

The LongPath

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From the President

By Bruce Smith, AC4G

This year is packed with many more activities for the North Alabama DX Club (NADXC). Many NADXC members will put forth an effort to operate Field Day with the prospective clubs near each member's QTH in late June. Many will operate with the Huntsville Amateur Radio Club (HARC) where record QSOs seem to be made. Next, we have the Huntsville Hamfest in August along with our annual NADXC Banquet providing loads of excitement. Later in the fall, we have our annual picnic, which is likely to be held at a member's farm this year where we may be allowed a seat on a rubber tire hay wagon for a hayride and enjoy partaking of some good picnic food. To close out the year, we always look forward to our annual Christmas party where we have good fellowship, discuss the work we accomplished on our stations earlier in the year, discuss upcoming DX on the high and low bands, and nominate the DX'er of the Year. To fill the gaps, we will have our monthly meetings where we plan these activities and just talk about DX and how we operated in ham radio contests to improve our operating skills or to snag a new DXCC entity.

We have a banquet speaker for our annual NADXC banquet held in association with the Huntsville Hamfest

held on Saturday evening, 19 August. Our banquet speaker is Ken Claerbout, K4ZW who was inducted into the CQ Hall of Fame in May at the Dayton Hamvention Contest Dinner. I am excited to hear Ken's program touching on many of his adventures to DXCC entities. His latest travels have been and are going to be to Ethiopia (ET3AA). You can read his "BIO" on the NADXC web page (www.nadxc.org). Our banquet will be held at the Signals Museum of Information Explosion (MIE) on University Drive where we meet monthly for our club meetings. This is a great venue for our banquet, especially with all of the vintage radios in sight. We will have the cater scheduled. We have paid our portion for the grand prize, which is a Yaesu FT10, one of Yaesu's newest HF transceivers. We have submitted letters to many of the larger vendors to obtain door prizes for our banquet with positive responses. We are putting the ribbons on our social which occurs just prior to the banquet dinner where we meet and greet new and old DXers. We are finalizing the banquet ticket price, so we can get ticket sales moving on the NADXC web site. So, things are falling into place. I trust each NADXC member will make an effort to attend our banquet this year by purchasing a ticket online when sales

From the President (continued)

open on our web page. I applaud the work of several of our members for the progress already made for our banquet.

Summertime is here and time to work on those antennas to get them ready for the DX and contest season that will be upon us before we all realize it. I need to dig a tower base, install a tower, install some antennas, work on an EME/satellite project that has been stuck in my head for a while. For all of these, I am trying to motivate myself to get busy. If you are in the same boat as I, do not procrastinate too long because the heat of summer is here and those pop-up showers with lightning are upon on us.

The HF bands are alive and full of QSOs being made daily! The solar activity has been explosive with lots of solar activity. Some days, the higher bands (10m, 12m, and 15m) open early in the morning and stay open into the night providing conditions for worldwide QSOs to be made. Six (6) meters has even been opening in the mornings around 1200Z – 1300Z and even gets better as the daylight extends to this part of the world. Oth-

er times, the higher bands are recovering from the CMEs and other disturbances that cause band conditions to be not so good. But this is “par for the course.” All in all, I continue to pick-up long-awaited band countries on many of the bands to include the higher bands for countries that I wished I had of worked a long time ago. If you need a new band country, chances are you will likely make that long awaited QSO and add another DXCC country to your list on the bands from 6m through 30m if you troll the bands. Do take advantage of making QSOs on 10m and 12m as we climb toward the solar maximum for Cycle 25.

At this month’s meeting, we will continue to discuss DX worked and our banquet planning. We also look forward to hearing a program from Rob Suggs (NN4NT) on “How We Communicated with the Moon.” Perhaps I can get a lesson to help in the construction of the EME station at my home from Rob’s program. You will not want to miss this month’s interesting NADXC meeting held on June 13 at 6:30 P.M. on University Drive at the Signals Museum of Information Explosion. I look forward to seeing you in person at the meeting. As always, ZOOM will be up and running for those unable to attend in person (see details in an upcoming email).

How to Find if a Band Is Open and Where Signals Are Coming From

By M.D. Smth, WA4DXP

Health no longer permits me to attend DX meetings, but I still use my Flex 6300 to talk all over the world. Right after I struggled to get DXCC, I found a much easier way to find out if any given band was open, and if it is, to what parts of the world.

That is to listen to one of the FT8 or FT4 narrow channels for tones. On USB with a 3khz bandwidth, you’ll hear the entire band. If you hear

anything at all, the band is open to somewhere. Now, you will need the WSJT-X software running and decoding callsigns if you want to know what countries you are hearing by looking up their call signs.

Now, if you are set up to transmit, even on a multi-band dipole, you might even add a new country right on the spot. But you will also know there is a chance of working a part of the globe on

How to Find if a Band Is Open and Where Signals Are Coming From (continued)

other modes. It saves endless scanning of the sideband portion of 20 meters to find out band conditions at any moment in time. Often, you miss the other side of the conversation in voice mode that you could have heard if the other station had been talking. With FT8, the side of the conversation switches every 15 seconds. With FT4, it switches every 7.5 seconds.

I've included tables with the FT4 and FT8 channels to listen for on upper sideband.

FT4 Mode (generally up 4k from FT8)		FT8 Mode	
80m	3.575	160m	1.840
60m	—	80m	3.573
40m	7.0475	60m	5.357
30m	10.140	40m	7.071
20m	14.080	30m	10.130
17m	18.104	20m	14.071
15m	21.140	20m (Region 1)	14.090
12m	24.919	17m	18.100
10m	28.180	15m	21.074
6m	50.318	15m	21.091
2m	144.170	12m	24.915
		10m	28.074
		6m	50.310
		6m	50.328
		4m	70.100
		2m	144.174
		1.25m	222.065
		70cm	432.065

Quick Takes on the Elecraft K4D

By Jim Spikes, N4KH

I received my Elecraft K4D late last year after about a 6 month wait. Elecraft has worked through a lot of the supply chain and COVID challenges since then. Delivery time is much shorter now I understand. This article is not a comprehensive review of the radio (those can be found in QST, Radcom, and elsewhere), but just some of my personal impressions, likes, and a few (minor) dislikes so far. For reference, I'm using production firmware R33 during the writing of this article.

Physically, I really like the rig's form factor. The radio is relatively small (4.5H x 13.5W x 11.0D", less protrusions) and only weighs in at about 10 lbs! Although somewhat larger than my K3 (see photo), the K4 doesn't take up a lot of space on the desk. There is a carrying handle on one side panel and rubber feet on the other. I really like that there are mic, headphones, and key connections included on the rear panel.

Front panel layout is somewhat similar to that of the K3 but the differences and added fea-

tures take some time to learn, especially the menu structure. The color touchscreen display is bright with high resolution. There is an HDMI receptacle on the rear panel for an external monitor/touchscreen. There are display options besides just mirroring the internal radio display in the menu. I use a wireless USB mouse to operate the touch screen controls most of the time. You



The K4D is somewhat larger than the K3

Quick Takes on the Elecraft K4D (continued)

can point and click anywhere on the screen with the mouse, jump to different signals on the panadapter, and use the mouse wheel to tune the VFOs up or down. The panadapter has an auto-threshold setting that keeps the noise floor close to the bottom of the panadapter and doesn't flood the waterfall with a lot of noise. Signal averaging can be adjusted from 0 to quite slow which keeps the signals on the panadapter from rapidly jumping up and down, unlike the Yaesu radios which have no averaging function.

The K4 is an SDR with two receivers and options to display one or both receiver panadapters simultaneously. Diversity reception on different antennas can be used in the case of the K4D. The receive audio is very easy on the ears, even at very narrow bandwidths (there are no crystal filters); much improved over the K3. A noticeable characteristic is the S-meter levels never change as a function of gain adjustment (not based on AGC loop voltage). The selectable attenuators and pre-amps are in front of the ADC. The RF Gain control changes input to the DSP, farther down the receive chain. I have yet to see a signal that causes overload, but I have no active hams on HF in my neighborhood. We'll see how it fairs in a Field Day environment.

CW operation with no T/R relays in the signal path is completely silent (yay!). The DSP CW filters are good with no ringing even at very narrow bandwidths, unless the CW IIR filter option is turned on (very steep skirts and can cause slight ringing). Controlled Envelope Single-Side Band (CESSB) processing on transmit seems to work good for extra punch on SSB although I haven't experimented with it much.

A few other nice features are dedicated

front panel buttons for record/play of CW messages and digital voice recordings, and an extended command set for macros that can be written and stored to execute all kinds of functions and strings of functions with the push of a button. There are four programmable macro function buttons (PF1 through PF4) on the front panel, and still more in the menus. For example, I have one macro programmed to put the radio in split mode, move the transmit sub-VFO up 1 kc, and turn the sub-receiver on. Another one is programmed to reverse all those settings to put the radio back in normal mode. I also have a PF button programmed to toggle the external speaker on and off.

My biggest dislike at present is the performance of the DSP noise reduction (NR). I think the NR is on par or slightly better than the K3, but that's not saying much. The NR on the FTdx-101D I owned previously was the best I've ever heard on SSB. Elecraft is reportedly working on new NR algorithms that will be a big improvement. For now, I usually just leave NR off. That isn't a big deal for a CW op like me anyway. Another minor issue is the two rear cooling fans are always on in at least the "slower" speed when the radio is powered on. The fans aren't loud but can be heard if you don't wear headphones and listen for them. You can turn the fans off in the menu, but then the radio gets warmer even on receive and that's not the recommended setting according to Elecraft. Boot-up time on my radio takes about 30 seconds. There is also a rather annoying, momentary screech from the speaker when the radio is powered down (keeping your headphones on not recommended). I guess it doesn't like being turned off!

The radio is still a bit of a work in progress as Elecraft pushes firmware updates to make further improvements. Updates are fairly frequent, and it is interesting to see what additions have

Quick Takes on the Elecraft K4D (continued)

been implemented. The ethernet connector on the rear panel makes downloading firmware updates directly from Elecraft a snap, including beta versions to test out. I'm still waiting for the long-promised Windows software that I can run on my laptop to remotely control my K4. I'm looking for-

ward to being able to make CW contacts while sitting on my screened porch or den recliner!

No radio is perfect and the K4 is not cheap, but performance is excellent. I also like that the radio is made in the USA by a company known for excellent customer support. The K4 groups.io mail list is a good resource for K4 owners.

IO-117 GreenCube By Steve Werner, AG4W

I was very interested in amateur radio satellites back in the 1987 timeframe when AO-10 (Phase 3B) and AO-13 (Phase 3C) were in orbit. With those satellites in a highly elliptical earth orbit you could work the world. I operated on Mode B which had a 2 Meter downlink and a 435MHz uplink. The last high earth orbit satellite that we could use was AO-40 (Phase 3D) which was launched in November 2000, and it ended up having an explosion in its propellant system. I had made several contacts on that satellite using Mode S with a 435MHz uplink and a 2.4GHz downlink before it failed. I used a small dish for the downlink.

After those satellites all quit working, I was no longer able to work DX since all the new satellites were in low earth orbit with very short passes overhead. On July 13, 2022, that all changed with the launch of the IO-117 GreenCube satellite. It is an Italian satellite managed by the S5Lab research team at Sapienza University in Rome.

IO-117 is an autonomous biological laboratory for cultivating plants that are in a medium earth orbit of about 6000 km or 3700 miles altitude. Besides the experiments it has digipeater functionality in real time or store and forward. To operate this satellite, you need a 435MHz trans-

ceiver that can operate USB and have an audio connection to your PC. You also need a 10dBi directional antenna with azimuth and elevation capability and be able to transmit about 50 watts. I started using an 8 element Cushcraft yagi with my ICOM 9700. This is a fun satellite to operate even though it operates on only 1 frequency 435.310MHz. Many of the passes are about an hour and it is not unusual to have opportunities to contact Asia, Europe, and South America during the same pass. To give you an idea of coverage, recent contacts have included BA1PK, CX7AF, 4U1ITU, ZB2TG, LU3FCA, YV5NEA, and OK1VOF.

To talk to the satellite, you need modem software by UZ7HO Ver0.07b, GreenCube 1200bd, and the GreenCube Digipeater software V0.27. These are shown in Figure 1 and 2. In the digipeater software I called EA4CYQ, and he answered along with the confirmations. The packet transmissions are very short so many hams can share the same frequency. Unlike FT8 you can send whatever you want. It is nice since over 90 percent of the users confirm on LOTW and there are separate awards for satellite VUCC and DXCC. One of the fun parts of operating a new mode or band is you can start out with no countries or grid squares again. You also need to have software to track the satellite in azimuth and elevation and to

IO-117 GreenCube (continued)

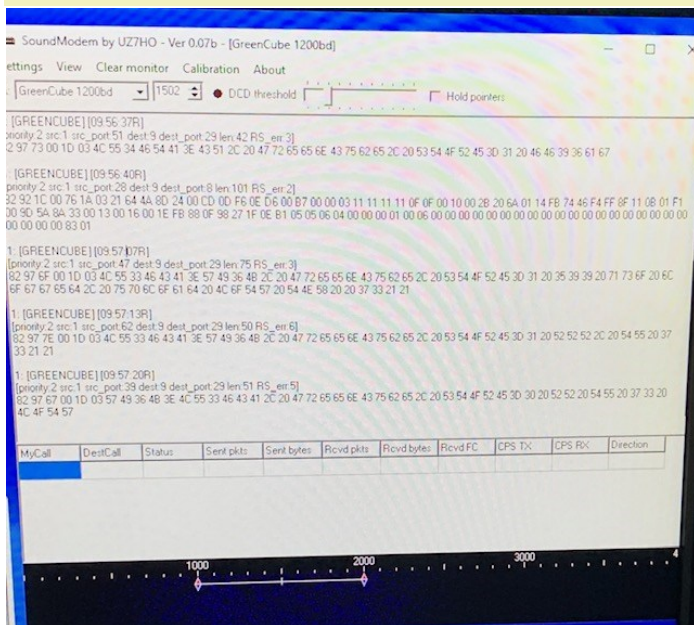


Figure 1: UZ7HO's GreenCube 1200bd modem software (version 0.07b)

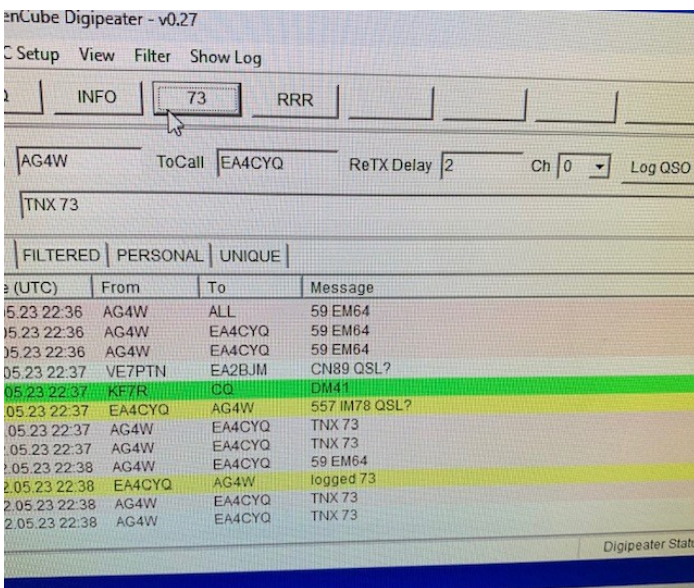


Figure 2: GreenCube Digipeater software (version 0.27)

handle the doppler frequency shift. Your frequency changes plus or minus up to about 4 KHz based on whether the satellite is moving toward or away from you. HRD has a satellite program and so does AMSAT, called SATPC32. I am cur-

rently using HRD, shown in Figure 3. In that timeframe the satellite was just about to come into view and I would have coverage of part of North America, North Africa, all Europe, and part of Asia. I would be transmitting on about 435.314MHz and receiving about 435.306 MHz.

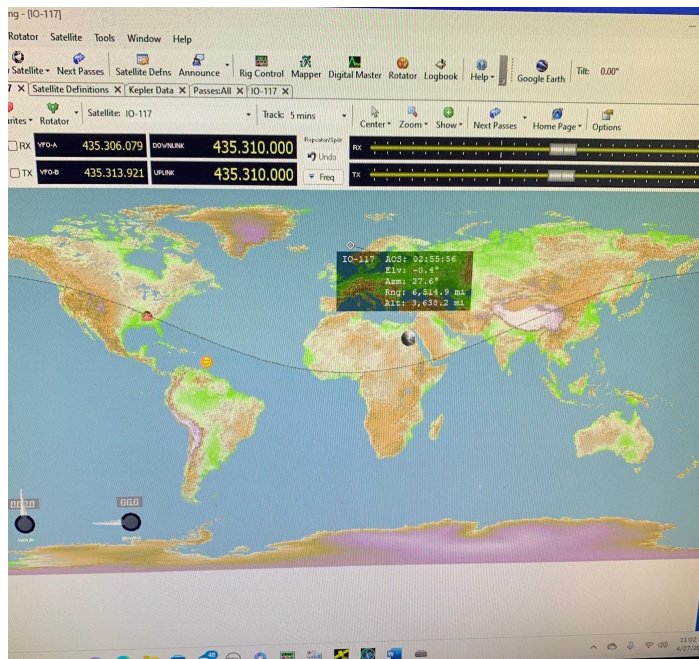


Figure 3: Ham Radio Deluxe's satellite program

As part of the effort to reestablish 432-435MHz capability I plan to also operate 432MHz EME. My current plan is to use 2 yagis like my 2-meter EME setup and run about 500 watts. I will use the 50 VDC high current supply from the 2-meter amplifier and build a new 432MHz RF deck. I purchased 2 heatsinks with chassis and some fans at Dayton this year along with a 2 yagi splitter shown in Figure 4. I also got a 500-watt 432MHz element for my Coaxial Dynamics wattmeter. It uses the same plug-in elements as a Bird wattmeter. I also purchased a used Advanced Receiver Research 432MHz preamplifier shown in Figure 5. These GaAs FET preamplifiers provide a very low noise figure of .55dB with 18dB gain and can be mounted right at the antenna.

I was planning to buy the yagis and splitter from Innov Antennas, but they have a 2-month

IO-117 GreenCube (continued)

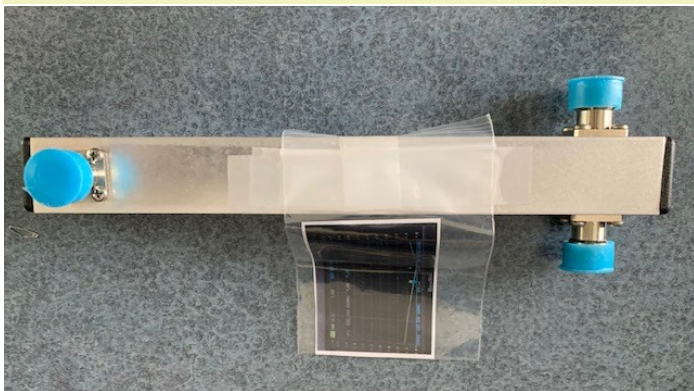
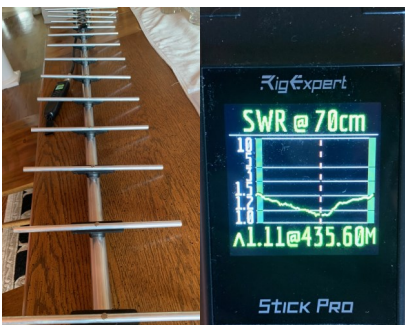


Figure 4: AG4W's 2-yagi splitter



Figure 5: Advanced Receiver Research 432MHz preamplifier



Figures 6 and 7: Tabletop testing of a KLM 420-470-14 with AG4W's RigExpert Stick Pro

element version next. After that I will get 2 high-performance models to work using the splitter I

delivered, so I took advantage of an opportunity to purchase four KLM 420-470-14 antennas from the Smith estate that Chuck Lewis is managing. These antennas are new in the box from 1978. In that timeframe there was no antenna computer modeling. The newer antennas from M2 or Innov have better patterns and about 1-2 dBi more gain for a given boom size. My current plan is to build and install one 14 element antenna and then build a high-performance 20-24

purchased at Dayton. The initial testing off the 14 element yagi on the dining room table test range looks good, as



Figure 8: AG4W's KLM 420-470-14 shown in Figures 6 and 7. The SWR on 432MHz and 435.3MHz are below 1.4 to 1. I started this whole project by upgrading my RigExpert Stick 230 to a Stick Pro. I thank Steve Molo and GigaParts for making this trade possible. I have installed the new antenna as shown in Figure 8 and have been using it with great results. I now have full power output of 75 watts. Before my SWR with the old antenna was 2.4 to 1 and the 9700 limited power to 50 watts.

I plan on using the old Henry Radio 100-watt 443MHz amplifier chassis and fans from Dayton shown in Figures 9 and 10 to house my new 500-watt LDMOS 432 MHz amplifier. The transistors were dead in this amplifier, so the price was right. Instead of 2 boards, I will likely have just one. The original amplifier did not use a copper heat spreader and bonded the power FETs to the aluminum heat sink. With LDMOS compo-



Figures 9 and 10: Amplifier chassis and fans scored at the Dayton flea market

IO-117 GreenCube (continued)

nents it is better to use a copper heat spreader. I plan on using the NXP ART700 LDMOS device. It can be used from 1MHz to 450MHz up to 700 watts. My 2-meter amplifier uses 2 LDMOS devices and they are extremely rugged on the output

side. I have melted coax with no damage to the amplifier. On the input side, I need to be careful to only use up to 5 watts. Damage to the LDMOS devices will result with high input power. I hope to have the initial EME capability ready for the EME contest in the fall. It will be more fun to operate on 2 bands.

How to Receive DXCC Credit for Paper QSL Cards

By Bruce Smith, AC4G

I am a fan of Logbook of the World (LoTW) hosted and managed by the American Radio Relay League (ARRL). I am currently seeking my DX Century Club (DXCC) Award(s) also managed by the ARRL. Weekly, I submit hundreds of QSOs through the LoTW online system for management of my QSOs and to acquire DXCC credit where in many cases credit happens almost instantly. Credit occurs whenever myself and the DX station upload our QSOs from our individual, electronic logbooks to LoTW. Once this happens and the date/time/band/mode data matches, only then do we get a so-called representative “electronic QSL” in the LoTW system. I have submitted applications early in the morning and have received credit by the afternoon. That is extremely fast versus the old way the ARRL DXCC desk used to process applications. However, LoTW does NOT allow for paper QSL cards submissions. For the ham that has old and new paper QSL cards, other methods must be used. Do not fret! There are a couple of methods to get DXCC credit for those paper QSL cards, which we will explore in this article. This article assumes that DXers already use LoTW and are knowledgeable on how to submit their QSOs for DXCC credit via the LoTW process. It also assumes the ham operator knows how to review their DXCC totals on the “Awards Account Status” Page.

Recently, I went through a data mining process to try and find any old QSL cards that I had on hand where I did not have DXCC credit yet for a particular country or band/mode. This process took me a while to go through boxes of old QSL cards and old photo albums where I stored my colorful picture QSL cards. I had received these under my current callsign and my old callsign (before I received my current vanity callsign which I have had since 1996). I was able to find two QSOs for which I needed DXCC credit: an old QSL card for KH4 - Midway Island dating back to 1996 under a previous callsign and a QSL card for Mount Athos - SV2/A, which was not so old, but recent within a few years under my current callsign. See Picture 1 and Picture 2 to see those QSL cards. Next, I had to get credit for those cards. I had to re-search the methods available from the ARRL web



Picture 1: Midway QSL Card

How to Receive DXCC Credit for Paper QSL Cards (continued)



Picture 2: Mount Athos QSL Card

site (www.arrl.org) and on other web sources to determine methods available to get DXCC credit for these paper QSL cards. There are a couple of methods that one can use to get DXCC credit for paper QSL cards. I recently went through the first method described below. It has been tested, it worked, and it is documented in this article

One method to get DXCC credit for paper QSL cards uses the field checking approach as a step to obtain DXCC credit. We will call this Method 1, Field Checking method. Method 2, the other method that I call the Traditional method, requires the DXer to send their paper QSL cards to ARRL Headquarters (HQ) where they check your cards to obtain DXCC credit. Method 2 is the method used for years before computers were readily available and in homes. Some may think these methods to be a simple, non-trivial processes, but for new DXers, I hope the information in this article will help you get the long-deserved DXCC credit that you need for any paper QSL cards that you have.

First, in order to avoid problems with field checking an application, be sure to follow the instructions on the ARRL website <http://www.arrl.org/dxcc-rules>. From what my research

yielded, there are two methods of doing a paper card submission that were mentioned above. There is an online method and a traditional method for doing a submission. Please be advised that at one time, one could do a hybrid LoTW and paper card submission on a single application. This no longer works.

In order to get DXCC credit for that paper QSL card, it is absolutely necessary that you follow all the instructions and have all the paper work properly filled out or the field checker will not be able to check your cards. Note that submissions via LoTW and paper card methods are treated as two (2) separate applications. There is a charge by the ARRL for submitting DXCC applications, regardless of which method you choose to use. One can submit a DXCC application multiple times per year, but the ARRL charges a fee any time you submit an application to be processed by the ARRL. If this is a concern or additional information is needed, please check the ARRL application instructions prior to any submission. These can be found on the ARRL Web Page at www.arrl.org. Let us describe both methods below if further detail.

If you use Method 1 (Field Checking method, the preferred method), the online, electronic DXCC application is located at URL: <http://www.arrl.org/online-DXCC> for your paper cards. It will be easier and cheaper for you. The ARRL DXCC desk will process your request faster when they get your paperwork via the web site listed above, since you will have already entered your card data in the ARRL system. With the online application, you can enter the cards in any order. Just make sure to enter the QSOs on cards with multiple QSOs together to facilitate checking. The reason you don't have to sort by band then mode is because there is minimal data entry work at HQ when they get your field checked application. Payment is made online and not handled by the card

How to Receive DXCC Credit for Paper QSL Cards (continued)

checker. After the system processes your payment, you print out your application and take the application and QSL cards to be checked by an authorized ARRL field checker. The field checker will review your application against your QSL cards. If the information is accurate, they will send the signed application to the ARRL HQ DXCC Desk for further processing into the ARRL system. Method 1 is simple, faster, and cheaper than Method 2 described next.

For the older, not so computer savvy ham, they can use Method 2, the Traditional application method, where the DXCC form is accessed via <http://www.arrl.org/dxcc-forms>. Many older hams are familiar with this process. It was used for years by the ARRL DXCC Desk before it was replaced with the current, active LoTW system. The radio amateur will enter their QSO information on hard copy forms for each card seeking DXCC credit. They will need to make sure to follow the instructions provided of the form. A traditional application submission will cost you roughly twice as much as the online application to cover data entry costs at ARRL HQ and for postage. With a traditional application you must sort cards by band, then by mode, with all the multiple QSO cards being listed last to facilitate data entry at ARRL HQ. Next, you must box up the cards and send your cards to the ARRL HQ for card checking, which costs you postage. If you use the traditional application, make sure you include valid credit card info on the bottom of the PDF application form as form of payment. Payment by credit card is best as cash presents problems for HQ. However, ARRL HQ accepts personal checks as well, as a secondary form of payment to cover the fees for checking your QSL cards and return postage to

get your QSL cards returned to you by ARRL HQ. Again, the ARRL DXCC Desk will review your application against the QSL card QSO information. If all is accurate, they will further process your application, box up your QSL cards, and send your QSL cards back to you once payment is deemed to be good. If you send payment via check, the process is stopped until the ARRL receives payment on a “good” check from their bank. Once payment is received (either by credit card or good check) the process resumes. It takes a couple of weeks for this process to work. At one time, the DXCC Desk had a backlog of cards to process and it took several months for you to receive your cards back from them. Today, with the LoTW system, processing work load at HQ is not bad. I would assume that processing time to process paper cards via the Traditional method is only a matter of one to two days, but to include shipping time, one is looking at a couple of weeks to get their cards returned.

I recently used Method 1 for my two paper QSL cards, “KH4” and “SV2/A”, using the electronic, online DXCC application process to enter the QSO information online at the <http://www.arrl.org/online-DXCC> web site. After entering my QSO information via the web site, I used the online sorter to sort my cards. Next, I reviewed my information for accuracy. Then, I entered my payment method, which in my case was my credit card. I then printed out my application form on my local printer. Next, I took my QSL cards to be checked, application, and stamped envelope to the North Alabama DX Club (NADXC) meeting where I solicited local DXer, Steve Werner (AG4W) who is an approved ARRL Field Card Checker, to check my QSL cards against the data I inputted on the electronic, online forms via the ARRL web site. Steve checked my cards against my application within five minutes. That was all that is required by me. Steve took the envelope and mailed the

How to Receive DXCC Credit for Paper QSL Cards (continued)

application in the envelope provided by me from his QTH to ARRL HQ DXCC Desk. He also handed me back my two QSL cards after checking the cards and application. Two things to remember: (1) If you have multiple callsigns (current and previous), include them on the application; and (2) Bring a stamped, addressed envelope with the ARRL HQ address for your field checker to send off your application to ARRL HQ from the field checker's mail box. See my (AC4G's) DXCC Award application and DXCC Record Sheet (Part of application) below in Picture 3 and Picture 4. It was generated by the ARRL online, electronic system mentioned earlier.

DXCC Award Application

I am applying for the following DXCC award(s):

Endorsement: Yes

Number of QSOs: 41

You must mark those qsos on your cards for which you wish credit. Cards must be placed in the order shown on the DXCC Records Sheet(s) which follow.

Complete DXCC fees are shown at www.arrl.org/dxcc.

- The use of a current DXCC application form is required.
- Do not use this form for plaque or pin orders.
- You must clear previous balances (per your last credit slip) with this submission in order to avoid delays.

I affirm that I have observed all DXCC rules as well as all

Call Sign: AC4G

Ex Call Sign(s): N4GAK

Name: Bruce Smith

Mailing Address:
Bruce Smith
46 Henry Thompson Rd
Taft, TN 38488-5258

Your cards, paperwork, and certificates will be shipped to the address above.

New Address: No

Name as to Appear on Certificate:
Bruce Smith

Telephone: (931) 425 8799

Picture 3: Sample DXCC Online Application (partial picture)

DXCC Record Sheet

Call Sign: AC4G

Page 1 of 2

Note: Cards may be submitted directly to ARRL or checked by a DXCC Card Checker. Cards must be placed in the order shown below.

Number	Call Sign	QSO Date	Band	Mode	Entity
1	FO/W5MJ	2019-11-04	160	CW	FRENCH POLYNESIA
2	ZD9BV	1993-11-13	20	PHONE	TRISTAN DA CUNHA & GOUGH ISLANDS
3	ST2NH	2015-04-16	20	DIGITAL	SUDAN
4	EY7AD	2013-10-24	20	PHONE	TAJIKISTAN
5	EY7AD	2014-05-18	17	PHONE	TAJIKISTAN
6	EY7AD	2014-08-23	20	DIGITAL	TAJIKISTAN
7	ZD7W	2019-11-24	160	CW	SAINT HELENA

Picture 4: Sample DXCC Record Sheet (QSL data entered from QSL cards)

Whichever method you use, follow the ARRL instructions and make sure the cards are properly sorted in the same order as your DXCC application. Make certain that all the QSL card information (call, date, band, mode, country) has been entered correctly on the application.

I might add, there are not many field card checkers and holders of 160m DXCC that can check cards for 160m, i.e. top band. AG4W happens to have his 160m DXCC, which qualifies him to also check 160m QSO information. This process and having AG4W available makes it easy for members of the NADXC to have all of their QSL cards (160m thru 2m) field checked. Typically, I have saved up many cards and taken them to the Huntsville Hamfest where a few local ham operators such as AG4W and/or K4ADK have checked them for me. Within a few hours, I either get a cell phone call or I later checked back by the NADXC booth at the Hamfest to pick up my QSL cards. Remember to bring the following with you when getting your cards field checked: Cards sorted per your application; a printed copy of the signed and dated application; and stamped envelope addressed to DXCC Desk, ARRL HQ, 225 Main Street, Newington, CT 06111, so that the field checker can mail your application to HQ. A list of ARRL approved field checkers can be found on the ARRL web site.

Once the ARRL HQ completes their review of the documentation submitted by you based on the paper DXCC confirmation process you use, your DXCC totals will be accurately reflected by logging in to LoTW, selecting the LoTW "Awards" tab in LoTW, then, review your DXCC countries total in the "Award Credit Matrix" shown below the "Account Status" table. Reference Table 1 below. Your submitted totals are not shown in the "Account Status" portion of LoTW that show your total band totals in "New LoTW QSLs", but the ARRL does update the LoTW columns "DXCC Cred-

How to Receive DXCC Credit for Paper QSL Cards (continued)

its Awarded”, “Total”, and “Total (Current)”. Again, the newly submitted credits can be seen in the Award Credit Matrix. You will see the country credited by band/mode with an “X”. The ARRL Desk is also very fast to process applications and send you a paper letter of the credit(s) you received along with decals you can apply to your DXCC certificates. I noticed that the country totals in the LoTW “Account Status” page do reflect accurate DXCC totals which include LoTW totals and your paper submission totals.

My favorite method for QSO submission is still using LoTW. It is faster, requires less work

from me, and is all online. Also, LoTW does not require me to send my cards to the ARRL DXCC desk and vice versa saving me time and money for postage. If you are a LoTW user, you know that when both stations upload their logs to LoTW, instant credit is given if the data from each station matches, i.e. date/time/band/mode. No paper QSL card exchange is required. But there are times where a DX station is not a LoTW user and I am forced to send my QSL card to that DX station if I eagerly need a QSO confirmation. The DX station that I worked (made a QSO) sends me a QSL card in response to confirm our QSO. Many times, because of the expense (postage to/from and a donation) I will try to work another station from that DXCC entity who does use LoTW, because it is

Account Status					
DXCC Award	New LoTW QSLs	LoTW QSLs in Process	DXCC Credits Awarded	Total (All)	Total (Current)
Mixed *	0	0	349	349	339
CW *	0	0	349	349	339
Phone *	0	0	348	348	338
Digital *	4	0	297	301	301
Satellite *	0	0	151	151	150
160M *	0	0	228	228	227
80M *	0	0	297	297	295
40M *	0	0	319	319	315
30M *	2	0	310	312	310
20M *	1	0	342	343	336
17M *	0	0	327	327	323
15M *	1	0	332	333	326
12M *	10	0	283	293	292
10M *	5	0	308	313	307
6M	2	0	79	81	81
2M	0	0	1	1	1
70CM	0	0	1	1	1
Challenge *	21	0	2791	---	2812
5-Band *	---	---	---	---	---
5-Band 160M *	---	---	---	---	---
5-Band 30M *	---	---	---	---	---
5-Band 17M *	---	---	---	---	---
5-Band 12M *	---	---	---	---	---

* = Award has been issued

[View Award Credit Matrix](#)

‘Paper QSO’ DXCC Credit updated by DXCC Desk for only LoTW columns “DXCC Credits Awarded”. “Total”, and “Total (Current)”

‘Paper QSO’ DXCC Credit reflected in “Award Credit Matrix” not in LoTW “Account Status” Table column “New LoTW QSLs”

Figure 1: Sample account status page from LoTW

How to Receive DXCC Credit for Paper QSL Cards (continued)

cheaper. If I can't, then I will resort to sending my QSL card first to the DX station worked and wait until the DX station sends their QSL card back. After receiving the QSL card back, this forces me to use one of the methods explained in this article to get DXCC credit.

Whichever method you use, good luck on

your DXCC Challenge. I hope this information was helpful to you. I did receive DXCC credit for my KH4 Midway Island QSO and for my SV2/A Mount Athos QSO and the process was only about 8 days. If you have any questions, if I confused you, or if you feel the processes described have been changed or updated, please let me know. We all need to get credit for all of those DX contacts we have been eagerly chasing and waiting to confirm to get that coveted QSO confirmed by the ARRL DXCC Desk for all of our paper QSL cards.

Why Bother with the Contest Dinner at the Hamvention?

By Bob DePierre, K8KI

I've been going to the Hamvention yearly with friends since about 2006, and each year we've attended the Contest Dinner. It's now held in the (Bob) Hope Hotel, a historic building just yards from the front gate at Wright Patterson AFB. This is the biggest event at the Hamvention for a reason: the speakers, the prizes, and the show. The attendance is likely something over 500 guests.

Prizes! Last year I won Heil's best headphone set. This year I won a \$50 prize, and two other folks at my table also won prizes.

Well, Steve/AG4W and I walked in and sat down as close to front/center as we could. We were hardly settled when Frank Donovan/W3LPL walked over and asked if he could sit with us. Frank is a legend. He has the biggest antenna farm in the world and has sponsored a multi-multi contest station in Maryland for the last 40 years. He places in the top-five in every contest, and I work him (or avoid him on DX contests) on every band. It's funny, but I always know his run frequency a priori.

Then Lee Finkel/KY5M sits down right next to me. So I ask him "Lee, do you remember me?"

You sat right next to me at this dinner last year." Lee happens to be ARRL's editor of the National Contest Journal. It just happens that Lee and I are the same age, and upon his taking the reins at NCJ, he mentioned that he got his Novice license as a Chicago high school freshman in 1962, getting the call sign WA9EBT. Well, I got my first license on the same day in Chicago, with the call sign WA9EBS. Obviously, I preceded him, if only by a few microseconds. So I told him "Lee, as old as you get, just remember I've been licensed longer than you." He has two full contest stations at a remote location 250 miles from his home and operates multi-two with his friends. We got into a conversation regarding the difficulties from the Bouvet Dxpediton, especially as it related to Lee's remote contest station, and how could they make it a little easier. As I understand, you get DX credit based on where the equipment and antennas are located, rather than where the operators are located. We wondered why the operators couldn't operate remote right from the boat instead, since the station was on the island. And further, why couldn't the operators just operate from Arizona, just as Lee does with his contest station?

Then the show started, and Tim Duffy/

Why Bother with the Contest Dinner at the Hamvention? (continued)

K3LR introduced the guest speaker, a 19-year-old kid named Bryant Rascoll/KG5HVO...from Montgomery, Alabama! Bryant got his license in 2015 when he was 11. He was awarded the Amateur Radio Newline Young Ham of the Year in 2018 at the Huntsville Hamfest and qualified for WRTC 2018 in Germany. Duffy says Bryant was clocked on CW at 50 wpm in 2017. Rascoll is also a star pitcher for the Univ of Alabama, having just finished his freshman year there, and winning a team championship in the process. I didn't have to wonder for long why I would want to listen to a kid speaking on such a stage. This kid is an exceptional speaker and spoke, among other things, about why preparing yourself for a major athletic event is just like preparing for a radiosport contest. I was stunned – if this kid speaks at this year's hamfest, I'll be in the audience.

Next up were three hams to be installed in the Contest Hall of Fame. First up was Kirk Pickering/K4RO. I first met Kirk at last year's hamfest here. I had invited Ward Silver/NOAX to be our banquet speaker, and he had stopped in Nashville to pick up his old friend, Kirk. So now I'm wondering whether I offered a free dinner to Kirk...I'm pretty sure I did, but...if I had only known he'd be installed in the HOF eight months later!

Well, the second inductee turned out to be Ken Claerbout/K4ZW. I about fell over! Our president, Bruce, had just invited him to be our banquet speaker for this year only 4 days earlier, having no idea that this was about to happen. Further, Ken isn't exactly a famous contester or Dixer. Ken is a long-time employee of Voice of America, and had spent significant time traveling to the many countries where VOA has an interest. What

he has done is bring ham radio to the citizens of these many countries in a very big way, without the notoriety of being on a famous team. The ham radio cause owes Ken a huge thanks for bringing so many people into the community. After the event Steve Werner and I stormed the stage to introduce ourselves and congratulate Ken. When Ken arrives for our hamfest in August, I'll be there to welcome him.

And the last inductee was supposed to be Ben Buettner/DL6RAI. Unfortunately, Ben was killed in a tower accident in Aruba on Thursday, just an hour before he was supposed to board an airplane for Dayton! He was installed posthumously. Just unbelievable.

So, I've got to ask myself, why do I continue going to such boring events? I did just pay for my ticket to next year's Contest Dinner, though.

2023 NADXC Officers and Directors

President	Bruce Smith, AC4G
Vice-President	Mick Bell, N8AU
Sec./Treasurer	Barry Barton, WA4HR
Directors:	Fred Kepner, K3FRK Bob De Pierre, K8KI (Ex-Officio)

How to Join

Come to a club meeting or send in an application by mail (form on www.NADXC.org)

Monthly Meetings

Meetings are held at the Signals Museum of Information Explosion at 6:30pm on the 2nd Tuesday of each month. Participants can also join the meeting virtually via [Zoom](https://zoom.us).

**This edition of The LongPath published by:
Fred Kepner, K3FRK**

New Tower Installation - Part 3

By Fred Kepner, K3FRK

Progress towards raising the tower stalled this month. In last month's Part 2 of this series, I shared my work in digging the hole, building the form for the concrete tower base, and building the rebar cage. The next step was to acquire concrete or a contractor to conduct the pour. Due to the location of my base, behind my shack in the backyard, and my desire to not damage my driveway with a large, heavy cement truck, I determined that the cement would have to be brought approximately 200 feet from the street to the rear side of my shack. I decided that work was best left to professional concrete workers with "Georgia Buggies" that could transport the cement more easily. It is important to pour the cement rather quickly, so that the entire 7 cubic yards is poured in one session and poured before it begins to harden. I also decided I wanted to use a high strength concrete. Typical concrete is rated at about 3,000 psi. Higher strength versions are available that are rated at 4,000 or 5,000 psi. The engineering plans for the tower call for a minimum of 2,500 psi concrete. The higher strength concrete was not required but this install has been an investment and I appreciate the extra safety factor introduced in using the higher strength material. I found a contractor who agreed to install my rebar cage in the hole and pour 5,000 psi concrete for a very reasonable price.

As the following days came and went, it became apparent that the contractor was having difficulty getting the high strength concrete. Unfortunately, after a few weeks, the contractor stopped communicating with me and I found myself starting over on my search for a contractor. I made a few calls, talked to several contractors, and found one that I felt was responsive and experienced. The price wasn't as good as the origi-

nal contractor, but the work was promised for the next week. He was able to acquire the 4,000-psi concrete much more easily than the 5,000-psi concrete that the previous contractor struggled to acquire. As you will see later in this article, he came through!

While waiting for the concrete to be poured, I began doing the necessary work inside my shack. The tower will have 3 antennas on top. Making a single coax run with a remote switch would have some benefits, but that is not the direction I chose when I planned my install, for several reasons. Instead, I ran 3 LMR600 coax cables from my radio desk, along the rafters, through the internal wall, and into the enclosed storage area attached to my shack. I installed antenna disconnects and baluns on each of the coax runs, near where the line will exit the building. A short jumper will be installed to run the coax out-



Above: A dual line and single line Paradan Antenna Disconnect are used to keep the antennas disconnected when powered down. The antennas can be disconnected remotely over the internet using a network connected power supply.

New Tower Installation - Part 3 (continued)

side and into waterproof enclosures that will be mounted on the side of the building, next to the tower. The enclosures have been prepared with 3



Above: Baluns are installed on each coax run.

Below: The coax and rotator cable lightning arrestors will be mounted in weatherproof boxes.



lightning arrestors for the 3 coax lines and a lightning arrestor for the rotator cable. The coax and rotator cable coming down the tower will feed directly into the enclosures. I also ran a large gauge extension cord with a waterproof connector from a receptacle inside the shack to the tower. It will be used to power the motorized winch to extend and retract the tower.

I frequently operate my station remotely, from inside my house or my hotel room when on travel for work. In order to fully control the new antenna system remotely, I need to be able to control the rotator remotely. The Hy-gain T2X rotator installed on the tower came with a Hy-gain rotator controller. The controller can be modified to add USB control, such as with an [Easy-Rotator-Control board](#), but I opted to go a different direction. I acquired a like new Green Heron universal controller on QRZ for a fraction of its retail cost. The Green Heron has native USB control and offers quite a few customizable settings. The original controller will be kept as a spare. If the controller on my other antenna fails, the Green Heron can be moved to it and the tower operated with the original controller. Basically, I now have backup hardware that can accommodate either antenna system. I connected the new controller to the existing rotator control cable on the tower and was able to confirm my controller settings and fully control the rotator.



Above: Green Heron Engineering RT-21 Rotator Controllers will allow precise remote control of the rotators

The concrete was finally poured just the other day. The contractor installed my rebar cage into the hole, then I carefully measured and mounted the tower base over the cage. Much time was taken as the specifications in the tower's engineering plan required placement accuracy down to the 1/32 of an inch in the ground plane (relative to the rebar cage placement) and accuracy within an inch margin relative to the ce-

New Tower Installation - Part 3 (continued)

ment in the vertical direction. Once the base was mounted, the cement was brought to the hole with Georgia Buggies and poured. Seven cubic yards is a lot of concrete and weighs approximately 31,500 lbs. I'm glad I hired the crew to do it, they did a better job than I could have and were able to complete the pour before the concrete began to harden.

Now that the concrete has been poured and I need to wait 30 days for it to set, I will concentrate on reassembling the antennas on the ground, installing my grounding systems, and all the other things that will need to be done before the antennas can be mounted and the tower raised. I hope that all will be up and running in time for a final segment to this series in the August LongPath.

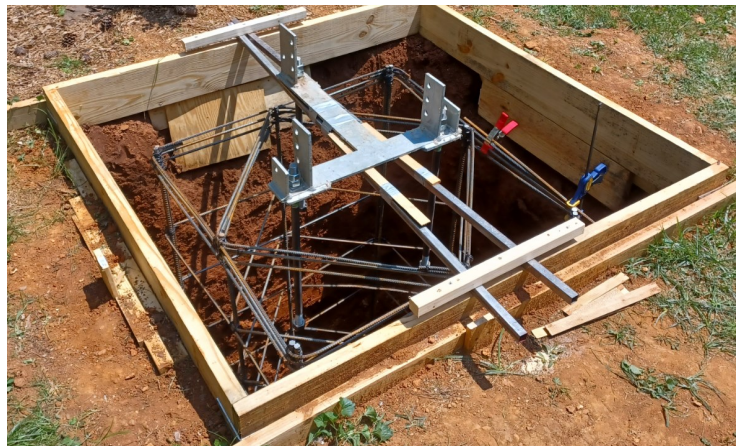
If anyone is looking for concrete work to be done, I was very impressed with my contractor and his crew. He responded and got the work done quickly, provided materials to the specs that I wanted, was reasonably priced, and was experienced. I've included a flyer for Jamie's Concrete in case anyone is interested in contacting him. I highly recommend Jamie and his crew.

Top right: Positioning of the rebar cage

Above right: Tower base mounted over the rebar cage and hole.

Right: The cement truck stayed on the street and "Georgia Buggies" were used to transport the cement to the back yard.

Bottom right: The cement was poured and worked into position by the crew.



New Tower Installation - Part 3 (continued)

Top right: The finished slab. Extra concrete was poured on the right side to provide a place to locate equipment and stand when raising/lowering the tower. The slab will be surrounded by bushes and flower beds.

Lower Right: The author received very good service from Jamie's Concrete and recommends the contractor for your concrete needs.



Club Business

May 2023 Meeting Minutes and Financial Report by Barry Barton, WA4HR

May 9, 2023 Meeting Minutes

- Club President Bruce Smith, AC4G called the meeting to order at 6:30pm
- Bruce spoke about the various DX club members worked.
- Barry, WA4HR Treasurer gave the monthly treasury report for March.
- Bruce spoke about getting Ken Claerbout K4ZW for the speaker for the upcoming DX Banquet.
- Michael Werner KF4BOG said that he has located a source for getting shirts made with the NADXC club logo.
- Bruce AC4G and Steve AG4W spoke about various openings they worked.
- Meeting was adjourned at 7:00pm
- Following the meeting, Mike Rozar N4CNZ gave an excellent and informative presentation on locating and eliminating RFI noise using a Yaesu ft-817nd and a homemade 440 Yagi. This equipment, along with Mike's skills, eliminated severe RFI noise at WA4HR and AC4G QTH's
- The following members attended the meeting: Bruce Smith AC4G, Steve Werner AG4W, Michael Werner KF4BOG, Barry Barton WA4HR, John Stensby N5DF, Craig Compton K4XR, Rob

May 2023 Meeting Minutes and Financial Report (continued)

Suggs NN4NT, Mike Rozar N4CNZ, Billy Gold KM4BMF, Jared Cassidy KQ4VT, Mark Brown N4BCD, Jack Hemby W5WQQ, Bob DePierre K8KI, Chris Arthur NV4B, Jem Perillat K2LAT, Fred Kepner K3FRK, Kevin Hibbs KG4TEI, Phil Lewis W4EUV, Tim Huffaker KM4ESU, Barry Johnson W4WB, Laura Morgon K4CNY, Mick Bell N8AU, Chuck Lewis N4NM, and Walt Miller AJ6T.

Budget Statement

We are keeping the 2023 budget in line with the budget proposal for this year.

The May Financial Status report ending on May 31st included in this edition of the Longpath, at the end of my report.

We still need a few more members to pay their 2023 dues, not many, just a few. Doing so will achieve our goal of 50 paid

Upcoming NADXC meeting:

Tuesday, June 13th, 2023

5:45 PM Doors Open / 6:30 PM
Meeting

Location: Signals Museum of Information Explosion, 1806 University Drive NW, Huntsville, AL 35801 and via [Zoom](#)



members that we set as our goal in this year's budget. We received \$147.88 in dues in May. We also received \$40.00 dollars towards 2024 dues.

The grand prize at the DX Banquet is a Yaesu FTDX10 transceiver. We allocated \$390.00 for the grand prize and the club spent \$400.00 on this radio. The listing price for this item is currently going for \$1,399.95. I think we received an excellent deal. Thank you GigaParts.

The club purchased liability insurance for the DX Banquet from Event Helper in the amount of \$105.00, we had allocated \$130.00. The policy was purchased to protect NADXC because the museum does not carry liability insurance at this time.

Which brings us to the total of \$7,653.73 for the month of May, ending on May 31st.

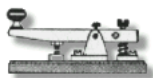
2023 NADXC Financial Status– A 05/31/23			
Budget Category	Targets	Year Totals	May Subtotals
Year Start	8,365.65	8,365.65	8,010.85
Dues In	1,000	1,037.46	147.88
Recurring Exp	-683.00		
repeater elect	-160		
web hosting/domain service	-73	-16.88	
repeater maintenance to HARC for Zoom	-100		
use of museum	-50		
Bank checks	-300	-300	
			-22.5
Donation of equipment to sell			
Dxpeditons	-1,000	-305.00	
Picnic	-160		
DX Banquet	380.00		
venue	-600	-600.00	
food	-2,350		
speaker	-400		
tickets	3,800		
raffle	700		
grand prize	-390	-400.00	-400.00
beer/wine	-250		
insurance	-130	-105.00	-105.00
EOY Bank Delta	-463		
Year End Bank Balance	7,903	7653.73	7,653.73

Upcoming DX Contests

By Chuck Lewis, N4NM

GACW

Grupo Argentino de CW



GACW WWSA CW DX Contest, (CW), 80-10 meters

June 10, 1500Z to June 11, 1500Z

Exchange: RST, CQ zone

See page 81, June QST and https://gacw.ar/wp-content/uploads/2022/04/WWSA_2022_Ingles.pdf

Asia-Pacific Sprint, (SSB), 20-15 meters



June 10, 1100Z to June 10, 1300Z

Exchange: RS, Serial #

See page 81, June QST and www.jsfc.org/apsprint/aprule.txt

Portugal Day Contest, (SSB/CW), 80-10 meters



June 10, 1200Z to June 11, 1200Z

Exchange: RS(T) and Serial or district code

See page 81, June QST, and <https://www.portugaldaycontest.rep.pt/rules.php>

All Asian DX Contest (CW), 160-10M



June 17, 0000Z to June 18, 2359Z

Exchange: RST plus age

See page 81, June QST and https://www.jarl.org/English/4_Library/A-4-3_Contests/2023AA_rule.htm

Stew Perry Topband Challenge (CW), 160 meters



June 17, 1500Z to June 18, 1500Z

Exchange: 4-character grid square

See page 81, June QST and <http://www.kkn.net/stew/>

IARU Region 1 50 MHz Contest, (SSB/CW), 6M



June 17, 1400Z to June 18, 1400Z

Exchange: RS(T) plus Serial # plus 6-character grid square

See <https://www.iaru-r1.org/about-us/committees-and-working-groups/vhf-uhf-shf-committee-c5/vhf-up-contesting/>

IARU HF World Championships (SSB/CW), 160-10M



July 8, 1200Z to July 9, 1200Z

Exchange: RS(T) plus ITU zone; IARU HQ stns send HQ abbrev.

See <http://www.arrl.org/iaru-hf-world-championship>

OTHERS:

REF DDFM 6 Meter Contest, 1000Z June 11 to 1100Z, June 11

His Maj. King of Spain Contest, SSB, 1200Z, Jun 24 to 1200Z, Jun 25

Dates & times often change or are misprinted in the journals; beware.



DXpeditions in June 2023

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2023 Jun01	2023 Jun12	Central Kiribati	T31TT	By Rebel DX Group; 160-10m; CW SSB FT8
2023 Jun06	2023 Jun18	Lakshadw eep Is	VU7W	By YL2GM fm Minicoy I (AS-106); HF w/ emphasis on 6m; CW SSB FT8; 1kw; vertical, Spiderbeam, BoG; see QSL details on Web
2023 Jun10	2023 Jun24	Ducie I	VP6A	By AA7JV KN4EEI W6IZT + large team of remote ops fm CG75oi; 160-6m; CW SSB FT8 (f/h); QSL via HA7RY
2023 Jun12	2023 Jun18	Easter I	CE0Y	By XQ3PCN as CE0Y/XQ3PCN, CA3YMR and CE3KEY likewise fm Hanga Roa; 20-10m; delta loops, 4 ele yagi; QSL via home call
2023 Jun13	2023 Jun21	Maldives	8Q7KB	By DL2SBY fm Maafushi I; 12 10 6m; CW SSB
2023 Jun21	2023 Jul03	Malawi	7Q7WW	By W1IE K4CD, perhaps others; 160-6m; FT8 (f/h); SSB CW RTTY; spare time operation
2023 Jun23	2023 Jun29	Br Virgin Is	VP2V	By W9DR as VP2V/W9DR fm Anegada I (FK78tr); 6m; FT8 Q65 SSB CW; 1kw; 5 ele yagi
2023 Jun25	2023 Jul05	Faroe Is	OY	By DC8TM as OY/DC8TM and DF3TS as PY/DF3TS; HF; SSB FT8
2023 Jun27	2023 Jul08	Bermuda	VP9	By G4OSY as G4OSY/VP9 fm Hamilton Parish; 40-6m; SSB, perhaps CW
2023 Jun27	2023 Jul11	St Pierre & Miquelon	FP	By KV1J as FP/KV1J fm Miquelon I (IOTA NA-032); 80-6m, focus on 60 6m; CW SSB + digital; QSL via Club Log OQRS or KV1J Buro or direct (w/ SAE + 1USD or new style IRC)



Congratulations!

Bob De Pierre, K8KI was presented with the Huntsville Amateur Radio Club's Tennessee Valley Outstanding Amateur Award



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2023 North Alabama DX Club Banquet tickets

Saturday, August 19th, 2023

5:30 PM Social / 6:30 PM Dinner / 7:30 PM Program

Location: Signals Museum of Information Explosion

1806 University Drive NW, Huntsville

Keynote speaker: Ken Claerbout, K4ZW

Grand prize: Yaesu DX-10 HF radio

Tickets for sale on the [NADXC website](https://www.nadxc.com)

