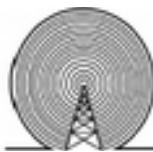


THE HAM ARUNDEL NEWS



Providing Fellowship and Community Service through Amateur Radio Since 1951

January 2020

HAPPY NEW YEAR

41st Year of Publication



Keith Miller, AE3D

The Prez Sez

As I write this, it's not January 2020 yet, but rather December 16, 2019 the morning after the Holiday Party. A year ago I was writing this column for the first time, and I was all excited about the prospects for the future.

I knew we needed to split our Committee structure into a system of committees and teams, with committee's being run roughly by Roberts Rules, and the Teams operating more like the military, with a leader in charge, and perhaps even an assistant leader. We did that. It was easy.

We needed a standing Rules Committee to start working on a Policy and Procedure Document to contain collective club wisdom, and retain information on long standing Board decisions. We did that too. In 2019 Chuck Tanner's Rules Committee created the Policy for the Trustee covering approved use of the W3VPR call sign.

The committee also set out to revamp the procedure, and rules for the annual Maryland DC QSO Party. The new procedure worked incredibly well. After several years of being months late on determining the winners, it too just over a month in 2019. Thank you Jim Wallace (N3ADF). Meanwhile rules changes are on the agenda this month.

Our Ham Shack project was well underway, thanks to my predecessor Richard Grace (KB3ZYQ) but it was still rough around the edges. By that, I mean networking was not completely operational. Logging computers weren't installed, and the front edges of the tables weren't even there. We needed rotor controls, a way to access the logging PC's remotely, another SignaLink USB and a system of jacks for access to key input and headphone output, to keep users from ever having to 'go behind the rig and touch the cables'. We had no way to train people to operate our Shack, nor did we have a plan to administer it, or any sort of group to do so. We only achieved parts of that in 2019, the work continues.

Outside we hadn't really started. We needed an



almost all new system of antennas to provide 160m through 70cm capability, and we had no plan in place either. Plus before we could start, we needed repairs to both club house towers, one having no antenna, the other needing antenna repair work. We got one tower fixed, and a plan in place to pour a base around the other. Plus the beam was replaced with a Cushcraft A3S instead of being repaired. The Ham Shack Antenna Committee headed by Bernie Coletta (NK3PS) may have a plan in place as soon as later this month.

Meanwhile the big surprise of 2019 was not that the Fox Hunt failed to materialize. (I can't win them all.) The surprise was a person, Board Member Eric Berman (KC3GDV). Eric had his own agenda. I knew when he ran for the Board he would be quite an asset, but when he took over the job of Facilities Team Leader, wow! Everyone just got out of his way.

Eric formed the Wrecking Crew, a group of members, who show up at the club house Tuesday mornings ready to work. Eric reorganized Field Day storage, and created a workshop in Storage Room #1 that just keeps getting better. He reorganized the club house, arranged a sale of excess antenna making materials, made agreements with the Eagle Scouts to build us stairs, clear the area around the pedestal for placement of a new tower, pour concrete around the west tower's base, and create a small movable podium for the club house. Several of those are still under way. Then, when the opportunity struck Eric picked up a larger, movable podium, and a series of tables that can convert our club house into a class room. And speaking of such, Eric volunteered the AARC to help with South River High School's STEM program. Their kids spent 4 days with us this past fall, for which Eric arranged teachers which included a number of club members plus Rol Anders (K3RA) and Frank Donovan (W3LPL).

I mention all of the work done in 2019, because its the kinds of things I thought I'd be thinking about during the Holiday Party. But I was wrong. I was late already when asked to pick up the meat at the deli, so I was even later. I had been working on our paperwork since 7:30am and in my rush printed an older version of one document that turned out to be critical. I was plenty grumpy, and want to apologize to anyone I talked to in the first few minutes. But after that I stopped worrying about all the paperwork I was going to have to fix later, and looked around. And then I smiled. All I could think was, gosh I have a lot of friends in this room. Everywhere I looked I saw people who had been part of one of my Technician or General license classes. Three of them are on the Board

now! Plus there were still more who helped as instructors or in sharing their experiences with our students. There were people I'd served with on the Board, or who were committee chairs, or served in other key positions. They were everywhere too. Folks I met at public service events. Regulars from the Holly Net, some who's faces I wasn't familiar with but who's names and call signs were well known to me. There were those who worked Field Day, and of course my superb Field Day Chairman, David Rawley N3AT. Some were presenters at Membership Meetings. Some I knew from VE Testing, one or two from kit building, and a number of meeting regulars. All friends, all hams, all members of the Anne Arundel Radio Club, and all people who I could just walk up to and say 'Hi'.

So when I look back at all my years at the Anne Arundel Radio Club.... It's not what I got done that's important, it's the friends I made. To me you are the important part of amateur radio. I need to focus more on that. Let me thank all of you for being my friends.
73s...

Keith Miller, AE3D

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## Did you get a New VHF/UHF H/T or Mobile or Base For Christmas?

Congratulations for all who have passed their tests throughout 2019. You now have your 'ticket' and hopefully have purchased your VHF/UHF radio. It does not have to be new but it is new to you. There are some valuable sets you need to take to get full enjoyment from your equipment.

1. READ THE MANUAL and then talk to a friend who can guide you with the programming and set up of this unit.

2. Be sure you have a decent antenna and power supply for your radio.

3. Finally, be a member of an active radio club, such as the Anne Arundel Radio Club. There will be someone there who can answer all of your questions. There are no questions to dumb and if necessary keep asking until you understand the capabilities of your new acquisition.

The Anne Arundel Radio Club is associated with the American Radio Relay League (ARRL). The "League" is another tremendous source of information from line of site communications to around the world and even space communications. The 'League' is divided up into sections and we are part of the Maryland/ District of Columbia section (MDC). Below is some general information that will help guide you in your quest to master this craft.

=====

Here is the band plan for the VHF/UHF Amateur Radio Spectrum.

### VHF 2m (146 MHz) Repeater Offsets & add PL Tone if required

145.1 - 145.5 MHz -600 kHz

146.0 - 146.4 MHz +600 kHz

146.6 - 147.0 MHz -600 kHz

147.0 - 147.4 MHz +600 kHz (e.g. Listen 147.225 / Transmit 147.825)

147.6 - 148.0 MHz -600 kHz

\*\* Some 2m repeater offsets are not ±600kHz

### VHF 1¼m (222MHz) Repeater Offsets & add PL Tone if required

223.85 – 224.98 MHz – 1.6 MHz

### UHF 70cm (440MHz) Repeater Offsets & add PL Tone if required

442.0 – 445.0 MHz + 5 MHz (California repeaters start at 440 MHz)

447.0 – 450.0 MHz – 5 MHz

### MDC SECTION Propagation Beacon(s):

144.296 MHZ W3APL Laurel MD at Grid: FM19ne w/ 10W+loop @ 60'

FCC Technician Class Licensees have several Radiosport / Contesting opportunities  
<http://contests.arrl.org/>.

First, sign-up "NOW" for Logbook of the World (LoTW), if you're not an ARRL member - join today. <http://www.arrl.org/logbook-of-the-world> LoTW helps gather, validate and certificate you for many QSO Awards, so get credit for you QSOs.

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## Maryland DC Section Reflectors

We introduced a new MDC Section reflector, ARRL MDC Section Winlink Training Group for P2P and Hybrid networks, or MDCQRV for short. Please make use of this tool to sharpen skills and fine tune your configuration files. Located at:

<https://groups.yahoo.com/neo/groups/MDCQRV/info>.

The new ARRLMDCSection Yahoo Reflector is now available. If you are not a member.. .you should be!! I encourage you to use this to stay informed or keep in-touch with the rest of your fellow ARES members. With the wide distribution of this newsletter coming out only once a month, this Yahoo Site will keep you up to date with late breaking news, including a possible disaster call up. There is very little traffic to clog your in box.

I don't know if all the DECs and ECs are subscribing to the Yahoo Reflector. If you are not, please do. This is going to be the quickest way possible to inform MDC Section ARES of current incidents and impending disasters. Please do it now.

You can join at:

<https://groups.yahoo.com/neo/groups/ARRLMDCSECTION/info>.

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Winter Field Day

MDC SECTION - One MONTH before Amateur Radio Winter Field Day -

Winter Field Day is a 24-hour long event, from **Saturday, January 25th, 2019, 2pm EST (1900 UTC)** to **Sunday, January 26th, 2019, 2pm EST (1900 UTC)**.

All bands may be used, except 12, 17, 30 and 60 meters which prohibit contesting.

All modes are available. MDC Section Winter Field Day groups: Prince George's County, Maryland ARES/RACES (<https://www.pgares.org/>) and Anne Arundel County Amateur Radio (<https://www.w3vpr.org/node/362>). More info about Winter Field Day at <https://www.winterfieldday.com/>

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## Fine-tuning your radio skills and station is easy with the

### ARRL W1AW Operating Schedule

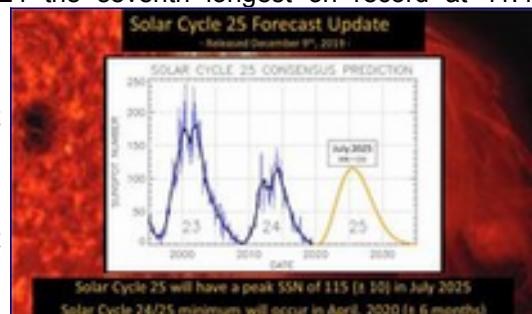
(in this issue)  
Code, Digital, Voice.  
Also available via W1AW Conference Server "W1AWBDCT"

<http://www.arrl.org/echolink-irlp>

<http://www.arrl.org/w1aw-operating-schedule>

## NOAA/NASA Panel Concurs that Solar Cycle 25 will Peak in July 2025

The NOAA/NASA-co-chaired international Solar Cycle Prediction Panel has released its [latest forecast](#) for the coming Solar Cycle 25. The panel's consensus calls for a peak in July 2025 ( $\pm 8$  months), with a smoothed sunspot number of 115. The panel agreed that Cycle 25 will be of average intensity and similar to Cycle 24. The panel additionally concurred that the solar minimum between Cycles 24 and 25 will occur in April 2020 ( $\pm 6$  months). If the solar minimum prediction is correct, this would make Solar Cycle 24 the seventh longest on record at 11.4 years. In its preliminary forecast released last April, the scientists on the panel forecast that Solar Cycle 25 would likely be weak, much like the current Cycle 24.



"Solar Cycle 25 may have a slow start, but is anticipated to peak with solar maximum occurring between 2023 and 2026, and a sunspot range of 95 to 130. This is well below the average number of sunspots," the panel said last spring, adding with "high confidence" that Cycle 25 "should break the trend of weakening solar activity seen over the past four cycles." The panel said the expectation that Cycle 25 would be comparable in size to Cycle 24 suggests that the steady decline in solar cycle amplitude seen from Cycle 21 through Cycle 24 has ended and that there is no indication of an approaching "Maunder-type" minimum. Cycle 24 peaked in April 2014 with an average sunspot number of 82.

The Solar Cycle Prediction Panel forecasts the number of sunspots expected for solar maximum, along with the timing of the peak and minimum solar activity levels for the cycle. It is comprised of scientists representing NOAA, NASA, the International Space Environment Services, and other US and international scientists.

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[Take A Brief Survey](#)



ARRL is inviting listeners of the [So Now What?](#) podcast for amateur radio newcomers to [take a brief survey](#) about the bi-weekly podcast. The survey

will close on December 13. -- Thanks to Michelle Patnode, W3MVP, ARRL Communications Content Producer

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## Net Control Radio Operators

ARE NEEDED for the HOLLY NET

during the work-weekdays -

from 0700 to 0900 am.

Contact: Jim Wallace, N3ADF

## ARRL to Launch New On The Air Magazine in January

ARRL is launching a new magazine, On the Air, in January 2020. To be published on a bimonthly basis, On the Air will offer new and beginner-to-intermediate-level radio amateurs a fresh approach to exploring radio communication. Each issue will include advice and insights on topics from the variety of Amateur Radio interests and activities: radio technology, operating, equipment, project building, and emergency communication. The goal of this new magazine is to be a vital resource in helping new and newer radio amateurs get active and involved in radio communications.

<http://www.arrl.org/news/arrl-to-launch-new-on-the-air-magazine-in-january>

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Everything Should Be Made As Simple As Possible, But Not Simpler

By Dan Romanchik, KB6NU

"Everything should be made as simple as possible, but not simpler" is a quote attributed to Albert Einstein (<https://quotationcelebration.wordpress.com/2017/01/07/everything-should-be-made-as-simple-as-possible-but-not-simpler-albert-einstein/comment-page-1/>). Here's one way to apply this principle in amateur radio, specifically to code practice oscillators.

A week ago, my friend, Paul emailed me:

"I am planning on teaching a two-hour introduction to Morse code to 14 girls ages 8 to 9 [[Paul's granddaughter is a Girl Scout.]]. I plan on having the girls build a code practice device. I need your help in selecting a low cost buzzer and battery holder. Please take a look around and see what you can find. I would like to limit the power to one or two AA batteries."

I replied that I'd be happy to help him with the demonstration, and offered the following advice:

"A while back, I built the QRPGuys' K7QO Code Practice Oscillator (<https://qrpguys.com/k7qo-code-practice-oscillator>). It uses a CR2032 coin battery.

"Unfortunately, they don't sell it anymore, but the assembly manual is still online (https://qrpguys.com/wp-content/uploads/2017/03/cpo_assy_012616.pdf). The assembly manual doesn't call out specific parts, but here are some Amazon SKUs:

- B00J4BK0NS, Black 3V Electromagnetic Type Piezo Buzzer, 20 pcs/\$6.58
- B06XF3K4NP, Coin Cell Button Battery Holder, 30 pcs/\$9
- B008SNZUYC, 3 Pin PCB Mount Female 3.5mm Stereo Jack, 10 pcs/\$5.40
- B071RMD6FD, 1/8" 3.5mm Stereo Male Connector, 10 pcs/\$7

"Batteries are available at the dollar store for about 30 cents each. So, you could do the whole thing for less than \$5 for sure, even with a printed circuit board, which I would suggest that we do. Heck, if you ask nicely, the

QRPGuys might even give us the artwork, or even better, have some boards still in stock. Even if they have neither, you should be able to get the boards in plenty of time."

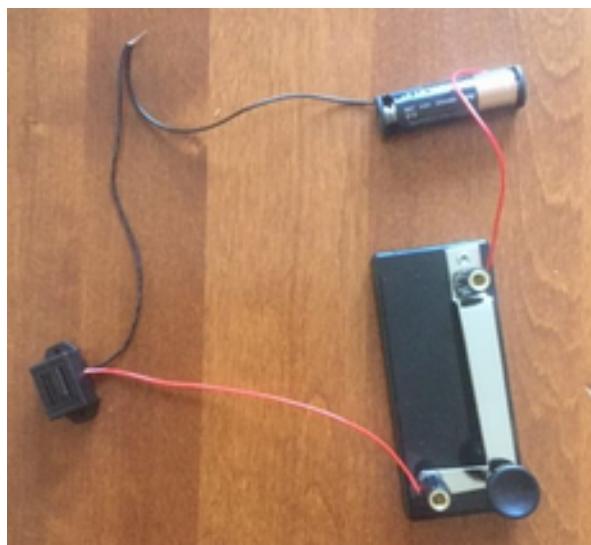
Later that day, Paul replied:

Thanks, Dan, for the information and making yourself available to help. I am just going to use a buzzer, key, and battery. The buzzer has a frequency of 400 Hz.

<https://www.xump.com/science/Buzzer-Leads15V.cfm>

- <https://www.xump.com/science/ContactKeySwitch.cfm>
- <https://www.xump.com/science/Single-AA-Battery-Holder.cfm>

And this morning, he sent me this photo, noting, "FYI. Also sounds great."



I think that this is as good an example of "Everything should be made as simple as possible, but not simpler" as there can be. I've volunteered to help Paul with his class. That will be fun, too.

Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (KB6NU.Com/study-guides/), and often appears on the ICQPodcast (icqpodcast.com). When he's not trying to keep things as simple as possible, but not simpler, he likes to build stuff and operate CW on the HF bands.

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## Massachusetts Rule For Mobiles

**.Massachusetts has settled on a one-hand-on-the-wheel rule for mobiles.** The Bay State's two ARRL Section Managers report they have received confirmation



that the Commonwealth's distracted driving law does not apply to two-way mobile radio operation. The new law "permits use of a federally licensed two-way radio, provided that one hand remains on the steering wheel at all times," except as provided in sections 8M, 12A, and 13B of the law. -- *Thanks to Western Massachusetts SM Ray Lajoie, KB1LRL, and ARRL Eastern Massachusetts SM Tom Walsh, K1TW*

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AARC STAFF – 2020 Officers

President	Keith Miller / AE3D president@w3vpr.org	240 758 0423
Vice President	Jim Wallace, (N3ADF) vice.president@w3vpr.org	
Secretary	Bernie Coletta / NK3PS secretary@w3vpr.org	
Treasurer	Bill Mooney / KA3UQQ treasurer@3vpr.org	
Director A	Eric Berman / KC3GDV eric.board19@w3vpr.org	
Director B	Doug Ellmore, (NA1DX) TBA	
Director C	Scott DeMatteo, (W3GTR) TBA	

Support Staff

Membership Secretary	
Information Officer	Ed Santilli / KB3YMU info.officer@w3vpr.org
Safety	John Bowes / KB3LY safety@w3vpr.org
Security	Tom Provenza / N3HLD security@w3vpr.org

Representatives

ARES/RACES	John Bowes / KB3LY ares.races@w3vpr.org
DFRC Rep	Milford Craig / N3WYG dfrc.rep@w3vpr.org
FAR	Ed Brown / AA3EB far.rep@w3vpr.org
Fox Hunt	Jim Wallace / N3ADF
Joint 440 Comm	Gordon Davids / WJ3K joint440@w3vpr.org
MD Slow Net	(T B A)
MDC Section Manager	Marty Pittinger / KB3MXM arr.sec.mgr@w3vpr.org
Public Relations	Ed Santilli / KB3YMU pr@w3vpr.org
Resident Agent	Justin Leishman / KC3BJT ra@w3vpr.org
Trustee	Dick Mayo / WW3R trustee@w3vpr.org

Committees

Club Sale & Auction	Ike Lawton / W3IKE club.sale@w3vpr.org
Digital Networking	Ted Ruddy
Facilities	Eric Berman / KC3GDV facilities@w3vpr.org
Field Day	(TBD) field.day@w3vpr.org
Station Manager	(TBD)

Holly Net	Jim Wallace / N3ADF holly.net@w3vpr.org
HSMM-MESH	(TBD) hsmm.mesh@w3vpr.org
Kit building & Repair	'Raven' Weiland / KB3MUV 203 948 5369 kit@w3vpr.org
MDC QSO Party	Jim Wallace / N3ADF mdcqspop@w3vpr.org
Newsletter	Milford Craig / N3WYG newsletter@w3vpr.org
Packet Radio	Jonathon Gafe / AE2JG packet@w3vpr.org
Program	Tim Nagel / KB3YQK vice.president@w3vpr.org
Public Service	Erick Graves / WA3G public.service@w3vpr.org
Repeater Ops	John Williams / K8JW repeaters@w3vpr.org
Rules	Chuck Tanner / K3ACT rules.chair@w3vpr.org
Service Hours	Jim Wallace / N3ADF service.hours@w3vpr.org
Tower	(TBD) tower@w3vpr.org
Training	Keith Miller / AE3D training@w3vpr.org
VE Team	David Rawley / N3AT testing@w3vpr.org
Webmaster	Mark Bova / W2PAW webmaster@w3vpr.org
Wed. Nite Net	Jamison Phipps / W3KNH wednesday.night.net@w3vpr.org
Winter Field Day	Rick Steer / AB3XJ winter.field.day@w3vpr.org

Groups

Board of Directors	board19@w3vpr.org
Kit Building Committee	kitbuilding@w3vpr.org
Rules Committee	rules@w3vpr.org
*****	*****



VE Testing Schedule

**Second Saturday of each month
– Noon – AARC –**

David Rawley, N3AT testing@w3vpr.org

**Third Saturday of each month – 9AM – Laurel ARC –
John Creel, 301-572-5124**

**Fourth Tuesday of each month – 6PM – MMARC –
Mike Montrose / KA2JAI 443-310-4907 web site is
tinyurl.com/marylandmobileers**

To all exams bring:

- Picture ID
- Social Security Number or FCC Registration Number (FRN)
- **ORIGINAL** and a **COPY** of current FCC amateur radio license
ORIGINAL and a **COPY** of all element credits (eg., FCC letters, old licenses or unexpired Certificates of Successful Completion of Examination-CSCE)

W1AW 2019/2020 Winter Operating Schedule

Morning Schedule:

Time Mode Days

1400 UTC (9 AM EST)	CWs	Wed, Fri
1400 UTC (9 AM EST)	CWf	Tue, Thu

Daily Visitor Operating Hours:

1500 UTC to 1700 UTC - (10 AM to 12 PM EST)

1800 UTC to 2045 UTC - (1 PM to 3:45 PM EST)

(Station closed 1700 to 1800 UTC (12 PM to 1 PM EST))

Afternoon/Evening Schedule:

2100 UTC (4 PM EST)	CWf	Mon, Wed, Fri
2100 "	CWs	Tue, Thu
2200 " (5 PM EST)	CWb	Daily
2300 " (6 PM EST)	DIGITAL	Daily
0000 " (7 PM EST)	CWs	Mon, Wed, Fri
0000 "	CWf	Tue, Thu
0100 " (8 PM EST)	CWb	Daily
0200 " (9 PM EST)	DIGITAL	Daily
0245 " (9:45 PM EST)	VOICE	Daily
0300 " (10 PM EST)	CWf	Mon, Wed, Fri
0300 "	CWs	Tue, Thu
0400 " (11 PM EST)	CWb	Daily

Frequencies (MHz)

CW: 1.8025 3.5815 7.0475 14.0475 18.0975

21.0675 28.0675 50.350 147.555

DIGITAL: - 3.5975 7.095 14.095 18.1025

21.095 28.095 50.350 147.555

VOICE: 1.855 3.990 7.290 14.290 18.160

21.390 28.590 50.350 147.555

Notes:

CWs = Morse Code practice (slow) = 5, 7.5, 10, 13 and 15 WPM

CWf = Morse Code practice (fast) = 35, 30, 25, 20, 15, 13 and 10 WPM

CWb = Morse Code Bulletins = 18 WPM

CW frequencies include code practices, Qualifying Runs and CW bulletins.

DIGITAL = BAUDOT (45.45 baud), BPSK31 and MFSK16 in a revolving schedule.

Code practice texts are from QST, and the source of each practice is given at the beginning of each practice and at the beginning of alternate speeds.

On Tuesdays and Fridays at 2330 UTC (6:30 PM EST), Keplerian Elements for active amateur satellites are sent on the regular digital frequencies.

A DX bulletin replaces or is added to the regular bulletins between 0100 UTC (8 PM EST) Thursdays and 0100 UTC (8 PM EST) Fridays.

Audio from W1AW's CW code practices, CW/digital bulletins and phone bulletin is available using EchoLink via the W1AW Conference Server named "W1AWBDCT." The monthly W1AW Qualifying Runs are presented here as well. The audio is sent in real-time and runs concurrently with W1AW's regular transmission schedule.

All users who connect to the conference server are muted. Please note that any questions or comments about this server should not be sent via the "Text" window in EchoLink. Please direct any questions or comments to w1aw@arrl.org.

In a communications emergency, monitor W1AW for special bulletins as follows: Voice on the hour, Digital at 15 minutes past the hour, and CW on the half hour.

All licensed amateurs may operate the station from 1500 UTC to 1700 UTC (10 AM to 12 PM EST), and then from 1800 UTC to 2045 UTC (1 PM to 3:45 PM EST) Monday through Friday. Be sure to bring your current FCC amateur radio license or a photocopy.

The W1AW Operating Schedule may also be found on page 100 in the November 2019 issue of QST or on the web at,

<http://www.arrl.org/w1aw-operating-schedule>

Used with permission

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Orlando HamCation® 2020

Orlando HamCation® 2020 visitors in February will be able to navigate the convention with ARRL's free mobile event app, ARRL Events. First introduced for the [Dayton Hamvention](#)® in May 2019, the app received

extremely positive reviews from users. ARRL has partnered with Orlando HamCation and Dayton Hamvention to re-introduce the app for these 2020 events. "The user-friendly event app will help convention-goers find exhibits and forums, follow prize drawings, and connect with other attendees," said ARRL Convention and Event Coordinator Eric Casey, KC2ERC, who has been working with Orlando HamCation Committee members to help ready the app for the 2020 event. The free *ARRL Events* app will be available in late December for both Apple iOS and Android devices, along with a web-browser version. Orlando HamCation 2020 takes place February 7 - 9 and has been sanctioned as the 2020 ARRL Northern Florida Section Convention. [Visit](#) the HamCation website to purchase tickets.

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The Sun's Magnetic Field Flips for Cycle 25 –

The switch happens around the peak of solar activity or solar maximum and marks the sound-half beginning of the Solar Cycle.

The appearance of Sunspot marks the beginning of the next Solar Cycle but what occurs before the beginning of the Sunspots? The change in the Sun's yearly average total irradiance during an 11-year cycle is on the order of 0.1 percent or 1.4 watts per square meter. But is this measurement good-enough to predict the onset of the next Solar Cycle?

Irradiance (also called insolation) is a measure of the amount of sunlight power that falls upon one square meter of exposed surface, usually measured at the 'top' of Earth's atmosphere. This energy increases and decreases with the season and with your latitude on Earth, being lower in the winter and higher in the summer, and also lower at the poles and higher at the equator. But the sun's energy output also changes during the sunspot cycle!

The first sunspot appearance sun's hemisphere will herald in the beginning of a new 11-year solar cycle, researchers say. Here on Earth, it's not obvious what that means to our everyday life but Solar activate of current Cycle 24 - nearing the lowest point of 11-yr means Solar Cycle-25 is forecasted to peak soon; ending by 2030.

See-

<http://www.arrl.org/w1aw-bulletins-archive-propagation>

<http://www.arrl.org/propagation-of-rf-signals>

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communications, moonbounce, meteor scatter, and more. What truly excites me about our hobby is the diversity of these modes and the fact that, as we move to the future, we still enjoy the technologies of the past." Gerbs noted that Hamvention has long been a place to find vintage parts and gear and to see the latest technology. "The theme acknowledges the role that amateur radio has always played and will continue to play in future communication developments," Hamvention said, acknowledging the contributions of the many hams who actively work on new ideas, equipment designs, and software to improve electronic communication. Hamvention 2020 takes place May 15 - 17 at the Greene County Fairgrounds and Expo Center in Xenia, Ohio

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MDC SECTION HAMFEST :

Sunday, January 26

Post-Holiday Hamfest at Odenton Volunteer Fire Department, 1425 Annapolis Road (Rt. 175) Odenton MD Maryland Mobileers Amateur Radio Club

Opens: 7:30 AM until Noon

VE Exam: 9AM and pre-registration is preferred & walk-ins are welcome

Card Checking: QSL Card checking will be available on site

Talk-In: 146.805 MHz PL107.2)

Public Contact: Bruce AB3AC

Phone: 410-456-2500 / Email:

bmcpherson73@verizon.net

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ARESMAT Zoom Conferencing

ARESMAT Zoom conferencing, initiated and continued through the dedication of Ken KG4USN MDC ASM PIC/EA will now shift leadership to Steven KC3DSO, AEC and continue the collaboration with our adjacent Sections. Next Video Conference will be schedule with participants.

Contact Steven KC3DSO MDC ASEC k3dso@gmail.com to participate and learn more about ARESMAT Amateur Radio Mutual-Aid. The next ARESMAT Video Conference Call is in January 2020. Contact our ASEC Steven KC3DSO to be included.

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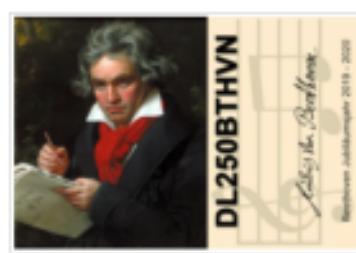
Theme For The 2020 Dayton Hamvention®

The theme for the 2020 Dayton Hamvention® will be "Amateur Radio, The Future." Hamvention General Chair Jack Gerbs, WB8SCT, invited Hamvention attendees to celebrate amateur radio's past, present, and future. "As amateur radio operators, we enjoy many modes of operating," Gerbs said. "We also enjoy challenges such as satellite



Event To Honor Beethoven

A year-long special event will honor Beethoven. German special event station DL250BTHVN will be active between December 16, 2019, and December



17, 2020, to honor the 250th anniversary of the birth of famed composer Ludwig van Beethoven. The Beethoven anniversary year will take place under the auspices of Germany's Federal President Frank-Walter Steinmeier. Beethoven was born in December 1770 in Bonn, Germany, and lived there for the first 22 years of his life. The anniversary event is aimed in part at highlighting Beethoven's extensive oeuvre as a composer and to boost Bonn's reputation as a "Beethoven city." QSL via direct or by the bureau.

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SECTION TRAFFIC MANAGER'S REPORT

MDC 1909 STM REPORTS

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STM TRAFFIC REPORT

FOR THE MDC WEB SITE 1911

MDC NTS NETS:

MEPN 1911: W3YVQ QND/29 QNI/364 QTC/14
MINS/528 BTN 1911 AB3WG QND/30 QNI/305 QTC/45
MINS/479 MDD 1911 AA3SB QND/56 QNI/219 QTC/68
MINS/437 MSN 1911 N3AEA QND/26 QNI/78 QTC/8
MINS/373

PSHR: NI2W 170, W3YVQ 135, K3IN 110,
WB3FTQ 100, N3JET 100, AB3WG 92, AA3SB 92;

TFC: K3IN 220, WB3FTQ 107, N3JET 76, W3YVQ
52, AB3WG 43, AA3SB 35, NI2W 5

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HF PROPAGATION

MEPN TIME CHANGE: On NOV 3rd the net moved one hour earlier to the winter schedule: Pre-net 1630L, formal call 1700L.

MEPN: The net NVIS propagation was functional in November, 2019, with good signals after 1800L most evenings. Due to the low solar activity, the afternoon propagation suffered with less effective NVIS propagation between 1730L and 1800L, often with the residual E layer from the daytime sun angle obscuring the F1-F2 layers overhead, although this effect is diminishing as the days grow shorter. The MEPN DTS stations continue to provide liaison with the national digital messaging services including DTN and Winlink.

MDD: November NVIS propagation for local MDC stations on MDD early was fair to poor due to falling MUFs. Some nights a residual E layer provided good NVIS prop. The MUF sometimes recovered for the Region nets and MDD late, but NOV is likely to see failed nets, both early and late, without help from the sun. Last winter we saw MUFs down to 2 MHz some nights. It will be an interesting winter.

John, WB3GXW-L, continues to make that EchoLink resource available for MDD use on nights when propagation fails. 160m may need to be used as winter progresses. Check out your antennas. Outbound traffic to 3RN may be handled by DTS representatives as needed for posting on the Digital Traffic Net (DTN) when prop permits. DTN stations operate 24/7 so traffic will flow across the country as prop permits, day or night.

CW OPERATORS NEEDED

Additional CW operators are needed for liaison from MEPN and BTN to MDD and to the higher nets, and Net Control Stations are also needed on MDD and 3RN/C4. The evening NTS and RRI nets in Cycle 4 nationwide are conducted on CW.

MEPN/BTN/MDD/3RN ECHOLINK:

MEPN representatives check for EchoLink check-ins starting at net call daily via the WB3GXW-L link node (or *WASH_DC* conference node backup if the -L node is not available). The conference bridge is available for MEPN, MDD, BTN, MSN, and 3RN stations during periods of failed propagation.

MSN CW TRAINING:

The MSN net continues to operate and serve nightly at 1930L on 3563 kHz. Ron, N3AEA, is stepping up to fill the Net Manager's role. Thanks, Ron. Show your support by checking in even if you do not take training. MSN needs NCS stations and liaison stations to early and late MDD. Ron could use your help.

TN LOCAL NTS TRAFFIC AND TRAINING NET:

The BTN continues to meet on 145.33/R (no tone) daily at 6:30PM local time. The BTN was established to provide a welcoming place for newcomers to the Amateur Service, and their first exposure to directed traffic nets and message handling. The NM, AB3WG, has initiated plans for broader cooperation between BTN and MSN to foster more awareness between operators using the respective modes. Instructive message swapping and liaison duties are in effect. A new cooperative effort has been launched between ANAR ARES(r) and the BTN as well.

Thanks to all the Section traffic net NCS stations, RRI/DTN and WL2K stations, liaisons, and traffic handlers for the continuing effort to keep the nets running and traffic moving.

Thank you for your continued support of MDC integrated ARES(r), RRI, and NTS operations.

Merry Christmas and best holiday wishes to all; and a very happy and healthy New Year.

73, W3YVQ, MDC ASM, STM
w3yvq @ arr.net
w3yvq @ winlink.org from WL2K

Used with permission Dec 20, 2019 MDC Section News

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JOTA Station Participation Up In 2019

The Boy Scouts say JOTA station participation was up in 2019. The Scouts report that, although overall Jamboree On the Air (JOTA) 2019 participation was down slightly from 2018, "our calculations show that each station averaged an additional 13 people in attendance over 2019. This shows an aggregate increase of 24% attendance per station, even with our reported



stations being down from 266 in 2018 to 201 in 2019." The Scouts reported that 13,783 individuals took part in JOTA 2019, down from 14,708 in 2018.

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CONGRATULATIONS

RHODES, BRAD E -- KG4COS	-- Upgrade to Amateur Extra
Rudie, James T -- KC3LMV	-- Upgrade to Amateur Extra
Cherry, Denise M -- KC3OIA	-- Upgrade to General
Ehrenreich, John M -- K3DDT	-- Upgrade to Amateur Extra
Laur, Matthew J -- KC3OOB	-- New Technician
Beck Jr, Robert W -- KC3OOC -	-- New Technician
Robson, Christopher L -- KC3OOD	-- New Technician

*Good job! Well done! Welcome to the Amateur Radio.
Please join us in all the activities of the
Anne Arundel Radio Club.*

*President and board of Directors
Anne Arundel Radio Club
December 2019*



A 600 W Broadband HF Amplifier Using Economically Priced LDMOS Devices

Razvan Fatu, M0HZH/YO9IRF, has designed and built a [600 W broadband HF amateur radio amplifier](#) that uses a pair of low-cost MRF300 [LDMOS](#) (laterally diffused metal-oxide semiconductor) MOSFET devices. LDMOS devices are widely used in RF power amplifiers. Fatu's model A600, now at version 1.2, was designed to demonstrate the capabilities of MRF300s as linear broadband devices in the 2 - 50 MHz range.

"The announcement of the MRF300 and MRF101 transistors by NXP in 2018 has generated quite a spark of interest in the amateur radio community, and as soon as I learned about them, I wanted to get some on my workbench," Fatu said. He has entered his project in the NXP Homebrew RF Design Challenge 2019.

"To achieve the target of 600 W output while also minimizing the level of even-number harmonics, a push-pull configuration of two transistors is used," he explains. "Luckily, the manufacturer made it easy to design the PCB layout for such a thing by offering two versions -- the MRF300AN and MRF300BN -- that have mirrored pinouts." The individual transistors are specified at 330 W output and come in a TO-247 package, with the source connected to the tab. The recommended supply range is



"This is a homebrew project, so the test setup is pretty typical of a hobbyist's test bench," Fatu said. "Most of the equipment is not of lab-grade precision, but still accurate enough for amateur radio."

around 45 V across a reasonably large bandwidth; the aim is to cover 1.8 to 54 MHz," Fatu said. "Main challenges when designing this amplifier are related to achieving

good input and output matching over the entire frequency range as well as maintaining high and flat gain. Good linearity and a low level of harmonic products are mandatory. As the TO-247 is not a package specifically designed for high-power RF, there are some challenges with thermal design and PCB layout as well."

The circuit uses a 4:1 transformer at the input.

He used surface-mount devices wherever possible, to minimize stray inductance, and designed the circuit board power traces to be thick enough to support the high current. Traces also were sized for the right trace impedance where possible, he explained. Fatu installed an intermediary 3-millimeter-thick copper plate between the transistors and the aluminum heatsink. He used a liquid metal product called Galinstan which, he said, offers exceptional thermal and electrical conductivity and doesn't require much pressure to achieve best performance.

During testing, he found that the amplifier will put out about 580 W at 3.7 MHz and works most efficiently in the higher bands. "The highest output power I've measured was 840 W in the 10-meter band, but the wave was distorted and the harmonic levels were high," Fatu said.

He has posted a [video](#) in addition to an online article.

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WSJT-X 2.1.1 Issues A Second Bug-Fix

Just after announcing the release of **WSJT-X** version 2.1.1, the **WSJT Development Group** issued a second bug-fix release, version 2.1.2. **WSJT-X** is the free software suite that includes the FT4 and FT8 protocols. According to the developers, an error in the code broke the WSJT-X rig control features for certain Icom radios. The [Release Notes](#) detail program changes made since WSJT-X 2.1.0. The *WSJT-X 2.1 User Guide* has also been updated. Upgrading from earlier versions of **WSJT-X** should be seamless, with no need to uninstall previous versions or move any files. [Links](#) to installation packages are available. The **WSJT Development Group** asks those using the code to let the developers know, as well as to report bugs or suggest improvements to the code.

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The Anne Arundel Radio Club

is a registered 501C3 charity.

We are pleased to receive any donations over your yearly dues.

The Ham Arundel News is the monthly official publication of

The Anne Arundel Radio Club, Inc.
(ARRL Club No. 0484).

Editor: Milford Craig / N3WYG

Send newsletter articles, questions and information to **Milford** at
newsletter@w3vpr.org

Deadline for submissions – The Saturday after the 3rd Thursday of the month

Mailing Address:
Anne Arundel Radio Club
Post Office Box 308
Davidsonville, MD 21035

Meetings:

General Business 1st Thursday at 7:30 PM
Board Meeting 2nd Thursday at 7:30 PM
Program/Activity 3rd Thursday at 7:30 PM

Dues:

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

World Wide Web: www.w3vpr.org

AARC Supports The Maryland Slow Net:
3.563 MHz CW 7:30 P. M. Daily

^^

Free Money for AARC!
ARRL Membership Reminder

ARRL affiliated clubs receive a commission for every new ARRL membership and renewal they submit to ARRL Headquarters. Clubs retain a portion of the dues for each regular or senior membership submitted to ARRL Headquarters:

Clubs retain \$15 for each new membership OR lapsed membership (of two years or more).

Clubs retain \$2 for each renewal,

A RENEWING MEMBER can renew at any time, even before their current membership expires.

Send your application and payment (made out to AARC) to the club treasurer.



Mark Your Calendars

REGULAR ACTIVITIES

Club Meetings are held on the first and third Thursdays of the month from 7:30 to 9PM at the clubhouse located at the Davidsonville Family Recreation Center in Davidsonville, MD

Free License Exams every 2nd Saturday of the Month - Check in at Noon, Exams at 1PM - At the clubhouse - Contact David Rawley / AE5Z, testing@w3vpr.org

Weekly AARC 2-Meter Net on 147.105 (Typically linked to 147.075 and 444.400 with CTCSS tone of 107.2 Hz) every Wednesday at 8 PM - All Welcome

2 meter "HOLLY NET" on 147.105 (Typically linked to 147.075 and 444.400 with CTCSS tone of 107.2 Hz) every morning 7:00 am to 9:00 am. All hams are welcome.

EVENT SCHEDULE

Thursday, January 2, 2020 7:30pm
Membership Meeting

Thursday, January 9, 2020 7:30pm
Board Meeting

Thursday, January 16, 2020 7:30pm
Membership Meeting

Saturday, January 18, 2020 2:00pm
ARRL VHF Contest

Sunday, January 19, 2020 » 11:00pm
ARRL VHF Contest

Thursday, January 23, 2020 7:30pm
Rules Meeting

Saturday, January 25, 2020 2:00pm
Winter Field Day

Sunday, January 26, 2020 » 2:00pm
Winter Field Day

AARC Repeaters and Nets

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.

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.

70cm Repeaters

Location	Frequency	Tone	Notes
Davidsonville	444.400+	107.2	AARC 70 cm Repeater.
Annapolis	442.300+	107.2	AARC 70 cm repeater
Laurel	442.500+	156.7	Laurel ARC 70 cm Repeater.
Millersville	449.125-	107.2	<u>Maryland</u> Mobileers Repeater.
Upper Marlboro	443.600+	103.5	SMARC 70 cm Repeater.

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

Amateur Radio NETS

Name	Frequency (in Mhz)	Day	Time
The "Holly Net"	147.105+ PL 107.2	Weekdays	0700
AARC Talk Net	147.105+ PL 107.2	Wednesday	2000
AA County ARES Net	146.805- PL 107.2	Sunday	2000
Baltimore Traffic Net	146.670-	Daily	1830
Boating Net	146.805- PL 107.2	Wednesday	1930
Maryland Emergency Phone Net	3.920	Daily	1800
Maryland-DC-Delaware Traffic Net	3.643	Daily	1900 and 2200
Maryland Slow Net	3.563	Daily	1930
React Net	442.300+ PL 107.2	1st Sunday	1930

We use **simplex 146.430 Mhz** frequently enough that you should probably program that into your HT or mobile. This is the go-to frequency for many 5K race/walk volunteering efforts, local communication, Field Day setup, and the like when we're not using a repeater.

REPEATER FREQUENCIES

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

PL: 107.2 for all repeaters

The 147.105 and 147.075 repeaters are frequently linked. Please leave an extra second after the courtesy beep to allow the link to reset as well.

Visitors are welcome to all meetings and nets.

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

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

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Wednesday Night Talk Net -- All are welcome

8PM, On the AARC Repeater 147.105

Other Amateur Radio nets

Name	Frequency	Day	Time
The "Holly Net"	147.105+Mhz PL 107.2	Weekdays	0700
AA County ARES Net	146.805- Mhz PL 107.2	Sunday	2000
Baltimore Traffic Net	146.670- Mhz	Daily	1830
Maryland Emergency Phone Net	3.820Mhz	Daily	1800
MD-DC-DE Traffic Net	3.557Mhz	Daily	1900 and 2200
Maryland Mobileers Net	146.805 PL107.2	Monday	1930
Maryland Slow Net	3.563 MHz	Daily	1930
REACT Net	442.300+Mhz PL107.2	1st Sunday	1930

The Radio Amateur Operator is...

CONSIDERATE

...He/[She] never knowingly operates in such a way as to lessen the pleasure of others.

LOYAL

...He/[She] offers loyalty, encouragement and support to other amateurs, local clubs, the IARU Radio Society in his/[her] country, through which Amateur Radio in his/[her] country is represented nationally and internationally.

PROGRESSIVE

...He/[She] keeps his/[her] station up to date. It is well-built and efficient.
His/[Her] operating practice is above reproach.

FRIENDLY

...He/[She] operates slowly and patiently when requested; offers friendly advice and counsel to beginners; kind assistance, cooperation and consideration for the interests of others. These are the marks of the amateur spirit.

BALANCED

...Radio is a hobby, never interfering with duties owed to family, job, school or community.

PATRIOTIC

...His/[Her] station and skills are always ready for service to country and community.