans to Retrieve *Titanic* Wireless Equipment Put on Indefinite Hold

RMS Titanic, Inc., (RMST) the company that owns salvage rights to the *Titanic* shipwreck, has indefinitely put off its plans to retrieve the vessel's radio equipment for exhibit. The company cited the coronavirus pandemic for the delay, according to a January 29 court filing. The Atlanta-based company said its plans have faced "increasing difficulty associated with international travel and logistics, and the associated health risks to the expedition team." RMST's primary source of revenue comes from its exhibits of its vast collection of *Titanic* relics, which have been closed or seen only limited attendance due to virus-related restrictions.

RMST -- a subsidiary of Premier Exhibitions and the "salvor-in-possession" of the *Titanic* wreck site -- said its planned expedition to recover the ship's wireless station equipment remains a top priority, however, and will "take place as soon as reasonably practicable." The Marconi-equipped station transmitted the distress calls after the *Titanic* (on its maiden voyage) struck an iceberg some 370 miles off the coast of Newfoundland in 1912 and began sinking. The transmissions, heard by some nearby vessels, have been credited with helping rescue some 700 passengers in lifeboats deployed from the *Titanic*, but about 1,500 passengers were lost.

ARRL Letter, February 4, 2021

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## British Columbia Radio Amateur Copies Signal from Mars-Orbiting Satellite

As reported on Spaceweather.com, Canadian radio amateur Scott Tilley, VE7TIL, of Roberts Creek, British Columbia, has snagged another signal from deep space. His latest conquest has been to copy the signal from China's Tianwen-1 (pronounced "tee-EN-ven") probe, which went into orbit around Mars on February 10. Tilley told Spaceweather.com that the probe's X-band signal was "loud and audible."

"It was a treasure hunt," Tilley told Spaceweather.com. He explained that while the spacecraft did post its frequency with the International Telecommunication Union (ITU), it was too vague for precise tuning (X band is between 8 GHz and 12 GHz).

Launched last July, Tianwen-1 represents China's first Mars mission. It consists of an orbiter and a rover, which will land on the Martian surface in May or June 2021. It is able to photograph the planet's surface while in orbit.

Finding signals from deep space is a sub-hobby for Tilley, who seeks what he calls "zombie satellites" among other signal sources. In 2020, he tracked and identified signals from the experimental UHF military communication satellite LES-5.

In 2018, while hunting for an undisclosed US government spacecraft lost in a launch mishap, he spotted the signature of IMAGE (Imager for Magnetopause-to-Aurora Global Exploration), a NASA spacecraft believed to have died in December 2005.

Tilley has also picked up signals from NASA's Mars Reconnaissance Orbiter, and the United Arab Emirates Hope probe, both orbiting Mars some 124 million miles away.

He uses a homemade 60-centimeter dish and relies on software-defined radios (SDRs) to accomplish the task.

ARRL Letter, February 18, 2021

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## A "Perfect Coronal Mass Ejection" Could Be a Nightmare

A new study in the research journal *Space Weather* considers what might happen if a worst-case coronal mass ejection (CME) hit Earth -- a "perfect solar storm," if you will.

In 2014, Bruce Tsurutani of Jet Propulsion Laboratory (JPL) and Gurbax Lakhina of the Indian Institute of Geomagnetism introduced the "perfect CME." It could create a magnetic



storm with intensity up to the saturation limit, a value greater than the Carrington Event of 1859, the researchers said. The interplanetary shock would arrive at Earth within about 12 hours, the shock impingement onto the magnetosphere would create a sudden impulse of around 234 nanoteslas (nT), and the magnetic pulse duration in the magnetosphere would be about 22 seconds. Orbiting satellites would be exposed to "extreme levels of flare and interplanetary CME (ICME) shock-accelerated particle radiation," they said. The event would follow an initial CME that would "clear the path in front of it, allowing the storm cloud to hit Earth with maximum force."

The CME's 12-hour travel time would allow little margin for preparation. The CME would hit Earth's magnetosphere at 45 times the local speed of sound, and the resulting geomagnetic storm could be as much as twice as strong as the Carrington Event. Power grids, GPS, and other services could experience significant outages.

More recent research led by physicist Dan Welling of the University of Texas at Arlington took a fresh look at Tsurutani and Lakhina's "perfect CME," and given improvements in spaceweather modeling, he was able to reach new conclusions.

Welling's team found that geomagnetic disturbances in response to a perfect CME could be 10 times stronger than Tsurutani and Lakhina had calculated, especially at latitudes above 45 to 50°. Read an expanded version.

*ARRL Letter*, February 11, 2021

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## **IARU Agrees On Preliminary WRC-23 Positions**

The International Amateur Radio Union (IARU) has agreed on its preliminary positions for World Radiocommunication Conference 2023 (WRC-23), according to Barry Lewis, G4SJH, Chair of IARU Region 1 Spectrum Affairs.

"The preparatory work for WRC-23 has started across all [three] regions in both the ITU R [Radiocommunication Sector] and the Regional Telecommunications Organizations (RTOs)," Lewis said. "The IARU has representatives in these RTOs, and the ITU R contributing to the studies and helping to develop the regional positions on all the WRC agenda items. It is vital that the amateur community presents its views in a consolidated and consistent manner on each WRC agenda item across all the regions."



Lewis said the IARU Administrative Council has agreed on initial preliminary positions covering the six most important agenda items for the Amateur and Amateur-Satellite Services.

The preliminary IARU positions:

- Agenda Item 1.2 -- oppose the identification of 10.0 - 10.5 GHz for International Mobile Telecommunications (IMT) in Region 2 (the Americas), as well as the introduction of a mobile service allocation in the region.
- Agenda Item 1.12 -- support studies that include the need to protect the incumbent amateur service in the adjacent 50 - 54 MHz band. The agenda item calls for studies to establish a possible new secondary allocation for spaceborne radar sounders within a range of frequencies around 45 MHz.
- Agenda Item 1.14 -- support retaining the 248 - 250 GHz primary and the 241 - 248 GHz secondary Amateur and Amateur-Satellite Services allocations.
- Agenda Item 1.18 -- support retention of the amateur secondary allocation of 3300 - 3400 MHz in Regions 2 and 3.
- Agenda Item 9.1, Topic A -- The IARU said, "In considering potential new regulatory provisions for the recognition of space weather

## Maryland-DC Section, ARRL

### Legislative

systems, additional constraints on incumbent services including the Amateur and Amateur-Satellite Services must be avoided."

- Agenda Item 9.1 Topic B -- The IARU said, "Radio amateurs have successfully co-existed and innovated in the frequency range of 1240 - 1300 MHz for many years, and IARU believes that the regulatory status of the Amateur and Amateur-Satellite Services in this range is already clear."

*ARRL Letter*, February 11, 2021

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### Spring Red Cross Emergency Communications Drill Set

The spring 2021 Red Cross Nationwide Emergency Communications Winlink Drill will be held on May 8, which is World Red Cross and Red Crescent Day 2021. Details and instructions are available. Ahead of the May nationwide exercise, the American Red Cross (ARC) Emergency Communications training group will continue its *Winlink Thursdays* training sessions on March 11 and April 8.

*ARRL.com*, February 26, 2021

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HB663 - MD General Assembly - Local Government - Regulation of Amateur Radio Station Antenna Structures:

Declaring the intent of the General Assembly to codify a certain federal regulation concerning preemption of local regulation of amateur radio station antenna structures; requiring that an ordinance adopted by a county or municipality to regulate amateur radio station antenna structures may not preclude amateur radio communications, must accommodate amateur radio communications, and must constitute the minimum practicable regulation to accomplish the purpose of the ordinance; applying the Act to all counties and municipalities; etc.

<http://mgaleg.maryland.gov/mgawebsite/Legislation/Details/hb0663?ys=2021RS>

*MDC Sectuin News*, February 20, 2021

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### **\*\*Online Courses Available\*\***

National SKYWARN® courses are also offered online by COMET on their MetED site. These courses can be extra value to you however they do not replace the SKYWARN® Basics course taught by one of our meteorologists from the National Weather Service Baltimore/Washington. These online courses leave out vital information on the multitude of weather threats we get in the Mid-Atlantic region. Online - [https://www.meted.ucar.edu/training\\_course.php?id=23](https://www.meted.ucar.edu/training_course.php?id=23)

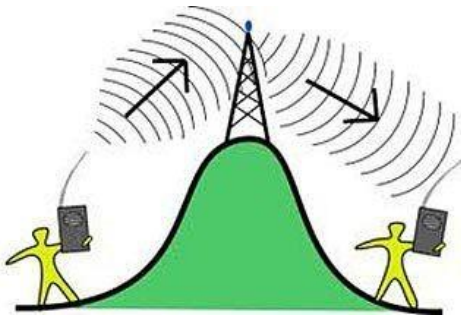
Also, check-out the "THE NATIONAL CAPITAL AREA SKYWARN SUPPORT GROUP" <https://www.wx4lwx.org/>

*MDC Sectuin News*, February 20, 2021



# AARC REPEATER FREQUENCIES

Davidsonville	Millersville	Glen Burnie	Annapolis
147.105+		147.075+	
223.880-	224.560-		
444.400+			442.300+



**PL 107.2 is active for all repeaters**  
**The 147.105, 147.075 and 444.400 repeaters are frequently linked. Please allow 2-3 seconds after the courtesy beep to allow for the link to reset.**

## Visiting AARC

Visitors are welcome at all meetings and on all nets.

Meetings are held in the Clubhouse at the Davidsonville Family Recreation Center, Queen Anne Bridge and Waysons Roads off Rt. 214 near Davidsonville, MD.

For en-route directions make contact on the 147.105 repeater.

## AARC Service Frequencies



**When assisting in community events, Field Days or races, AARC uses 146.430 MHz as the primary communications frequency. In the event the frequency is busy, the backup is 146.475 MHz**

# Repeaters

## 2 Meter Repeaters

Location	Frequency	Tone	Notes
Davidsonville	147.105+	107.2	AARC Repeater with morning traffic net.
Glen Burnie	147.075+	107.2	AARC repeater Located in Northern AA County.
Brandywine	147.150+	114.8	SMARC Repeater.
Prince Frederick	145.350-	156.7	SPARC/CARC Repeater.
Laurel	147.225+	156.7	Laurel ARC Repeater.
Millersville	146.805-	107.2	Repeater.
Barstow	145.350-	156.7	SPARC Repeater
Baltimore	147.030+	156.7	BRATS Repeater.
Westminster	145.410-	114.8	CCARC Repeater
Sykesville	147.285+	107.2	CCARC Repeater
Columbia	147.135+	156.7	Columbia ARC Repeater
Cooksville	147.390+	156.7	Columbia ARC Repeater
Bladensburg	146.610-	N/A	GMRA Repeater
Greenbelt	146.880-	N/A	GMRA Repeater
District Heights	145.230-	110.9	Prince George's ARES

## 1.25 Meter Repeaters

Location	Frequency	Tone	Notes
Davidsonville	223.880-	107.2	AARC 1.25M repeater *check to see if tied into 7.105...
Millersville	224.560-	107.2	AARC repeater Located in Northern AA County.
Barstow	223.960-	186.2	Southern MD Digital Group, analog
Baltimore	224.960-	N/A	BRATS Repeater.

## 70cm Repeaters

Location	Frequency	Tone	Notes
Davidsonville	444.400+	107.2	AARC 70 cm Repeater.
Annapolis	442.300+	107.2	AARC 70 cm Repeater
Millersville	449.125-	107.2	Maryland Mobileers Repeater.
Upper Marlboro	443.600+	103.5	SMARC 70 cm Repeater.
Sunderland	444.950+	156.7	CARC 70 cm Repeater
Baltimore	448.325-	N/A	BRATS 70 cm Repeater
Westminster	449.875-	127.3	CCARC 70 cm Repeater, FM and C4FM
Baltimore City	448.275-	156.7	Columbia ARC Repeater
Columbia	449.475-	156.7	Columbia ARC Repeater
Lanham	447.325-	110.9	Prince George's ARES

## Packet Stations

Location	Frequency	Call	Notes
Davidsonville	145.050	W3VPR	AARC Club packet node running JNOS
Davidsonville	145.010	W3VPR-5	Digipeter Relay to EOC Winlink
Millersville	145.010	W3AAC-5	Digipeter Relay to EOC Winlink
Glen Burnie	145.010	W3AAC-10	EOC Winlink system and digipeter

N/A - no tone required

## Amateur Radio NETS

Day	Name	Frequency (MHz)	Time
Daily	Baltimore Traffic Net	146.670	1830
Daily	Maryland Emergency Phone Net	3.820	1800
Daily	Maryland-DC-Delaware Traffic Net	3.643	1900 and 2200
Daily	Maryland Slow Net	3.563	1930
Weekdays	The "Holly Net"	147.105+ PL107.2 147.075+ PL107.2 440.400+ PL107.2	0700
Sunday	AA County ARES Net	146.805- PL107.2	2000
Sunday	Columbia Group Net	147.135+ PL156.7 147.390+ PL156.7 448.275- PL156.7 448.275-PL156.7	2100
Sunday (1st)	REACT Net	146.805- PL107.2	1930
Monday	Calvert ARA Net	145.350- PL156.7	1930
Monday	Maryland Mobileers Net	146.805- PL107.2	1930
Monday	Queen Anne's ARC Net	146.940- PL107.2	2000
Monday	Delmarva Amateur Radio Enhancement Net	146.820- PL156.7	2100
Tuesday	Kent Amateur Radio Society 2-meter Net	147.375+ PL156.7	1900
Tuesday	PG-ARES Training Net	145.230- PL110.9	1900
Tuesday (3rd)	Anne Arundel - CERT	442.300+ PL107.2	1900
Wednesday	Boating Net	146.805- PL107.2	1930
Wednesday	Elmer Net	145.350- PL156.7	1930
Wednesday	AARC Talk Net	147.105+ PL107.2 147.075+ PL107.2 440.400+ PL107.2	2000
Wednesday (2nd)	AERO 440 Net	449.575- PL123.1	2000
Wednesday (4th)	AERO 140 Net	147.240+ PL123.1	2000
Wednesday (odd)	Laurel Bi-weekly Club Net	147.225+ PL 156.7	2030
Wednesday (after 3rd Mon.)	Maryland HFHospital Net	3.820+/-	1900

## Echolink (E), Allstar (A) and IRLP (I) Repeater Access

Repeater	Location	PL Tone	Nodes
W1AW	Newington, CT (ARRL)	100 Hz	E - W1AWBDCT (501443); I - 4292
N3UR	Jarrettsville		E - 297689
K3YGG	Bethesda, NIH	156.7 Hz	E - 247914
K3GMR	Bladensburg		E - 796114
W3FDK	Frederick	141.3 Hz	E - 614369
W3CU	Millersville	107.2 Hz	E - 90911 (KA2JAI-R)
WA3NAN	Greenbelt		E - 40045
WA3FSJ	Port Deposit	107.3 Hz	E - 585690
K3WX	Ashton	156.7 Hz	E - 251966; I - 4088
WB3GXW	Silver Spring	156.7 Hz	E - 147225 (WASH_DC)
N3HIA	Dundalk	192.8 Hz	E - 480134; A - 49358
K3ARS	Warton	156.7 Hz	E - 249466
N3HIA	Joppa	103.5 Hz	E - 245186; A - 493800
N3UHD N3ITA K3KMA	Clear Spring Frederick Thurmont	79.7 Hz 79.7 Hz 103.5 Hz	E - 481682
K3VEC	Silver Spring	156.7 Hz	E - 84345; I - 4712
K3ORG	Ocean City	151.4 Hz	E - 54945; I - 4291
W3SMD	Barstow, Prince Frederick	186.2 Hz	A- 513100
KX3B	Elkton	131.8 Hz	A - 59149
N3KTX N3KZS	Frederick Manchester	107.2 Hz	I - 7070
KD3SU	Boonsboro	94.8 Hz	I - 8657
WA3UMY	Lexington Park		I - 4820
N3PX	Barstow, Prince Frederick	156.7 Hz	E - 315280 (WB3BW-R)
K3EMD	Trappe	156.7 Hz	E - 969856 (W3GAC-R)

## Special Event Stations

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**February 27-March 7**, 1000Z-0300Z, 1845 Florida Statehood Special Event, W4F, Winter Springs, FL. Lake Monroe Amateur Radio Society. 7038 CW 7238 SSB Phone 7074 FT8 7040 RTTY. Certificate. 1845 Florida Statehood Special Event C/O Orlando Amateur Radio Club, PO Box 574962, Orlando, FL 32857. 1845Florida.org

**March 11** 0000Z-0000Z, Battleship Texas Birthday, W5T, Cleburne, TX. Club KC5NX. 14.255 14.045 7.240 7.235 . QSL. Club KC5NX, 9200 Summit Ct W , Cleburne, TX 76033-8212. Club KC5NX back on the air for the celebration of the 107th birthday of the Battleship TEXAS. jay.n.violet@gmail.com or check here to find us:  
<https://www.dxwatch.com/dxsd1/dxsd1.php?f=0&c=w5t&t=dx> <https://www.qrz.com/db/kc5nx>

**March 13**, 1700Z-2359Z, USS Midway Museum Ship Special Event: Launching of USS Midway, NI6IW, San Diego, CA. USS Midway (CV-41) Museum Ship. 7.250 14.320 14.070 (PSK31) DSTAR vis PapaSystem repeaters. QSL. USS Midway CV-41 COMEDTRA NI6IW, 910 N Harbor Drive, San Diego, CA 92101. SASE please.  
[www.qrz.com/db/ni6iw](http://www.qrz.com/db/ni6iw)

**March 14**, 0000Z-2359Z, PI Day - David Sarnoff Radio Club, Princeton, NJ, N2RE, Princeton, NJ. David Sarnoff Radio Club. 14.250 14.050 7.200 7.050. QSL. Bob Uhrig, 104 Knoll Way, Rocky Hill, NJ 08553. Famous Princetonian Albert Einstein was born on PI Day. n2re.org

**March 20-March 21**, 1800Z-0300Z, Arrows from the Air, K7SWI, Middleton, ID. South West Idaho Amateur Radio Club. 28.427 14.227 7.227 3.827. Certificate & QSL. South West Idaho Amateur Radio Club, 332 West Dewey Ave, Nampa, ID 83686. What Are Those Giant Arrows Dotted the American Landscape? The arrows were part of a federal project to speed up communication across great distances. Transcontinental airmail service began in 1920, but even with this advancement over ground travel, service was slow. Pilots had no sophisticated instruments, so they couldn't fly at night or in poor weather. The government built a path of 70-foot-long concrete arrows every few miles from coast to coast, each painted yellow and topped with a 51-foot steel tower that had a rotating beacon. Using the path, an airmail pilot needed only half the time to deliver a letter from New York to San Francisco, The SOUTH WEST IDAHO ARC will operate 14.327, 7.227, 3827 plus or minus traffic/qrm.. K7SWI will issue a Certificate and QSL to all requested please include SASE for QSL only and SASE with one green stamp for QSL and Certificate. Reply to address of K7SWI. 332 West Dewey Ave Nampa, ID 83686. nq6s@att.net

**March 23-March 25**, 1400Z-2100Z, Honoring World War II Gunners at Buckingham Airfield W4LX, Fort Myers, FL. Fort Myers Amateur Radio Club. 28.360 21.360 14.270 146.685. Certificate. W4LX Fort Myers Amateur Radio Club, P.O. Box 61183, Fort Myers, FL 33906. [www.fmarc.net](http://www.fmarc.net)

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# Contest Corral

# March 2021

Check for updates and a downloadable PDF version online at [www.arrl.org/contest-calendar](http://www.arrl.org/contest-calendar).

Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start Date-Time	Finish Date-Time	Bands	Contest Name	Mode	Exchange	Sponsor's Website
1 0000	1 0100	1.8-14	K1USN Slow Speed Test	CW	Max 20 WPM, name, SPC	<a href="http://www.k1usn.com/sst.html">www.k1usn.com/sst.html</a>
1 1630	1 1729	3.5, 7	OK1WC Memorial (MWC)	CW	RST, serial	<a href="http://memorial-ok1wc.cz">memorial-ok1wc.cz</a>
1 2000	1 2130	3.5	RSGB 80-Meter Club Championship, Data	Dig	RST, serial	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>
2 0100	2 0159	1.8-50	Worldwide Sideband Activity Contest	Ph	RS, age group	<a href="http://wvsac.com/rules.html">wvsac.com/rules.html</a>
2 0200	2 0400	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	<a href="http://arsgrp.blogspot.com">arsgrp.blogspot.com</a>
2 1700	2 1900	3.5-14	RTTYOPS Weeksprint	Dig	Other's call, your call, serial, name	<a href="http://rttyops.wordpress.com">rttyops.wordpress.com</a>
2 1900	2 2100	3.5	AGCW YL-CW Party	CW	RST, serial, name	<a href="http://altagcw.de/index.php/en">altagcw.de/index.php/en</a>
3 1300	3 1400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	<a href="http://cwops.org/cwops-tests">cwops.org/cwops-tests</a>
3 1700	3 2000	144	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	<a href="http://ft8activity.eu/index.php/en">ft8activity.eu/index.php/en</a>
3 1900	3 2000	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	<a href="http://cwops.org/cwops-tests">cwops.org/cwops-tests</a>
3 2000	3 2100	3.5	UKEICC 80-Meter Contest	Ph	6-char grid square	<a href="http://www.ukeicc.com/80m-rules.php">www.ukeicc.com/80m-rules.php</a>
4 0300	4 0400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	<a href="http://cwops.org/cwops-tests">cwops.org/cwops-tests</a>
4 1800	4 2200	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-char grid square	<a href="http://nrricontest.no/index.php">nrricontest.no/index.php</a>
4 2000	4 2200	1.8-50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	<a href="http://www.skccgroup.com">www.skccgroup.com</a>
5 0145	5 0215	1.8-21	NCCC RTTY Sprint	Dig	Serial, name, QTH	<a href="http://www.ncccsprint.com">www.ncccsprint.com</a>
5 0230	5 0300	1.8-21	NCCC Sprint	CW	Serial, name, QTH	<a href="http://www.ncccsprint.com">www.ncccsprint.com</a>
6 0000	7 2359	1.8-28	ARRL International DX Contest, SSB	Ph	W/VE: RS, SP, DX: RS, power	<a href="http://www.arrl.org/arrl-dx">www.arrl.org/arrl-dx</a>
6 0000	14 2359	3.5-144	Novice Rig Roundup	CW	Name, QTH, rig, mbr	<a href="http://www.novicerigroundup.org">www.novicerigroundup.org</a>
6 0600	6 0800	7, 14	Wake-Up! QRP Sprint	CW	RST, serial, suffix of previous QSO	<a href="http://qrp.ru/contest/wakeup">qrp.ru/contest/wakeup</a>
6 1800	7 1359	1.8-28	Open Ukraine RTTY Championship	Dig	State/province/canton/etc, serial	<a href="http://krs.ho.ua/openrtty">krs.ho.ua/openrtty</a>
7 0700	7 1100	3.5	UBA Spring Contest, CW	CW	RST, serial, UBA section (if ON)	<a href="http://uba.be/hf/contest-rules">uba.be/hf/contest-rules</a>
7 1200	7 2200	3.5	NSARA Contest	CW Ph Dig	RS(T), county (if Nova Scotia)	<a href="http://nsara.ve1cfy.net/?page_id=82">nsara.ve1cfy.net/?page_id=82</a>
7 1800	7 2200	3.5	WAB 3.5 MHz Phone	Ph	RS, serial, WAB square or country	<a href="http://wab.internip.net">wab.internip.net</a>
10 1700	10 2000	432	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	<a href="http://ft8activity.eu/index.php/en">ft8activity.eu/index.php/en</a>
10 2000	10 2130	3.5	RSGB 80-Meter Club Championship, CW	CW	RST, serial	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>
10 2300	14 2300	3.5-14	AWA John Rollins Memorial DX Contest	CW	RST, eqpt type and year	<a href="http://antiquewireless.org">antiquewireless.org</a>
13 0000	13 2359	3.5-28	YB DX RTTY Contest	Dig	RST, serial	<a href="http://rtty.ybdxcontest.com">rtty.ybdxcontest.com</a>
13 0500	14 1100	50-1296	SARL VHF/UHF Analogue Contest	CW Ph	RS(T), 6-char grid	<a href="http://www.sarl.org.za">www.sarl.org.za</a>
13 1000	14 1000	3.5-28	RSGB Commonwealth Contest	CW	RST, serial	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>
13 1200	14 1200	3.5-144	F9AA Cup, SSB	Ph	RST, serial	<a href="http://www.site.urb.asso.fr">www.site.urb.asso.fr</a>
13 1200	14 1200	28	South America 10-Meter Contest	CW Ph	RS(T), CQ zone	<a href="http://sa10m.com.ar">sa10m.com.ar</a>
13 1200	14 2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	<a href="http://www.skccgroup.com">www.skccgroup.com</a>
13 1400	13 2000	3.5-28	AGCW QRP Contest	CW	RST, serial, class, mbr or "NM"	<a href="http://altagcw.de/index.php/en">altagcw.de/index.php/en</a>
13 1400	14 2100	3.5-50	Oklahoma QSO Party	CW Ph	RS(T), county or SPC	<a href="http://k5cm.com/okap.htm">k5cm.com/okap.htm</a>
13 1500	14 1500	1.8	Stew Perry Topband Challenge	CW	4-char grid square	<a href="http://www.kkn.net/stew">www.kkn.net/stew</a>
13 1600	14 1600	3.5-28	EA PSK63 Contest	Dig	RSQ, province or serial	<a href="http://concursos.ure.es/en">concursos.ure.es/en</a>
13 1800	14 0559	3.5, 7	Tesla Memorial HF CW Contest	CW	RST, serial, 4-char grid	<a href="http://www.radiosport.org.rs">www.radiosport.org.rs</a>
13 1800	14 1800	1.8-50	QCWA QSO Party	CW Ph Dig	Year first licensed, name, SPC	<a href="http://www.qcwa.org">www.qcwa.org</a>
13 1900	14 1900	1.8-28	Idaho QSO Party	CW Ph	County or SPC	<a href="http://pocatelloarc.org/idahohqsoparty">pocatelloarc.org/idahohqsoparty</a>
13 2300	14 0300	3.5-14	North American Sprint, RTTY	Dig	Other's call, your call, serial, name, SPC	<a href="http://ncjweb.com">ncjweb.com</a>
14 1400	17 0800	1.8-144	Classic Exchange, Phone	Ph	Name, RS, SPC, rig	<a href="http://www.classicexchange.org">www.classicexchange.org</a>
14 1800	15 0100	All	Wisconsin QSO Party	CW Ph Dig	County or SPC	<a href="http://www.warac.org/wqp">www.warac.org/wqp</a>
15 0000	15 0200	1.8-28	4 States QRP Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	<a href="http://www.4sgrp.com">www.4sgrp.com</a>
15 1800	15 2059	3.5, 7	Bucharest Digital Contest	Dig	RST, serial	<a href="http://yo3test201x.blogspot.com">yo3test201x.blogspot.com</a>
15 2000	15 2130	3.5	RSGB FT4 Contest Series	Dig	4-char grid square	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>
16 1700	21 1700	3.5-28	CLARA Chatter Party	CW Ph	RS(T), name, SPC	<a href="http://clarayl.ca/chatter-party">clarayl.ca/chatter-party</a>
18 0030	18 0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	<a href="http://naqcc.info">naqcc.info</a>
18 1930	18 2059	3.5	BCC QSO Party	CW Ph Dig	RS(T), t-shirt size	<a href="http://bavarian-contest-club.de">bavarian-contest-club.de</a>
20 0200	22 0159	3.5-28	BARTG HF RTTY Contest	Dig	RST, serial, 4-digit UTC time	<a href="http://www.bartg.org.uk">www.bartg.org.uk</a>
20 1200	21 1200	1.8-28	Russian DX Contest	CW Ph	RS(T), oblast or serial	<a href="http://rdxc.org/asp/pages/rulesq.asp">rdxc.org/asp/pages/rulesq.asp</a>
20 1400	20 1800	144, 432	AGCW VHF/UHF Contest	CW	RST, serial, power, 6-char grid	<a href="http://altagcw.de/index.php/en">altagcw.de/index.php/en</a>
20 1400	21 2359	All	Virginia QSO Party	CW Ph Dig	Serial, county or SPC	<a href="http://www.qsi.net/sterling">www.qsi.net/sterling</a>
20 2000	20 2159	1.8-28	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	<a href="http://google.com/site/feldhellclub">google.com/site/feldhellclub</a>
21 0700	21 1100	3.5	UBA Spring Contest, SSB	Ph	RS, serial, UBA section or serial	<a href="http://uba.be/hf/contest-rules">uba.be/hf/contest-rules</a>
21 2300	22 0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	<a href="http://qrpcontest.com/pigrun">qrpcontest.com/pigrun</a>
24 0000	24 0200	1.8-50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	<a href="http://www.skccgroup.com">www.skccgroup.com</a>
25 2000	25 2130	3.5	RSGB 80-Meter Club Championship, SSB	Ph	RS, serial	<a href="http://www.rsgbcc.org/hf">www.rsgbcc.org/hf</a>
27 0000	27 2359	1.8-VHF	FOC QSO Party	CW	RST, name, mbr (if any)	<a href="http://g4foc.org/qsoparty">g4foc.org/qsoparty</a>
27 0000	28 2359	1.8-28	CQ WW WPX Contest, SSB	Ph	RS, serial	<a href="http://www.cqwp.com">www.cqwp.com</a>
31 2000	31 2100	3.5	UKEICC 80-Meter Contest	CW	6-char grid	<a href="http://www.ukeicc.com/80m-rules.php">www.ukeicc.com/80m-rules.php</a>

There are a number of weekly contests not included in the table above. For more info, visit: [www.qrpfoxhunt.org](http://www.qrpfoxhunt.org), [www.ncccsprint.com](http://www.ncccsprint.com), and [www.cwops.org](http://www.cwops.org). All dates refer to UTC and may be different from calendar dates in North America. Contests are not conducted on the 60-, 30-, 17-, or 12-meter bands. Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state. Listings in blue indicate contests sponsored by ARRL or NCJ. The latest time to make a valid contact QSO is the minute listed in the "Finish Time" column. *Data for Contest Corral is maintained on the WA7BNM Contest Calendar at [www.contestcalendar.com](http://www.contestcalendar.com) and is extracted for publication in QST 2 months prior to the month of the contest. ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service.*