The Ham Arundel News

Providing Fellowship and Community Service through Amateur Radio Since 1951

January 2017 ***38th Year of Publication***

The Prez Sez…

Greetings … For those that don't know me, I'm Bruce WR3Q. I'm 63 years old, I've been a ham for 46 years, I've been a member of AARC for 22 years, and I've served as Secretary, Board of Directors and President.

Let me begin by saying thanks to Brian and his team for doing a great job this past year. A lot of things were accomplished this year. There were a number of non-radio related projects that got completed by a dedicated team of members. We always want to be mindful of the great luxury we enjoy with our own clubhouse. In my 46 years as a ham, I've enjoyed only one other club that had its own clubhouse (K3IVO Ft. Meade).

One of the projects is a complete revamping of the ham shack. The new tables/shelves are installed. This will allow us to have multiple operating positions for the many operating events in which I hope we will participate. The major indoor work is running the new coax cables from the repeater room to the shack. The outdoor work is completing the repair of the tower on the West side and doing a major restructuring of the club antenna system on top of the clubhouse.

There are a few other facility efforts that need to be executed this year … painting the clubhouse is one of those. It was last done when I was President in 1997 and that was because DFRC was getting on us about it. There has been nothing from them yet, but it's only a matter of time.

I am going to be reviewing our various committees for relevance/activity. I will be sitting down with the committee chairs to get more details. I have one or two new committees in mind to address the clubhouse and shack operations/maintenance.

Please joins us on January 5th when our new Vice-President Rich KB3ZYO does a presentation I'd like to call "Go-Kits are more than just radios". Rich will elaborate on an earlier presentation on Go-Kits, with an emphasis on preparing for environmental, nutritional and power needs.

Again, I'd like to thank Brian and the entire 2016 team for a great job. I was pleased at the Christmas party that he did NOT hand me the proverbial "Bag-o-Snakes".

73
DE WR3Q

AARC STAFF – 2017

OFFICERS

President:
Bruce Strackbein, WR3Q _____
bruce.strackbein@gmail.com

Vice Pres:
Rich Grace, KB3ZYO _____
_____

Secretary:
Keith Miller, AE3D _____
ae3d@graykitty.net

Treasurer:
Justin Leishman /KC3BJT _____
kc3bjt@icloud.com

Directors:
Timothy Nagel / KB3YQK _____
kb3yqk@gmail.com
Mark Bova / W2PAW 240-274-6294
w2paw@markbova.com
Jim Wallace, N3ADF 301-464-0661
n3adf@arrl.net

REPRESENTATIVES

Trustee:
Dick Mayo / WW3R 410-956-5099
ww3r.maio@gmail.com
Resident Agent:
Bob Jeter / K3RSJ 410-315-9403
jeter904@verizon.net
DFRC Rep:
Milford Craig / N3WYG 301-218-8867
n3wyg@w3vpr.org
Public Relations:
Paul Bowling / W4ATN 410-934-1355
paul@w4atn.com
Assistant: Holly Bevan / N3MB 410-923-0229
n3mb@arrl.net
Program Chairman:
Wayne Precht / AB3RY 240-268-9070
wayne@wayneprecht.org
ARES/RACES:
Ron Boller / N3WOF 410-956-6127
n3wof@arrl.net
Joint 440 Comm:
Walt King / N3USB 449-791-4174
mdfirenet55@aol.com
FAR Representative
Ed Brown / AA3EB 301-856-3317
brownmejr@comcast.net

COMMITTEE COORDINATORS

Public Service:
Erick Graves / WA3G 410-987-7670
erick.g@comcast.net
Repeater Ops:
John Williams / K8JW 410-847-7406
k8jw@verizon.net
VE Team:
Steve Kelly / K3BAY 410-975-6246
k3bay@comcast.net
Training:
Keith Miller / AE3D 301-805-1854
ae3d@graykitty.net
Packet Radio:
Jonathan Grafe / KB3ZVO 240-426-2664
grhear@yahoo.com
Newsletter:
Milford Craig / N3WYG 301-218-8867
newsletter@w3vpr.org
Web Page:
Steve Kelly / K3BAY 410-975-6246
k3bay@comcast.net
Field Day:
Dick Maio / WW3R 410-956-5099
ww3r.maio@gmail.com
MDC QSO Party
Sonny Barnette / AB3WS 443-491-8811
ab3ws@arrl.net
MD Slow Net:
Bruce Stewart / W8CPG 304-940-3076
chickenfarm9@gmail.com
ARRL MDC Section Manager :
Martin J. Pittinger / KB3MXM 410-356-7899
kb3mxm@arrl.net

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VE Testing Schedule

Second Saturday of each month – Noon – AARC – Steve Kelly / K3BAY 410-975-6246
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)

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

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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 Steve/K3BAY k3bay@w3vpr.org

Weekly AARC 2-Meter Net on 147.105 (Typically linked to 147.075 and 444.400) every Wednesday at 8 PM - All Welcome

2 meter Morning Commuter Net on 147.105 (Typically linked to 147.075 and 444.400) every morning 6:30 am to 9:00 am.This is the famous Holly-net. Pre-Holly-net starts at 5 AM or so.

EVENT SCHEDULE

04jan17 (Wed) - (on-air) **2-Meter net** every Wednesday night at 8 PM. See details below.
05jan17 (Thu) - **Club meeting** at 7:30 PM. Tonight: Everything *else* you should have in your go-kit, besides radio gear. Rich/KB3ZYO
08jan17 The Mesh Networking Group meets today. (Originally posted as the 15th of this month, my mistake)
12jan17 (Thu) - Board meeting at 7:30 PM (We have an open meeting policy)
11jan17 (Wed) - (on-air) **2-Meter net** every Wednesday night at 8 PM. See details below.
14jan17 (Sat) - (free) **Exams** for your FCC amateur radio license, every second Saturday of the month.
18jan17 (Wed) - (on-air) **2-Meter net** every Wednesday night at 8 PM. See details below.
19jan17 (Thu) - **Club meeting** at 7:30 PM.
22jan17 (Sun) - Kit-building, troubleshooting and repair 1 to 4 PM Every 4th Sunday at the clubhouse

Recordng Radio Nets and Small Group Meetings

Ed Brown, AA3EB

As a result of steadily advancing age and declining libido, my hearing has gone to pot. Even with hearing aids it sometimes has been difficult for me accurately to record names and/or call signs when acting as Net Control for the AARC Wednesday 2-Meter Net. Also, it sometimes was difficult to write down accurately the topics being discussed while at the same time keeping the net traffic flowing.

After thinking about this situation, I decided to try recording the nets on my desktop and laptop computers using a couple of free/inexpensive computer programs offered by NCH Software - RecordPad Sound Recorder for recording the audio of the net and (later) WavePad Sound Editor for cleaning up and otherwise manipulating the recorded audio. The purpose of recording the net traffic was to enable me, when preparing the Net Report, to identify and correct any mistakes in initially recording names, call signs, and topics.

My laptop has only USB ports for connecting external devices, so my first task was to purchase a microphone with a USB connector. Radio Shack offers two such items and, after perusing both at a local RS store, I selected the cardioid condenser I decided initially to use a USB microphone/headset already on hand (for use with the Rosetta Stone language programs) for the headset. Later, I began using YASEU YH-55 headphones and a couple of adapters to connect the headphones' 1/4" telephone plug to the laptop's USB port.

USB microphone ATR2500-USB offered by Audio-Technica.

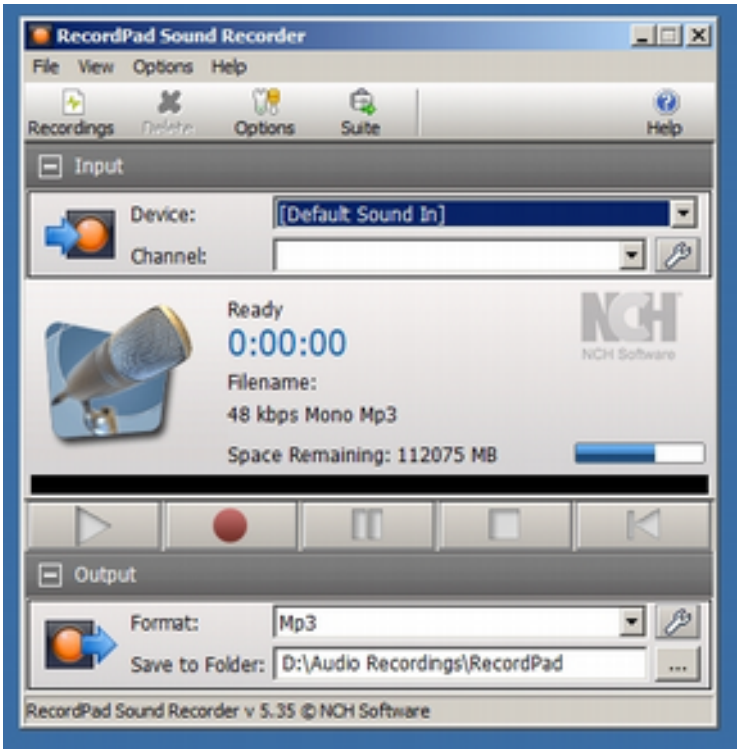
Two test recordings of AARC Wednesday 2-Meter nets were made in March 2016 using RecordPad. The ATR2500-USB microphone was set up about 18-24 inches in front of the ICOM SP-10 speaker for my dual-bander radio and was pointed directly at the speaker. I was seated at about the same distance from the mic but at a 135 degrees angle to the right. The recorded files were labeled AARC 2M Net [date]. Each file was about 21 MB in size.

Initial results were:

1. The microphone picked up the audio (from the SP-10 speaker) fairly well; playback audio of the stations on the net was of adequate volume and clarity although there was too much bass (low-frequency) in the playback.

2. The microphone did not pick up my voice (direct from mouth) well at all; playback volume was low and the audio was bassy and muffled (remember, the ATR-2500 mic is a directional cardioid and I was 135 degrees off-axis).

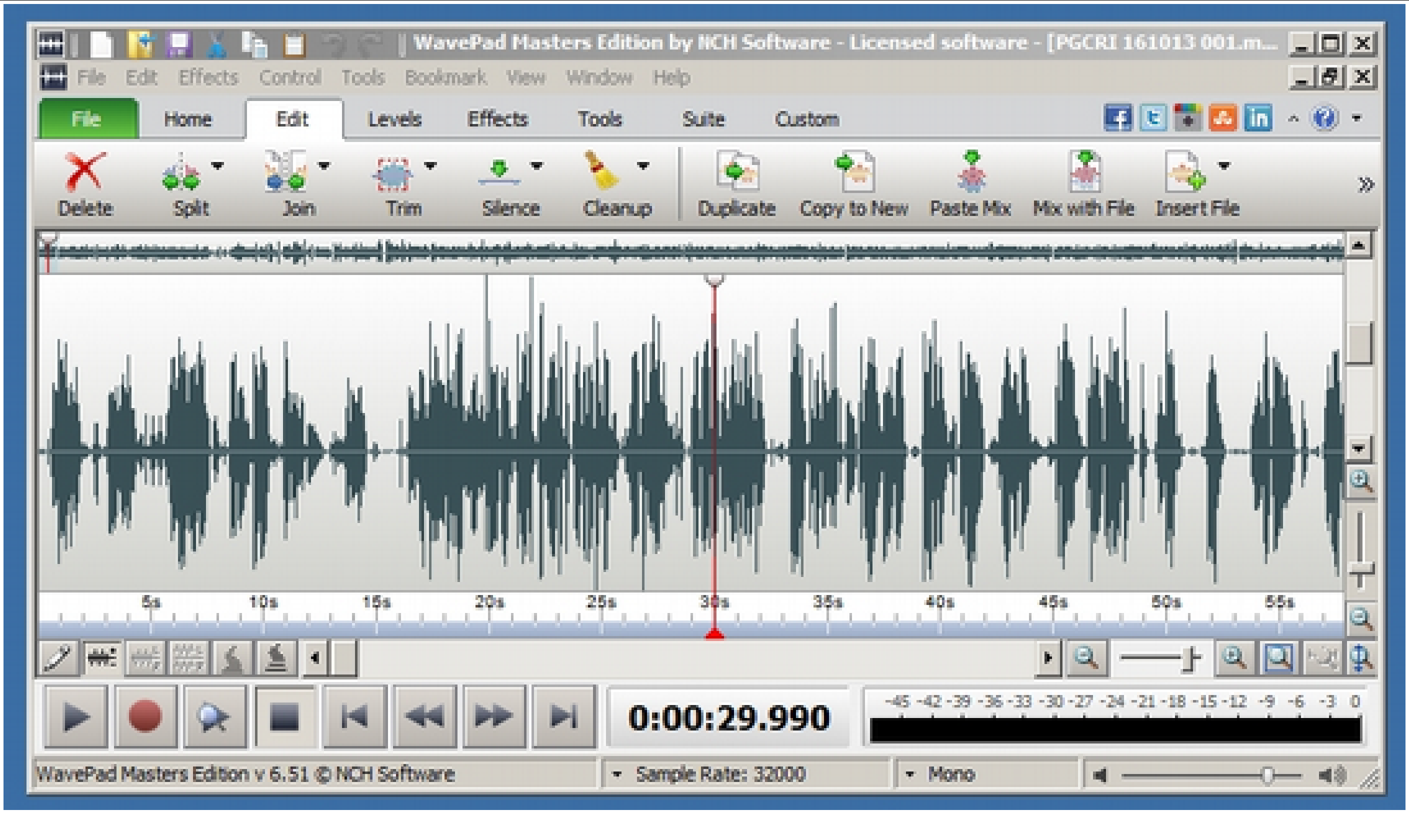
3. RecordPad worked well for recording the audio; it did not work well in playing it back due to an inability to handle the variance in audio volume. RecordPad also has only a limited ability to modify recorded audio.



A third test recording of the AARC Wednesday 2-Meter Net was made in May 2016. This time I decided to try manipulating the RecordPad recorded audio by using the WavePad program to see if I could improve its intelligibility. The recorded file again was labeled AARC 2M Net [date].

WavePad is capable of applying a number of effects to raw audio recordings to change how it is perceived by the ear. Many of these effects are more suitable for music recordings, such as waw-waw, tremolo, fade in and out, reverb, etc. However, I found four effects that potentially were suitable for voice recordings -- automatic gain control, noise reduction, and high- and low-pass filters. After an audio file is loaded into WavePad and an effect is selected, WavePad applies the effect to the entire file from beginning to end. Note that the application is only to the file as it resides in the computer's memory; it is not applied to the file on disc unless/until the file is saved (or saved as under a new name).

-- Automatic gain control works the same as in ham radio, by reducing the absolute difference between soft and loud recorded audio. One pass usually is sufficient; if not, a second pass may be made



-- Noise reduction lessens the background noise in the recorded file. It is helpful because my desktop computer has six fans and is rather noisy since it is in close proximity to my radios. For this effect, also, one pass usually is sufficient although a second pass may be made. Auto spectral subtraction is a quick & dirty reduction of background noise, but spectral subtraction based on a noise sample taken from a selected area of the recording yields better results.

-- High- and low-pass filters permit establishment of an audio passband, thereby reducing those bass and treble frequencies which do not contribute to voice intelligibility, and retaining those which do contribute. I set the high-pass filter at 350 Hz and the low-pass filter at 3000 Hz. Application requires two passes -- one for high pass and one for low. There are a few additional effects or tools which may be used if needed, such as automatic click/pop removal and noise gate; however, these must be applied with caution lest the desired audio be adversely affected. After each effect was applied, I found it wise to save the manipulated audio under a new name, i.e., AARC 2M Net [date](2), prior to applying additional effects/tools.

I made several additional recordings of the AARC weekly 2-meter net, the Green Mountain Repeater Association (GMRA) weekly 2-meter net, and business meetings of the Prince George's County REACT Team and the Maryland State Council of REACT Teams using the Audio-Technica ATR2500-USB microphone.

I noted again that the directional characteristics of this microphone did not facilitate good recording when sound arrived from more than one direction, as it does at meetings where the participants sat at a table. Therefore, I acquired a second microphone, a SoundTech CM-1000 USB omnidirectional microphone. This microphone lies flat on a table top and is intended to record, fairly equally, sounds arriving from all horizontal directions. It appeared to be better suited for recording a business meeting and. possibly, a net. It also had a USB connector, like the ATR2500 mic.

SoundTech CM-1000 USB omnidirectional microphone

Subsequent recordings of both nets and meetings validated the superiority of the CM-1000 omnidirectional mic over the ATR2500 directional mic. Recorded audio was fairly equal for audio received direct from mouth (meeting participants) and for audio received from both mouth (Net Control) and from the radio's speaker (net participants).

After about six months of use and experimentation with RecordPad and WavePad, I have a folder on my desktop computer containing about 35 recordings (both original and edited). One hour of audio recorded at 48kbps (high quality) yields a recorded file of about 20-21 MB in size. It takes perhaps ten to fifteen minutes to apply AGC, high and low filters, and noise reduction to a file of raw audio to make a file of edited audio; however, if I also wish to delete those annoying end-of-transmission squawk/beeps! from the file it will take additional time since each instance must be handled individually.

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ARRL Seeks Nominations for Six Awards

The ARRL is inviting nominations for awards that recognize educational and technological pursuits in Amateur Radio. Nominations are also open for the League's premier award to honor a young licensee.

The Hiram Percy Maxim Award recognizes a radio amateur and ARRL member under age 21, whose accomplishments and contributions are of the most exemplary nature within the framework of Amateur Radio activities. Nominations for this award need to be made through your ARRL Section Manager, who will then forward the nomination to ARRL Headquarters by March 31, 2017.

The ARRL Herb S. Brier Instructor of the Year Award honors an ARRL volunteer Amateur Radio instructor or an ARRL professional classroom teacher who uses creative instructional approaches and reflects the highest values of the Amateur Radio community. The award highlights quality of and commitment to licensing instruction. Nominations are due by March 15, 2017.

The ARRL Microwave Development Award pays tribute to a radio amateur or group of radio amateurs who contribute to the development of the Amateur Radio microwave bands. The nomination deadline is March 31, 2017.

The ARRL Technical Service Award recognizes a licensed radio amateur or group of radio amateurs who provide Amateur Radio technical assistance or training to others. The nomination deadline is March 31, 2017.

The ARRL Technical Innovation Award is granted to a radio amateur or group of radio amateurs who develop and apply new technical ideas or techniques in Amateur Radio. The nomination deadline is March 31, 2017

The Knight Distinguished Service Award was established to recognize exceptionally notable contributions by a Section Manager to the health and vitality of the ARRL. The nomination deadline is April 30, 2017.

The ARRL Board of Directors selects all award recipients. Winners are typically announced following the Board's July meeting. **More information** about these awards on the ARRL website, or contact **Sean Kutzko**, KX9X (860-594-0328) at ARRL Headquarters.

Used with permission, The ARRL Letter for Dec. 1, 2016

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Looking Out for Number One in a Disaster Area

All of us who have had even minimal experience at the scene of any form of disaster, man-made or natural, know just how rapidly things can change in that environment. We have our "go bags" ready for what we believe we will need to get us through the situation/deployment. But have we given any thought about what would happen if, during our deployment, something were to happen to us, both on a minor scale and a larger scale?

For the minor scale issues, I suggest what I call a *personal comfort pack*. This would include items such as pain killers, cough drops, Antacid, lip balm, sun screen, any prescription drugs you may need, a few Band-Aids®, a few granola or power bars, and anything else you think may make your deployment a little easier and more comfortable for you, such as eye drops if you wear contact lenses.

All of these items can fit into a small pouch: I use a nice weather proof camera case I found in a local thrift store! Many of the items listed can be found in small quantities in the travel section of some stores. These smaller versions are ideal for your kit. Of course your kit doesn't have to be small. If you want more comfort items than can fit into a small pouch you could always go bigger.

The author's medical flash drive. (N8QQN photo)

Popular now in some sporting goods stores are the plastic military style "ammo cans." These would also be a good choice for your personal comfort kit. They are inexpensive, light weight and have a rubber gasket around the lid to give it some degree of water resistance. These "cans" can even hold a bottle of water if you wanted one.

Now that you have taken care of the little things, what can you do to help yourself if something more serious happened to you during your deployment and you were unable to communicate? Most Emergency Medical Technicians are used to looking at a person's wrist or neck for a medic alert bracelet or necklace, so I got a very small brightly colored flash drive and labeled it on both sides, "Mike B. MEDICAL."

Since there are laptops everywhere now, from mobile data terminals (MDT's) in the squad emergency transport vehicles to the desks in the trauma center, you can communicate a great deal of information without being conscious by having it readily available on the little flash drive.

On mine, I have the following: Page one has my name, address, home phone and date of birth. It also lists the names and cell phone numbers of my wife and daughters. At the bottom, in red and in all caps, I have listed no allergies and my blood type. The next few pages list my personal medical history to include the type of medical incident (broken bones, surgeries, etc.) the attending physician's name, the date and location of treatment. After that I have a sheet with a copy of the labels of all prescription medications I am currently on. This gives the hospital the type of medication, dose, and the name of the physician who prescribed it.

Next I have a page that has a copy of all my doctor's business cards, from my family doctor to a specialist, my dentist and even my optometrist. I provide this so that if a trauma center or ER doctor has a specific question, he/she can contact my doctor directly. Lastly I provide a page of family medical history. Depending on what has happened to you, this information could be very important.

You might say, well I have a card in my wallet with my spouse's contact information -- they can just call him/her

and get the information needed, and you would be correct, they could. However, in some medical situations, time is of the essence and if they had any difficulty contacting your spouse, they are using up critical time.

Conclusion: It takes very little effort to put together a personal comfort pack and personal medical information onto a flash drive. Do it for yourself and your family. -- *Mike Burg, N8QQN, Emergency Medical Technician* [Burg retired recently as Chief of Police. One of the first things he did after making Chief was to install a 2-meter radio and station in the department. Burg said, "Since the department is one of the three 9-1-1 centers in the county, we have a massive generator that runs the entire building in the event of a power outage. By putting the station there, my club was always able to get on the air."]

Used with permission, The ARES E-Letter for Dec. 21, 2016

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Looking Forward to 2017

AARC Board of Directors wish you and your family a prosperous and happy new year. Family and friends help make the best of times even better. We all can look back to our childhood days and remember very pleasant memories that brings a smile to our face as we remember them. Now as grown ups with families of our own, we should make a definite attempt of bringing some of our childhood happiness into our families lives.

As we move into 2017, let's put amateur radio on your list of things to do. Make a list for yourself and let's do something this year to build our very interesting and diverse hobby. Below are some of the areas that we may be involved in.

1. If you are not a licensed operator, make this your priority, Secondly, check on those friends who are interested in your hobby to help encourage and mentor them. If you have your Technician or General ticket, why not plan to upgrade to the Amateur Extra.

2. Try a new aspect of our hobby. It has been stated that there are about 30 different areas that encompass ham radio. Sit down with some friends and make a list of what they may be. Let's start off with FM Repeaters, HF SSB, Morse Code, just to start with. How many can you think of?

3. Antennas are small and easy to build. Plan to venture into this area. Plan, talk it over with friends and then construct the project and make it work!

4. Set yourself a ham radio goal. There are contests on VHF/UHF as well as the low bands. Do some planning and enjoy the fun of contacting folks you have never spoke with before.

5. Set up or reorganize your radio shack. When you are finished with it, take a picture of it and send it to the Ham Arundel News and have it inserted. Write a couple of paragraphs about how you went about it and what you found out as you worked through the situations you came across.

6. Convert your logs to electronic. Log Book Of the World is there so that your logs are always available.

7. Join with 'Raven', KB3MUV on the fourth Sunday of the month to put together the antenna mentioned above or fix that piece of equipment which is not operating properly. Use these opportunities to learn and then teach someone else about the joy and excitement of Amateur Radio.

8. Delve into the whole world of computers and the vast opportunities they provide. Do not be put off by the word 'computer' as a lot of us are. Look at a project and then start asking questions of the ones in the Radio Club. You will be sure to find a willing buddy there to work on you project and see it through to completion.

9. What about helping in the teaching of the various classes that the AARC provide. Your way of looking at a problem could be the key that will unlock a vast area that folk were stumbling over and hence held them back from completing their license or that project that is setting in a box.

10. Develop into an Ambassador of Amateur Radio. Someone talked with you about 'radio' and peaked an interest in you which led to your license and where you are today. Be that someone for a young man or woman. There are many areas in which you could talk and teach and encourage. Join in on the local 'nets' that are available and begin to learn and teach about net control operations and how to handle traffic in a very friendly setting. There may be a time when you will be called on to handle a net or transfer traffic is a real world situation. Lets prepare and practice now for that time, if it is to come.

11. Get involved in your radio club. Become an ACTIVE member and seek ways to develop leadership.

12. **The Most Important Resolve of Ham Radio Is To Enjoy and Learn.**

73, Milford, N3WYG

Thanks to Quicksilver Electronics for some of their ideas.

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UPCOMING HAMFESTS

This is a list of hamfests in the Maryland-DC Section area. We hope to see you all there.

Post Holiday Hamfest
Date: Sunday, January 29, 2017
Location: Odenton Volunteer Fire Company
1425 Annapolis Road, Odenton, MD 21113
Website:https://sites.google.com/site/marylandmobileers/hamfests-1/hamfest-2
Sponsor: Maryland Mobileers Amateur Radio Club
Talk-In: 146.805- (PL 107.2)
Public Contact: Bruce McPherson, AB3AC
484 Peach Leaf Court,Odenton, MD 21113
Phone: 410-456-2500--Email: bmcpherson73@verizon.net

Virginia State Convention (FrostFest)
Date: Saturday, February 4, 2017
Location: Richmond International Raceway
600 East Laburnum Avenue
Richmond, VA 23218
Website: http://www.frostfest.com
Sponsor: Richmond Amateur Telecommunications Society
Talk-In: 146.880 (PL 74.4)
Public Contact: Timothy Farrell, KJ4NPB
8287 Ellerson Drive, Mechanicsville, VA 23111
Phone: 804-306-1134--Email: timfarrell57@gmail.com
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Is There a Market for a $400 "Prepper" Radio?

By Dan Romanchik, KB6NU

A couple of days ago, a reader wrote:

"I would like to know if it would be feasible to build a radio with the following features:

* SSB operation (only SSB is required, CW would be an additional benefit)
* 20 – 50W of power
* Portable-friendly (lightweight, capable of operating at lower voltages from small portable batteries)
* Low receiver current drain
* Coverage of 40m and 80m bands. Very limited coverage is acceptable. Even channelized coverage of a few select frequencies would be acceptable.
* S-meter

"It strikes me that there is a large market for ham radio products for "preppers," and there has been a lot of interest in the Baofeng line of radios from that market. I think there would be a LOT of interest in a radio that could go far beyond line-of-sight and contact friends or family hundreds of miles away. Preppers would have little interest in contacts more than a state or two away, and no interest at all in novel operating modes. I wonder if a radio that trims away excess features (all-mode operation, wide frequency coverage, high power output, sophisticated audio filtering) could be produced for a lot less cost than currently available HF rigs. If so, and it was paired with a decent NVIS dipole and some General-class study materials and sold as a package deal, it could be a huge hit – Something you could tuck in a bug-out-bag, set up in the field, and use to make contacts in a reasonably local area, or set up in your backyard at home and use minimal power to operate.

"Is there a reason why I don't see radios like this on the market, some kind of technological limitation that would make this sort of thing impractical? If something like this was built, what kind of cost and performance would you expect? I'm certainly not expecting any kind of detailed analysis, but even just a speculation about if such a project could be feasible would be appreciated."

I replied:

"I think one of the reasons you don't see radios with the feature set you describe is that more full-featured radios are already pretty inexpensive. The Yaesu FT-450D, for example, costs less than $800 and offers 100W output. The FT-817ND, which is designed for portable operation, costs less than $700. Is that too much for preppers?

"While it might seem like you could sell a radio with fewer features for less, I think that you hit the law of diminishing returns. At some point, removing features, doesn't reduce the cost all that much. For example, removing the CW capabilities from a transceiver capable of SSB operation really doesn't save that much because in a way CW operation is really just a subset of SSB operation. You'll save the cost of a key jack, but how much is that? Maybe a buck or two. Having said that, it could be that the big amateur radio manufacturers are overlooking an opportunity here."

We swapped a couple more e-mails about this. He noted, "Most preppers would probably rather buy a high-end AR-15 or several months worth of storage food for $800 than a radio." I suggested, "If there was a catastrophic event, and you really needed to communicate, wouldn't it seem silly to have not spent the extra $400 on a really decent radio?"

What do you think? Is my analysis a little too simplistic perhaps? Are amateur radio manufacturers ignoring a potential market?

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Dan, KB6NU, is the author of the "No Nonsense" amateur radio license study guides, and blogs about amateur radio at KB6NU.Com. You can contact him by e-mailing cwgeek@kb6nu.com.

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JOTA 2016 Report Shows Participation was Up

The Boy Scouts of America has released the final report on the 2016 Jamboree on the Air (JOTA), and the news is good. Participation was up from 2015, despite what the report called "terrible propagation." According to the report, 10,761 Scouts took part, an increase of more than 50% from a year earlier, and the number of stations filing reports, at 267, jumped by 28% from 2015 (the record was 271 in 2013). The number of Amateur Radio operators was up by 14% to 1,120, although the number of radios reported in use dropped by 25% to 631. Total JOTA 2016 contacts remained flat at 8,254. Over the next several months, the BSA National Radio Scouting Committee will review various suggestions to determine improvements that can be made for JOTA 2017. These include concerns over conflicting on-the-air activities and the need for better advance publicity.

-- Thanks to JOTA Coordinator Jim Wilson, K5ND

Used with permission, The ARRL Letter for Dec. 1, 2016

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You *Can* Take It With You -- Build a Go-Box Station

In this article I share both my experience with designing a versatile go-box, as well as my operating experiences outside of the shack. Consider the variety of locations you would like to operate from and let this project inspire you to enjoy similar experiences and convenience. Having participated in many field day events, as well as serving in various emergency/disaster communications response roles, I can attest to the benefit of having all the critical components conveniently pre-wired in one place. There is an added benefit to quickly adjust between diverse environments such as home, portable, and mobile operations without the hassle of installing and uninstalling radio equipment.

Background: Being a requirements engineer, I

applied a systems approach to this project with the goals of developing a go-box that would be capable of HF, VHF, and UHF operation; easily transformed between a portable, mobile/rover, or home operating environment; usable for digital modes, using a sound card device and software where possible; lightweight enough to carry (e.g., through an airport terminal); and small enough for aircraft carry-on (i.e., 22x15x9). It was important for me to maximize the capabilities of my station while minimizing the weight and ensuring simplicity. The main focus was on packaging the three basic components of a station: transceiver, antenna tuner, and sound card interface. At the same time, a decision was made not to include a power supply, but rather rely on various power options that were particular to the environment I would be operating in, thus saving on total weight.There are a number of HF/VHF/UHF radios on the market that offer multi-mode capabilities. Add to that a wide variety of sound card interfaces, a computer, and lastly, a general-purpose antenna tuner and you have the beginnings of a highly versatile station. As a concept shown in Figure 1, the commonly-used components could be packaged and pre-wired together in the go-box. Depending on the chosen operating environment, the user may substitute various accessories and antenna(s) as needed. Note: For safety and convenience, especially in a mobile environment, I recommend using a radio that has remote-head capabilities.

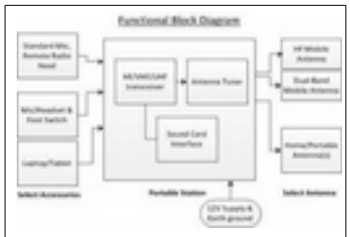

Figure 1.

After some trial and error, I selected the MTM Case-Gard's sportsman utility dry (SPUD) box, specifically, the SPUD-2 model, as it has a comfortable carrying handle and provides enough depth, strength, and support needed to handle the weight of the radio gear.

The components I selected for this go-box were the Icom IC-706 Mark IIG transceiver, the LDG Z-100 Plus autotuner with the radio interface cable, as well as the Tigertronics SignaLink USB sound card interface, as seen in Figure 2. A small Anderson Powerpole junction box simplifies wiring. The total weight of this packaged solution is less than 17 pounds.

Figure 2

Operating Environments

Below are typical operating environments and special uses where you can safely and effectively operate the station. You should consider how many of these environments apply to your particular needs before designing your own packaged solution.

Home station	A fully featured system that can be used with a power supply, an antenna, and power for the computer.
Mobile	A limited set of functions on HF/VHF/UHF with a remote head for driver safety and convenience.
Contesting Station	Add a headset and foot switch, and laptop computer, and it is ready for contest logging, DX Spotting, and digital sound card modes. The sound card interface can also act as a digital voice-keyer, saving you from calling CQ for hours on end.
Emergency Station	Perfect for quick setup, a quick-deploy NVIS antenna, and VHF vertical antenna for operating HF, VHF, or the popular e-mail over radio software such as Winlink Express.
Boating	Since many of the sensitive components are packaged securely, it is possible to operate this in a marine environment as well-consider harsh environments when designing your go-box.

Additional Benefits of a Good Design:

- Security of being able to easily remove the go-box from a vehicle when not in use
- Quickly adaptable among various operating environments
- Allows hams to only need one radio that serves multiple purposes

Design Considerations

Topic	Best Practice
Component Monitoring	Bolts/nuts are best for installation, but Velcro should be sufficient for smaller components. Another option is to tie wrap components on to sanded plywood for good results. Mount radio on lower portion of box, using rubber feet to raise angle of radio for less strain when using controls. Put less-used materials on the top shelf. When mounting SO-239 connectors through the case, use star washers to keep the connectors in place.
Additional Accessories	As a convenience, add an external speaker, volt meter, USB port to charge small devices, and a dual-band DB-J2 roll-up antenna.
Documentation	Consider adding a manual or guide for your radio or create your own document for nontraditional (set and forget) settings (i.e., port speed for radio to computer communications, operating various digital modes software, and preferred audio settings for each). Print the document on laminated paper to fit neatly into the go-box.
Labeling	Don't forget to label all connectors. Also, print labels with your name and call sign inside the box and cover.

Mobile Use	If you wish to use the go-box as a mobile rig, the radio should have remote-head capability. Mounting the head unit remotely will provide additional space inside the box.
Air Travel	The go-box fits the aircraft carry-on bag size requirements; however, consider what you store in the case as there is an ever-growing list of prohibited items that cannot be transported on a commercial flight.

The Guts of it All

The internals are very simple. A thin high-grade plywood shelf slides between parallel guides as seen in Figure 3. The power, coax, and braided cables need to be long enough to slide out with the shelf when accessing the components. Optional internal fused circuits for protection, or a small fan for cooling that may be needed during mobile operation, are not shown.

Figure 3.

The top shelf holds less frequently-used components such as the SignaLink and auto tuner. Therefore, the bottom shelf is reserved for more frequently used items such as the transceiver, thereby reducing arm muscle strain when in operation. Note, in Figure 4, there is a 1½" hole in the top shelf for passing wires through the shelf to the bottom of the go-box.

The bottom shelf is mainly for the radio with storage space for remote head or other accessories.

Pennsylvania QSO Party, 2016 - the shake-down

I traveled from my home in Oregon to operate in Pennsylvania with Randy George, N3ZK and Frank Bobro, N3FB, to test out my new go-box under multi-operator contest conditions. I was able to transport the go-box on board as an airline carry-on (with no fuss from airport security) easily fitting in the overhead compartment. For contesting in the Pennsylvania QSO Party, I used a Heil headset, foot switch, and tablet computer. I was surprised that with running pileups for two hours straight, the heat dissipation from the go-box was sufficient and no additional fans were required. The N1MM contesting software allowed sending digital voice recordings through SignaLink, which worked very well.

Figure 4.

The author, Paul Lusardi, N0VLR, participating in the 2016 Pennsylvania QSO Party (photo credit N3FB).

The only additional piece of equipment I needed was a small folding table to hold the go-box, my computer, and I still had ample room for food and drink!

Conclusion

Building a go-box can be very rewarding and will definitely draw attention from fellow ham club members. Hopefully, I have inspired you to build your own go-box for those times when an out-of-shack operational need presents itself. Just to reiterate, it is important when designing your go-box to consider various operating environments; you never know when an emergency situation may arise that could depend on your services for communication to the outside world. -- *Paul Lusardi, N0VLR, Corvallis, Oregon; member, Benton County ARES, Search and Rescue, and Oregon Disaster Medical Team*

Used with permission, The ARRL ARES Newsletter, Dec 21, 2016

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New ARRL Repeater Directory Will Leverage Crowdsourcing Technology

ARRL partner RFinder, the creator of a web and app-based directory of Amateur Radio repeaters worldwide, will supply all data for the 2017-2018 *ARRL Repeater Directory*Â®. RFinder will employ its crowdsourcing technology to aggregate timely and accurate information for the *Directory*, marking the first time crowdsourcing has been put to use in the production of an ARRL publication. "Crowdsourcing," in this case, means repeater owners and frequency coordinators. Including RFinder's data in *The Repeater Directory* will help users seeking the most complete listing of on-air repeaters. *The Repeater Directory* will continue to publish listings by state, city, frequency, and mode.

Although RFinder's data is primarily user supplied, ARRL has invited volunteer frequency coordinators to contribute their coordination data to RFinder. RFinder has set up an online portal to accept coordinator input. Every coordinator supplying repeater data to RFinder will have its listings credited as coordinated repeaters in both the RFinder smartphone apps and web listings, and in the hard-copy *Repeater Directory*.

As part of this program, RFinder will make the RFinder database available to all frequency coordinators free of charge, with the exception of the Apple iOS version app, which requires a $9.99 license. The Android-compatible database is a free download.

"We believe this will help you in your coordination activities, as it will provide you with a complete map of machines, both coordinated or not," RFinder said. "It will also assist coordinators to bring uncoordinated machines into coordination."

RFinder's steadily growing worldwide repeater database now includes more than 60,000 repeaters in some 170 countries around the globe. RFinder listings are dynamic, regularly reflecting new, updated, revised, and deleted information.RFinder is integrated directly with *EchoLink* on both Android and iPhone and provides the ability to share repeater check-ins on Facebook, Twitter,

and APRS. *RFinder* is integrated with RT Systems and CHIRP radio programming applications and has a routing feature that lets users find repeaters worldwide over a given route. Video demos of *RFinder* features are available on YouTube.

RFinder also includes the ability to report radio jamming anywhere. Those without a device or subscription can file reports online. Those responsible for coordinating anti-jamming activities also can request access to view jamming reports for their area.

ARRL previously discontinued its own products that supported digital listings of repeater data including the *TravelPlus for Repeatersâ¢* software and its own apps.

RFinder is $9.99 per year. Subscribe to RFinder from your iPhone, iPad, iPod Touch, or from your Android smartphone or tablet.

RFinder recently collaborated with the BrandMeister network of Amateur Radio digital voice systems to include a daily data feed of digital repeaters. Digital repeaters are now categorized in RFinder by network, and RFinder's Android and iOS apps can provide information on BrandMeister networked repeaters worldwide. The daily data feed from BrandMeister includes both repeaters and talk groups.

RFinder also now supports automated repeater coverage maps for the newly released BrandMeister dashboard, active once repeaters sysops enter their repeater information on BrandMeister. RFinder generates its coverage maps using CloudRF technology, developed by Alex Farrant, M6ZUJ.

Used with permission, The ARRL Letter, Nov. 17, 2016

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Hamvention® Countdown: With 6 Months to Go, Plans Proceed Apace at New Venue

With just 6 months to go until Hamvention®Â® debuts at its new Greene County Fairgrounds and Event Center venue in Xenia, Ohio, May 19-21, General Chair Ron Cramer, KD8ENJ, and Dayton Amateur Radio Association (DARA) Board Member Mike Kalter, W8CI, assure that all is progressing smoothly. Cramer and Kalter made another appearance this week on *Amateur Radio Roundtable*, hosted by Tom Medlin, W5KUB, to update progress on preparations for the all-new Hamvention. Cramer and Kalter said they continue to be bombarded with questions, concerns, and rumors regarding how the event will be staged.

An aerial view of the Greene County Fairgrounds and Event Center in Xenia, Ohio, the new Hamvention venue. [Photo courtesy of DX Engineering and Greg Ordy, W8WWV]

"You have to remember, we're starting from the ground up," Cramer said. "So it's taken a while to get things going." He asked for patience from prospective visitors, but he and Kalter told Medlin that the vast all-volunteer team has everything well in hand, and that plans are coming together. Both maintained that those attending Hamvention 2017 "will be very impressed."

Cramer predicted parking would not be an issue, and that there would be plenty of room for the anticipated number of vehicles, with overflow parking available and transportation to the buildings housing the vendors and events from the parking areas, as needed.

Traffic and transportation logistics are being addressed, Cramer said, and Hamvention is working with four police departments as well as a professional traffic planner to ensure that all goes smoothly.

Hamvention Chair Ron Cramer, KD8ENJ (left), and DARA Board member Mike Kalter, W8CI, on *Amateur Radio Roundtable*. [Photo courtesy of *Amateur Radio Roundtable*]

Cramer said Hamvention 2017 tickets will become available starting in December -- a bit earlier than in past years. The cost of admission will rise by $2 from the 2016 price of $20 for advanced tickets, and $25 for those purchased at the gate. But, he pointed out, there will be no parking charges on site.

The Hamvention website is yet to be updated to reflect the 2017 event, but Cramer and Kalter said that both indoor and outdoor layout maps will be made available online in advance of the show, and these will be included in the Hamvention program as well.

Hamvention announced in August that it would be relocating to Xenia, following the closure of Hara Arena, where the show took place for more than 50 years.

The Amateur Radio Roundtable show included a DX Engineering-produced video taken from a drone operated by Greg Ordy, W8WWV, and narrated by DX Engineering's Tim Duffy, K3LR.

Used with permission, ARRL Letter, Nov 17, 2016

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ARRL Transitioning to New Digital Publishing Platform

ARRL is moving to a new digital publishing platform! The January 2017 digital edition of *QST* will be the first produced using *PageSuite*. ARRL Publications Manager Steve Ford, WB8IMY, said the transition from the current *Nxtbook* platform to *PageSuite* not only will improve members' reading experience, it will be more convenient.

"*PageSuite* provides a sleek, modern design that runs on desktop browsers, mobile browsers, and within apps for mobile devices," Ford said. "*PageSuite* does not require *Flash* but uses *HTML5* instead. This alleviates many security concerns and makes the magazine more broadly compatible."

New *QST* issues, beginning with the January 2017 edition, will take up less space on mobile devices, speeding up download time. Added features include digital *bookmarks* to save a page and pick up right where you left off, and a *clipping tool* to save or share important passages as JPEG files. Video files will be hosted on YouTube in high resolution.

The new application is compatible with Android devices, iOS devices -- including iPhones, iPod touches, and iPads -- and will be newly available to Kindle Fire. These apps will receive regular, quick updates in order to keep the application running smoothly.

Ford said the link to the digital edition of the monthly journal will remain in the same spot on the *QST* website, and members will continue to be notified of its release via e-mail.

A sample of the digital edition of *QST* produced using the PageSuite platform.

ARRL has compiled a "how-to" guide to help members navigate *PageSuite*, which will be available on the *QST* web page on the day the January digital edition is announced. The announcement concerning the availability of the January issue of *QST* in the new desktop/laptop version, the how-to guide, and the new digital *QST* apps, will be forthcoming.

Members can use the online digital *QST* feedback form to comment on the new platform when it is available. To ease the transition, *Nxtbook* applications will continue to function on iOS and Android devices until January 1.

Used with permission, The ARRL Letter for Dec. 8, 2016

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Amateur Radio Parity Act Bill Unable to Overcome Florida Senator's Objections

The Amateur Radio Parity Act, H.R. 1301, suffered an unbefitting demise on December 9 as the 114th Congress drew to a close. After passing the House of Representatives on a unanimous vote earlier this fall, the bill stalled in the Senate due to the intervention of only one member, Sen. Bill Nelson (D-FL). The measure would have directed the FCC to extend its rules relating to reasonable accommodation of Amateur Service communications to private land-use restrictions, such as covenants, conditions, and restrictions (CC&Rs) imposed by homeowners associations.

"[During 2016] Nelson received thousands of e-mails, letters, and phone calls from concerned constituents asking for his support of H.R. 1301. Numerous meetings were held with his senior staff in an effort to move the legislation forward," ARRL said in a news release. "Negotiations, which led to an agreement with the Community Associations Institute (CAI), the national association of homeowner's associations and publicly supported by CAI and ARRL, were brushed aside by Sen. Nelson as irrelevant."

In a final meeting with Nelson's staff as the 114th Congress neared adjournment, it became clear that no matter what was said or done, the Senator would oppose the bill and refuse to allow it to move forward. Because the measure had not been put on the floor schedule, the only way it could have passed the Senate would have been through a process called "unanimous consent." A Senate member may request unanimous consent on the floor to set aside rules and expedite proceedings. If any single Senator objects, though, the request is rejected.

The unhappy ending followed nearly 2 years of intense effort on the part of ARRL and thousands of its members, who contacted their Congressional representatives to urge their support of the measure on Capitol Hill. The ARRL Board of Directors is expected to discuss the future of the initiative at its January meeting.

Used with permission, The ARRL Letter for Dec. 15, 2016

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ISS Packet Digipeater is Now on 70 Centimeters

The Amateur Radio on the International Space Station (ARISS) packet digipeater aboard the ISS now is active on 437.550 MHz. The UHF frequency means users will have to make adjustments for Doppler on both uplink and downlink. The change to 70 centimeters comes in the wake of a problem that has sidelined the Ericsson VHF transceiver, so the UHF model has been put into service.

The digipeater operates just as it did when it was on its former 145.825 MHz frequency. AMSAT suggests that users program a group of five memory pairs to permit an operating range that will compensate for Doppler, with transmit frequencies from 437.560 to 437.540 MHz, and receive frequencies from 437.540 to 437.560 MHz, in 5 kHz increments (i.e., the transceiver would be in simplex for 437.555 MHz). More information is available from the AMSAT website. Scheduled ARISS contacts and APRS operations will also utilize the Ericsson UHF transceiver in the *Columbia* module. -- *Thanks to AMSAT News Service*

Used with permission, The ARRL Letter for Dec. 8, 2016

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This correction edition of the January 2017 Ham Arundel News contains the entire article by Mr. Ed Brown, AA3EB.

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.

- adapted from the original Amateur's Code, written by Paul M. Segal, W9EEA, in 1928The Radio Amateur's Code

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.

Wednesday Night Talk Net -- All are welcome

8PM, On the AARC Repeater 147.105

Other Amateur Radio nets

Name	Frequency	Day	Time
Morning Commuter Net	147.105+Mhz PL 107.2	Weekdays	0600
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