Orlando Amateur Radio Club

The Listening Post

HamCation® 2021 Special Edition --- Feb 13-14, 2021

Dedicated to Community Service and All Central Florida Hams January 2021

President's Message

Happy New Year!! Wishing everyone a happy, healthy, and prosperous New Year. Just a short message this month. We will continue virtual meetings for the foreseen future. The City of Orlando has begun to slowly open its facilities, but to an

(Continued on Next Page)

OARC MEETING

January 6th, 7:00pm
YouTube Live and Zoom
Beardall Senior Center - **CLOSED**
800 Delaney Ave, Orlando, FL 32801
ARRL Testing: **CANCELED**
For information & Updates
See www.oarc.org

The Listening Post is the OARC newsletter for OARC members. The LP will be distributed electronically via E-mail and the OARC web site (www.oarc.org).

Editor: Ed Thralls NE4H.

Comments, suggestions and articles are welcome. Send to editors@oarc.org.

Contributing to this edition: John Knott N4JTK, Michael Cauley W4MCA

OARC REPEATERS

Call	Freq	Shift	PL
KB4UT	146.760*	-600	103.5
N4UMB	147.015	-600	103.5

* Fusion Repeater

D-Star

K1XC C	146.820	-600	
K1XC B	443.275	+5MHz	
K1XC A	1275.00	-12 MHz	Voice
K1XC A	1255.00	-12MHz	Digital
W4PLB C	145.160	+600	
W4PLB B	442.300	+5MHz	

From the President's Desk (*Continued* from Previous Page)

extremely limited capacity. The last word I received was that they were allowing meetings of 10 people or less. That will not work for OARC, so we agreed that we will wait until things get back to some kind normal.

January's meeting will include a presentation from John Kruk, N9UPC ***. John is the National Sales Manager for Yaesu USA. Part of John's presentation will include the new FTDX10. The January meeting will be on Wednesday January 6, 2021 at 7pm. Please note, while the meetings are all virtual, the meetings will begin at 7pm!

In this issue, we were scheduled to begin an opportunity for members to place a business card size ad to advertise their business. Do to type setting issues that I am having, we will delay this to next month's issue.

Announced last month, the board wanted to give an opportunity for members that own a business to place a small ad in our newsletter as a benefit to all members. This will be for a business card size ad and the cost of this ad is minimal at $10 for 12 issues. Shortly I will be announcing who The Listening Post Ad Manager will be, but in the meantime, please email me any questions or request to advertise.

Finally, be sure to read through this entire newsletter as it is chock full of info, including information on our next test session!!!

73

John Knott, N4JTK

*** about John Kruk, N9UPC: (edited from QRZ.com) his two main focuses in life are amateur radio and EMS. Licensed in 1993, he enjoys amateur radio as a hobby, an education base, as well as a means to have a goal for expanding my horizons in a field that is ever-changing.

In addition to exploring the amateur hobby, he is very active in EMCOMM, ARES/RACES, digital voice communications, and utilizing more of his Extra class privileges. He upgraded Extra class license to give something back to a hobby that has supported him.

He never thought amateur radio would evolve from a hobby to a career. His life is like a non-stop geek-fest!

HamCation® Chairman News

(by Michael Cauley, W4MCA)

Greetings Everyone

I hope everyone is still staying safe.

Here is the latest update on HamCation® Special Edition.

Are you looking to upgrade your amateur radio license, or do you know someone that wants to get their tech license? Well, here is your/their chance.

We will be holding Amateur radio exams at the 2021 HamCation® Special Edition in person.

What you need to know:
Location: Central Florida Fairgrounds, North Building
When: February 14, 2021
Time: 10am to 4pm
Registration is required https://www.hamcation.com/amateur-radio-exams (will be live this week)
Fee: **FREE**

You must always wear a mask while inside the building. All participants will be spaced six plus feet apart. All tables, chairs and materials will be sterilized in between each person testing.

This will be our first test session since the club meeting in March, 2020. We are looking at having a large turnout. We will be needing lots of VE's to pull this off. If you would like to volunteer as a VE please email testing@hamcation.com

Please keep an eye on our website for more information. It is being updated regularly with new content.

73,
Michael Cauley, W4MCA
2021 HamCation® General Chair

ARRL Asks FCC to Allow 3.4-GHz Operation until Spectrum is Occupied

(The ARRL Letter for December 3, 2020)

In comments to the FCC, ARRL has argued that radio amateurs be allowed to continue shared operation in the 3.4 GHz band until 5G licensees who purchase the spectrum when the FCC puts it up for auction initiate incompatible operations. In its *Further Notice of Proposed Rulemaking* (*FNPRM*) in WT Docket 19-348, the FCC had proposed to sunset the band for amateur radio in two phases, governed by when new licenses are issued rather than when the new licensees begin to use the spectrum. In the *FNPRM*, the FCC solicited comments on whether alternatives exist to its proposal.

"Amateur activities further the public interest and should be permitted to continue on a secondary basis unless and until a new primary licensee is ready to occupy the spectrum in a preclusive manner," ARRL told the FCC. "At a minimum, amateur operations should be permitted to continue indefinitely in the 3.3 - 3.45 GHz spectrum, where no new flexible licenses are under immediate consideration. The Commission could consider whether a registration or other mechanism similar to that found in Section 97.303(g) would facilitate avoiding interference." Section 97.303(g) contains specific frequency-sharing requirements for the 2200- and 630-meter amateur bands.

"Amateurs often select the 3.4-GHz spectrum precisely because other spectrum choices are sub-optimum or simply not available. Amateurs also are only secondary users on most of the other spectrum suitable for similar purposes," ARRL said. "Links must be carefully engineered because of that secondary status, which applies to most of the 2.4- and all of the 5.8-GHz bands available to amateurs. ARRL emphasized the importance of allowing amateurs to continue to use the 3.4 - 3.45 GHz portion in particular.

ARRL pointed out that in many geographic areas it could be years before the 3 GHz spectrum is actually put into use by commercial users, and argued that amateur radio should be allowed to continue to operations on a secondary, non-interference basis as it has done for decades with federal primary users, until new uses actually begin, rather than when licenses are issued.

FCC to Require Email Addresses on Applications

(The ARRL Letter for December 3, 2020)

Amateur radio licensees and candidates will have to provide the FCC with an email address on applications, effective in mid-2021. If no email address is included, the FCC may dismiss the application as defective. The FCC is fully transitioning to electronic correspondence and will no longer print or provide wireless licensees with hard-copy authorizations or registrations by mail. A *Report and Orde*r (*R&O*) on "Completing the Transition to Electronic Filing, Licenses and Authorizations, and Correspondence in the Wireless Radio Services" in WT Docket 19-212 was adopted on September 16. The new rules will go into effect 6 months after publication in the *Federal Register*, which hasn't happened yet, but the FCC is already strongly encouraging applicants to provide an email address. When an email address is provided, licensees will receive an official electronic copy of their licenses when the application is granted.

Under Section 97.21 of the new rules, a person holding a valid amateur station license "must apply to the FCC for a modification of the license grant as necessary to show the correct mailing and email address, licensee name, club name, license trustee name, or license custodian name." For a club or military recreation station license, the application must be presented in document form to a club station call sign administrator who must submit the information to the FCC in an electronic batch file.

Under new Section 97.23, each license will have to show the grantee's correct name, mailing address, and email address. "The email address must be an address where the grantee can receive electronic correspondence," the amended rule will state. "Revocation of the station license or suspension of the operator license may result when correspondence from the FCC is returned as undeliverable because the grantee failed to provide the correct email address."

Launch Window for AMSAT's RadFxSat-2 / Fox-1E CubeSat Opens on December 19

(The ARRL Letter for December 10, 2020)

The launch that will carry AMSAT's RadFxSat-2/Fox-1E CubeSat into orbit could come as early as this month. Virgin Orbit has announced that the launch window for its LauncherOne Launch Demo 2 mission, which will carry the AMSAT spacecraft into orbit, opens on December 19. RadFxSat-2 is the fifth and final Fox-1 satellite built by AMSAT.

Like RadFxSat/Fox-1B (now AMSAT-OSCAR 91) the RadFxSat-2/Fox-1E CubeSat is a partnership opportunity between Vanderbilt University and AMSAT and will carry a similar radiation effects experiment, studying new FinFET technology.

The RadFxSat-2 spacecraft bus is built on the Fox-1 series, but Fox-1E features a linear transponder upgrade to replace the standard FM transponder in the Fox-1A - Fox-1D projects. In addition, the uplink and downlink bands are reversed from the previous Fox satellites in a mode V/u (J) configuration using a 2-meter uplink and 70-centimeter downlink.

The telemetry downlink will be 435.750 MHz. The inverting linear transponder uplink will be 145.860 MHz - 145.890 MHz. The inverting linear transponder downlink will be 435.760 MHz - 435.790 MHz.

The telemetry downlink features a 1,200 bps BPSK channel to carry the Vanderbilt science data, in addition to a 30 kHz wide transponder for amateur radio use. Telemetry and experiment data can be decoded using *FoxTelem* version 1.09 or later.

"Participation in telemetry collection by as many stations in as many parts of the world as possible is essential, as AMSAT Engineering looks for successful startup and indications of the general health and function of the satellite as it begins to acclimate to space," AMSAT said in announcing the possible launch window. "AMSAT will send a commemorative 3D-printed QSL card to the first station capturing telemetry from RadFxSat-2." -- *Thanks to AMSAT*

Nathan Simington Confirmed as Newest FCC Member

(The ARRL Letter for December 10, 2020)

On a 49 - 46 vote, the US Senate on December 9 confirmed Nathan Simington to be a Commissioner at the FCC. Simington previously served as a senior advisor at the US Department of Commerce. Earlier, he was a legal associate at various law firms, often specializing in finance.

Upon being sworn in, he will take the seat of Commissioner Michael O'Rielly, whose renomination was pulled by President Donald Trump last summer, shortly before it was to go to the Senate floor.

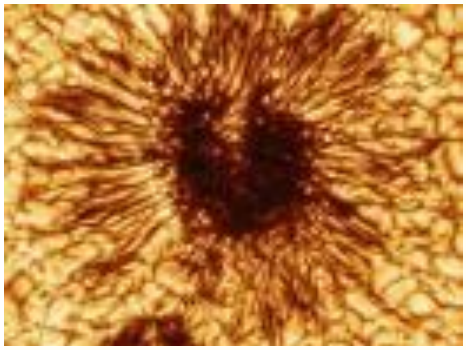
FCC Chairman Ajit Pai has announced that he will step down on January 20, opening a seat for incoming President Joe Biden to appoint a new commissioner to form a new 3 - 2 Democratic majority. Biden then could either designate that new commissioner as chairman, or select one of the two sitting

Democrats already on the Commission, Jessica Rosenworcel and Geoffrey Starks. Biden could also designate one of the two sitting Democrats as Acting Chairman to manage the FCC until his new pick has been confirmed by the Senate and sworn in. Until that happens, the FCC will have a 2 - 2 party split.

First Solar Image from Hawaii Observatory Shows Sunspot Close-Up

(The ARRL Letter for December 10, 2020)

The world's largest solar observatory, National Science Foundation (NSF) Daniel K. Inouye Solar Telescope in Hawaii, has released its first image of a sunspot, capturing the phenomenon in striking detail. The image, taken last January, is among the first solar images of the new Solar Cycle 25. The telescope's 4-meter primary mirror will give the best views of the sun from Earth throughout Solar Cycle 25. The image was released along with the first of a series of Inouye-related articles featured in the *Solar Physics* journal. As radio amateurs know, sunspots and other solar activity can affect HF radio propagation, among other things, and they are where coronal mass ejections (CMEs) and solar flares originate. The Inouye telescope is in its final stages of construction.



The first sunspot image taken on January 28, 2020 by the NSF's Inouye Solar Telescope's Wave Front Correction context viewer. The sunspot is sculpted by a convergence of intense magnetic fields and hot gas boiling up from below. [NSO/AURA/NSF, photo]

"While the start of telescope operations has been slightly delayed due to the impacts of the COVID-19 global pandemic, this image represents an early preview of the unprecedented capabilities that the facility will bring to bear on our understanding of the sun," said David Boboltz, NSF Inouye Solar Telescope Program Director. Solar Cycle 25 is predicted to peak in mid-2025.

"With this solar cycle just beginning, we also enter the era of the Inouye Solar Telescope," said Matt Mountain, President of the Association of Universities for Research in Astronomy (AURA), the organization that manages the National Solar Observatory and the Inouye Solar Telescope. "We can now point the world's most advanced solar telescope at the sun to capture and share incredibly detailed images and add to our scientific insights about the sun's activity."

During the peak of Solar Cycle 24, 120 sunspots were tracked. Some 115 sunspots are predicted for the peak of Solar Cycle 25.

The new image encompasses an area on the sun's surface of some 10,000 miles across -- just a tiny part of the sun, but large enough to fit Earth inside, the Inouye

Solar Telescope said in its statement. Read more. -- *Thanks to the National Solar Observatory and news media reports*

SKYWARN Recognition Day 2020 Deemed A Success

(The ARRL Letter for December 17, 2020)

Judging by the list of more than 700 registered participants, SKYWARN® Recognition Day (SRD) on December 5 was a success. Cosponsored by ARRL and the National Weather Service (NWS), SRD recognizes radio amateurs for the vital public service they provide during severe weather. Participants ranged from NWS offices, radio amateurs, non-amateur radio spotters, and non-SKYWARN spotters. Radio amateurs -- the first SKYWARN volunteers -- comprise a large percentage of SKYWARN volunteers across the country, providing vital communication between the NWS and emergency management in the event that telecommunication systems are knocked out.

The NWS Milwaukee Forecast Office reported more than 150 contacts logged across 35 states. The NWS office in Springfield, Missouri, tweeted, "What would SKYWARN Recognition Day be without a special thanks to the net control operators?" The NWS office in Chicago tweeted, "SKYWARN Recognition Day has come to an end; thanking everyone for attending and to all of our spotters across the nation."

SKYWARN Recognition Day planner and organizer Michael Lewis, KG4KJQ, who is the Warning Coordination Meteorologist in the northern Indiana NWS Forecast Office, expressed appreciation to the SRD Planning Team and the Facebook livestream presenters for helping to make the event a success. The NWS Forecast Office in northern Indiana registered 34 radio amateurs. The office serves 37 counties in northern Indiana, southwest lower Michigan, and northwest Ohio.

Given the COVID-19 pandemic, SRD was handled a little differently than in the past. Normally, radio amateurs participate from their home stations and from stations at NWS forecast offices, with the goal of contacting as many NWS forecast offices as possible. This year, participation from NWS forecast offices was minimal, and the focus shifted to contacting as many SKYWARN trained spotters as possible. New this year, SRD was opened to all SKYWARN spotters, and a SKYWARN Recognition Day Facebook

page was created, hosting a variety of live and recorded segments throughout the day. -- *Thanks to the* ARRL ARES Letter.

SSTV Event to Help ARISS Mark 20 Years of Continuous Ham Radio Operation in Space

(The ARRL Letter for December 17, 2020)

Amateur Radio on the International Space Station (ARISS) will continue its year-long 20th anniversary celebration of continuous ham radio operation from the ISS this month, with a slow-scan television (SSTV) event over the holidays. The first ARISS school contact took place in December 2000, not long after the first ISS crew arrived on station a month earlier and had made test contacts. The commemorative late-December SSTV event will be held December 24 through December 31, although dates are subject to change. The frequency will be 145.800 MHz, using SSTV PD-120 mode. Over its 20 years, ARISS has supported nearly 1,400 scheduled ham radio contacts with schools, student groups, and other education organizations.

"ARISS would not be the complex and growing program of education, operations, and hardware were it not for ARRL, AMSAT, NASA, and the ISS National Lab (INL)," said Rosalie White, K1STO, ARISS-US Delegate representing ARRL. "For these past 20 years and for the years to come, when we grow into lunar ham radio opportunities and more, the ARISS team will continue to be grateful to ARRL and all our sponsors. We could not do it without you!"

The ARISS ham radio gear, for what would become NA1SS on board the station, arrived ahead of the Expedition 1 crew, headed by Bill Shepherd, KD5GSL. Shepherd made the first ARISS school contact with students at Luther Burbank Elementary School in Illinois on December 21, 2000. NASA has marked the ARISS milestone with an infographic highlighting the educational contacts via amateur radio between astronaut crew members aboard the ISS and students.

ARISS will continue to sponsor various commemorative events through November 2021, including more of the very popular ARISS SSTV sessions. In celebration of the 20th anniversary of ham radio on the space station, ARISS took part in the ISS Research and Development Conference (ISSRDC) panel session, "20 Years of STEM Experiments on the ISS." A video developed for the session describes the program, conveys some key lessons learned over the past 20 years, and describes the ARISS team's vision for the future.

"Twenty years of continuous operations is a phenomenal accomplishment," said ARISS-International Chair Frank Bauer, KA3HDO, who's been with the program from the start. "But what makes it even more extraordinary is that ARISS has achieved this through hundreds of volunteers who are passionate in paying it forward to our youth and ham radio community. On behalf of the ARISS International team, I would like to express our heartfelt thanks to every volunteer who has made ARISS such an amazing success over the past 20 years. Your passion, drive, creativity, and spirit made it happen."

In September, ARISS announced that the initial element of its next-generation Interoperable Radio System (IORS) had been installed in the ISS *Columbus* module, replacing outmoded and problematic station gear.

A helpful addition to the ARISS website is a "Current Status of ISS Stations," which reports the present or coming operating mode of ARISS radios in the *Columbus* and *Service* modules. Click on "General Contacts" and then "Current Status of ISS Stations" on the drop-down menu of the ARISS website to access the reports.

Contest University to Host Propagation Summit

(The ARRL Letter for December 17, 2020)

Several radio propagation experts will share their knowledge during a Propagation Summit via Zoom, sponsored by Contest University (CTU). The event is scheduled for January 23, 2021. The presentation schedule includes: "Update on the Personal Space Weather Station Project and HamSCI Activities for 2021" with Nathaniel Frissell, W2NAF, at 11 AM EST (1600 UTC); "Solar Cycle 25 Predictions and Progress" with Carl Luetzelschwab, K9LA, at noon (1700 UTC); "Maximizing Performance of HF Antennas with Irregular Terrain" with Jim Breakall, WA3FET, at 1 PM EST (1800 UTC), and "HF Ionospheric Propagation" with Frank Donovan, W3LPL, at 2 PM EST (1900 UTC). Registration is free. An Icom IC-705 will be raffled off as a door prize. The winner must be present on Zoom to win. -- *Thanks to CTU Chair Tim Duffy, K3LR*

Australian Radio Amateurs Denied Access to 60 Meters

(The ARRL Letter for December 10, 2020)

After considering several options for a 5 MHz amateur allocation, the Australian Communications and Media Authority (ACMA) has come down in favor of national

government interests. Following a consultation, ACMA decided not to permit ham operation on the 5351.5 - 5366.5 kHz band. The 15 kHz-wide band was allocated to the amateur service on a secondary basis in 2017, ACMA says, "unresolved sharing issues" have prevented ham radio use of the band, used by more than 500 other licensed services as well as by the Australian military."

"The ACMA recognizes the high level of interest shown by the amateur community in adding this band and understands there will be disappointment," the agency said.

Australia's International Amateur Radio Union (IARU) member-society, the Wireless Institute of Australia (WIA), argued for amateur access to 5351.5 - 5365 kHz as a compromise. The WIA pointed out that more than 80 countries have been granted access to the band.

Radio amateurs in New Zealand lost access to 60 meters in late October. Use of this band by radio amateurs there was provisional, allowing hams to use two frequencies in the band -- 5353.0 kHz and 5362.0 kHz -- as part of a trial.

In the US, ARRL proposed amateur access to a new, contiguous secondary band at 5 MHz in a 2017 *Petition for Rule Making*. ARRL also asked the FCC to retain shared access to four of the current five 60-meter channels (one would be within the new band) as well as current operating rules, including the 100 W PEP effective radiated power (ERP) limit. The federal government is the primary user of the 5 MHz spectrum in the US.
Read more. -- *Thanks to* The 5 MHz Newsletter *Editor Paul Gaskell, G4MWO, for some information*

NEW HF OPERATORS -- THINGS TO DO

(The ARRL Contest Update for September 28, 2020)

Ward, N0AX, talked about the NA CW Sprint in the September 2, 2020 issue of the Contest Update. The independent NA SSB Sprint contest is this weekend, and the same concepts apply. The weekend of November 7, why not give the ARRL CW Sweepstakes a go? The exchange is challenging by virtue of its length with its origin in the message format used by the National Traffic System. Want to try something really scary? The QRP Zombie Shuffle event on Friday, October 30 is well suited to this time of year.

WORD TO THE WISE

(The ARRL Contest Update for December 9, 2020)

Trove

From the Oxford Dictionary: "a store of valuable or delightful things," such as the trove of past results articles from the ARRL RTTY Roundup, ARRL 10-Meter, and ARRL 160-Meter contest that have been uploaded to contests.arrl.org by Trey, N5KO.

OPERATING TIP

(The ARRL Contest Update for December 9, 2020)

New Contesters: Ease Into Contesting by Searching and Pouncing

Dennis, WU6X, suggests that new contesters "ease into" contesting by trying searching and pouncing for contacts before running. Look for the loud stations calling CQ, and give them a call. It might take a few tries, but after a few contacts everything should become more familiar. Don't worry about mistakes, everyone makes them, correct them, and continue on!

CONVERSATION

(The ARRL Contest Update for December 9, 2020)

Green Fields

The 2021 ARRL RTTY Roundup on January 2-3 features two new categories for multi-ops: multi-two and multi-multi. January 2021 is NOT the best time for people from different households to be gathering in person, however if your "pod" includes others interested in contesting, the 2021 contest will definitely be for the record books. Because multi-2 and multi-multi are new categories, there are no existing records, so the high scores for these categories will, by default, become the new records! High scores are kept by U.S. Call Area, ARRL Division, ARRL Section, Canada Province, and DX entity. There are plenty of slots.

Maybe you can convince the PC gamer in the house that this is a sort of text-based old-school adventure, or that you absolutely need your spouse to participate, since they're such a better typist than you.

If you have to look outside your immediate household for operators and you're already set up for RTTY or FT8/FT4, consider staying safe and letting other team members access your station remotely via *AnyDesk* or another sharing technology. Key to making this easy and frustration-free for all involved is that all aspects of your station's operation be controllable from your logging computer's desktop, and that the RTTY audio be audible to the remote operator (if using RTTY) via the sharing software.

It *is* possible to do RTTY without listening to the receiver and just by watching the decode and X-Y or waterfall, but not recommended. Having tried it personally I can verify it's a more difficult without the low-level audio to indicate when other stations are transmitting. For those that are using FTx modes, all you really need is the screen display!

You can see the existing all-time records for the ARRL RTTY Roundup on the ARRL Contesting website.

That's all for this time. Remember to send contesting related stories, book reviews, tips, techniques, press releases, errata, schematics, club information, pictures, stories, blog links, and predictions to contest-update@arrl.org

73, Brian N9ADG

Weekly Radio Network Meetings

Mon @ 20:00	**147.090**	**Seminole ARES Net – Except – First Monday of the month (146.460 Simplex)**
Tues @ 19:00	**145.350**	**Osceola ARES Net**
Tues @ 19:30	**147.195**	**Quarter Century Wireless Association**
Tues @ 20:00	**146.760**	**Wayne Nelson Trader's Net**
Wed @ 19:00	**147.300**	**Disney Emergency Amateur Radio Service**
Wed @ 21:00	**432.090**	**Florida Weak Signal Group**
Thur @ 19:00	**443.050**	**Orange County ARES Net**
Thur @ 20:30	**432.090**	**Florida Weak Signal Group**

OARC Meetings and Events 2021

January 6, Wednesday	**Virtual Meeting, 7:00pm YouTube Live! and Zoom**
February 3, Wednesday	**Meeting, 7:30pm at the Beardall Center**
February 12-14	**HamCation™**
March 3, Wednesday	**Meeting, 7:30pm at the Beardall Center**
April 7, Wednesday	**Meeting, 7:30pm at the Beardall Center**
May 5, Wednesday	**Meeting, 7:30pm at the Beardall Center**
June 2, Wednesday	**Meeting, 7:30pm at the Beardall Center**
June 26-27	**ARRL Field Day**
July 7	**Meeting, 7:30pm at the Beardall Center**
August 4	**Meeting, 7:30pm at the Beardall Center**
September 8	**Meeting, 7:30pm at the Beardall Center**
October 6	**Meeting, 7:30pm at the Beardall Center**
November 3	**Meeting, 7:30pm at the Beardall Center**
December 1	**No Club Meeting**
December 4	**Christmas Party**

OARC Membership Application

Make checks payable to:
Orlando Amateur Radio Club

Mail to:
Orlando Amateur Radio Club
Post Office Box 574962
Orlando FL 32857

To have your membership card mailed to you, please include a SASE with your check.

Date: __/ __/20__ [ ] Regular Member [ ] Family Member [ ] Associate Member
[ ] New Membership [ ] Renewal [ ] CMP

Name: _____ Call _____ Class _____

Address: _____

City _____ State _____ Zip _____

E-mail Address (print) _____

(Home) Phone: _____ (Cell) Phone _____ Birth Month_____

Rates: Regular [ ] 1 year $15.00 [ ] 3 years $40.00 [ ] 6 years $75.00

Rates: Family [ ] 1 year $5.00 per family member Husband, Wife or Child under 18

Rates: Associate [ ] 1 year $15.00 Dues Total: _____

All Membership(s) will expire ONE, THREE or SIX year(s) from date paid.

Other Club Affiliations:_____

_____

Are you an ARRL Member: [ ] Yes [ ] No

Name Badges: White letters on Black background with Gold embossed OARC logo.

[ ] Regular 3" x 1.5" @ $10.00 each

Name: _____ Call _____

All badges are to be picked up at the General meeting or add $3.00 for shipping & handling.

Shipping & Handling: [ ] Yes [ ] No

Badges _____ S&H _____ Total _____

HAMCATION® COMMERCIAL VENDORS

Company	Website
NEX-GEN Custom Hot Spots	https://hamradio1.com/
Signman of Baton Rouge	https://www.thesignman.com/
RT Systems	https://www.rtsystemsinc.com/
NorthWest Digital	http://nwdigitalradio.com/
Expert Linears	https://www.expertlinears.com/
TN07 Engineering	https://tn07.com/
Times Microwave	https://www.timesmicrowave.com/
ABR Industries LLC	https://abrind.com/
Ham Radio Outlet	https://www.hamradio.com/
Mastrant	https://www.mastrant.com/
Heil Sound	https://heilsound.com/
Giga Parts	https://www.gigaparts.com/
M2 Antenna	https://www.m2inc.com/
W2IHY Technologies	https://w2ihy.com/
Peet Brothers	https://www.peetbros.com/shop/
Tornado Alert	https://tornadoalert.com/
Information Station Specialist	https://www.theradiosource.com/
The Wireman Inc	https://thewireman.com/
Ham Radio Deluxe	https://www.hamradiodeluxe.com/
Aluma Tower	https://www.alumatower.com/
Cable Experts	http://www.cablexperts.com/
Arlan Communications	http://www.arlancommunications.com/
Wolf River Coils	https://www.wolfrivercoils.com/
QuickSilver	https://www.qsradio.com/
Tower Electronics	http://www.pl-259.com/
Vibroplex	http://www.vibroplex.com/
Comet Antenna	https://cometantenna.com/
WB0W	https://www.wb0w.com/
Diamond Antennas	https://www.diamondantenna.net/
Batteries America	https://batteriesamerica.com/

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HAMCATION® COMMERCIAL VENDORS

Company	Website
Bridgecomm Systems	https://www.bridgecomsystems.com/
Buddipole	https://www.buddipole.com/
Gifts 4 HAMS	https://www.gifts4hams.com/
RadioWavz	https://www.radiowavz.com/
N3ZN Keys	https://www.n3znkeys.com/
West Mountain Radio	http://www.westmountainradio.com/
SteppIR	https://www.steppir.com/
JT Communications	https://www.jtcomms.com/
Yaesu USA	https://www.yaesu.com/
Elecraft	https://elecraft.com/
Alpha Antenna	https://alphaantenna.com/
R&L Electronics	http://www.randl.com/
JVC Kenwood	https://www.kenwood.com/usa/com/
M&P Coax	https://messi.it/en
CushCraft Antennas	https://mfjenterprises.com/collections/cushcraft
Mirage Amps	https://mfjenterprises.com/collections/mirage
Hygain Antennas	https://mfjenterprises.com/collections/hy-gain
Ameritron Amps	https://mfjenterprises.com/collections/ameritron
MFJ Enterprises	https://mfjenterprises.com/
Flex Radio	https://www.flexradio.com/
EZ Hang	https://www.ezhang.com/
Elad	https://shop.elad-usa.com/
Green Heron Engineering	https://www.greenheronengineering.com/
Icom America	https://www.icomamerica.com/en/
Ham World Inc	https://hamworldinc.com/
Gold Medal Ideas	https://www.goldmedalideas.com/
ULTIMAX ANTENNA	https://ultimax-antennas.com/
Shack-in-a-Box	https://shack-in-a-box.com/
Hamsource	https://www.hamsource.com/
Rfinder LLC	https://rfinder.shop/

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