



Newsletter of the
Twin City DX Association
www.tcdxa.org

December, 2023



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Gray Line Staff
KØAD
WAØMHJ
WØJMP
WØZF
AJ8B



Note from the President

Bert Benjaminson, WBØN, President

First, I would like to thank Pat Cain for his 14 years on the TCDXA board! It will be a lot tougher without him, but he deserves a break. Please make sure to thank him the next time you see him, as the TCDXA wouldn't be where we are today without him. He is still very valuable as our webmaster! I would like to thank JB, K80S, for stepping into Pat's place on the board.

It appears that you are stuck with me again for 2024. I am questioning when term limits or old age comes into effect? I would like to thank Mike, WØVTT, and Tom, ABØJ, for returning for another year. I would also like to thank and wish good luck to John, NGØZ, and Clay, WØLED, in the race for the seat as a board member. At the time I am writing this the voting has just begun.

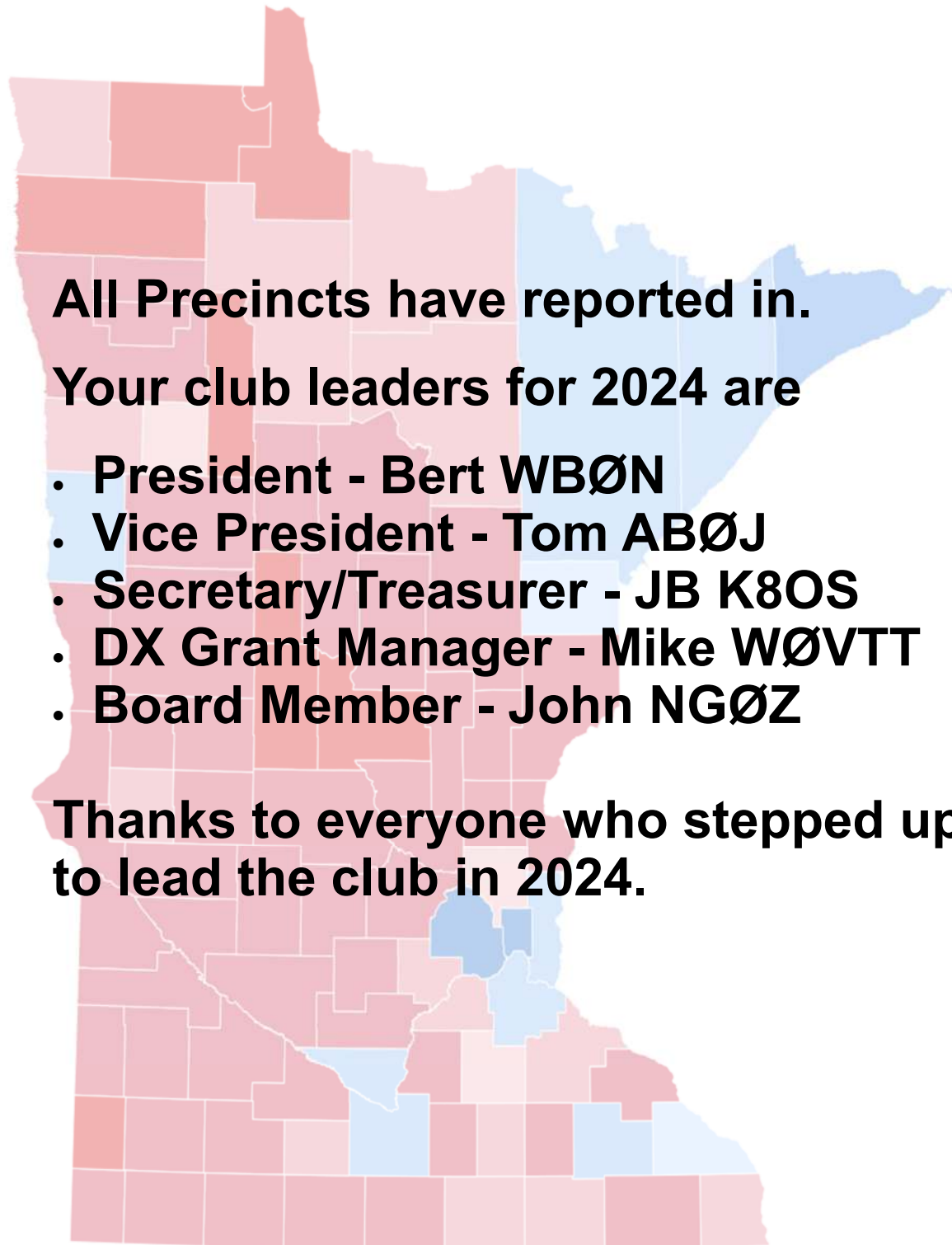
As for DX it has been a great year! Even with my "wet noodle" antennas I have worked 208 entities so far in 2023 which is 31 more than last year, and a personal record. Being back to work, I have cut my Q's way down as I am just chasing DX!

OK, so how has the DX been for you all? Hopefully you all are cashing in on all the available DX.

So what can we do to get our in-person attendance at Pub42 back to where it used to be? If you have any ideas about future speakers, please let us know. Also I would like to thank the GREAT Gray Line staff led by Bill, AJ8B! And thank you to all who contributed to this edition! OK enough from me. Go chase some DX!

GL 73 ES GD DX De WBØN Bert

Twin City DX Association Election Results



Dollars for DX Report

Mike Cizek WØVTT—mgcizek@gmail.com
DX Grant Manager



This fall has been a very good time for chasing DX. There have been several DXpeditions on the air including a few who received funding from TCDXA. We received a final request just before press time and will likely be voting on it about the time the Grayline is published.

XW4DX to #98 most-needed Laos wrapped up their wrapped up their ten day operation with over 43,000 QSOs in the log. They received a \$250 donation from our club.

Our next funding request came from TJ9MD, the Mediterranean DX Club's trip to Cameroon. At #89 on the most-needed list, and considering their past history, they certainly would have rated a TCDXA donation. However, they never responded to our request for information on their trip so we did not offer funding.

708AD/708AE made 58,000 QSOs on their twelve day operation from Socotra Island off the coast of Yemen. Ranked #44 on the Clublog list, we voted to give them a \$500 donation. Yemen was an All Time New One for nearly half of those who voted on the donation. I hope everyone made it in to the log at least once. They have already provided LoTW confirmations.

Our most recent request was from Stan LZ1GC for his upcoming trip to Wallis & Futuna Islands operating as FW8GC. Our board has approved a \$250 donation for this operation and voting will likely be over by the time you are reading this.



Dollars for DX

There is one more request for funds that is still being investigated. Ken LA7GIA plans a return trip to Bouvet and a separate trip to Peter I. Both of these are very high on the most needed list, but we have some reservations about making another donation. TCDXA is most fortunate in that we have club members who are also board member of both NCDXF (Glenn W0GJ) and INDEXA (Ralph K0IR and Jerry WB9Z).

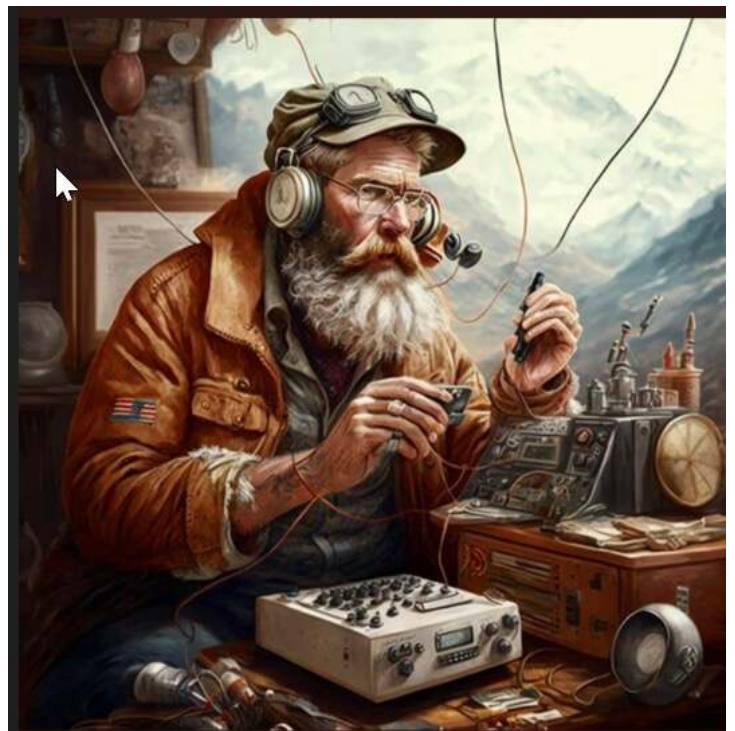
I often consult them when I have questions or am uncertain about donating to a DXpedition. Both have recommended waiting for more information before making a donation, so we are still sitting on this one.

On a personal note, 2023 has been a very good year for DX here at W0VTT. I added 23 new Challenge points, including QSOs on all bands except 20 and 40m. I'm still waiting for North Korea to come on the air for my last "new one".

Thank you.

Mike Cizek W0VTT

TCDXA DX Grant Manager



Landing Ship–Tank

by Danny Dantzler WØJMP

Amphibious warfare is defined as “military operations directed against hostile shores and characterized by attacks launched from the sea by naval and landing forces.” Amphibious warfare has been conducted since ancient times, but the 20th century saw the development of specialized landing craft for that specific purpose.



World War II saw the largest use of amphibious warfare in history. It was used extensively for island hopping in the Pacific and for the famous D-Day landing which was the largest amphibious attack in history.

Most Americans are at least somewhat familiar with the Higgins boat. It was used extensively to land troops on the shores of Normandy beginning on November 6th, 1944. The Higgins boat was a 36 foot long plywood boat and could land about 36 troops or less men and some light equipment. Of course, it was used in the first wave of landings on D-Day.

The predecessor designs of the Higgins boat were used in oil and gas exploration in the Louisiana bayous. It is also more than likely that they were used for rum-running in those same bayous during prohibition.

After the first wave of troops and light equipment were on the beach, heavier equipment was needed. Other landing craft, notably the LST (Landing Ship-Tank) were employed.

The LST was built in several configurations throughout the late 1930s until the end of WWII. The vessel could carry troops, jeeps and tanks. It could handle a massive amount of cargo or personnel and was even suitable for ocean crossing. It had very large opening “barn doors” in the front and a ramp that allowed the landing of heavy vehicles on a beach without docks.

C. Kermit Fraley was a tobacco farmer near the town of Dungannon, Virginia. Despite having a wife and three small children, he enlisted in the US Navy on February 28, 1944, leaving his family behind.



Landing Ship–Tank (cont.)

This type of patriotism was not uncommon during WWII.



Photo 1: From left, Carol, Carrie, Judy and Fred Fraley



Photo 2: Dog-eared copy of photo 1 that Kermit carried in his wallet

After basic training, he was sent to a radio school and became a radio operator on LST 928. He was a “plank holder” which meant was a member of the crew of the ship, when that ship was placed in commission. LST 928 was commissioned on July 30th, 1944, and Kermit’s service record shows that he was assigned to it on that day. He served as a radio operator on the ship in the Pacific theater including the assault and occupation of Iwo Jima in March, 1945.



Photo 3: LST 928



Photo 4: LST 928 crew, Kermit Fraley back row, right



Landing Ship–Tank (cont.)

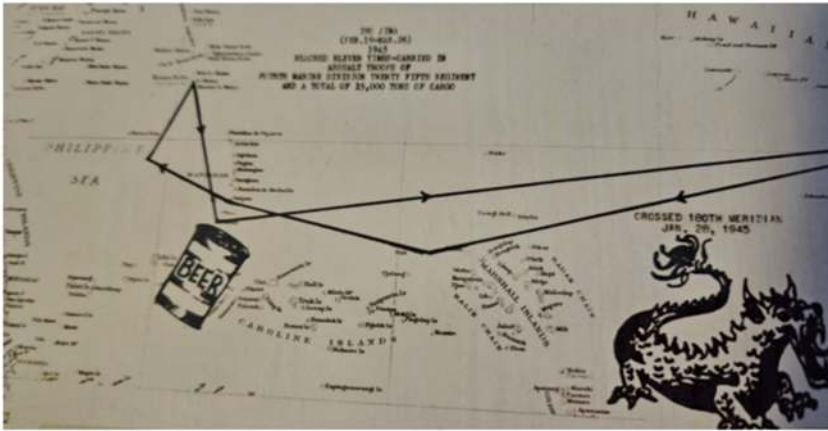


Photo 5: LST 928 Pacific travels

After the war, Kermit supplemented his farming income as a radio and television repairman. He also got his amateur license (K4SAB, SK) as did his son Fred (W4CHK, AA4FF, W4DF, SK) and daughter Carol, K4SAF.

There is only one remaining LST still in its military fitment, LST 325, which is docked in Evanston, Illinois, as a museum ship. This ship served in the US Navy until the early 1960s then the Greek Navy until 1999. In the year 2000, a group of men acquired the vessel, made the needed repairs and sailed it from Greece back to the United States (against the warning of the US Coast guard). The crew had an average age of 73 and included several ex navy men. (<https://abcnews.go.com/US/story?id=94767&page=1>)

LST 325 makes annual trips down the Ohio and was docked and opened for public viewing in Ashland Kentucky. Carol and I made a trip to visit the ship. It is truly massive. The crew on the ship was friendly but the radio room was not on the public tour. Carol and I asked if there were any ham radio operators on the ship and there were quite a few. After introducing ourselves and explaining that Carol's father was a radioman on an LST, we got the back stage tour. I was able to take a photo of Carol at the radio operator's position in front of a mill much as her father probably did. (A "mill" is a Navy typewriter distinguished from normal typewriters by having all caps (9 point, sans serif) and having numbers "1" and "slashed 0" on the top row. Portable models were typically used elsewhere than in the radio room, but still have the same key/type layout.)



Landing Ship–Tank (cont.)



Photo 6: Carol at "mill" on LST 325



Photo 7: LST 325 docked in Ashland Kentucky



Sable Island 2023–CY0S–By Jay, K4ZLE

According to our team leader, Murray, WA4DAN, Sable Island is a very special place. After my participation in the 2023 CY0S operation, I must agree with him. To finally obtain permission to make this multi-operator, multi-day DXpedition a reality, it took multiple phone calls, several trips from his home in North Carolina to Halifax, Nova Scotia, Canada, and additional short trips out to Sable Island itself. All of this was at his own expense.

Our on-island team consisted of the following: Murray, WA4DAN; Dan, W4DKS; John, W2GD; Lou, N2TU; Lee, WW2DX; Craig, K9CT; **Glenn, W0GJ**, and Jay, K4ZLE. The support team was Pat, N2EIN; Bill, K5DHY; Randy, N0TG; Bob, K4UEE; Hal, N4GG; Chaz, W4GKF; San, K5YY and John N8AA. There were no rookies on either team. Two are officers of NCDXF. Two are directors of INDEXA. Three are CQ DX Hall of Fame members. Two are CQ Contest Hall of Fame members. Over half of the team had previously operated from 'top ten' entities. Our results bear witness to the quality of the team.

We operated 10m – 160, 2M EME, 6M, and Satellite. Modes were CW/SSB/FT8/FT4/RTTY. Antennas used were as follows: Hy-Gain 20-15-10 monoband Yagis, a Cushcraft 12/17 A3WS duo bander with diplexer, verticals on 30m – 160m (using Spider Poles), and a 60M dipole. The same Spider Pole supported both the 160 and 80 m verticals.



Sable Island 2023–CY0S– (cont.)

This limited us to having only one or the other band operational at a given time.

On HF there were 4 K3's and, 3 KPA500 amps, The VHF station consisted of an IC-705 Transceiver and Italialabs 1KW SSPA amplifier; LNA: Antennas-Amplifiers EME2-144; Antennas: 2 X 12 Element Antennas-Amplifiers PA144-12-7AGPL; 3 element yagi for 6M, G5500 + RT21 AZ/EL Controller.

Originally, we had planned to have near real time ClubLog feeds, but the existing internet on Sable would not support that mode. True to the time proven adage, "Plan well but also plan to innovate", we had to change those plans. As a result, logs were pulled from the master at least twice per day and sent to K5DHY for ClubLog upload.

This was not a tent and generator operation, but that does not mean there were no other obstacles to overcome besides intermittent internet. While the weather on Sable was not as intense as some previous venues, it was not a summer stroll on a tropical beach. We experienced snow in some amount every day except one. Temperatures were generally in the 30's F. Wind was almost a constant 25 knots with gusts into the low 50's. Weather is also a limiting factor traveling to/from Sable, sometimes delaying plans for days. We were delayed by half a day traveling to Sable. Because Halifax was fogged in on our scheduled departure day, we were delayed a day in departing Sable. That extra day allowed us to push our total Q's over 80,000.



Sable Island 2023–CY0S– (cont.)



The island is a Canadian National Park Reserve and access is normally limited. Because of its protective status, no intervention is permitted between wildlife and humanity. The island is as pristine as nature provides. Intervention is prohibited, but scientific research abounds. One scientist, Zoe Lucas, has over forty years of experience as a naturalist on Sable Island. She does continuous research and monitoring involving terrain restoration projects and biodiversity studies. While there, we were informed that more than 500 wild horses currently make their home on this island. In addition, it is estimated that 300 to 400 thousand seals come to the island during the winter months to breed and pup. More than 350 species of birds have been recorded on the island.

Sable is a shifting crescent shaped sandbar. It gets its name from the French “l’île de Sable” which means island of sand. It is approximately 300 km (190 mi) southeast of Halifax, Nova Scotia, and about 175 km (109 mi) southeast of the closest point of the mainland. It is not more than 1.6 km (1 mi.) across its widest location and about 42 km (23 mi.) long.

Because Parks Canada does not recommend coming by boat, transport was via air. Normally that would entail a charter with Sable Aviation on their BN-2A Britten Norman Islander from Halifax, NS. Since there were eight of us on the team, we would have had to make two trips going and coming. Instead, we chose to also use Vision Air and their Sikorsky SK-76A++ helicopter. Otherwise, it would have taken two days each way.



Sable Island 2023–CY0S– (cont.)

Our total weight allowance spread between the two aircraft was 3000 pounds. We all committed to personal weight of no more than 240 pounds each, including personal items which included food for the entire island stay. Murray spent many hours (days) juggling equipment composition vs weight to meet the weight restrictions. There is no airstrip on the island, so fixed wing takeoffs and landings are on the sandy beach.

We arrived on the island on March 20th, and departed on March 31. Except during the WPX contest, we operated split. Even though ClubLog had rated CY0 at 49, the pileups were generally massive. The team participated as a Multi-Multi entry in the WPX SSB contest with the plan to satisfy much of the phone demand during that time. We made nearly 7900 QSOs during the contest in spite of a G-3 solar event. This resulted in a new Canadian Multi-Multi record. Overall Japan, Oceania, Africa, and South America were our priorities when there were openings. FT8 was exclusively Fox/Hound mode. On EME & SAT operation, Lee, WW2DX, focused on 2m EME, 6M, and satellite. As mentioned previously, we did make some RTTY and FT4 QSOs. Our total QSO's approached 85,000. As a result of this expedition Sable Is dropped from 49 to 73 as of Sep 2023 on the ClubLog needs list.

I have been on many DXpeditions, some at the top of the needs list, and while those were once in a lifetime experiences, I consider this operation from Sable Island another once in a lifetime event. There is much history of this island not herein covered and so much beauty to be admired. I have been truly fortunate to visit this place. It is the team's hope that you made it into the log, if you wanted to and if you did not, I fear it could be another seven years plus before it is activated again. However, if Murray has anything to do about that, perhaps it shall not be so long. Time will tell.



Sable Island 2023–CY0S– (cont.)

As a representative of the team, we are thankful for the individuals and organizations that made this operation possible. We are especially appreciative of the Parks Canada staff (Sarah Medill and Ken Wile), our aviation partners and Zoe Lucas for their participation. And, of course, without the financial support of organizations like yours, operations like this would possibly not happen. Thank you for your support.

As an aside and a teaser, many of the same team members are hoping to activate CY9, St Paul Island, in 2024.



Sable Island 2023–CY0S– (cont.)



Join TCDXA

Our mission is to raise *Dollars for DX*, used to help fund qualified DXpeditions.

Our funds come from annual member contributions (dues) and other donations.

TCDXA is a non-profit organization, as described in Section 501 (c) (3) of the Internal Revenue Code. All contributions from U.S. residents are tax-deductible.

Becoming a member is easy. Go to <http://tcdxa.org/> and follow the instructions on the home page.

All contributions (including annual dues) may now be paid on our secure site, using PayPal or credit card.



DXer's Trivia Game—

by Mike Cizek, WØVTT

Many people are familiar with the popular New York Times “Wordle” game. It’s a nice brain teaser that Susan and I use to decide which spouse is smarter than the other each day. Recently, with a group of friends, we were discussing Wordle, and a friend asked if I was familiar with a geography game called Worldle? She thought that would be good for us “ham radio guys”.

Naturally, I had to check it out. The game displays the outline of a country and gives six chances to guess what it is. Incorrect answers get hints; distance in kilometers and direction (eight compass points) to the correct country. After guessing the country, the next round shows the outline of all of its neighboring countries, giving several chances to guess them. Subsequent rounds are to guess the capitol city, population, and currency.

Worldle does not use the ARRL DXCC country list, so not all of their “countries” align with our “entities”. For example, England, Scotland, and Wales are all bundled into the United Kingdom; but they do list Guernsey, Jersey, and the Isle of Man separately. Worldle uses the ISO 3166-1 country list.

Considering myself a serious DXer, I thought this game would be fairly easy. (Spoiler alert: it’s NOT!). Those little island countries all look alike, and how many of us really know or care about the geographic outline of every little island? We just need to know which direction to point the beam. Naming the neighboring countries is easy for EU, AS, NA, and SA, and not too hard for AF, but those island countries are tough. Most of us probably know all of the Caribbean countries, and the South Pacific island nations, but not their exact arrangement or location. Just point the beam in the right direction and start calling.

Being a life long map geek (even before discovering ham radio), I really enjoy this little game and play it every morning. I hope it amuses some of you as well. <https://worldle.teuteuf.fr/>



NI0K 12x2 Antenna Switch

By John Simmons NI0K@arrl.net

I like to build stuff. I also like to improve my station. I wanted to have more capability than my five position RCS8V remote switch and move toward SO2R capability. I didn't want to spend the money for the ready-built options and I found a source of PC boards from the Czech Republic to do what I wanted. About the same time I found a good way to control the switch automatically from N1MM contesting software. So I got started on the project.

The remote switch needed 48 relays and I got them ordered before the COVID price increases. The build instructions for the switch have very detailed photos and I managed to stuff the boards. When I got to interconnecting the boards I got confused. Stu, N7QJP, helped me understand what I needed to do and I finished up the switch build by installing the coax connectors in a mounting plate, adding a good label, and putting it in a weatherproof box. I tested the switch for continuity, power handling, and impedance. Making the control cable from the switch was a real chore; power and 24 relay lines! I used a 25-wire serial cable I found in my junkbox. All those tiny wires tried my patience, eyesight, and coordination.

Next was the control system. It consists of multiple Raspberry Pi's, each with a "hat" with 16 outputs. Up to 4 Pi's can be controlled by the Windows console program for a total of 48 outputs. Figuring out the configuration required assistance from the program's author but now making changes is easy and quickly done.

Switch Details:

PC board source: <https://remotegqth.com/modular-antenna-switch.php>
For each antenna port one board is used: Figure 1, then after I installed the parts: Figure 2.



NIØK 12x2 Antenna Switch (cont.)

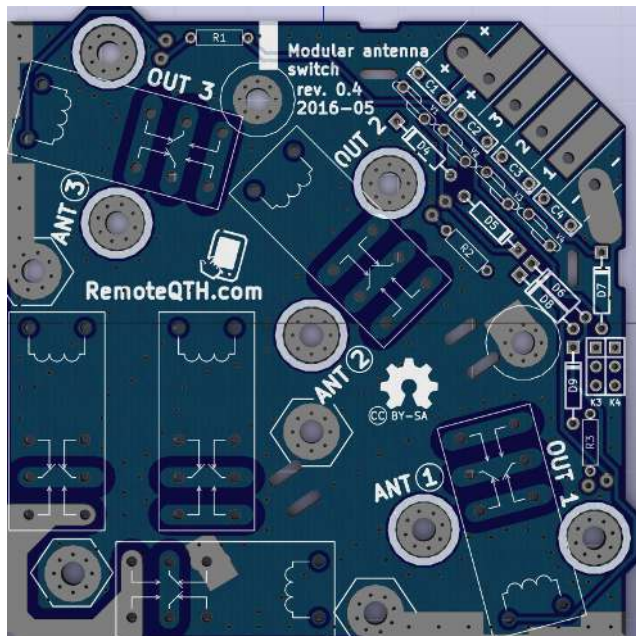


Fig. 1 –Bare Board

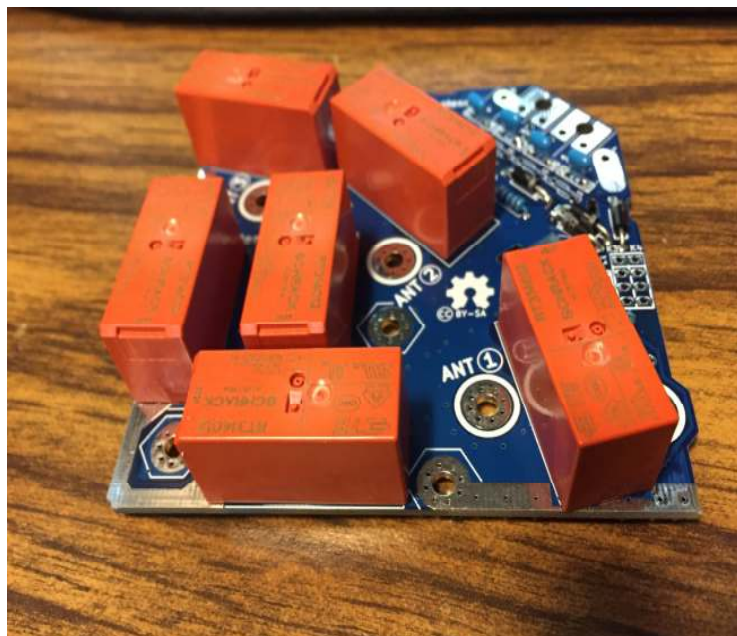


Fig. 2–First quarter board completed

For 12 antennas and one radio four PC boards fill the circle: Figure 3.

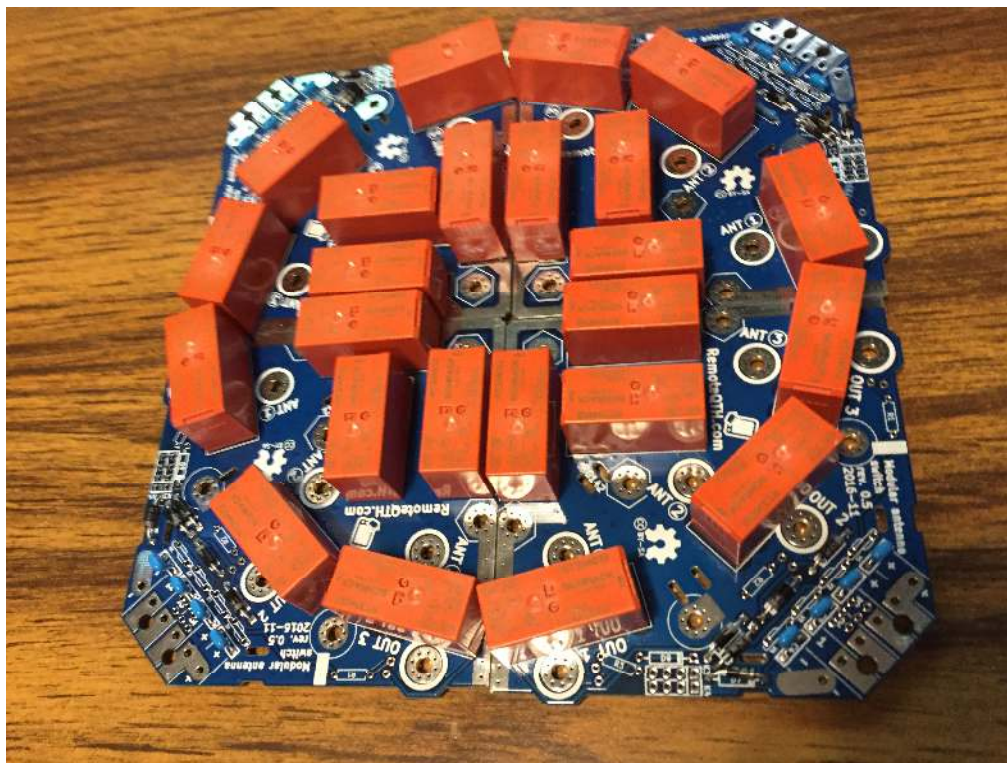


Fig. 3–First Layer Mounted



NI0K 12x2 Antenna Switch (cont.)

Another layer is a shield between the two relay layers to increase isolation: Fig 4.

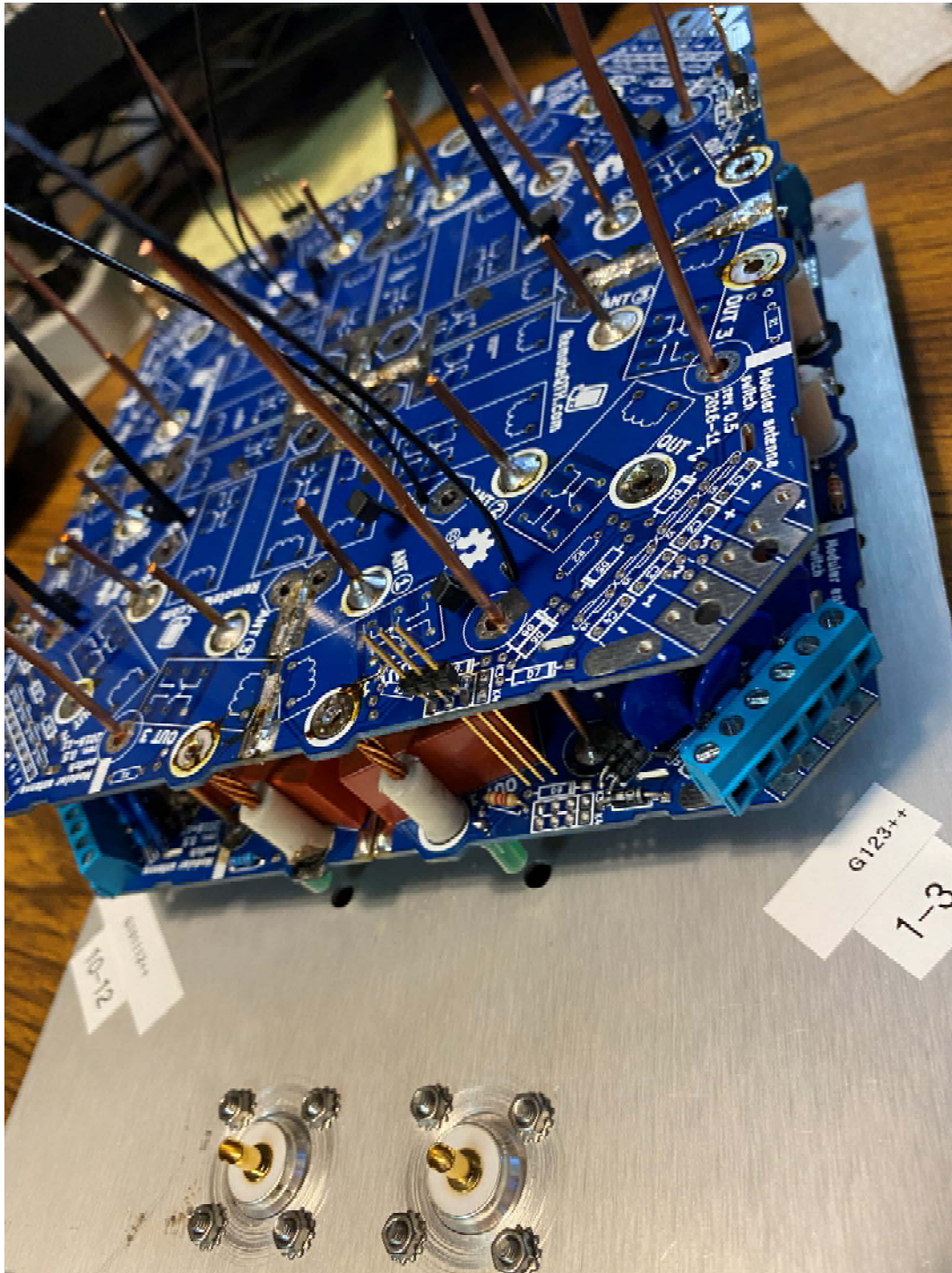


Fig. 4-Partial Build



NI0K 12x2 Antenna Switch (cont.)

Then the coax connectors are soldered on and mounted to an aluminum plate: Figure 5. With a label applied, Figure 6.

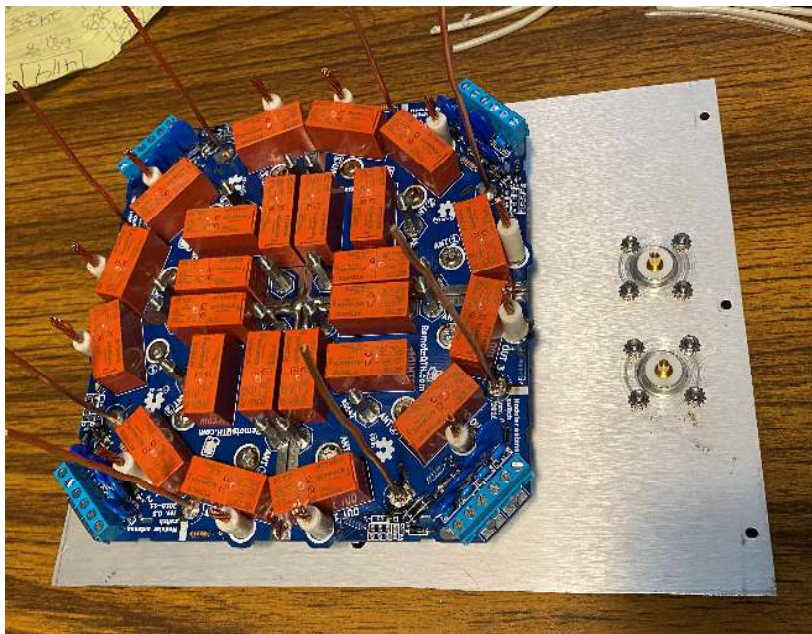


Fig 5—First layer completed on mounting Plate

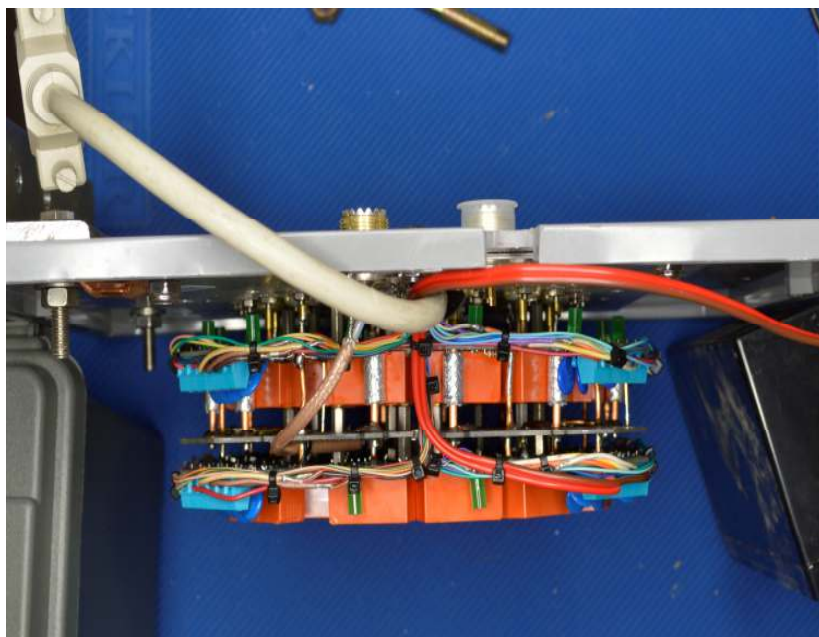


Fig 6—Completed



NI0K 12x2 Antenna Switch (cont.)

Side view, Figure 7. Ready to go into enclosure, Figure 8.

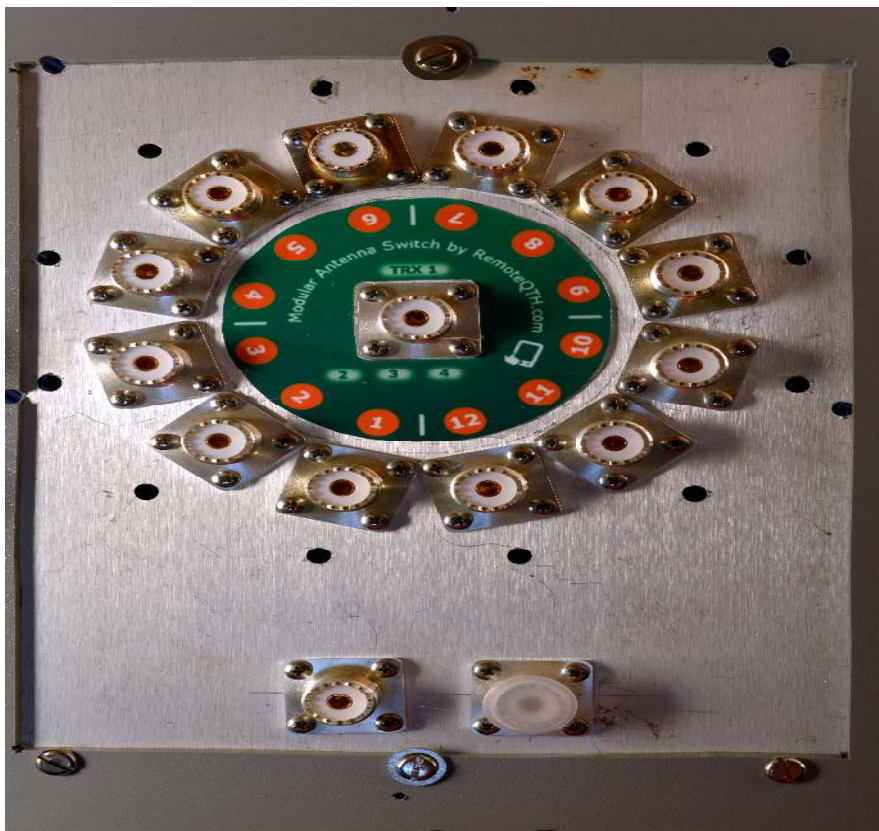


Fig 7-Connectors with Labels

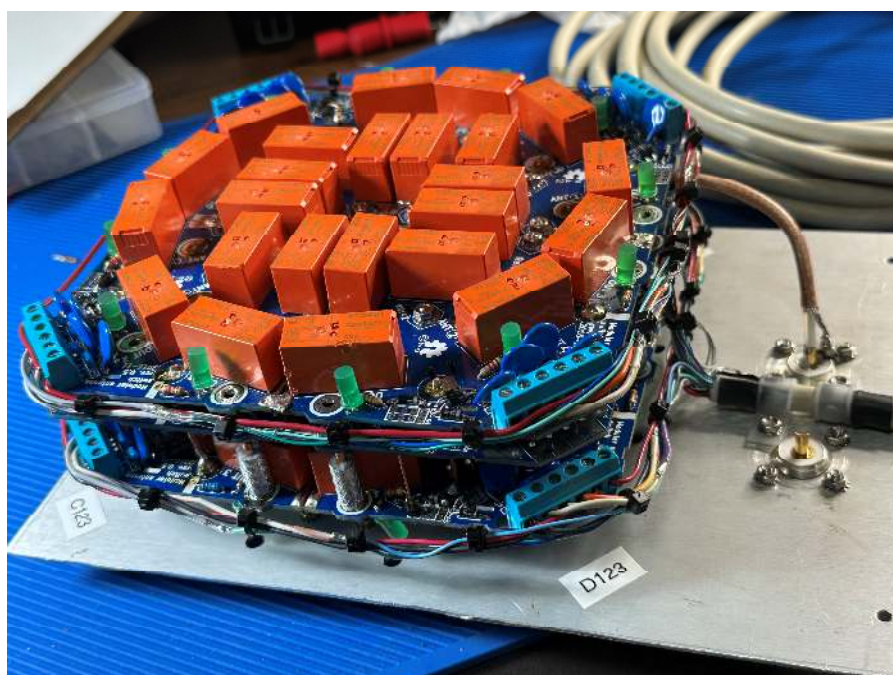


Fig 8-Ready for Enclosure



NIØK 12x2 Antenna Switch (cont.)

Control System Details:

Source: <https://freqez.com/>

There are two halves: a Raspberry Pi equipped with a “hat” (plugs onto RPi board). The hat is available for \$50 from the FreqEZ website: Figure 9.

The diagram below shows how it connects to the switch. I have two of them at the base of the tower for the remote 12x2 switch and one in the ham shack for bandpass filter switching. (Next Page)

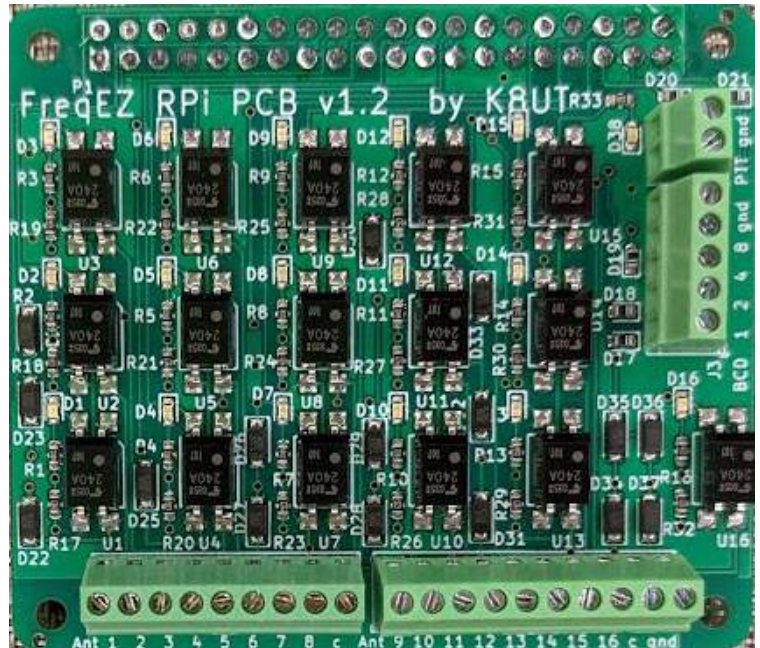
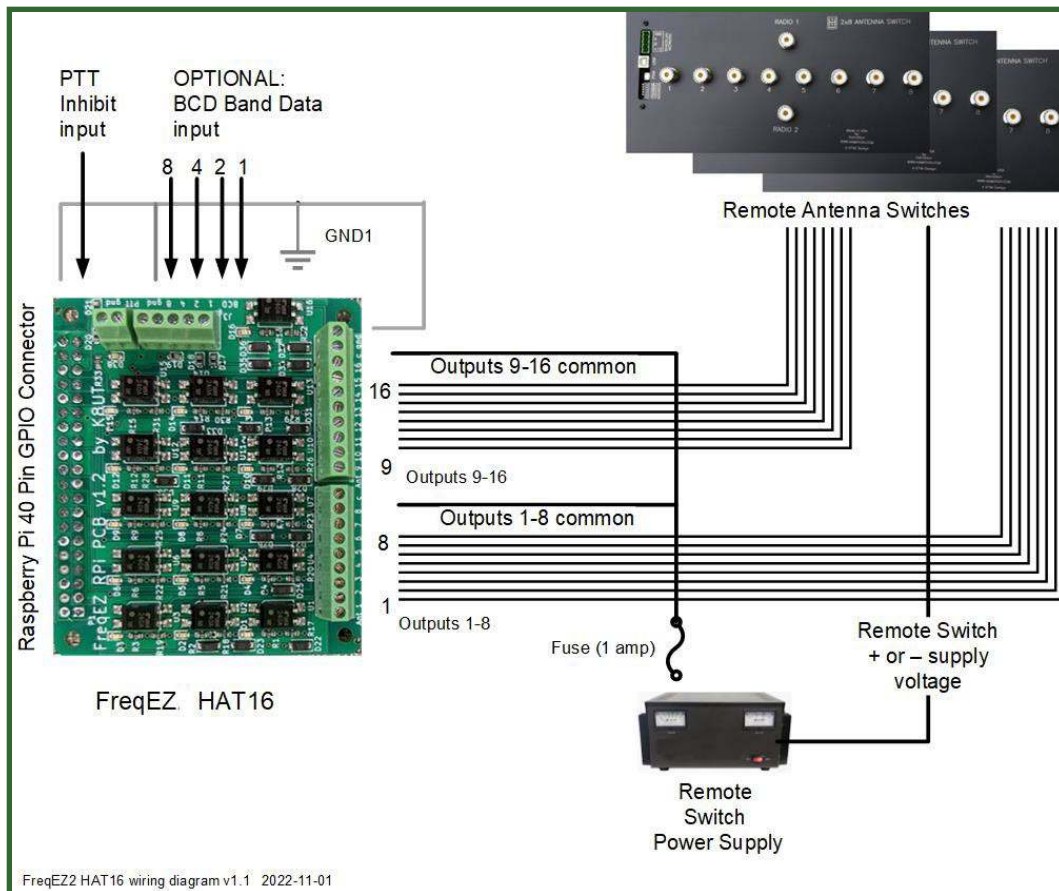


Fig 9–FreqEZ2 Hat16



NIØK 12x2 Antenna Switch (cont.)

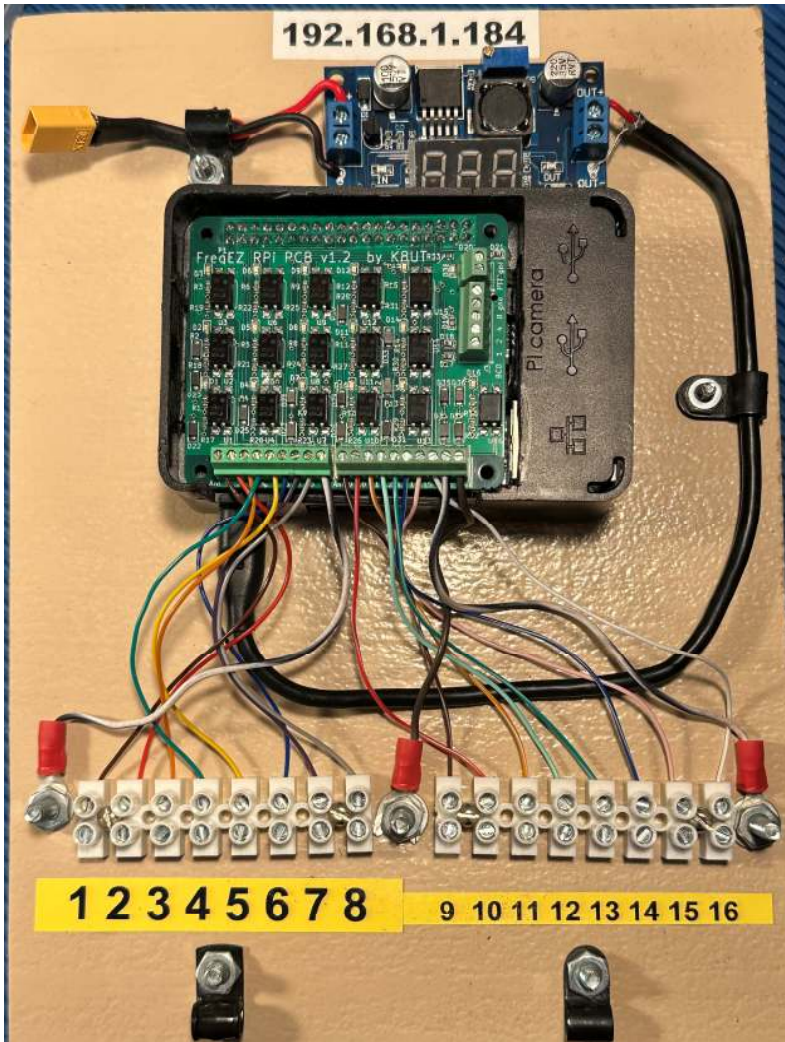


Fig 11–Shack Control Board

The RPi runs a program that communicates with a companion Windows program via Ethernet. The Windows program is easily configured for your station and accommodates changes easily. The chart is to the right.



NI0K 12x2 Antenna Switch (cont.)

Integration and Operation:

N1MM Logger+ includes programmable antenna switch functionality. I can configure antennas per frequency range, i.e. 3500-3750, 3750-4000, 7000-7300, etc. I can also configure antennas per compass heading range in a band, i.e. Europe (30-60 degrees), JA (300-330 degrees), etc.: Figure 13. Via configuration in the FreqEZ console it will control bandpass filters in the shack for S02R. FreqEZ will accommodate up to 48 switches per instance of the program. When I'm contesting changing my radio's frequency selects the proper antenna and bandpass filter automatically! I can also select a secondary antenna for that frequency with a hotkey combination. I can also control the antenna selection manually with a mouse click. Having a 12x2 remote switch with additional contacts that I can easily switch has really added to the pleasure operating in my shack.

Code	Antenna	Bands (1.8, 3.5, 7, 14,...)	Rotor Description	Offset	Bidirectional	Sector
0	80 EDZ	3.5			<input type="checkbox"/>	0-360
1	VOYA	1.8,3.5			<input type="checkbox"/>	0-360
2	80 NE	50			<input type="checkbox"/>	1-100
3	80 SW	50			<input type="checkbox"/>	170-275
4	40 JK	7	JK2040		<input type="checkbox"/>	0-360
5	40 DIPOLE	7			<input type="checkbox"/>	0-360
6	30 GAP	10			<input type="checkbox"/>	0-360
7	TH11 YAGI	14	TH11		<input type="checkbox"/>	0-360
8	TH11 YAGI	21	TH11		<input type="checkbox"/>	0-360
9	TH11 YAGI	28	TH11		<input type="checkbox"/>	0-360
10					<input type="checkbox"/>	0-360
11					<input type="checkbox"/>	0-360
12					<input type="checkbox"/>	0-360
13					<input type="checkbox"/>	330-270
14					<input type="checkbox"/>	330-270

Fig 13–N1MM Antenna Setup



NEW Submission Tool for DX Marathon

by Mark Wohlschlegel-WC3W@arrl.net

Ladies and Gentlemen of
The DX Marathon Program:

We wanted to make all of you aware early of an exciting change we have been working on throughout 2023 to simplify the submission process for your 2023 results to be submitted between January 1-5, 2024.



Why are we doing this? The answer is simple. We are trying to continue to make participation easy for everyone AND we must position our program for future growth as we expand. We don't yet know what 2023 will bring in terms of participation but in 2022, we grew at a +46% rate. We have exciting enhancements we wish to make in the future so we must pay careful attention to our processes to make it possible to continue to administer the program in a quality manner.

How does the submission process work? In the past, you created an Excel file and that was your submission. Some of you edited this worksheet manually, directly in Excel, but most used tools like AD1C's to process an ADIF export from your logging program, or if you were using DX Keeper, you generated the Excel worksheet directly. This Excel file is still accepted, and you can upload it on our new Submission Tool to get started with your entry.

Now, however, you can skip all these steps, generate an ADIF file from your logging program, and upload this instead of the Excel file. The Submission Tool will help you select, review and edit your entry directly, making any additional tools and applications completely optional.

You can find a link to the new Submission Tool right in the middle of www.dxmarathon.com.



NEW Submission Tool for DX Marathon (cont.)

The most significant benefit to you with the new tool is that it will allow you to review, and more importantly, EDIT, each one of your entries.

Why is this a benefit to you? Well as you all know, you and only you, are responsible for the integrity and accuracy of your reported QSO's. Just as the case in the past, you get a wrong CQ zone, you list a pirate, or you make a typo, your QSO will be rejected, and you will lose the point. The new submission tool does not check the integrity of your QSOs; that is for you to do just as you have in the past.

Stated another way, your results as reported are only as good as the accuracy of your log. Therefore, we encourage all participants to carefully check all of your information before submission. The tool will make this easier for you to accomplish.

If you've been using Excel to keep track of your progress or use DX Keeper or AD1C's tool to generate the worksheet, you can still keep your workflow.

We have beta-tested the tool for the last 2 months with over 100 participants. The results that we have thus far are excellent and those that have used it are very impressed. Of course, in a beta test, we did uncover some issues which have been corrected.

You will notice with the tool, that there will be a list of questions as you continue through the process to include your station data, your call, and your antenna details. If you have a club affiliation, be sure to include that as well.



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NEW Submission Tool for DX Marathon (cont.)

If your club is not in the provided list, that's fine, just make sure that all members settle on a single descriptive input, for example, the Northern Illinois DX Association should decide on NIDXA or whatever they choose (or even better, send us an email with the name and we'll include it in the list). The antenna questions will help define your entry classification, i.e. Unlimited, Limited, Formula, or QRP.

The tool is live now. Go ahead and try it out. As was the case in the past, you can have multiple submittals, the last of which will be the only one to be maintained. Also, your early submittals are held confidential within our system and are not available in the public domain. I encourage all to start using it to avoid a panic rush when the official submittal is due between January 1-5, 2024.

We want to encourage more software developers to produce ADIF files that work flawlessly with our tool, and if their apps do a better job at selecting QSOs than our does, then they can produce an ADIF, or even an XML file, that only has one QSO per entity and zone, so no further decisions are needed.

Your DX Marathon administrative staff are always available to assist you. I would also encourage you to join DX Marathon Group IO as that is a great forum to get many of your questions answered.

PLEASE TRY IT OUT NOW!

JUST DO IT! If you have any issues, please email both Sebastian at KI2D@dxmarathon.com and myself, at wc3w@dxmarathon.com, and describe the issue. Any other comments are appreciated.

73

Mark-WC3W

CQ DX Marathon

Program Administrator



**DXers Have
A Choice**



The Daily DX - is a text DX bulletin that can be sent via email to your home or office Monday through Friday, and includes DX news, IOTA news, QSN reports, QSL information, a DX Calendar, propagation forecast and much, much more. With a subscription to The Daily DX, you will also receive DX news flashes and other interesting DX tidbits. *Subscriptions are \$49.00 for one year or \$28.00 for 6 mos.*

The Weekly DX - is a product of The Daily DX that can be sent weekly to your home or office via email in the form of a PDF (portable document format). It includes DX news, IOTA news, QSN reports, QSL information, a DX Calendar, propagation forecast and graphics. *Subscriptions are \$27.00 for one year.*

Get two weeks of The Daily DX or a sample of The Weekly DX free by sending a request to bernie@dailydx.com, or at <http://www.dailydx.com/trial.htm>.





My First Beam Project

by Bill, AJ8B (aj8b@arrl.net)

Since 1980 I have been chasing DX with various degrees of effort and varying degrees of success. I have had a variety of rigs including an HW-101, TS-530SP, IC-718, FT-950, and my current Flex-6400. I have used a variety of wire antennas when and where I could. The one constant companion has been my 6BTV vertical. (Fig. 1) Over the years, I have added the 12M and 17M kits, the radial ground plate and the tilt-over base. I have been able to confirm 310 countries, WAZ, and 1,600 in the Challenge. All good totals for a modest station. However, to get to the next level, I knew I had to get some aluminum in the air.



Figure 1 My 6BTV Vertical with the 17M kit installed.

If you know me, then you know my limitations. I am 6'9" and not slim. However, my big challenge is that I have had 4 hip replacements. That really limits my climbing, whether it is a ladder or a tower section. So, I had to find a solution that met my physical needs and would not force a housing refinance!

At the 2022 DX Dinner®, I happened upon a discussion between several hams. One had just put up a hex beam and the other two hams were telling him how much he would love it. They mentioned that although it was a 2-element beam for 6M through 20M, it was lightweight, easy to build and easy to get into the air. You will see my inexperience with such matters as this in the rest of the article. However, I am always looking to learn!



My First Beam Project (cont.)



Figure 2 32" x 6" ID PVC

I checked around and after reading several of the reviews in QST¹, I settled on the K4KIO hexbeam². Since I had not built a beam and raised it before, I thought this experience would be something I could share, and a few others might benefit. Not as challenging as what most of you have, but... Here it is...

I was having chili with Joe, W8GEX, and Janet, W8CAA, and the topic turned to the hex beam. I mentioned that I was trying to determine the concrete needed to get the push up mast secured. It really didn't seem like it would be a lot, but it would be permanent. I

had the perfect area in a clearing in my woods for just such a project. Joe told me about a way to secure the pole that I had not heard of.

Sink a 32" piece of 6" I.D. PVC in the ground. (Fig. 2, Fig. 3) Pack the space around the outside of the PVC with pea gravel. (Fig. 4) Use a 4x4 as the "tower" portion of the assembly. The 8' long 4x4 will go into the PVC, allowing over 5 feet of 4x4 to mount to. Once you put the 4x4 into the PVC, use more pea gravel around the 4x4 to really pack it



Figure 3 My grandson digging the hole.
Lucky Me!!!

down. I used a broom handle as a "tamp." Always keep an eye to make sure the 4x4 is plum. Once this is done and you have it packed, that 4x4 isn't going anywhere!



Figure 4 Finished Mount



My First Beam Project (cont.)



Figure 5 4x4, rotor, and thrust bearing on "tower" portion. Looks crooked but it isn't!

A bonus is that if you need to take it down, a wet/dry shop vac can be used to remove the pea gravel allowing you to lift the 4x4 out!

Building the Hex Beam:

Carefully unpack the hex beam components. I received 2 boxes from K4KIO, excellent instructions, and clearly marked components. However, I missed one of the bags that contained about 1/3 of the mounting hardware. I

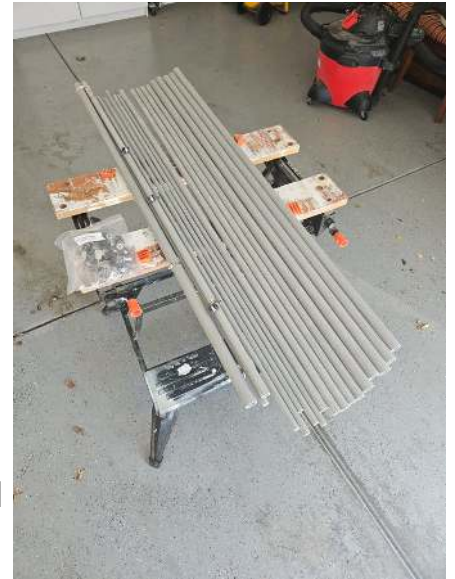


Figure 6 The spreaders laid out for painting.

I contacted K4KIO and ordered what I needed. They overnighted it to me. A few days later, I found the missing bag. I sent it back to K4KIO. Not only did they give me full credit, but they paid for shipping both ways and then followed up!

I painted the spreaders to protect the fiberglass from UV deterioration. Rust-oleum proved to be quite effective.

Figure 7 shows the mast plate and the feed point together ready for the spreaders. The next several pictures show the steps in putting it together.



Figure 7 Mast plate and feed point in place - ready for the spreaders.



My First Beam Project (cont.)

Figure 8 shows the spreaders together and mounted to the mast plate. The spreaders each have 3 sections that slide into each other. Once the spreaders are pulled up and held in place, they are quite mechanically sound.

Figure 9 shows the assembled antenna at the “antenna farm”, ready to install. There was one spreader in the original box that had the wire holding clamps in place and that was used as a template for the rest. I did some minor physical adjustments of the wire tension.

I performed some SWR measurements for each band to make sure there was nothing wrong. All checked out OK.

I was now feeling the pressure to finish for two reasons. First, I only had to install the rotor, the thrust bearing, the



Figure 9



Figure 8

guy wires

and the push-up mast to be on the air. Secondly, it was 2 weeks until CQWW CW and 2 days before a major cold front was due with wind and rain. So, I was up and out early on that Saturday!

Figure 10 shows the Yaesu 450G rotor mounted to a steel plate using “L”-channel hardware used in garage door systems. I used 1/8” 9” x 12” steel plate⁸ to hold the thrust bearing and the rotator. Figure 11 shows the thrust bearing installed.



My First Beam Project (cont.)



Figure 10



Figure 11

I dropped the pushup mast³ through the thrust bearing⁴ and into the rotator⁵. I used a ¼” piece of wood as a temporary spacer between the bottom of the mast and the rotator housing. This allows the thrust bearing to hold all the weight. I dropped the guy wire Ring Kit⁶ over the mast between the top and middle sections. We (my son Patrick and I) secured the thrust bearing and then the rotor.

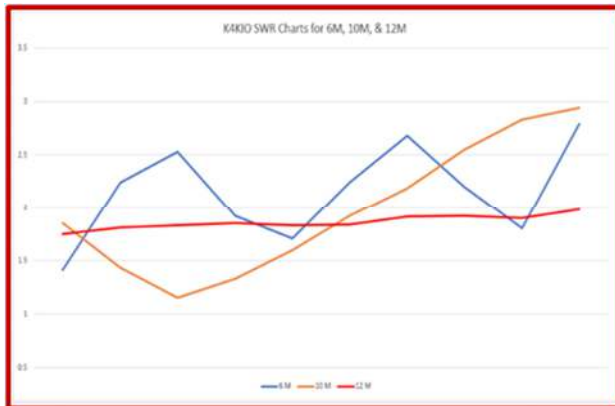
Once this was done, I attached the guy ropes to the guy ring. You must be careful not to get your feet tangled up in the ropes, the co-ax, and the rotator cable! I was able to lift the hex beam assembly up to Patrick and he was able to drop the antenna mast pipe into the push up mast. We secured it with two 2.5” stainless steel bolts. Patrick then pushed up each section and I secured it. Finally, we secured the guy ropes to the guy anchors, and we were ready to go!

The SWR charts are on the next page. It has really performed well. The rotor interfaced beautifully with my DX Suite^{7,9} logging program. Now I need to remember that this does work differently than a vertical!



My First Beam Project (cont.)

If you have any questions, just drop me a line and we can set up a sked. I bet I can work you now!



¹ [QST August 2017](#)

² [KIO Technology \(k4kio.com\)](#)

³ [WiMo Antennenn und Elektronik 18305-5 WiMo Aluminum Telescoping Masts | DX Engineering](#)

⁴ [Yaesu GS-065 Yaesu Rotator Mast Bearings | DX Engineering](#)

⁵ [Yaesu G-450ADC Yaesu G-450ADC Medium-Duty Rotator Systems | DX Engineering](#)

⁶ [WiMo Antennenn und Elektronik 23050 WiMo 23050 Metal Guy Ring Kits | DX Engineering](#)

⁷ [DXLab \(dxlabsuite.com\)](#)

⁸ [Amazon.com: 1/8" x 9" x 12" Steel Plate, A36, Hot Rolled, 1/8" Thick : Industrial & Scientific](#)

⁹ [MDS-HAM Amateur Radio Products](#)



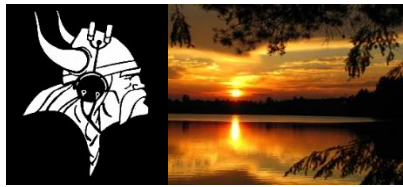
TCDXA OPERATING BUDGET FY 2024
(Sep 2023 - Aug 2024)
November 20, 2023



INCOME		ACTUAL	BUDGET	Actual 2023
Surplus from FY 2023 (balance 8/31/2023)		10017.73		10024.48
Member Dues 2024		3155.32	4400.00	4600.84
Door Prize Ticket Sales club share		105.00	500.00	519.00
Donatons (estates, wills, etc.)		0.00	0.00	0.00
Refunds and Reversals		0.00	0.00	0.00
TOTAL INCOME		13278.05	4900.00	15144.32
EXPENSES			BUDGET	Actual 2023
Member Recruitment/Retention/Zoom		0.00	(300.00)	(195.96)
Website ISP & Domain Name		0.00	(150.00)	(97.77)
Office Supplies, Miscellaneous expenses		0.00	(50.00)	(200.00)
Meeting Room Rental		(100.00)	(600.00)	(500.00)
Holiday Party Dec		0.00	(500.00)	(451.28)
ARRL Spectrum Defense Fund		0.00	(250.00)	(250.00)
NCDXF Donation		0.00	(250.00)	(250.00)
MWA Plaque		0.00	(80.00)	(80.00)
DXpedition Contributions Total		(1,800.00)	(5000.00)	(3051.58)
#1 Dxpediton - ZD9W Tristan Da Cunha	(500.00)			
#2 Dxpediton - PRØT Trindade	(250.00)			
#3 DXpedition - CBØZA Juan Fernandez	(250.00)			
#4 Dxpediton - V62P/V62S Micronesia	(300.00)			
#5 Dxpediton - 7O0AD Somalia	(500.00)			
#6 Dxpediton -	0.00			
#7 Dxpediton -	0.00			
#8 Dxpediton -	0.00			
#9 Dxpediton -	0.00			
#10 Dxpediton -	0.00			
TOTAL EXPENSES		(1900.00)	(7180.00)	(5076.59)
NET		11378.05	-2280.00	
Checking balance		10754.26		
PayPal balance		573.79		
Cash / Checks on Hand		50.00		
NET BALANCE		11378.05		

When required, Wells Fargo & PayPal online statements can provide detail not shown in this report.





TWIN CITY DX ASSOCIATION (TCDXA)

CLUB FACT SHEET

Who We Are:

The Twin City DX Association (TCDXA) is a 501(c) (3) non-profit amateur radio organization, whose members have an interest in DXing and in supporting the club mission: **Dollars for DX**. Bylaws and Articles of Incorporation govern the club's operation.

Club Mission:

The club mission supports major DXpeditions with financial donations. The source of operating income for this activity is an annual contribution (dues) of \$25 from each member.

DX Donation Policy:

The policy supports major DXpeditions that meet our requirements for financial sponsorship. All requests must be approved by the Board of Directors. Final approval is by vote of the full membership. Over 70 DXpeditions have been sponsored since 1997. Details are available on the website at: <http://www.tcdxa.org/sponsoredxpeditons.html>

Club History:

The club was formed in the early 1970s by a small group of DXers from the Twin City area. Over the years, the club has changed; most notably by opening its doors to anyone interested in DXing - from the casual to the very serious operator. Our membership now resides in numerous states and several countries.

Requirements for Membership

We welcome all hams who have an interest in DXing and hold a valid FCC Amateur Radio License. It doesn't matter whether you're a newcomer, or an old-timer to DXing; everyone is welcome!

Meetings:

The club meets on the third Monday of each month (except July & August) at PUB 42 Restaurant in New Hope, MN. Members gather early in the bar for Happy Hour, and move into a private room at 5:00pm for dinner and a short business agenda, followed by a program. If you enjoy a night out on the town with friends, you'll enjoy this get together. Meeting attendance is NOT a requirement for membership.

Club Officers:

Four officers, plus one additional member make up the Board of Directors; currently: Bert Benjaminson, WBØN, President & Director, wb0n@yahoo.com, Vice President & Director, Tom Weigel, AB0J, Secretary/Treasurer & Director, Pat Cain, k0pc@arrl.net, Mike Cizek, WØVTT, Director & DX Grant Manager and John Rusciano, NG0Z, Director.

Website:

We maintain a website at www.TCDXA.org that provides information about a variety of subjects related to the club and DXing. The site is maintained by our webmaster Pat Cain, KØPC.

Newsletter:

The **Gray Line Report** is the club newsletter, which is published on a quarterly basis. We're proud of the fact that 99% of the content is "homegrown" – written by our members. Past issues are on the website at:

<http://www.tcdxa.org/newsletter.html>.

How to Become a Member:

An application for membership can be completed and submitted online, or printed and mailed in. (See <http://www.tcdxa.org/Application.html>) Contributions may be made by check or via the PayPal link on the homepage at www.TCDXA.org.

Visit us at a Meeting:

You are most welcome to attend a meeting, and look us over, before joining. Meetings are held at the PUB 42 Restaurant at 7600 Avenue North in New Hope (<http://pub42.com/>). Join us for happy hour at 4:00pm with dinner at 5:30pm, followed by the meeting at 6:30pm.



VKØIR	K5D	AHØ/NØAT	3W2DK	K4M	XU7MWA
ZL9CI	VK9DWX	5X8C	FT4TA	TX3A	S21EA
A52A	FT5GA	K9W	VK9MT	KMØO/9M6	J2ØRR
T33C	3D2ØCR	XRØZR	VK9DLX	YS4U	J2ØMM
3B9C	E4X	T3ØD	VU4KV	YI9PSE	BS7H
TX9	CYØ/NØTG	3W3O	EP6T	ZL8X	N8S
CP6CW	VP8ORK	3W2DK	VP8STI	4W6A	3B7SP
3YØX	VU4PB	FT4TA	VP8SGI	T32C	3B7C
K7C	STØR	VK9MT	TX3X	HKØNA	5JØA
5A7A	3D2C	VK9DLX	VP6DX	7Ø6T	K5P
VU4AN	3CØE	VU4KV	TX5C	NH8S	FT4JA
VU7RG	TT8TT	EP6T	9XØR	PTØS	PZ5W
VK9DWX	9M4SLL	3GØZC	9U4U	FT5ZM	ZL9A
S9OK	3DAØRRU	7P8RU	VU4W	CY0S	ZL7/K5WE
TN8K	3B7M	FT8WW	TX5S	VU7W	3Y0J

TCDXA DX DONATION POLICY

The mission of TCDXA is to support DXing and major DXpeditions by providing funding. Annual contributions (dues) from members are the major source of funding.

A funding request from the organizers of a planned DXpedition should be directed to the DX Donation Manager, Mike Cizek, WØVTT. He and the TCDXA Board of Directors will judge how well the DXpedition plans meet key considerations (see below).

If the Board of Directors deems the DXpedition to be worthy of support, a recommended funding amount is presented to the membership for their vote. If approved, the TCDXA Treasurer will process the funding..

Key Considerations for a DXpedition Funding Request

DXpedition destination	Website with logos of club sponsors
Ranking on <i>Most Wanted Survey</i>	QSLs with logos of club sponsors
Most wanted ranking by TCDXA Members	Online logs and pilot stations
Logistics and transportation costs	Up front cost to each operator
Number of operators and their credentials	Support by NCDXF & other clubs
Number of stations on the air	LoTW log submissions
Bands, modes and duration of operation	Previous operations by same group
Equipment: antennas, radios, amps, etc.	Valid license and DXCC approval
Stateside and/or foreign QSL manager	Donation address: USA and/or foreign

To join TCDXA, go to <http://tcdxa.org/>.

