

LEO SATELLITES

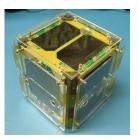
John Kludt K4SQC - GA AMSAT Coordinator

Tech Saturday Presentation – 15DEC2018

Our December Tech Saturday was a presentation on Amateur Satellites by Dr. John Kludt, K4SQC. John is a member of AMSAT, the Radio Amateur Satellite Corporation and is the AMSAT Ambassador for Georgia.

John described the typical amateur satellite as a small cube, known as a CubeSat, a 10cm X 10cm

X 10cm box weighing 1.3 mg. Dimensions and weight are extremely important. The Cube Sats are carried into space as a hitchhiker on large and very expensive commercial satellites. Once the main payload reaches orbit the Cube



Sats are ejected from a special spring fired launcher. The fit is very critical, AMSAT doesn't want to be the bird that jams the launcher. Once launched the whip antennas deploy and the satellite is activated. The surface of the cube is covered with solar cells, back-up power is supplied by standard "C" cell, Ni-Cad batteries.

There are currently >15 ham radio satellites in orbit. Many of them are usable with only a hand

held antenna and an HT (Full Duplex Required). The tape measure antenna many club members built can be used to receive the satellites with a 2 meter downlink. Several have cameras aboard and many are airborne repeaters. There are no Geo-Stationary ham sats yet (a very expensive project) though there are plans to fly one eventually.

Many of these small satellites are sponsored by colleges and universities and carry Amateur Radio along with the school provided experiments.

There are tracking apps for Smart Phones and computers that will show the time and track of every Amateur Satellite along with up-link and



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8 - Nets

7 - Net Mgr Rpt, Active Shooter

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JANUARY

2019

Vol 7, No 1

Nancy Phillips Editor 573-528-0697 K4NEP@arrl.com

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Amateur Radio Club of Butts County

January 07, 2019 Meeting Held at Butts County Fairgrounds Jackson, Georgia

Meeting Began at 1900

Meeting Concluded at 2100

Attendance at Meeting: Mark Austin, Winford Barnes, David Burnham, Michelle Burnham, Mark Clark, Mike Crowe, Dan Darsey, Buzz Kutcher, Monica Ladson, John Lipscomb, Melvin Mosier, Jeff Phillips, Nancy Phillips, Darlene Ragon, David Ridgeway, Elaine Stachowiak, Anthony Strite, Brent Strite, Joyce Strite, Ken Wallis, Rudy Williams, Glenn Wyatt, and Capt. Matt Garrison

Office of Homeland Security/CERT: Director Glen Goens No report tonight, member not in attendance.

Net Manager's Report: Ken Wallis The Morse Code classes Part Two will be held on Monday nights so Ken will be more available to function as Net Manager on Tuesday nights. Ken stressed how important it is that members continue to improve their digital skills. If anyone is interested in serving as the Winlink Net Logger please contact Ken for training.

VE Team: Dan Darsey There will be a Ham Cram held on Saturday January 19, 2019 at Fire Station #7 beginning at 0830; with testing done at 1600. Contact Dan for further information.

Repeater/Technical Committee: Mike Crowe The Club still doesn't have a dedicated Internet connection for the Ham Station at Sylvan Grove Hospital.

Skywarn Coordinator: Elaine Stachowiak Elaine shared that she was not aware of any upcoming Skywarn training classes in the immediate future.

Hospital Team and Public Health Department Team: Dan Darsey and Ken Wallis Dan shared that the Hospital Team was unable to make any of the required contacts for the December Hospital Net but all contacts were made for the January 2019 Net. Ken said that all 4 weekly Health Department Nets were covered and contacts made as required. There are 7 Health Department Team members but we need at least one or two more for better coverage.

CERT Activities: David Ridgeway No report tonight, David had to leave before the business part of the meeting began.

Field Day Committee: Nancy Phillips There have been 3 unofficial Field Day meetings and an "Official meeting" is to be scheduled shortly.

Membership Chairman: Nancy Phillips No new members.

Public Information Officer: Buzz Kutcher Club activities are posted in the local newspaper and mentioned on the local radio station.

EC Report: Buzz Kutcher Buzz reminded members of the State ARES meeting on January 12, 2019 to be held at GSPTC in Forsyth, GA. Members will meet for breakfast at Denny's at 0800 and then travel on to the training. ARES Connect is live now and Buzz reminded members to post their hours served by registering for activities. In December our Club's volunteer hours, training, etc were 185 hours, valued at \$4677.00. Buzz has been serving as Butts County EC since 2010; as of the end of March 2019 he is retiring from that position. If you are interested in assuming the position please let Buzz know so he can notify the proper coordinator. We are all in awe of the work that Buzz has done for the preparedness of Butts County Emergency Communications! Thanks Buzz!

Treasurers' Report: John Lipscomb General Fund: \$1355.66 Repeater Fund: \$1893.00 Total Funds: \$3248.66

Club Old Business: February 16, 2019 there will be an activity to assist Ken with the mapping of Butts County for communication needs.

Club New Business: Eight students finished the Morse Code Level One class and Level Two Classes have begun. They will be meeting for the next 8 weeks on Monday and Thursday evenings at Fire Station #7. Mark Clark made a motion that our Club join the Butts County Chamber of Commerce; Buzz Kutcher seconded the motion and it was passed by members present. Dues are \$50.00 a year for Chamber membership.

Coming Events: Consider volunteering to work the Publix Atlanta Marathon to be held on March 17, 2019. A pre-race educational meeting is scheduled for March 9, 2019. Mike Crowe asked members who were available to an antenna party at his house tomorrow, January 8, 2019 at 1400. Newton Radio Club is holding their first meeting at the Covington Airport Terminal at 1830, tomorrow evening. The Club will be serving pizza to all attendees.

Monthly Program: Captain Matt Garrison from the Butts County Sheriff's Department gave an excellent class on "Active Shooter Training for Civilians".

Raffle Funds Raised this Meeting: The Club raised \$47.00 for the Repeater Fund with Raffle items. Thanks to everyone for their support of our Repeater.

_Darlene Ragon KK4BKF

Whit's Wisdom Whit Smith - WA4VBX

HOW TIGHT IS THAT NUT ?

What type of nut, bolt, or screw do you have? There are several classes or grades of nuts and bolts. Generally, the hardware at the "big box" stores is the lesser grade. When you replace a nut or bolt, be sure that you get the same grade. Ask for help if needed. This is especially true if you are replacing a high torque bolt that in used in a car engine or some other place like wheel lug nuts. The lug nuts on most cars require about 100 foot pounds (ft lbs) of torque.

Every type and size of nut or bolt has a recommended amount of tightness. There are many things that factor into tightness. Among them are dry joint, lubricated joint, lock washers, flat washers, to name a few. Most of the time the bolt is dry and a flat washer and/or a lock washer used. This tightness or torque is rated in inch-pounds for smaller sizes and foot-pounds for larger sizes. There is also an equivalent metric rating in newton meters. Use of a torque wrench is an easy way to measure tightness. They are readily available in many stores, however, they generally are for the larger sizes. Torque wrenches that will measure 20 -200 inch pounds (in-lbs), 5-80 foot pounds (ft lbs), or 20-150 ft lbs are available for about \$25 each. A torque wrench that will measure 50-300 ft lbs is about \$85. Torque wrenches for the smaller sizes are available but they are expensive and hard to find. However, a socket or a bit that is compatible with the torque wrench will be needed to measure torque. When you get to the smaller sizes, it may be more convenient to rely on feel rather than a torque wrench. For smaller sizes, you can learn to tighten by feel. Take a small nut and bolt and tighten them to the point where the bolt twists into. By doing this enough times, you can teach yourself to tighten a bolt by feel. If you want a little extra holding power, put some **blue** "LOCTITE" on the threads and it will be difficult to remove the nut. If you use red "LOCTITE" it will be very very difficult to remove the nut. "PERMATEX" makes similar products.

There is a vast amount of data available on the internet. There are many types of screws available that are made from different materials. The chart below shows the torque for the smaller sizes of the lesser grade. It is not a complete list, but it shows some of the popular sizes.

(PITCH is distance in mm between 2 threads.)

Size - Threads/ in	Torque (lbs)	Torque (ft lbs)	Metric Size (mm-pitch)	Torque (lbs)	Torque (ft Ibs)	Torque (Newton meters)
4-40	5	0.4	M3x.50	7	0.6	0.8
6-32	10	0.8	M4x.70	17	1.4	1.9
8-32	18	1.5				
10-24	26	2.2				
10-32	30	2.5	M5x.80	35	2.9	3.9
12-24	41	3.4				
12-28	43	3.6	M6x1.00	6	5.0	6.7
1/4-20	63	5.3				
5/16-18	130	10.8	M8x1.25	145	12.1	16.1
3/8-16	230	19.2				

NOTES FROM THE BACK ACRE

_ Buzz Kutcher, K3GWK



Georgia ARES monthly report December, 2018

Reported by: Butts County EC, Buzz Kutcher, K3GWK

Report ID# 11444. Report submitted by: K3GWK, Buzz Kutcher - EC

Total number ARES members in your group is: 31 Change since last month: 0 Name of your Local ARES Net: Butts County FM **Training Net** Net Frequency: 147.285 PL 131.8 Day of the week: Tuesday Time of the Net: 19:30 LOCA Total of Nets this month: 6 NTS Liaison: GA ARES, GA SSB Drills, Tests and Training sessions: 7 Drills, Tests and Training Man Hours: 132 Public Service Events: 0 Public Service Man Hours: 0 **Emergency Operations: 0 Emergency Operations Man Hours: 0** Misc Activities: 2 Misc man hours: 33

TOTAL ARES OPERATIONS: 9 TOTAL ARES MAN HOURS: 164 Comments: We held our 8th Anniversary dinner at Buckner's Restaurant. The Morse Code Class wrapped up Phase One, thanks to W8XC for instructing the class. Phase Two will begin on January 3rd. The December Tech Saturday was a presentation on Amateur Satellites by John Kludt, K4SQJ. KK4GNO, KM4HOS, KM4NRP, W4DED and W8XC operated the Sylvan Grove Hospital station for the monthly hospital net. AJ4GU led a work day at the station to improve the grounding and reduce the QRM. KM4HOS, KA8LAD, NI2Y and KM4NRP continue to support the Thursday DPH Nets on DStar. Tuesday evening NBEMS training continues. Several ARES members attended the December GHA/DPH Mutual Aid meeting at GPSTC. The Field Day team has begun planning meetings, chaired by K4NEP. ARES Membership: 13 Deployable, 12 Active and 6 Pending.

TOTAL DECEMBER HAM HOURS: 186 (Value \$4,677)

LEO Satellites, continued from Front page

down-link frequencies. Most of the apps are free. There is also information available on the AMSAT website (<u>www.amsat.org</u>).

Satellite SO-50 will work with a Non-Full Duplex HT. Always listen first! If you hear activity from the satellite – CALL.

In addition to operating through these little birds, there is ham radio activity on the International Space Station. Many of the tracking apps provide tracking information for the ISS. Information about ISS activity can be found on the ARISS (Amateur Radio on the International Space Station) website (<u>www.ariss.org</u>).

I have copied Slow Scan TV pictures from the ISS using just a handheld radio and also have I digipeated on 2 meter FM through the space station's APRS (Automatic Packet Reporting System) system.

Just another really cool thing you can do with Amateur Radio.

73,

Buzz Kutcher, K3GWK



AMATEUR RADIO EMERGENCY SERVICES _ Jeff Phillips KN4FRG

Amateur radio operators have a long and distinguished history of providing communications during times of emergency. Some Ham operators choose to volunteer directly and serve agencies' communications needs, larger organizations like the American Red Cross and/or Salvation Army, or within their local and state emergency management organizations. For the majority of the folks in the Amateur Radio Club of Butts County, we support the Amateur Radio Emergency Service (ARES) at the local level. Since the 1930s, ARES members responded to local, regional, and natural disasters including the attacks of September 11, 2001 in New York City, Boston Marathon 2013, Puerto Rico 2017, Hurricanes 2018, and many others.

ARES consist of licensed amateurs that voluntarily registered their qualifications and equipment with their local ARES leadership for communications duty in the public service whenever needed. Every licensed amateur and only amateurs are eligible for applying for membership in ARES. Any licensed amateur can provide their services as needed without any requirement for emergency equipment, though, it is desirable. There is not a direct requirement to be a member of ARRL to volunteer, but it is a requirement for leadership appointments. There are actually four-levels within the overall ARRL ARES organization – national, section, district, and local.

The ARRL Field Services and Radiosport Manager or designee manage the ARES National Level emergency coordination at the ARRL Headquarters. Their responsibility lies with advising all ARES officials regarding problems, maintaining contact with associated federal agencies, and other national officials concerned with amateur emergency communications. The ARRL Field Organization Supervisor conducts business using the established emergency preparedness program. The Section, based upon call areas, has a Section Manager (SM) with a Section Emergency Coordinator (SEC) serving as the SMs assistant. We have one SM representing Georgia (GA) within the Southeastern Division (see this link for ARRL divisions/sections - <u>http://www.arrl.org/sectionboundaries</u>). The SM usually delegates responsibility to the SEC and they can appoint several assistants to help coordinate organization and operations within their section. These positions include District Emergency Coordinators (DECs), Assistant District Emergency Coordinators, and local Emergency Coordinators (ECs).

The SEC, based upon the size of a given section, usually groups the section into Districts and appoints a DEC. The DEC coordinates the activities of the local ECs within their respective areas of concern along with supervising the local ECs. The local EC coordinates the local ARES program and is a key team player in ARES for the local community. The local EC has varying responsibilities and some are promote and enhance the activities of the Amateur Radio Emergency Service (ARES) for the benefit of the public as a voluntary, non -commercial communications service, manage and coordinate the training, organization, and emergency participation of interested amateurs working in support of the communities, agencies, or functions designated by the Section Emergency Coordinator/Section Manager. The local EC establishes viable working relationships with federal, state, county, city governmental and private agencies in the ARES jurisdictional area which need the services of ARES in emergencies along with developing detailed local operational plans with served agencies, and many others. The EC, to ensure a viable program, must recruit ARES members.

January 2019

KB6NU's Ham Radio Blog

Daniel Romanchik

Posted: 30 Dec 2018 11:14 AM PST

Used by permission

Every week, I get an email newsletter from Penguin Random House called *Signature. Signature* includes links to articles about books and writing. Being a writer, I clicked on the link to <u>"5 Good Writing Habits You Need to Learn</u> <u>Now.</u>" As I was reading the article, it occurred to me that the advice could also apply to amateur radio.

So, with apologies to the author, Lorraine Berry, here are five things you can do to make ham radio a habit:

1. To get on the air more, set up a time to do it. If you enjoy getting on the air, but never seem to be able to find the time to do it, you need to put it on your schedule. Set aside the time a couple of days, or a week, or even a month in advance, and you'll be more likely to do it. If you set up a regular time every week, pretty soon it will be a habit.

2. If ham radio is important to you, create an environment that encourages you to do ham radio. To make ham radio a habit, you really need a place that's set up to do ham radio. If you have to dig out and set up your equipment every time that you want to get on the air, you're just not going to do it. You need a "shack" that makes it easier for you to engage in the hobby. Richards, K8JHR, gave me some great advice back in 2012 on where and how to set up a shack.

3. Create temptations that reward you for your new habit of ham radio. For me, being able to operate is reward enough, but you may want to reward yourself with a beer or some ice cream after an operating session.

4. Make it easy to practice the habit of ham radio. This is related to #4. Your shack should have everything you need to easily do whatever ham radio activities you enjoy doing. If you enjoy operating, then it should have a nice operating desk. If you enjoy building, then set it up so that all of your tools are readily accessible. The easier it is to do, the more likely it is that you'll do it.

5. Start with the Two-Minute Rule for new habits and continue from there. The <u>"two minute rule"</u> is a tool to help you overcome procrastination. The idea is to allot just two minutes to a task that you'd like to complete or a skill that you'd like to develop. It's a small commitment, but enough to get you started, and the idea is that once you're started on a particular task or project, continuing work on that task or project becomes a lot easier. Not only that, those two minutes could easily become a half hour or an hour once you've gotten the ball rolling.

So, armed with this advice, I'm expecting you to get on the air more in 2019. I'll be listening for you.

JANUARY HOSPITAL NET -

Today's hospital net was a complete success making communications to the net via D-Star, Winmor, WebEOC, and HF. My thanks to Ken KM4HOS and Glenn KK4GNO for their assistance.

_ Dan Darsey W4DED

Win Barnes W8XC taking care of some grounding work.



Above: Mike Crowe AJ4GU and Dan Darsey W4DED updated the system for D-Star.

Photos by Nancy Phillips 28 Dec 2018

190107 Net Mgr rpt

Well, Darlene, KK4BKF, and Buzz, K3GWK, pinch-hit again in December and held 3 ARCoBC Trng Nets. 'Nuther great job while alot of us were finishing up Win's Level 1 CW class and foregoing the Christmas Day net.

We averaged 5 voice chk-in's per wk, 1 on MT-63, w/ WinLinks at 8 weekly. Slow month again w/ the CW class goin' & Christmas, but January oughta be better now that the CW classes have moved to Mon/Thurs nights. The ARCoBC still needs Net Controllers, Buzz & Darlene did stellar work 'adlibbing' for the last couple of months, but we still need 'scheduled NCS's each month. Lemme know if any of you would like to try yer hand at the NCS slot on the net, voice & digi, and also Winlink Net Logger and I'll be glad to show you how they're done. (Reports too, if you'd like) The Net 'Preamble' (NCS script) is in the Yahoo grp files and my FLDigi 'Trng Net' macros are available on request. I'll be glad to show you how to use 'em.

...as for ARES... we STILL need more folks who are willin' to volunteer. We can 'field' teams for all the monthly/weekly testing of our 3 Response Team sites, but as y'all know, most of us are double scheduled on the teams and we can't be at 2 places at once. IF we have an 'event', and some of the RT mbrs are 'snow'd in' or diggin' or swimmin' out fm under their wrecked house, I doubt Butts Co ARES has the depth and/or REDUNDANCY to handle the situation, esp if it lasts longer than 7 or 8 hrs and we need to staff 'shifts' at the RT sites...also Buzz could tag ANYBODY to be the NCS, a mobile, or portable station depending on the needs at the time.

" ...we gotta be able to DO what we SAY we can do." - Mike Crowe, Nov '16 mtg

Thx & 73,

Ken, KM4HOS Butts Co Net Mgr

Capt. Matt Garrison Butts County Sheriff's Dept

'Citizen's Response to an Active Shooter'



How aware are you of your surroundings when you're out in public? Do you check for available exits? What would happen if you suddenly found yourself in a situation with an active shooter? Your heartbeat could easily reach 175 bpm. Your breathing becomes erratic. Your thinking is suddenly cloudy. Can you defend yourself? Can you escape? One must be on the defensive at all times these days. Shooters are popping up for no reason and in all kinds of public places. Capt. Garrison presented scenarios and gave us food for thought and training on many situations, and ways to avoid becoming a victim. From this presentation, we have 2 Special Classes scheduled. Sat, March 23: A Firearms class, 9AM-4PM. Next, is Sat, March 30: A Women's Defense Class, 9AM-Noon. The Firearms class requires an ID card, a handgun and 50 appropriate rounds. (Wear jeans!) For the Women's Defense class, wear comfortable clothes, such as sweats. Please contact Nancy 573-528-0697 to sign up and get further info.

Apologies to Rudy Williams KA8LAD

Rudy provided the photo of the Morse Code graduating class for the Dec 2018 issue, and credit did not get posted to the photo.

Metro ARES FM Net - 1st Sunday ONLY at 1600L,

packet, etc, if capable; otherwise, use Telnet.

EDT, summer.] 3.583 MHz USB.

GA ARES PSK 'Traffic' Net - send an ICS-213 to

NETS

ARES, continued from page 5



(rev. 181001) A licensed amateur radio operator serving as a member of the local ARES group is in the WA4ASI repeater, Covington, 146.925-, 88.5 PL front line of service to their community. In gen-KK4GQ repeater, Fayetteville, 145.210 -, 131.8 PL eral, there are two requirements for the opera-KC4AQS repeater, Paulding Co, 145.805 +, 100.0 PL tor to become a member of ARES. The requirements are a valid Amateur Radio license GA ARES/BCECA WL Express Net - Send an ICS-213 (or and a willingness to serve. As such, any liregular typed msg, if unable 213) to WX4GMA and censed operator can apply for membership. WX4BCA by 2200Z. [1700L EST, winter/1800L, EDT, The individual completes an application and summer.] Please use a Winlink RF gateway; Winmor forwards to the local ARES EC for approval. Once approved, and as within our club, ARES GA ARES Digital Net - 2100Z [1600 EST, winter/1700 participation requires specific training to become a fully deployable and/or an active member. The training includes a basic ARES course and several Federal Emergency Man-

WX4GMA NCS. centered on 1500 MHz. GA ARES PSK 'check-in' Net - Even numbered months, agement Agency (FEMA) courses. The Amacenter on 1000Hz, 'text' check-ins only and will teur Radio Club of Butts County is an active run concurrently with the PSK 'Traffic' Net. ARES club and willingly would accept any new members interested in volunteering.

GA ARES D-RATS Net - 2130Z [1630 EST/1730 EDT]. Odd months, port: gaares.ratflector.com.

GA Section HF Net - 2200Z [1700 EST/1800 EDT], 3.975 MHz LSB, voice, by callsign prefix.

SE Weather Net - 2100L, D-Rats/D-Star, on sewx.ratflector.com. D-Star Voice on REF004A.

TUESDAY:

SUNDAY:

Butts County Emergency Comm Training Net - 1930L, WX4BCA repeater, 147.285 MHz, + offset, 131.8 PL, begins with voice check-ins, followed by an NBEMS Digital Net. WL Express msgs accepted if Not sent the previous Sunday, send to WX4BCA with name, callsign, location, and whether you are on mobile or aux power.

THURSDAY:

NCRC/ARES/RACES FM Net - 2000L, WA4ASI repeater, 146.925 - & 444.800 -, 88.5 PL. WL - K4NCR. May have a 'follow on' Digital Net - MT63-2KL, centered 1500 Hz, D-Rats on gaares.ratflector.com.

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JP

This article provided a brief understanding of the history and organization of ARES serv-

ing as a refresher to those current members

and an introduction to others. The article could

also inspire others to join and volunteer to sup-

Field Services manage the overall emergency

managing the division of effort across the U.S.

and its territories. The EC manages the majori-

ty of the work at the local level providing need-

ed service to the local community in their time

of need. For those who wish to learn more about ARES, please review the ARES Manual

and Field Manual. The links for these docu-

ARES/ARESmanual2015.pdf and the ARES

Field Manual at http://www.arrl.org/files/file/

ments are the ARES manual at http://

ARES FR Manual.pdf.

www.arrl.org/files/file/Public%20Service/

communications process with SM and SECs

port the community during their time of need using your amateur radio skills. The ARRL

^{***} For other training opportunities, see the BCECA Yahoo Group website, and/or the GA ARES website for other Nets w/ days, times, freqs, protocols, etc, for your training convenience.***

CALENDAR

JANUARY 2019 24, 28, 31 - Morse Code II, 7-8PM, FS#7

26 - TechFest - Gwinnett Medical Resource Center - 665 Duluth Hwy, Lawrenceville 9 AM - 2 PM (free)

FEBRUARY 2019

4 - Monthly Meeting, 7 PM, Fairgrounds *'Field Day Information'* - Nancy Phillips

3, 11, 14, 18, 21, 25, 28 - Morse Code Level II, 7-8 PM, FS #7, 144 Colwell Rd

16 - Tech Saturday - 0900, FS #7, 144 Colwell Rd. *Mapping the County* continued, with Ken Wallis.

MARCH 2019

4 - Monthly Meeting, 7PM, Fairgrounds
7 - Morse Code Level II 'Graduation' - 7-8 PM, FS #7
16 - Hungry Hams - Lunch Box - 0730
16 - VE Session - 0830, FS #7, 144 Colwell Rd
23 - Day at the Range - Capt Garrison - 9AM - 4PM
30 - Women's Defense - Capt Garrison - 9AM-Noon

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2019 FIELD DAY

June 22 -23, Kersey Pavilion Daughtry Park, Jackson



Congratulations! NEW TECHNICIANS 17 Jan 2019 VE Session

> TYJON HARTY MONTICELLO

JARROD M HENDERJON JACKJON

CONTACT INFO

PRESIDENT - Elaine Stachowiak KW4AQ, ubudogems@hotmail.com

VICE PRESIDENT & MEMBERSHIP - Nancy Phillips K4NEP, k4nep@arrl.net

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