



NEWS FOR AND BY BARS MEMBERS

BARS Billerica Amateur Radio Society

SEPTEMBER 2019

From the President's Desk

from the President of BARS, Andy Wallace, KA1GTT

Hello, everyone. As you have heard, September's meeting will be our annual QSL sort with Eric Williams, KV1J, of the W1 QSL bureau. This, coupled with a free pizza party, is a very popular meeting event for BARS and I am happy we are helping Eric yet again.

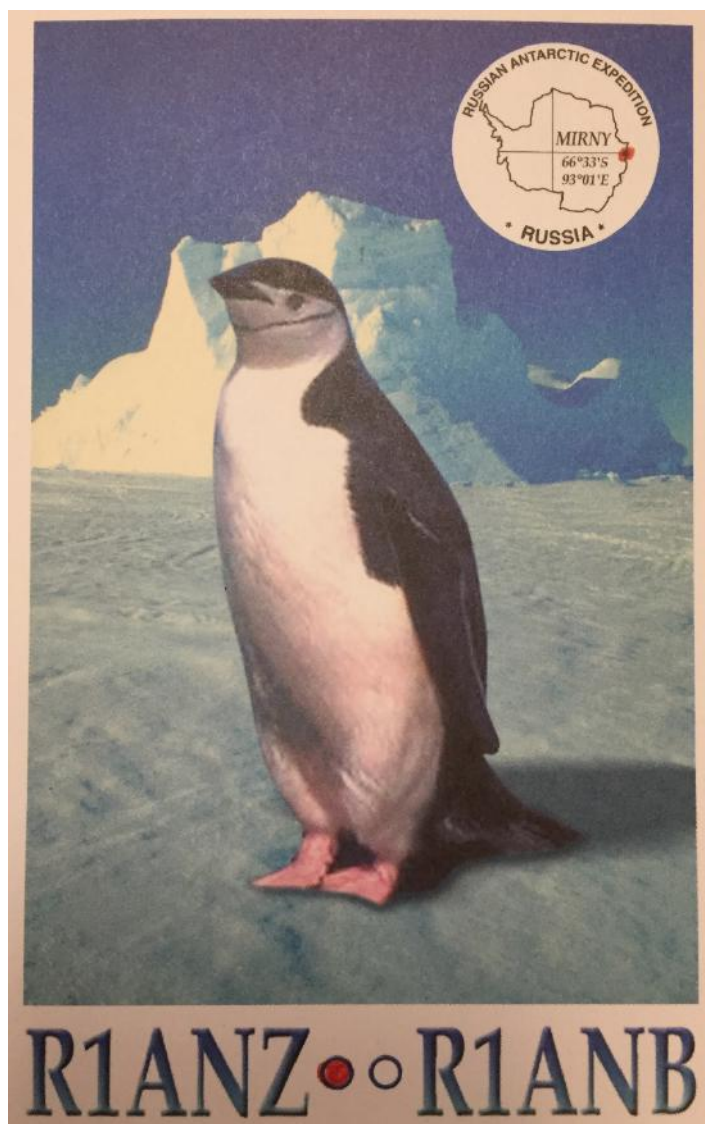
How many of you have paper QSLs you send out? Once you have a contact on the air, it can be fun to have a memento besides an entry in your logbook. A QSL is a postcard with your call and log of the contact you made and is sent to the other station, who should also send one to you. Google "QSL card" and select images and you will see thousands of cards from all eras. Almost all aspects of the radio hobby have had QSLs in one form or another. AM and shortwave broadcasters have sent them to listeners writing in since the early days. CBers have exchanged them. But the most common QSL is the ham radio QSL card.

Unless you are hamming using slow- or fast-scan TV, the contacts we make are not visual. A well designed QSL to exchange is a personal statement of who you are as a ham and can be a work of art, too! I really enjoy sending mine out and love receiving them from around the world. Most ham QSLs are standard postcard size so you can fit them in pocket pages and 3-ring binders. Some of your BARS friends have hundreds or possibly thousands of them.

I had my latest batch made at Cheap QSLs – www.cheapqsls.com which has cards starting at \$9.99 for 100 of them. They do a great job and email you a proof JPG to check before committing to printing. They have dozens of styles and will make custom cards as well.

I have a few cards which are very memorable. This is the fun of sending and receiving cards – looking at them brings you back to the contact you made. In this case, I was with some friends on the coast of Maine and had strung a random length of wire on the bushes outside the cottage for an antenna. I was tuning around on my Elecraft K1. The K1 is a 5W QRP CW-only rig. On 20m I heard this watery signal calling CQ early in the evening. It

was like a ghost ship – no one else was answering him. I called him, using my horribly compromised antenna, and he came back to me! We exchanged cards and I have a record of that contact to treasure.



The station was R1ANZ. I had forgotten my DXCC countries list, so I did not know exactly where it was other than it being a Russian territory. I figured it was in the Arctic region

somewhere. Well it turns out R1ANZ is Mirny Base, Antarctica, just about as far around the earth from Maine as you can go! I was thrilled. 5W into a hedge did it. Here's the QSL I have to prove it.

I hope you will consider creating and sending your own QSL. And please come to our meeting on September 4th. You will enjoy seeing exotic DX QSLs during the sort I am sure!

Andy, KA1GTT
President, Billerica Amateur Radio Society

Next BARS meeting: 7:00 PM Wednesday, September 4, 2019

Eric, KV1J - QSL Sort and Free Pizza!

BARS is pleased to announce that yet again we will have our annual QSL sort and pizza party!

Eric Williams, KV1J, is a volunteer for the W1 QSL Bureau, sponsored by the Yankee Clipper Contest Club.

<http://www.w1qsl.org/>

<http://yccc.org/>

The W1 QSL Bureau is a service which accepts incoming QSLs from overseas and redistributes them to U.S. hams in the W1 call district – 100,000 of them per year! Each card coming in must be sorted by first-letter-after-the-1 to prepare them for their final destinations to hams who have paid the small sum required for stamps and envelopes for the Bureau to mail them.

Eric is always happy to have clubs' help when it comes to sorting and it is a fun event too! Since BARS is doing this in September it is perfect timing because Eric will be bringing these cards to the Northeast HamXposition in Boxborough for September 6/7/8 where hams can stop by his booth to pick them up and save mailing delay! And if you discover cards destined for you in the sort, you may pick them up immediately also.

Please join us for the sort. Eric will spend a few minutes explaining how the sort works and set up the mail-cubbies for filing. Then we will dig in! Literally – because we will break in the middle for pizza for all. Likely it will come from one of the fine Chelmsford pizza houses and we will try to get pies everyone will like. The cost will be covered by BARS. A treat!

We look forward to seeing you there!

Visit to Plattsburgh

from Kayla, W2IRY

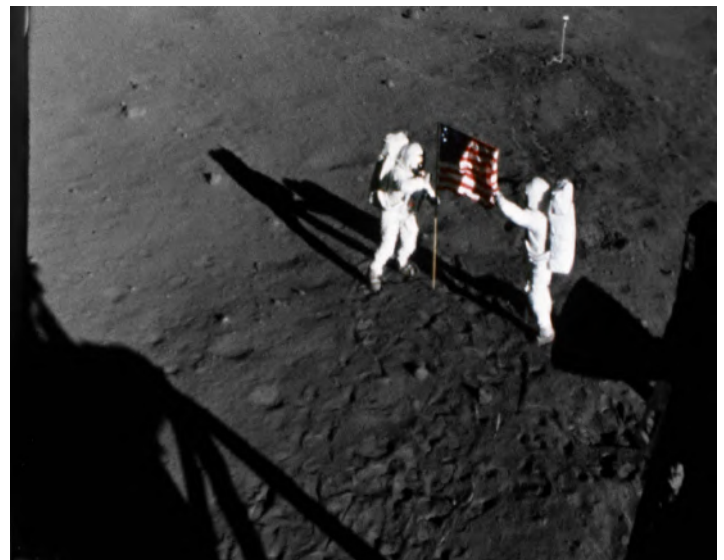
When I'm up in Plattsburgh, NY visiting family, I often get mistaken for WIRY 1340 kHz, the local AM radio station. This time, I decided to stop and grab a photo outside of the station for the folks back home.



73,
Kayla, W2IRY

"How We Communicated From the Moon"

from Phil Temples, K9HI, Program Chair Northeast HamXposition



"Tranquility base here. The Eagle has landed."

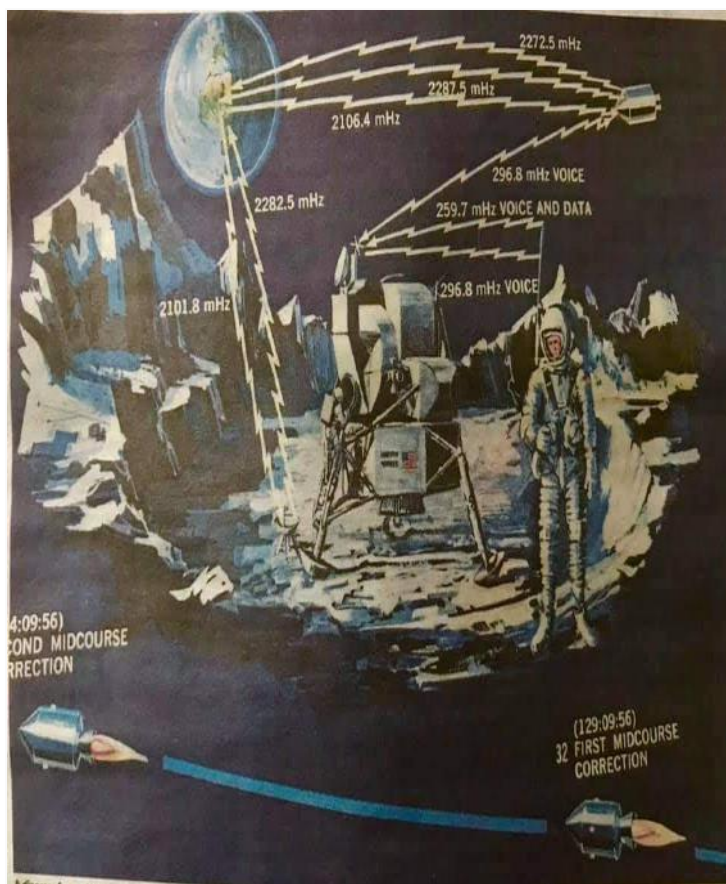
Nearly everyone recognizes these iconic words, spoken by Apollo 11 Commander Neil Armstrong. But what few individuals may realize, however, was the monumental effort involved in

designing and building the Apollo spacecraft's communications systems.

On September 7, 2019, George Whitehead, W1BOF, will discuss the technical details of the spacecraft's Communication Subsystem as well as his personal experiences as a working-level engineer for the Apollo Spacecraft prime contractor, North American Aviation, Space and Information Systems Division at an upcoming presentation at the Northeast HamXposition @ Boxboro (a.k.a. New England Division Convention).

According to Rick Zack, K1RJZ, "this is going to be an outstanding Boxboro/HamXposition presentation. Now with the design phase being well over 50 years ago, George is also seeking to contact other amateurs in the local area who may have worked on the Apollo project. If you know of anyone, please have that person contact George Whitehead, W1BOF, directly at whiteheadg@aol.com .

The presentation will occur on Saturday, September 7 from 2 PM to 2:50 PM in the Federal Room at the Boxboro Regency and Hotel and Conference Center, 242 Adams Place, Boxborough, MA 01719. There will be an open discussion and Q&A immediately following in the Gazebo from 3 to 4 PM. For more information about the Northeast HamXposition @ Boxboro, visit <https://hamxposition.org>.



A New Ham's Antenna Adventure

from Jon, AC1EV

I am a new ham operator, since February 2018. I tested at Chelmsford with BARS VEs for my Technician and General licenses. First year membership in BARS was a terrific benefit offered when I passed my Technical exam. My first radio was a Kenwood DH74A HT. In April 2018 I passed my Amateur Extra and around the same time I started with HF. I began with an IC-7300 and a very basic wire antenna. 63 feet of wire, end fed as a sloper and I was on the air. Since then I've changed antennas three times and for each antenna made numerous tweaks and reinstallations. By my count I have had at least 10 major iterations of antenna installations at my QTH.



This was my Buckmaster Off Center Fed Dipole (300-watt version). It took several upgrades to get to this mature installation, with the feed point at 33 feet and the ends around 10 feet. The orientation is E-W, opposite of the ideal, but that is where the trees were. On this antenna, with 100 watts, I made over 1000 QSOs and 80 DX entities, even in the doldrums of the solar cycle. Along the way I had opportunities to operate from more powerful stations, more power and beam antennas, I wanted one!

The project to bring my basic station up to an intermediate one occupied me for much of the past year. I needed to consider many things; spousal approval was top of the list with budget a close second. I knew that whatever I did, I would be living with it for a long time. I had many QSOs with hams who had hex beams and they all seemed happy with them. Also, I could see on the waterfall display on the IC-7300 that their signals stood out compared with the others. There were always

some brighter signals on the scope, beyond what the hex beams looked like and those were often from stations with much larger and more complex antenna systems like Stepplr or Optibeams mounted on towers 60', 70' or higher. That level of antenna was orders of magnitude more expensive, so I will put them on the dream antenna wish list, maybe if I win the lottery. The hex beam antenna was the most antenna I could get, within my budget and that I could install myself, without requiring a tower or manlift or crane to get it to the optimal height on 20 meters. Once I decided to proceed, I needed to get final spousal approval. My XYL was generically supportive of the hobby but living with the antenna on the roof was another thing. I knew of another ham locally with one, so we drove over to his house to see it. He has a split-level house with lots of trees, so the antenna is not as high off his roof and the trees behind it made it look less imposing than if it was out in the open. That did the trick and she gave me the green light to proceed.

There are many different hex beams to choose from. The first one I selected was backlogged on parts and couldn't take the order for three weeks. I waited and when I went to order it again the parts were still unavailable. I purchased the K4KIO model and ordered it on a Monday. It was delivered on Thursday, so kudos to them for prompt service! K4KIO does not offer an option for a 40-meter bent dipole to be a part of the antenna. They suggest it is better to have a second antenna for 40 meters instead, so it can be installed optimally rather than with the compromises required to have it included on the hex beam framework. I must say I do miss having 40-meters and will be adding an antenna to access it very soon.

I assembled the antenna in my driveway, with the central hub mounted on a short section of chain link top rail stuck in an umbrella stand. Assembly was simple. They recommend that you paint the spreaders, which I did after assembly, before the wires. I used white and it looks pretty good.



To move the antenna from the driveway to the roof I took a full section of top rail and had my wife steady it on the back of a tall step ladder. I carried the assembled antenna over to it and climbed the ladder to

place it onto the top of the top rail. From there I carefully walked it over to the roof of the house. The antenna is only 25 pounds, so not that heavy, but it is on a long pole and has long components so needed to be balanced or it will get away from you.



I climbed on the roof and was able to take the antenna and the short mast from my wife, leaving her with the 10-foot top rail pole. I put the antenna on the old tripod from the dipole for temporary use until the tower, rotator and Hex Lock Tilt plate were installed.





Now at 20 feet the hex beam can be used. I noticed the difference from the dipole immediately and had lots of fun for the next two weeks until I installed the tower. I climbed on the roof to rotate it. Here is the tower with the Yaesu G80-o DXA rotator and GS-65 thrust bearing installed

The height from the ground to the peak of my roof was 15 feet. I ordered the 8-foot Glen Martin tower to mount on the roof. I also ordered a Hex Lock Tilt Plate, which accounts for around a foot of height when installed. The main mast extends 6 feet from the top of the tower and there is a small section from the tilt plate to the antenna proper. The antenna is close to 3 feet deep, which would place the 20-meter segment at 33 feet or $\frac{1}{2}$ wavelength exactly.



The first step prior to installing the G-M tower was to reinforce the rafters under it to take any additional strain it would cause. I sistered the rafters with 2X8s and then braced them horizontally with additional 2X8s connected to 5 rafters.



The 16 lag bolts I used to attach the tower went into either the rafter or sistered 2X8 and it is very secure.



Above is the tower and antenna staged for the final steps. I need to remove the pyramid and install the G-M tower next. Relatively shallow pitch on the roof made it easy to work.

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The tower is installed. You can see the scale of the hex beam to the house here.



I removed two bolts from the front side legs of the tower and laid it back, hinging on the rear legs to rest on the sawhorse. It was easy with no antenna attached. Next I attached the tilt plate to the lower mast section and installed it in tower. With the tilt plate tilted 90 degrees I was able to place the antenna and short mast into it and tightened up all the nuts, taking care not to deform any of the mast tubes. At this height it is easy to attach the coax and rotator wire, etc. Next step is to raise it to vertical. I enlisted help for this step. My helper was able to help get the whole assembly up to around 45 degrees and then tend to the antenna angle with the tilt plate. It was not difficult for the two of us, you need to have more than just two hands available. It took less

than 5 minutes for us to get it standing upright, then I replaced the bolts on the front legs to the mounting brackets.



The antenna is at its final installed height.

Early the next day I heard Frankie VP2MNI in Monserrat having a QSO with Masa JE1LET in Japan and both were very strong signals to me. When I heard that Frankie was with a Japan station I rotated there and was able to hear Masa at 5/6. When they finished their QSO I called out and Masa replied first try! What a way to start the day and validation of the hex beam! I was also impressed that I could hear both Monserrat and Japan at the same time, they are on quite different headings from Massachusetts. Both stations are super stations which certainly helped.

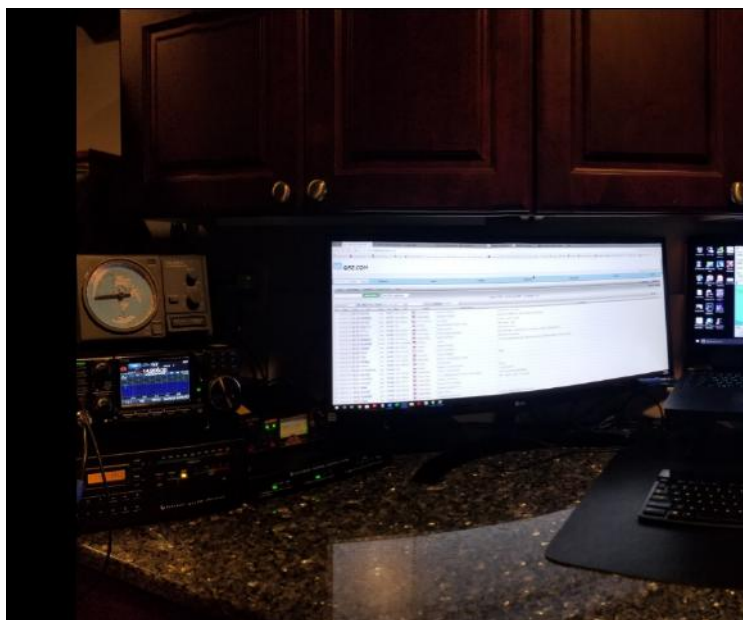
248	2019-07-20	11:52	JE1LET	20m	14.240	USB	PM95NG81	Japan	MASAHIKO
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I had fun making QSOs during the rest of the day and got many good reports on my signal. The last contact I made was KH7XS. Normally this station generates big pileups, but for some reason, everyone had gone to 40-meters and we were almost alone on 20-meters. We had an 18-minute QSO 5/9 for most of it. Japan in the morning and Hawaii at night, I never had a day like that before the hex beam.

232	2019-07-21	02:17	KH7XS	20m	14.226	USB	BL20ma	Hawaii	Big Island
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Not every day has had conditions as good. I often find that if I call CQ between 9:00 PM and 11:00 PM or so I get western US stations and did have a NZ station reply to me recently.

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Here is the shack. IC-7300, Elecraft KPA500 amp, Elecraft KAT500 tuner and the Yaesu rotator controller head. I've added a Heil Pro 7 headset. My laptop with two external monitors, a legacy of my former life in IT.

Notes on construction:

- Take care to use appropriate waterproofing anywhere there is a penetration of the roof. I used caulk in the holes for the lag bolts and sprayed liquid rubber over them to seal it up tight.
- Calibrate the rotator on the ground, it is easier than doing it on the roof.
- The antenna is well grounded. I also ran a separate ground from the tower itself to the ground.
- If you move the tower, remove any wires you can and address any you can't. It is easy to ruin a wire or connector and a pain to repair them.
- My roof was very easy to work on. It was still high enough to cause a serious injury if I fell from it, so be very careful especially if your roof is steeper or wet.
- At the very end of the construction as I was gathering the last of my tools to climb down off the roof, a pickup truck on the street stopped and the driver rolled down his window. He shouted up to me, "That thing is awesome!" I couldn't agree more.

73, Jon AC1EV

BARS Suggested Get-on-the-air Events

BARS is a "get-on-the-air" (GOTA) club. We encourage members to participate in the varied events on HF and VHF. Here are some popular suggestions for this month:

Date	Event	More information
Sep 6-8	W1N Special Event Station at HamXposition Boxboro	https://hamxposition.org/
Sep 7	CW OPS Open	https://cwops.org/cwops-tests/cw-open/
Sep 14-15	Nebraska QSO party	https://www.qcwa.org/2019-ne-qso-party-rules.pdf
Sep 14-15	Texas QSO Party	http://www.txqp.net/
Sep 21-22	New Hampshire QSO Party.	Google it. URL too long.
Sep 28-29	Maine QSO Party	http://www.ws1sm.com/MEQP.html

More events can be found every week on the WA7BNM contest calendar at :

<https://www.contestcalendar.com/weeklycont.php?mode=custom&week=current>

ARRL New England Division Convention - Sep 6-8. <https://hamxposition.org/>

It's the biggest ham event of the year in our region. Check out the many activities available on Friday, Saturday and Sunday.

W1N Special Event Station

VE Exams

Tech in a Day

Ham Radio Boot Camp for New Hams

DX Dinner

Saturday Banquet

Forums on Friday, Saturday, Sunday

Prizes

Big Flea Market

QRP Forums

YCCC Meeting

And much more!

BARS Membership

Bruce, W1LUS, our BARS Treasurer reports that as of September 2019 we have 95 total members.

2019 BARS Member Dues

The BARS Board has changed the policy on member dues. A \$15 annual BARS membership now runs from January 1 and expires on December 31st. Any renewal or new membership made after September 1 will be valid until December 31 of the next year. Memberships allow us to

- Pay our bills;
- maintain our great web page;
- fund field day;
- and bring the membership a great variety of informative meetings and speakers.

Treasurers Report

September 2019 Treasurers Report

We have had just one expense since my last report. \$220 for club insurance. We now have \$482.64 in our PayPal account, \$24.51 in the local Bank and \$10.00 in Cash for a total of \$517.12.

Bruce Anderson W1LUS, Treasurer

VE Report

At the August 8 BARS VE exam session six people passed the Technician exam. They were from Mass, NH, VT. Three new BARS members are Todd KC1LUB, Holger KC1LUE, and Jeffery KC1LUG. VE's for the evening were: Gary Frascarelli (W1GFF) VE Team Leader, Charles Suprin (AA1VS), Andy Wallace (KA1GTT) and Tom Walsh (K1TW).

BARS Needs You!!!

We are looking for a few good hams to act as net control on the regularly scheduled Wednesday night nets! All it takes is one night a month; if you are interested contact John KC1FTJ harpman@aol.com. Also, the club needs volunteers for light tasks of ~ 1 hour a month. Are you able to pitch in? Contact Andy, KA1GTT

Wednesday Night Net

Join us on the Billerica Repeater for the weekly BARS net (except on 1st Wednesday of Month which is club meeting night)

Repeater info:

147.12 MHz

+600 kHz (normal) offset

Encode CTCSS 103.5 Hz

Club Meetings

First Wednesday of the month at 7:00PM at Chelmsford Bible Church, 128 Gorham St., Chelmsford MA

Park in back and enter by rear door

[Chelmsford Bible Church Hall, 128 Gorham St, Rear Door, Chelmsford MA 01824-3220 \(map\)](#)

VE Sessions

VE sessions are held every month on the 2nd Thursday at 7:00 PM at Chelmsford Bible Church, 128 Gorham St., Chelmsford MA. Park in back and enter by rear door. [Chelmsford Bible Church Hall, 128 Gorham St, Rear Door, Chelmsford MA 01824-3220 \(map\)](#)

Club Breakfast every Saturday

On Saturday mornings around 8:15AM, we also meet weekly for a casual, social breakfast at Stelio's restaurant. [Stelio's Family Restaurant, Billerica, MA \(map\)](#)

BARS Leadership Team

President: Andy Wallace, KA1GTT

Vice President: Kayla Creamer, W2IRY

Treasurer: Bruce Anderson, W1LUS

Secretary: Paula Crock, KC1EDA

BoD: Mike Raisbeck, K1TWF

BoD: Henry Christle, WA1VAB

Ex Officio: Tom Walsh, K1TW