#### The OVH ARC Newsletter OLE VIRGINIA HAMS" AMATEUR RADIO CLUB, INC.

Post Office Box 1255, Manassas, Va. 20108

OVH FM Repeaters - 146.970- & 224.660- & 442.200+ & 443.500+ OVH D-STAR Repeaters - W4OVH - 146.865- & 442.5125+ (temporarily - limited functionality)

Web Site at http://w4ovh.net

## OLE VIRGINIA TIMES

## May 2019

Next Meeting: Tuesday, May 21, 2019

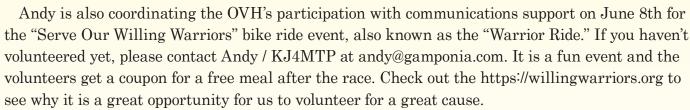
#### PRESIDENT'S LETTER:

I hope everyone is doing well and enjoying the spring like weather we have been experiencing between the rain showers.

Well it looks like we were all very fortunate to have had good weather at the NOVA STEM day event which took place on April 27, 2019 at the Northern Virginia Community College campus in Manassas. Wayne / N7QLK organized OVH's support and participation for the event with lots of assistance from John / KG4NXT, Theresa / KG4TVM, Cat / KM4PBD and Don / WA2SWX who staffed the event. Please check out the report on the NOVA STEM day on the club web site W4OVH.net and some photos from it later in this Newsletter.

The Mini-Try was also a "go" on Mother's Day. Big thanks again to Andy / KJ4MTP for organizing and coordinating the OVH's

participation in providing communications support for that event as well as for sequence of Mini-Tri events that run from March till November each year. That takes a lot of dedication to do that.



This June again promises to be a very busy month for the OVH as happens each year. First is the Warrior Ride just mentioned, next we will be putting on the Manassas Hamfest on Saturday, June 15th at a great new location at the Manassas Park Community Center from 6:30 am to 2:00 pm; then the ARRL/OVH Field Day event will take place on June 22nd and 23rd at the pavilion at the Nokesville Community Park. I was able recently to tour the Manassas Park Community Center building with John / KG4NXT and Phil / AC4PL when they were



#### Ole Virginia Hams Amateur Radio Club, Inc.

Post Office Box 1255 Manassas, Virginia 20108

OFFICERS			EMAIL REFLECTOR -	— w4ovh@googlegre	oups.com
President: Byron Dillon	AK4XR	222-2095	David Lane	KG4GIY	628-3868
Vice Pres: Jeff Fuller	WB6UIE	791-5916			
Secretary: John Heartney	KG4NXT	257-3566	JOTA - 2018		
Treasurer: Don Meyerhoff	WA2SWX	597-3211	John	KG4NXT	257-3566
DIRECTORS			LEGAL		
Don (Butch) Blasdell	W4HJL	369-2877	Bob	K4HJF	282-2451
Arthur Whittum	W1CRO	791-4330			202 2401
Charlie Dale Bob Zaepfel	WA4YGI K4HJF	361-3091 282-2451	MEMBERSHIP CHAIL		
WEEKLY FM REPEATER NET COORDINATOR			Luther	WA3FMO	361-4885
			NEWSLETTER		
Thurs - 8:00 PM Local Time	JOHN / KG4NXT	257-3566	Paul	W4ZB	754-0910
HAMFEST 2019 - Chairma			NEWSLINE FOR THE	WEEKLY NET	
Don	WA2SWX	597-3211	John.	KG4NXT	257-3566
FIELD DAY 2019			PROGRAMS		
Byron	AK4XR	222-2095	Jeff	WB6UIE	791-5916
CLUB ROSTER / DATABA	SE		QUARTERMASTER		
Arthur	W1CRO	791-4330	Steve	N4OGR	361-0008
EDUCATION			REPEATER CONTROL	LLERS	
Mark	WA4KFZ	818-8033	John	KG4NXT	257-3566
CLUB EMERGENCY COO	RDINATOR		Ken	KE2N	753-8587
	IIDINATOR		George	K4GVT	791-5956
Open			Arthur	W1CRO	791-4330
ARES - EMERGENCY CO	ORDINATOR		Butch	W4HJL	369-2877
David Lane	KG4GIY	703-628-3868	Steve David	N4OGR KG4GIY	361-0008 361-3042
D. 1777		4GIY@ARRL.NET			361-3042
Prince William County ARES	website http:/	/pwcares.org	W4OVH — TRUSTEE		
FINANCE			Wayne	N7QLK	571-237-0520
Arthur	W1CRO	791-4330	W4PVA — TRUSTEE		
Mark	WA4KFZ	818-8033	Arthur	W1CRO	791-4330
Don	WA2SWX	597-3211			
GENERATORS			SCHOLARSHIP	TTD 5 + TTTG	
Steve	N4OGR	361-0008	Sandy Knight	KM4JUS	901-4664
Al	KB4BHB	368-4794	SUNSHINE		
HISTORIAN			Theresa	KG4TVM	257-3566
Theresa	KG4TVM	257-3566	TECHNICAL COMMI	TTEE	
WEB COMMITTEE — W4	OVH.NET				752-0507
Kevin	KX4KU	540-439-3289	Ken Andy	KE2N KJ4MTP	753-8587 786-4651
Andy	KJ4MTP	786-4651	George	K4GVT	791-5956
John	KG4NXT	257-3566	Arthur	W1CRO	791-4330
			Butch	W4HJL	369-2877
TWITTER & FACEBOOK		<u>ERATOR</u>	Bob	K4HJF	335-1939
Jeff	KM4FTK	830-4155	David	KG4GIY	628-3868

All telephone numbers listed above are for Area Code 703 unless otherwise noted. This is the official monthly publication of the Ole Virginia Hams Amateur Radio Club, Inc., a §501(c)(3) organization, dedicated to the promotion and enhancement of Amateur Radio. Copyright © 2019 by the Ole Virginia Hams.

The OVH ARC regular monthly meeting is at 7:30 p.m. every third Tuesday at the Buckhall Volunteer Fire Department Station, 7190 Yates Ford Road, Manassas, Virginia. Members, prospective members and other interested persons are invited to attend without obligation. Local information can also be obtained through the OVH's FM repeaters on 146.865- and 442.5125+ MHz are temporarily operating with limited D-Star capabilities. Up to date information about OVH activities and its meetings is also available during the OVH's nets on its FM Repeaters each Thursday night at 8:00 p.m. or on 80 meters (3710 KHz) LSB each Sunday night at 7:00 p.m. (8:00 pm in Summer) or through the OVH's web site at http://wwovh.net

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surveying out the kitchen. It looks like a great location for our future Manassas Hamfests and with the reasonable facility rental for various rooms this club fund raiser looks like a winner. Because of the Saturday event, we will need to help the vendors setup on Friday evening, which is something new for this club but it should go smoothly. Keep an eye out on the club reflector for volunteer requests. More details for Manassas Hamfest are at http://manassashamfest.org

I really look forward to Field Day and not just because I am chairman again this year. It's one of the reasons that attracted me to join the hobby. Well not specifically Field Day, but the whole setting up all the equipment like you would in an emergency situation. Then trying to contact as many stations as you can, but in a relaxed atmosphere. No pressure here. Plenty of great food to sustain you in the late hours while trying to read someone's call sign through the static and other radio traffic. This year FT8 will be available as a digital mode which promises greater distances and more points per contact. We have been preparing for Field Day by updating our logging computers, thanks to John / KG4NXT, and preparing our equipment to make sure it is ready. Cat / KM4PBD, will be presenting our educational activity on Field Day, Wayne / N4QLK, will be our Safety Officer. Theresa / KG4TVM has done so much to get our Field Day some attention in the local press, and with our elected representatives. There are many more that are helping with the various things that give us points for their completion. If you are new to hobby, make sure you are there for setup; then stick around and try to make a few contacts. Don't worry if you are inexperienced, there are plenty around to help you get those first few contacts. Phil / AC4PL will be catering the event so there will be plenty of good food. There is a whole lot more than I can cover here so come out for Field Day and find out for yourselves.

Our Breakfast Get Together this month will be Saturday May 18th at 8:00am at the Yorkshire Restaurant. We usually have 8-9 people that show up. I hope to see you there. Also, FT4 is in Beta right now (see https://forums.qrz.com/index.php?threads/ft4-digital-mode-now-available.656385/) which but looks promising with 6 second transmitting and receiving compared to 15 seconds for FT8.

Finally, I hope everyone will be able to make the upcoming regular OVH meeting on Tuesday evening, May 21st at 7:30 pm at the Buckhall Fire Station, Manassas. Jay / NQ4T will be giving a presentation on ZUMSPOTS - be there to learn what they are! Hope to see you all there!

73 BYRON AK4XR

#### Sunshine Corner:

Happy birthday in May to OVH members: John / KM4VCJ, David / KG4GIY, Bill / WA4FIC, Jack / N4YIC, Carl / KK4ZYX, Craig / WA3UFY, Dick / KM4UXE, Susan / K3SSP, Terry / KC4DV, Don / WA2SWX and John / KG4NXT.

Congratulations to Lillian / KK4MXY, now 22, who is graduating from Fordham University in

New York City. Seems like only yesterday we were congratulating her on graduating from Battlefield High School, but that was 4 years ago! Time really does fly - 12 years ago Lillian was at the OVH Field Day at the Nokesville Park. See picture of her from the July 2007 OVH Newsletter to the right. And 10 years ago, Lillian (in the pink shirt) was at the microphone leading a pack of eager YL operators during the 2009 ARRL/OVH Field Day - see the picture from the July 2009 OVH Newsletter on the next page. There



Continued on page 4

is also another OVH related graduate: Bryron / AK4XR's No. 3 Son is graduating from George Mason University this spring. Best wishes to each of the graduates on his / her future endeavors!

Steve / N4OGR is back in town and up and around somewhat although he is still recovering. Paul / W4ZB ran into him at the local Costco a couple weeks ago. He and Jan are planning to help with the Hamfest talk-in this year. Please send him an email or give him a call to say Hi.



\*\*\*\* HAMFEST \*\*\*\* HAMFEST \*\*\*\* HAMFEST \*\*\*\*

It is crunch time! Less than 30 days to go until the 2019 Manassas Hamfest, we do need all hands available to help on Saturday, June 15th. Be sure to sign up to volunteer.

Hope all of the Moms out there had a wonderful Mother's Day last Sunday!

Happy Memorial Day to everyone - remember all of those who have served and sacrificed.

The OVH CW Net is every Wednesday evening at 7:00 pm on 10 meters – check with Jeff / K9VEG for more details. The OVH monthly Saturday morning breakfast is on the Saturday before the club monthly meeting at Yorkshire Restaurant at 8:00 am – that's May 18th this month. Two new great events!

Please try to check in to the Thursday night VHF/UHF FM net at 8:00 pm. You will hear updates and information on everything going on! How to do that is on the OVH web site at http://w4ovh.net and you can now also check in either by radio or via Internet connection.

Please send your news so it can be reported: email: kg4tvm@hotmail.com or tel: 703-257-3566.

73 Theresa KG4TVM

## Minutes of the Ole Virginia Hams Amateur Radio Club Meeting held on Tuesday, April 16, 2019:

OVH Vice President Jeff / WB6UIE, called the meeting to order at 7:30 pm on April 16, 2019 in the main conference room at the Buckhall Volunteer Fire Department Station.

After the Pledge of Allegiance, all present stated their names and callsigns.

Mark / WA4KFZ gave a presentation on a receive only loop antenna which he demonstrated with an FT-817.

The minutes of the March, 2019 meeting were approved without amendment.

Treasurer report by Don / WA2WX: Balances reported. The treasurer's report was approved.

Membership report by Luther / WA3FMO: David Lee / KC4QDW and Frank Sellers / N4AO were voted in. James Buckner / KC5LJZ was read in, to be voted upon at the next meeting.

Training Report by Mark / WA4KFZ: A new "What Now" session is planned.

ARES report by Greg / KM4CCT: There is meeting planned for May 18 at 9:00 pm at the county EOC at the McCort government complex. There is also a May 4 event at Prince William Forest to support a 24 hour run.

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Scholarship report by Sandy / KM4JUS: Two applications have been received so far. After discussion, it was agreed to extend the scolarship deadline to end of April and to support the STEM event on April 27th being chaired by Wayne / N7QLK.

Hamfest report by Don / WA2SWX: The was that hamfest volunteer roster is available to all on a shared google sheet link. Members are encouraged to sign up on the roster. Andy / KJ4MTP, is doing the postcard. There was a discussion on the need for talk-in and also on the possibility of some signage at the fairgrounds on the day of.

Web site and IT Committee report by Kevin / KX4KU: Normal function of web site and updating of Wordpress components is taking place.

Repeater report by Ken / KE2N. Ken is attempting to revive the OVH's DStar operations despite not having all the passwords. He recently got a PIN that he needed and will be working on that. He still does not have the password needed to allow DStar registrations on our repeater.

Field Day report by John / KG4NXT: A planning meeting was held and that all bonus point activities were considered. Direct FT8 logging to the new logging computers have been configured but not sure how robust it will be.

CW Net report by Jeff / K9VEG: The net is on 10 meters but has not been very active yet or lately.

The club decided not to run the won the 50-50 because of time constraints.

The meeting was then adjourned.

#### Reminders about some upcoming events / calendar dates:

#### HAMFESTS:

Friday - Sunday, May 17 - 19, 2019, Hamvention at the Green County (Ohio) Fairgrounds near Dayton, Ohio. This is the largest Hamfest in the world and should be a "must" to attend at least once for every serious ham! More info at http://hamvention.org Several hams from the OVH usually attend each year, and a few have been there more than 20 times - so ask around if you need a ride. The excellent Contest University program (see below) takes place in Dayton, Ohio on the day (Thursday) before the start of Hamvention.

Saturday, June 15, 2019 - Manassas Hamfest - for the 45th time - new day of the week and nearby new location this year - see flyer later in this newsletter for more details.

Friday - Sunday, June 21 - 23, 2019 - Ham Radio in Friedrichshafen, Germany, spectacular location for the largest hamfest in Europe, just slightly smaller than Hamvention. ARRL and other US vendor exhibit there. More info at http://hamradio-friedrichshafen.de This conflicts with Field Day this year, but should be on every ham's "bucket list" to attend.

#### HAM RADIO RELATED:

Saturday, May 18, 2019 at 8:00 am, Saturday at the Yorkshire Restaurant, 7537 Centreville Road, Manassas - breakfast for OVH members. This will be the fourth of a new type social "event" for OVH members; it is intended to provide a face to face venue at which members will be able to converse informally and get to know each other better. There is enough interest and this will held as a regular event on the Saturday morning each month just before the OVH's next regular meeting.

Wednesday evenings at 19:00 - OVH Slow Speed CW net on 10 meters. Get more details and info from Jeff / K9VEG and on the email reflector.

AMRAD meets monthly in McLean, Virginia - meetings usually consist of high level amateur radio related technical presentations on specific topics. Check the http://amrad.org web site for upcoming topics, and exact dates, times and locations for the meetings which have been changing recently.

#### HAM RADIO OPERATING / CONTEST EVENTS:

Saturday - Sunday, June 22 - 23, 2019 - ARRL / OVH Field Day. The OVH Field Day setup and operation will again be from the Pavilion at the Nokesville Park this year. This is a major club radio operating and social event: save the dates on your calendar.

The ARRL has a Contest web page at its web site, but a much more comprehensive, up-to-date, and long range planning contesting calendar with links to the rules for the various events is maintained at http://www.hornucopia.com/contestcal by WA7BNM. If you get the radio contesting bug or just want to find out what and how much is going on, that is a good place to look!

#### PUBLIC SERVICE / ARES EVENTS

Saturday, June 8th - OVH will be providing communications support for the "Serve Our Willing Warriors" bike ride event. General info at https://willingwarriors.org but contact Andy / KJ4MTP at andy@gamponia.com for specific information about what you need to do to volunteer and participate.

Check the online Calendar by David / KG4GIY at http://pwcares.org for the latest PWC ARES updates. David maintains a comprehensive calendar for upcoming events at that web site. Complete direct contact information for David appears on page 2 of this Newsletter.

#### A Few Pictures - OVH Participation at NVCC Manassas STEM Day - April 27, 2019



#### VP's Corner

#### Jeff Fuller WB6UIE

As we celebrate Armed Forces Day this month, lets take a moment to recognize some of the contributions made by our fellow hams in uniform. This column, I'd like to recognize Edwin H. "Howard" Armstrong, W2XMN, whose contributions helped to forge the foundation for much of today's radio communications technology.

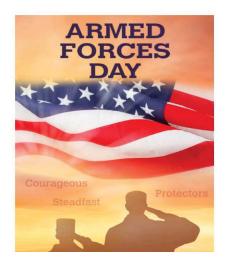
Armstrong grew up in suburban New York at the turn of the century and was fascinated by wireless technology. By age 14 he had filled his bedroom with wireless gear and erected a 125 foot antenna on his parents property (no HOAs in those days)[1] He was soon accepted at Columbia University where he received his electrical engineering degree in 1913.

America entered WWI shortly after his graduation and Armstrong joined the Army. Sent to France as a Signal Corps officer, he was tasked with improving short wave (< 200 meters in those days) receiver sensitivity. After recognizing problems with stability and selectivity in the existing designs, Armstrong embarked on a radically new approach - one in which all the gain took place at a single intermediate frequency down to which incoming signals were mixed or "heterodyned". His design, which forms the basis for most modern radios, became known as the superheterodyne receiver.

Armstrong returned to civilian life after the war and soon earned a professorship at Columbia. There his research continued, spawning even more landmark inventions. Among them was one familiar to today's hams - frequency modulation or FM. So, next time you enjoy a noise free 2 meter QSO or cruise effortlessly through the HF bands, thank Howard Armstrong.

May will close with another important remembrance - Memorial Day. Lets all take a moment to remember those who have sacrificed their lives to protect our freedoms.

May's meeting will be a busy one with Hamfest coming up and Jay's wireless hotspot presentation. Hope to see you there!





Armstrong in his WWI uniform



U.S. forces observe Memorial Day in Kuwait.

http://users.erols.com/oldradio/ehabio.htm
 Previously published in Dictionary of American Biography by Lessing, Lawrence P Charles Scribner & Sons New York

#### A Few Slides from Mark / WA4KFZ's presentation about his HF Magnetic Receiving Antenna Project at the 4/16/2019 OVH Meeting

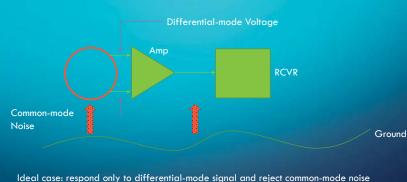
#### SOURCES OF COMMON-MODE NOISE

#### MOTIVATIONS FOR THIS PROJECT

- It's always been on my (ham radio) bucket list...
- The noise level at my QTH is really high
  - S7-S9 with lots of strong interferers

Loop Antenna

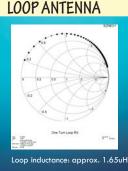
- Looking for a way to improve the received S/N ratio
- Emphasis on improving common-mode rejection



Ideal case: respond only to differential-mode signal and reject common-mode noise

### **BLOCK DIAGRAM** Antenna Gap Amplifier RF & DC



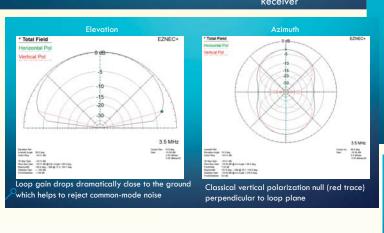






**AMPLIFIER BOARD** 

#### LOOP MODEL



EZNEC+ One Turn Loop RX

EZNEC+

Height: approx. 6 ft. above ground

3D Total Field Plot

- Maximize the loop area and minimize the loop inductance
  - Use parallel loops or very wide single-turn loops
- A shielded loop does not improve receive performance
  - It is designed to reject pattern distortions from nearby metal obstacles
- Use low-noise amplifier
  - High-gain designs do not improve performance
  - High CMRR of difference amplifier stage set by tight tolerance resistors (0.1%)

#### Continued from page 6 - text about OVH participation in NVCC Manassas STEM Day

OVH supported the NOVA STEM Day event at the Manassas Northern Virginia Community College on April 27, 2019, running one of 35 information booths. Many 'thanks' go out to John/KG4NXT, Theresa/KG4TVM, Cat/KM4PBD, and Don/WA2SWX who answered the multitude of questions from parents and kids regarding amateur radio. There were displays and demonstrations of digital radio, home-brew products (e.g., Raspberry Pi fox transmitter, crystal radio, WSPR, etc.), and other radio set-ups.

NOVA loaned us a 50 inch. Screen which we used to display FT8 activity in real time and also to display a world map of stations hearing us from NOVA using the PSK reporter application. NOVA also provided us Wi-Fi which was need for the PSK reporter application.

Three individuals were interested enough that they asked for information on how to become a ham. We sent them emails with the flyer for the June 7, 2019 Tech class sponsored by Woodbridge Wireless and also a link to hamtestonline and a link to the practice questions on QRZ.

OVH also recognizes and appreciates the excellent support of the NOVA SySTEMic cadre for the site set-up and equipment support. The event was chaired by Wayne / N7QLK.

#### Some Possibly Interesting or Useful Information

- 1. Small AA and (smaller) AAA 1.5 VDC batteries are now very common in many types of devices, including LED flashlights, headsets, meters, and other electronic devices. Ever have sucn an alkaline battery leak out corrosion onto the battery springs, clips and terminal connector strips in such devices? Who hasn't? In fact, with modern devices using such batteries that now can happens all the time, unpredictably because one does cannot tell when a good working battery (even an expensive one) might begin to leak. Such leakage can cause a big problem: the corrosion material from the battery leakage functions as an insulator (or at least a high resistance material) which often prevents the problems from being solved simply by putting new batteries into the device - the simplest possible fix. If the amount of corrosion is quite limited and there is good access to the battery compartment, sometimes the corrosion can be scraped off with an knife edge or a file, bringing "clean" conducting metal to the surface then again in contact with a newly inserted replacement battery. But what should one do when scraping off of the corrosion is inadequate as a fix? Throw the device away or discard it because it no longer works? Perhaps in an extreme cases, but the better answer is at least to try to apply some "chemicals" to dissolve and permit chemical removal of the corrosion material from the battery leakage and clean the surfaces down to bare metal conductors again so the device will work again with a new AA or AAA battery inserted. But what chemicals? Take a look at https://cleaning.lovetoknow.com/Clean\_Alkaline\_Battery\_Corrosion which provided the answer to that question for your editor recently. Remove the corroded batteries and then use a combination of cotton swabs, vinegar and baking soda to do the trick. Dip the cotton swabs into vinegar, and then apply the damp or wet swabs to the corrosion material from the battery in the battery compartment. Almost magically, the corrosion will dissolve away, leaving somewhat tarnished but bare and wet metal where a battery normally makes contact. Then use a dry swab dusted with some baking soda powder to dry off the metal and dry out the battery compartment. Clean out as much residue as possible. Insert a new battery (one with no leakage) and test out the device - it should work again, almost as good as new. A very good fix - which will minimize the amount of devices which you need to throw away due to alkaline battery corrosion in the future.
- 2. The various FT mode digital software suites from K1JT and his collaborators has become very popular; just when some have began to speculate that the FT modes were maxing out, another new mode, FT4, suitable for contest and expanded text exchanges was announced; FT4 is now being beta tested by numerous hams on the HF banks. See, http://physics.princeton.edu/pulsar/k1jt/FT4\_Protocol.pdf for "hot off the press" info from Joe Taylor. Also check out: https://qrznow.com/the-ft4-protocol-for-digital-contesting-by-k1jt It will be very interesting to see how this "new" mode develops and what will come next!

## REMINDER



Yes, it is that time of year again!!!!! Below is the 2019 Renewal Application.

Please fill out the form below (for database), attach your check and mail to the address below or drop off at a meeting. Be sure to update all information, including your e-mail address, telephone number(s) and nine digit ZIP

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## MEMBERSHIP RENEWAL APPLICATION "OLE VIRGINIA HAMS AMATEUR RADIO CLUB" for 2019

	101 2019
NAME:	CALL SIGN:
ADDRESS:	
	Call Tale
	Work Tel:
	EMAIL:
	BIRTHDAY:
WHAT IS YOUR PRESENT LICENSE CLASS?  Dues are now \$20.00 per year and payable on 3.	(YES/NO) NO) NOHE "Members Only" OVH ROSTER? (YES/NO)  January 1, 2019. Dues for each additional family
undergraduate or lower level [ list school atten ] are \$10.00	
	AMOUNT ENCLOSING:
NAME AND CALL OF FAMILY MEMBERS:	
Name:	Call:
Name:	Call:
Return to: Treasurer, OVH	
P.O. Box 1255	

Manassas, VA 20108-1255

NORTHERN VIRGINIA'S LARGEST

# Manassas Hamfest



AMATEUR RADIO, TECHNOLOGY & MAKER SHOW

An ARRL-Approved HAMFEST Presented By:

The OLE VIRGINIA HAMS Amateur Radio Club, Inc.

Note the new location - close to the former one - and the new day - Saturday - this year!

# Saturday, June 15, 2019

\*New location\* at the Manassas Park Community Center with outdoor and indoor flea market areas, indoor air-conditioned commercial areas and ample parking

Street address: 99 Adams Street - Manassas Park, Virginia -- Talk-In Repeater on 146.97-

INDOOR EXHIBITOR SPACE
6-foot tables: \$30\* each
with chairs & electricity
(\$25 if reserved by May 31th)
Setup 5:30 PM - 8:30 PM Friday
and 5:00 AM - 6:30 AM Saturday

\$10\*per person at gate
(Age 18 and younger: no charge)
(\*See web sites for prepayment discounts before 5/31/2019)
Gates open at 6:30 AM

TAILGATING (admission is extra)
Outdoor Spaces: \$10\*per space
(\*See web sites for details about online
prepayment discounts before 5/31/2019)
Gates open at 6:30 AM

\*Online ticket sales and vendor registration at http://manassashamfest.org
For our Most Current Vendor Info, Lists and Ticket Sales Visit our Web Pages:
http://manassashamfest.org and http://w4ovh.net

#### **PRIZES**

- Door prizes hourly 9 AM to 1 PM (be present to win)
- Major & Tailgate prizes awarded at 1 PM

#### INFORMATION

- · ARRL Roanoke Division Officers attending
- Virginia QSO Party Forum and Awards
- New location this year: no pets or firearms are allowed
- Also, overnight camping: not allowed at the new location
- Check our web pages (below) for the most up-to-date information

#### **ACTIVITIES**

- Flea Market & Vendors all day
- VEC License Exams: 8:00 AM 12:30 PM (\$15.00 Fee per Examinee at the VE Exams)
- 4th Call Area QSL Bureau Representatives
   & DXCC QSL Card Checking will be available
- Amateur maker project demos
- Amateur Radio Satellite Forum
- Various technology and radio demos
- More Forums to be announced, check web sites

#### http://manassashamfest.org and http://w4ovh.net

**Dealer Info** from Don / WA2SWX: **General Info** from Don / WA2SWX: **VE Testing / Exam Information**:

vendors@manassashamfest.org chairman@manassashamfest.org vetesting@manassashamfest.org