

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

September, 2023



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Gray Line Staff
K0AD
WA0MHJ
W0JMP
W0ZF
AJ8B



Note from the President
Bert Benjaminson, WB0N, President

Let me start by saying we lost a very important member, Jim Junkert K0JUH. Jim was the most dedicated member of the TCDXA that I know. He did so much to make this club what it is today, and I thank him. 73 Jim, you will be truly missed.

Well it's time for another one of these messages, and I am not sure what to put in here, but here goes: How is everyone doing on summer antenna work? Here, I am way behind as going back to work is killing my free time. How about DX? We are currently working on three DXpedition proposals which should be approved by the time this is published. And hey, one of them would be an ATNO for me! Another one I just have on 10m SSB from way back in March of 2002 when I was still WB0TNH. Remember that's when I just did SSB, no CW or digital modes. (I received WB0N in August of 2002) The other I just need on 6m, 80m, and 160m. Hopefully these DXpeditions will have lots of Q's for us all! How is DX treating you this summer? Our in person meetings have had an upswing in attendance lately, but still not back to pre-pandemic numbers. Not sure what's happening there? Food prices? Lack of interest in the speakers' presentations? Still worried about covid? Just too easy to watch on zoom? OR? Help us out in ways to get more in person attendance please. I know I love seeing as many of you as I can and I have learned a lot from you all. And the food is not bad either. It's almost time for our yearly elections so your chance to run and throw the bum outta office is nearing!! So maybe this is my last letter from the President?

73 es GD DX Bert WB0N

Dollars for DX Report

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



DXpedition funding was busy over the summer with five requests from various groups. Three of them came in at the same time and voting finished just a few days before this is being written.

Just after the last issue of The Grayline went to press, we received a request from Stan, LZ1GC, to fund his E6AM operation on Niue Island. Niue ranks #82 on the Clublog most needed list and we approved a \$250 donation by a vote of 52-0. Niue was a new one for 21% of those voting.

In July, the German DX Group requested funding for their trip to Tuvalu to operate as T2C. Tuvalu ranks #55 on the Clublog list and we voted 64 to 1 in favor of a \$500 donation. Tuvalu was a new one for 34% of the voters.

In mid August we received three separate requests for operations and ran the three votes simultaneously. There was some confusion about this, but the vote counts for the three were close enough that it appears almost everyone figured it out.

The first request was from a Brazilian group going to Trindade Island to operate as PR0T. Trindade ranks #14 most needed,

but because of the cost and the very short duration of their trip, we recommended a donation of only \$250. The donation was approved 54 to 1 with Trindade being a new one for 45% of those voting.

A multi-national group will operate CB0ZA from Juan Fernandez Island, which ranks #61 on Clublog's most needed list. We approved a \$250 donation by a vote of 54 to 1 with 35% needing Juan Fernandez for a new one.

After returning from a successful trip to Lakshadweep last spring, Yuris, YL2GM, will head to the South Atlantic to activate Tristan da Cunha Island as ZD9W. ZD9 ranks #44 on the Clublog most needed list and we voted 58 to 1 to award a \$500 donation. 42% need Tristan de Cunha for a new one.

We recently funded DXpeditions to Bouvet and Crozet Islands; at the time they were the #2 and #3 most needed countries in the world. Looking at the Clublog listing just recently, it is nice to see that Bouvet now ranks #11, while Crozet fell all the way to #30. The Bouvet team faced some serious challenges and were not able to make nearly as many QSOs as they had hoped.



Dollars for DX Report (cont.)

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

On Crozet, Thierry's challenges were mostly thrown at him by the French government by restricting his operating time. He still managed to make over 50,000 QSOs. Let's hope he mounts a similar operation to Kerguelen Island, which has now climbed to #9 most needed.

This month ends our club's fiscal year. During FY23, we funded 13 DXpeditions for a total of \$4500. Here's hoping for another good year next year.

Thank you.

Mike Cizek WØVTT

TCDXA DX Grant Manager



Tributes to Jim Junkert, KØJUH

The original email read as follows:

Date: Thu, Jun 8, 2023 at 12:32 PM

It is sad news to announce Jim Junkert, KØJUH, passed away this morning.

Funeral plans are being made now to be announced at a future time.

He will be greatly missed by many of us.

Mike Paskeuric-NØODK



Below are some of the thoughts and memories about Jim:

Jim was a generous ham with his time and advice. He loved chasing DX and his enthusiasm was infectious. For me, he was the face of the TCDXA when I joined and remained the face for a long time. He was a positive force for good in our hobby and I will miss him.

Scott Wright - KØMD

Here are a few memories of Jim KØJUH

Jim was instrumental in creating the club mission "Dollars for DX" and initiating funding DXpeditions.

Jim led the way in opening up the club to all amateurs with an interest in DX. The requirements to have DXCC and be approved by unanimous vote were eliminated.

Jim spent many years as an officer and board member. Most notably he held the Secretary/Treasurer position for years and created the reports we have today.

Jim created the club website with no prior knowledge of web programming. He taught himself how to do it.

Jim worked with a few others to create and edit the Gray Line newsletter for years.

The TCDXA would be a shadow of itself today without Jim's leadership.

73, Pat KØPC



Tributes to Jim Junkert, KØJUH (cont.)

Attached are a few photos of Jim.

I first met Jim 2 August 1957 on 15m CW. Jim was operating the MARS station in Germany and I was in N.E. Mpls. with my DX-35, 50W to a folded dipole. During the CW QSO, we discovered that we were both from the same part of Mpls. When Jim returned stateside in 1958, we met in person and became lifelong friends. Jim was a big



part of modernizing the TCDXA. Dollars for DX was Jim's idea.

The QSL on the next page is the one Jim sent to me from Germany. Jim explains the Force 12 20/40 meter beam he was ready to put up.

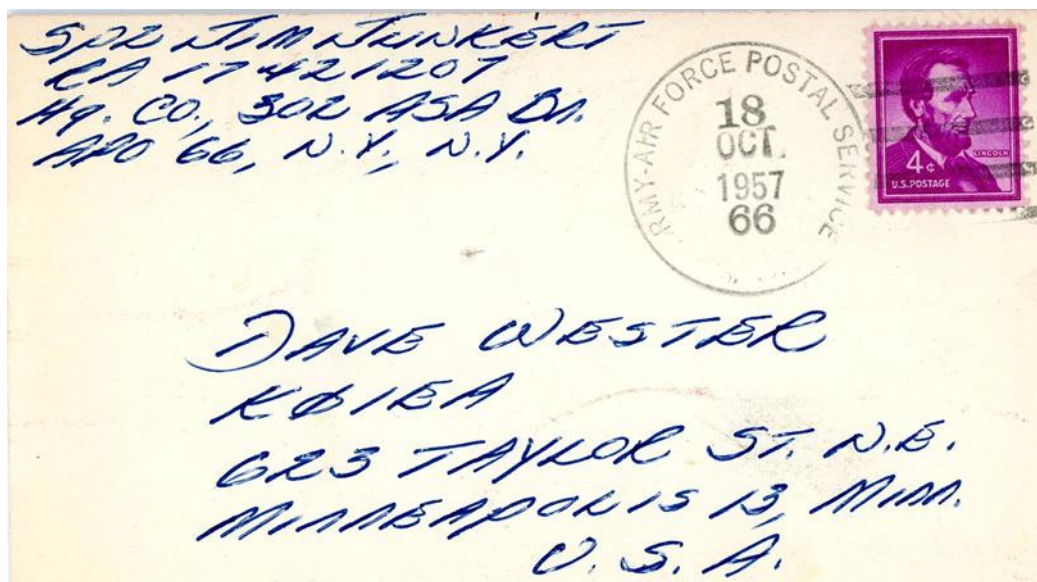
Last is a photo of Jim being congratulated and welcomed into the Army Security Agency as a Morse Intercept Operator. I'm guessing that was around 1955.

Most of the hams that attended the funeral already know much of this.

73 de Dave, KØIEA



Tributes to Jim Junkert, KØJUH (cont.)



From the log of

DL4WN
NEAR NÜRNBERG, GERMANY

Confirming QSO of KØ1EA

DATE TIME	STATION CALLED	CALLED BY	HIS FREQ. OR DIAL	HIS SIGNALS RST	MY SIGNALS RST	FREQ. MC.	EMIS-ION TYPE	POWER INPUT WATTS	TIME OF ENDING QSO
1508	✓	KØ1EA	21.559.599	414H	300	1535			
									TNX FER. NICE QSO
									DAVE. CU IN DECEMBER
									TB
									TIM
									TNX FER QSK

General Electric Tube Dept. Form 73A
(Log Form Courtesy of A.R.R.L.—Made in U.S.A.)



Tributes to Jim Junkert, KØJUH (cont.)

2011

The Force 12 20'40 combo on the ground. The old guy leaning on the Boom is yours truly. The Lake in the Background is Miller Lake. 20 miles Long & about 18 miles across. Excellent Walleye Fishing Summer & winter. The QTH is very quiet - really helps on the Low Bands.

EX - PL4WN 1957

Jim - KØJUH



Tributes to Jim Junkert, KØJUH (cont.)

Jim was always the best to me. I know it was sad news to hear of his passing and announce it to Ham Radio friends. He was great to me, helped me with many things Ham Radio wise and other things. He even taught me how to easily pull ground rods out of the ground with my Farm Jack. That trick really worked great. I had to laugh at that one.

When I was President of the TCDXA, he was a huge help during those two years. He would coach me on many of the items I had to do. He was a big factor in the TCDXA club and behind helping with the newsletter, meetings, and running events or helping out.

Jim was very active in Ham Radio, his classic car, hunting and fishing, and being there as a friend. We did a short trip together going up north to a State Park to operate Ham Radio there. I was having problems getting on the air with a couple different 40 meter antennas with SWR. Well, Jim pulled a HF2V out of his basement for me at no charge. It is still working great to this day and well over 150 DXCC on 40 meters, a long time without an amp.

I would stop by and help him with his aquarium maintenance and up-keep. We would talk about many ham radio events in his life and deep history operating CW.

I could go on a lot about him but you knew him as well. We have been friends since 1999.

For many years I will remember good times with him and miss visiting him, phone calls, or exchanging texts with him. Great having Jim as a friend.

Mike Paskeuric-NØODK

73



“My Antenna Dilemma” or “My Winter of Discontent”

by Don Currier W0DJC

The winter of 2022-23 was a brutal one for the Duluth area. We received a record amount of snowfall (140”), and it wasn’t the light fluffy stuff pictured on holiday cards. Much of what we received was preceded by freezing rain, and when it snowed, it was often the heavy wet stuff. A few of the storms had winds of 60 mph. Ice load and high winds aren’t the stuff of dreams for ham antennas.

My antenna “farm” consists of a US Tower TX-472MDP, a 16’ mast where I stacked a Force12 240/230 4 element beam at 1’ above the top of the tower, and a Optibeam OBW10-5 8’ above the 240/230. The Optibeam had a very small wind loading footprint, as the elements were wire. Despite its’ small size, it’s Moxon design had respectable performance. I turned this combo with a Yaesu G-1000DXA successfully for a little over 15 years.

The tower is in our backyard, and I liked the fact that I could lower the tower to a height where I could reach the antennas with the use of a manlift I would rent and trailer up to the base of the tower. This was an ideal setup for me as I’m not a fan of climbing towers. Especially crank-up towers. I liked being able to do my own maintenance in the safety of a “bucket” at the top of the rented manlift. The downside of this setup is that there is no way to get a manlift into the backyard when there is snow on the ground. This never presented a problem until last winter.

A late March storm had high winds that buffeted my antenna stack to the point of shearing through the mast bolt that pinned the mast to my rotor. I used to picture Holland in my mind when I’d hear the word windmill, but now all I picture are my antennas spinning with the wind. Not a pretty sight! It stretched and kinked the coax on the 30-meter portion of my 240/230 to the breaking point. With another storm looming, and high winds predicted to precede it, I needed help.

Enter Denny Moe. Denny was nice enough to drive up to Duluth on short notice on April 3rd, brace the tower sections, climb the tower and insert a new through bolt into the mast and rotor. I can’t recommend his services enough! A quick look into the back of his car showed an organized array of tools and equipment.

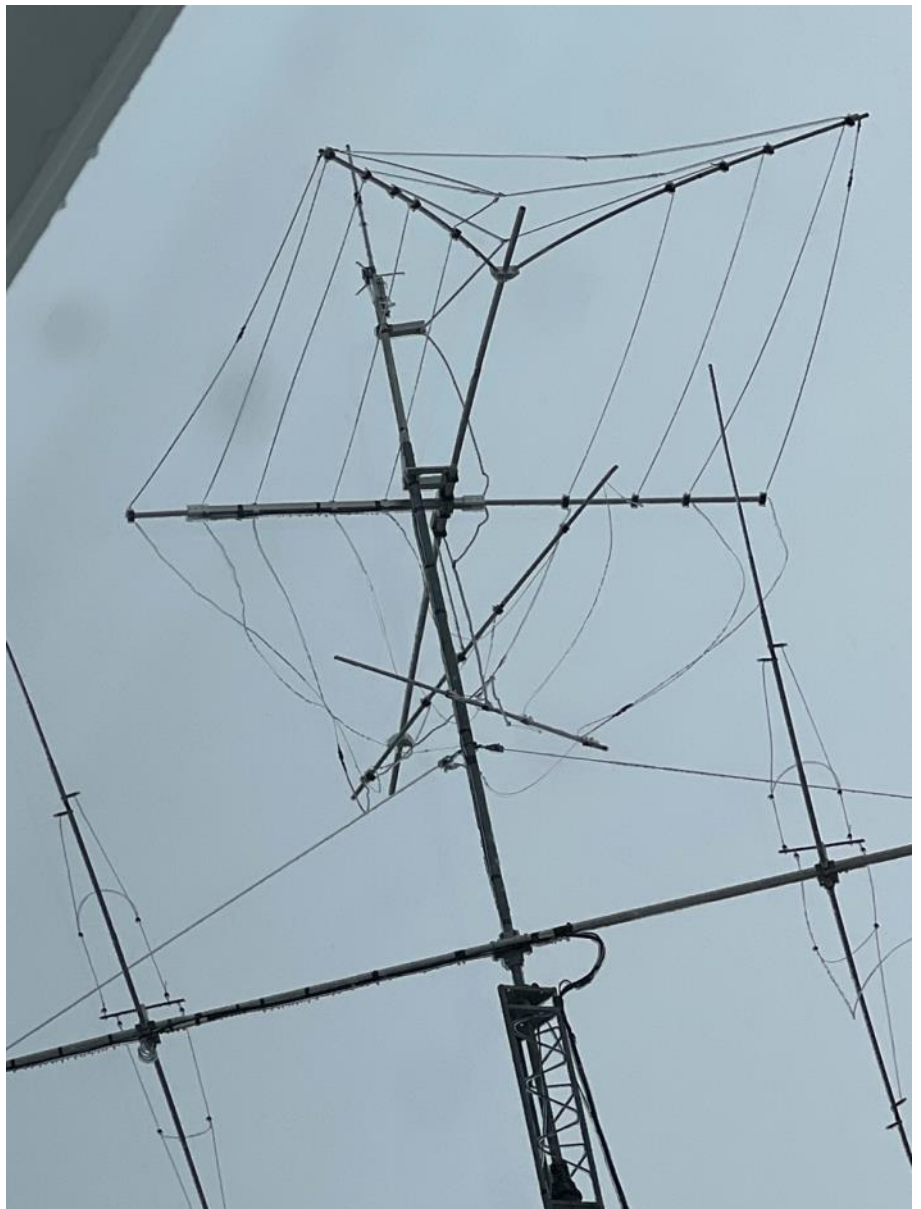


“My Antenna Dilemma (cont.)”

This wasn't his first rodeo by a long shot. I was so relieved that I could continue hamming until I would be able to do the necessary repairs in early summer.

Spoiler alert...I was so wrong! On April 19th and 20th, we experienced another blast from Old Man Winter. Another snowstorm preceded with freezing rain. Winds were 60 mph again and all I could do was watch my antennas sag with weight of the ice and sway in the strong wind. When I woke up the morning of the 20th, I was relieved to see that everything was still hanging in there. Later in the morning my XYL came into the shack to tell me “I'm not sure, but I think there is something wrong with your antennas.” Boy, was she right.

My Optibeam was toast. Not only were both fiberglass spreaders broken on one end of the antenna, but one of the machined parts that was a support for the spreaders was broken as well, and not available from Optibeam anymore. The 240/230 had broken linear loading wires, broken fiberglass spreaders for the loading wires, and some bent element tips. I was now effectively off the air. All I had left in my antenna “arsenal” was my 80-meter sloper, which to my surprise was somewhat effective everywhere when tuned with a manual tuner in the shack.



“My Antenna Dilemma (cont.)”

Now the new antenna research started. There were several variables that had to be addressed in the selection of antennas. Tower loading, both wind loading and weight. Performance of the new 20-10 antenna had to be at least comparable to my last Optibeam. I looked into replacing my 40/30 meter beam as well, but the weights and wind loading of newer models were too high for my tower. The Force12 would have to be rebuilt. At 25 years of age, I guess it was due.

After reading through reviews on eHam, and reviews on DX Engineering’s website, I opted for a Optibeam OB9-5. It had performance numbers equal to if not better than my last Optibeam, was relatively light at 66 pounds, and has a wind surface area of 7.8 sq. ft.

Several years ago, I found a spreadsheet titled “Free Standing Crank-up Tower & Antenna Wind Loading as a Function of Tower Height”. User defined variables include tower height, number of tower sections, mast outer diameter, mast wall thickness, mast inside diameter, distances of antennas from the top of the tower, wind surface areas of the antennas, tower section lengths, number of tower sections, maximum moment at the base of the tower (from the manufacturers specs), and what the maximum wind speed you would like to calculate for. So, pretty much the “Full Monty”.

The results for my old stack are shown below, and as you can see the base loading and mast yield are within the manufacturers specs.

General Tower & Mast Program for:					
"Free Standing Crank-up Tower & Antenna Wind Loading as a Function of Tower Height"					
User Input Variables		Symbol	Value	Units	Limits
Tower Height		H	72	ft	
Wind Speed		V	70.00	MPH	
Gust Factor		GF	1.2838		
Results					
Total Moment @ base Including Tower & Loads		M_TOT	32,488	ft-lb	34,200
Calculated Mast Yield		f	26,679	lb/in**2	87,000
Key Parameter Monitor					
Total Moment @ base-Due to unloaded Tower Only		M_TOT_T	13,884	ft-lb	34,200
Tower Section Overlap		h=	4.00	ft.	
Wind Speed Adjusted for Gust Factor		Vg	89.87	MPH	



“My Antenna Dilemma (cont.)”

Plugging in the specs for my proposed stack calculated the results shown below.

General Tower & Mast Program for:					
"Free Standing Crank-up Tower & Antenna Wind Loading as a Function of Tower Height"					
User Input Variables		Symbol	Value	Units	Limits
Tower Height		H	72	ft	
Wind Speed		V	70.00	MPH	
Gust Factor		GF	1.2838		
Results					
Total Moment @ base Including Tower & Loads		M_TOT	39,365	ft-lb	34,200
Calculated Mast Yield		f	47,988	lb/in**2	87,000
Key Parameter Monitor					
Total Moment @ base-Due to unloaded Tower Only		M_TOT_T	13,884	ft-lb	34,200
Tower Section Overlap		h=	4.00	ft.	
Wind Speed Adjusted for Gust Factor		Vg	89.87	MPH	

Oh oh...this isn't going to work! Total Moment @ base is way too high. I'd have to compromise somewhere, and it would either be giving up my 40/30 beam, or lowering the max height I would crank the tower up to. I opted for lowering the height, and the calculations resulted in the following.

General Tower & Mast Program for:					
"Free Standing Crank-up Tower & Antenna Wind Loading as a Function of Tower Height"					
User Input Variables		Symbol	Value	Units	Limits
Tower Height		H	62	ft	
Wind Speed		V	70.00	MPH	
Gust Factor		GF	1.2838		
Results					
Total Moment @ base Including Tower & Loads		M_TOT	34,240	ft-lb	34,200
Calculated Mast Yield		f	47,988	lb/in**2	87,000
Key Parameter Monitor					
Total Moment @ base-Due to unloaded Tower Only		M_TOT_T	12,072	ft-lb	34,200
Tower Section Overlap		h=	7.33	ft.	
Wind Speed Adjusted for Gust Factor		Vg	89.87	MPH	



“My Antenna Dilemma (cont.)”

The total moment for the tower is still a little over the spec of 34,200 ft-lb by 40 ft-lb. We have lived at our present QTH for 21 years, and have never seen sustained winds of 70 mph with gusts of 89 mph. By lowering the wind speed to 69 mph and gusts of 88.5 mph, the total moment of the new stack was lowered to 33,268 ft-lb, so within the specs from US Tower.

That tower height will put the 240/230 at a height of 63' and the new Optibeam at a height of 71'.

As the Optibeam OB9-5 weighs more than the previous OBW10-5, has a larger turning radius, and a bigger wind load, will my G-1000DXA handle the new stack? Yaesu has a formula for calculating what they refer to as the “K” factor. This “K” factor takes into consideration turning radius, and the weights of the antennas and the mast. Wind loading is just a simple total of the antenna wind loads that will be mounted to the mast.

The wind loading of the new stack is: OB9-5 $.725 \text{ m}^2$, and the 240/230 is $.53 \text{ m}^2$ and the mast has a wind load of $.15 \text{ m}^2$ for a total wind loading of 1.4 m^2 . Well within the 2.2 m^2 limit of the G-1000DXA. So far, so good.

$K = \text{Turning Radius} \times \text{Weight of antenna} + \text{Weight of Mast}$ (This must be calculated for each antenna separately and then totaled. (They suggest dividing the mast weight by the number of antennas mounted to the mast) My mast has a weight of 56#'s, or 25.4 kg's, so 12.7 kg per antenna.

K factor maximum for a G-1000DXA is 230. K factor maximum for a G-2800DXA is 950. Looks like I'll have to throw a new rotor into the mix. (It's obvious I had never used the “K” factor equation to size a rotor in the past, as just the K factor of my 240/230 is over the max factor for the G-1000. I had been living on borrowed time!)

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.



“My Antenna Dilemma (cont.)”

Now that the math is done, time to order up everything I'll need. I ordered the Optibeam, the rotor, (rotor only as I use a Green Heron controller) some new flex coax (I went with DX Engineering's brand) and aluminum tubing to replace the three outermost aluminum tubes for each element on the 240/230, and a bunch of DX Engineering's crimp/solder PL-259's. (Try 'em, you'll like 'em!)

When my order arrived, I was amazed at how well the Optibeam had been packaged, and even more amazed once I opened the package up. The elements, boom sections and element mounting plates were clearly labeled. Nothing was damaged. Assembly of the boom and the element mounting plates was straight forward. In fact, the entire assembly instructions are only 2 ½ pages long. This antenna is well engineered, and the machining of the parts was top notch. Every hole lined up precisely. I was very pleased with my purchase. I partially assembled the antenna in my garage/shop, but still had to wait for the white stuff to melt before I could take down the old stack and install new antennas.

Once the snow melted, and the ground dried up, I was anxious to get this project done. First thing I had to do was cut down 5 trees that had grown to about 40' in height since the tower was installed. Instead of cutting them down in the past, I just kept renting a bigger and bigger manlift when I went to do antenna inspection/maintenance. However, for this amount of work, I wanted to be closer to the ground.

First to come down was the 240/230. Today's manlifts require the operator to use two hands to operate them. So, if I were to hold the antenna with my hands once I released it from the mast, I would be short two hands to operate the lift. I used some tie down straps to fasten the boom of the antenna to the upper tubular frame portion of the manlift, which left me with the two hands needed to operate the lift and get back on the ground. Once on the ground, I separated the boom at the midpoint and set the two halves out of the way. The picture on the next page shows the placement of the lift, and the 240/230 on the ground.



“My Antenna Dilemma (cont.)”



Next was the OBW10-5, the wires of which had been whipping in the wind since the April storm. I couldn't believe what a twisted rat's nest of wires it created. At just 30 pounds of weight, it was easier to loosen the boom to mast bracket and lift the whole mess over the top of the mast than to try to untangle the wires. Mission accomplished. I now had a clean mast to work with.



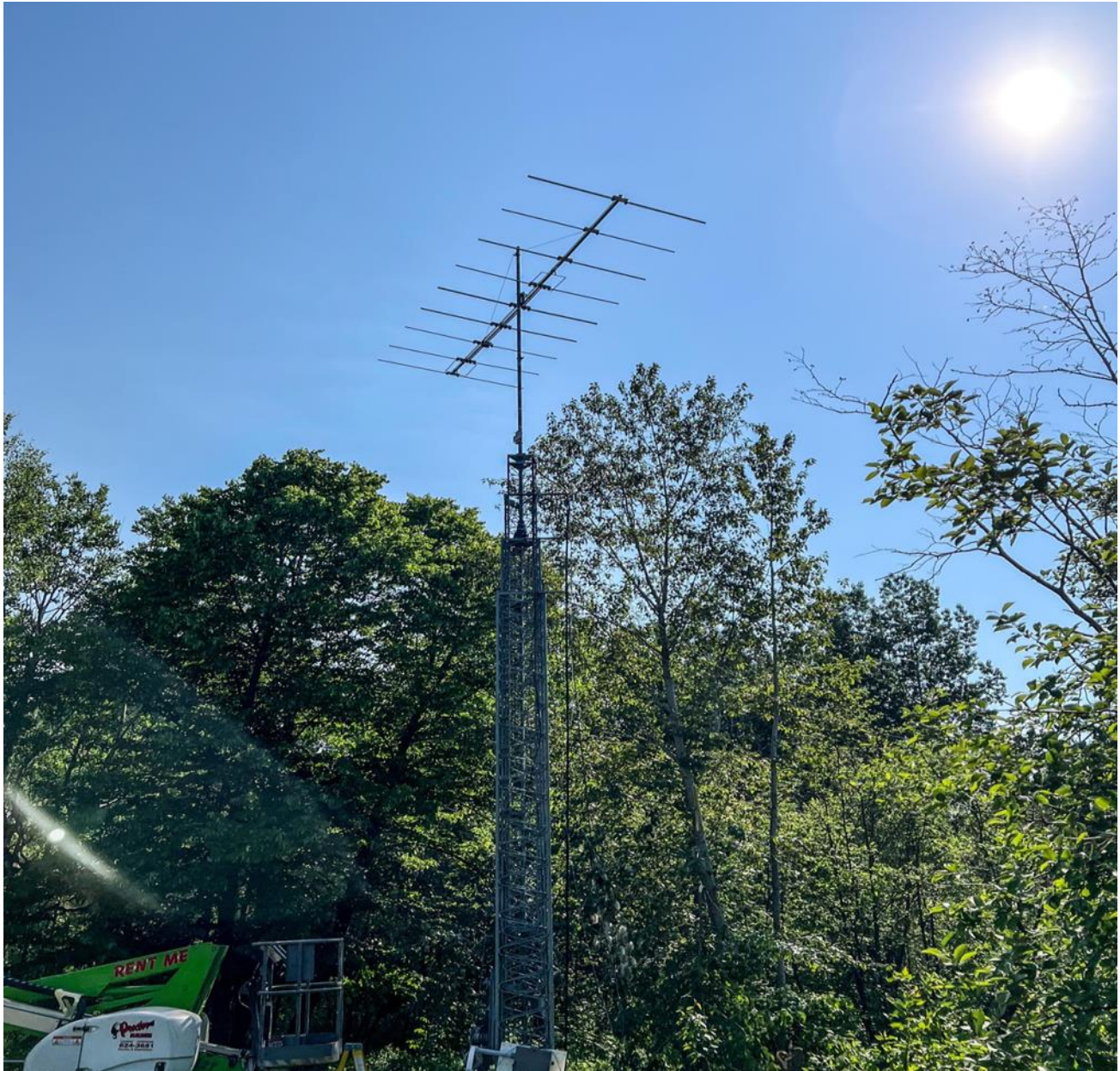
“My Antenna Dilemma (cont.)”

Below is a picture of what's left of the old Optibeam, a stripped mast, and the partially disassembled 240/230 in the background. First order of business was to install the new Yaesu G-2800DXA. It is a little taller than the 1000 model and has much beefier clamps. Fortunately, the wiring of the 2800 is identical to the 1000, so nothing to swap out there.

As the new Optibeam was going to be the top antenna of the stack, it was the first to be installed.



“My Antenna Dilemma (cont.)”



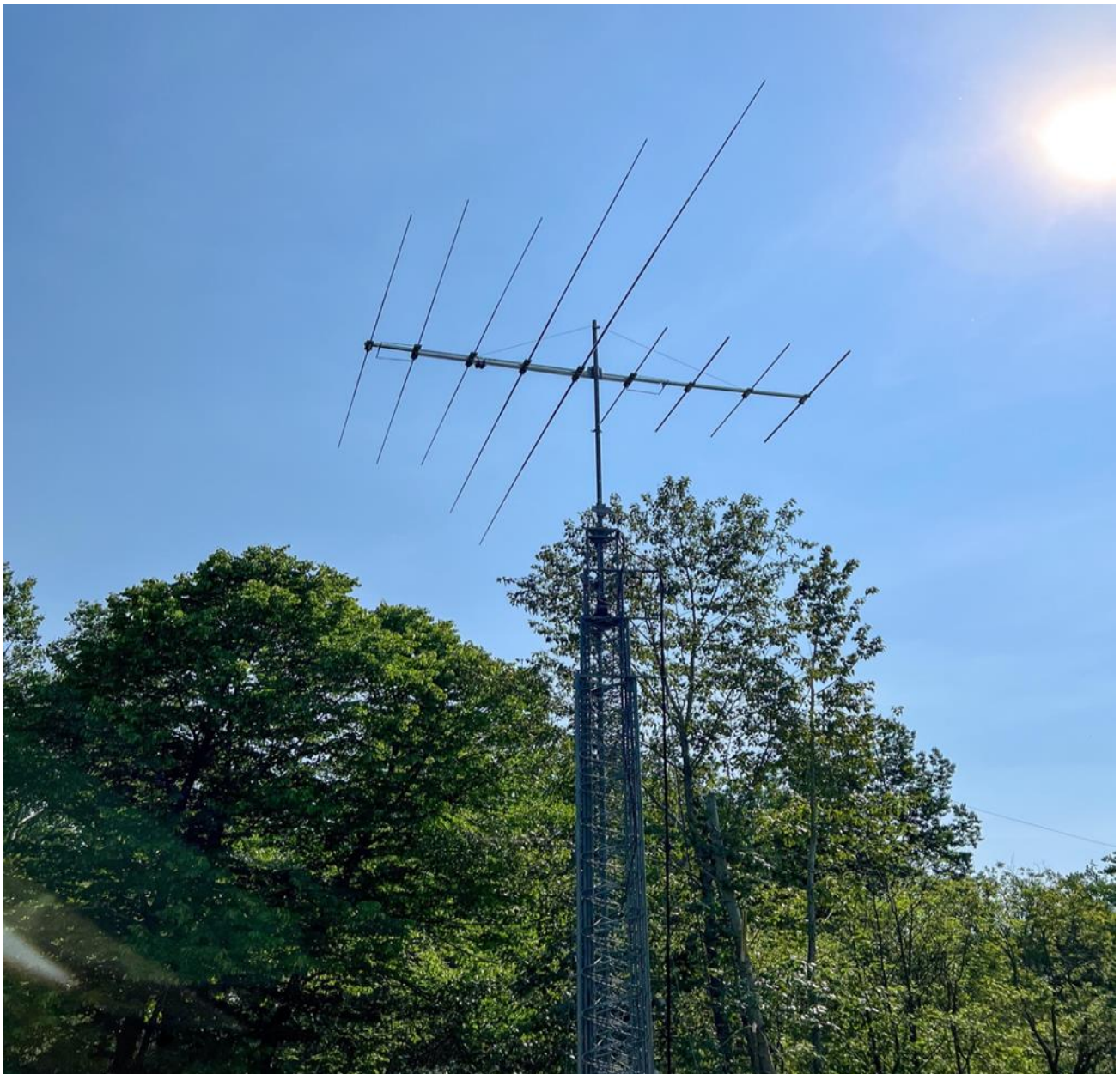
Yikes! Really short elements, aren't they? As I was doing this work alone, I opted to put up the “backbone” of the antenna, and then add the elements while it was up in the air. Lighter and more manageable for a one-man operation. Optibeam included a couple of extra pieces of each size bolt and each size nut that are used in the assembly of the elements, so if I dropped one, I'd still have enough hardware to complete the assembly.



“My Antenna Dilemma (cont.)”

Below you can see 5 of the 9 elements installed. (And I never dropped a piece of hardware!)

Once the antenna was assembled, I raised the tower up to about 55' and took it for a spin. SWR is excellent across all 5 bands. In fact, the worst reading I found was on 15 meters and is 1.6:1. This is at the top end of the phone portion of the band. It is typically 1.2:1 or less everywhere else. Better than the specs listed on Optibeam's website.



“My Antenna Dilemma (cont.)”

Now that I had this portion of the project complete, it was on to rebuilding the 240/230. The sourcing of the parts I would need turned out to be a little more difficult than I assumed it would be. The first problem I encountered during disassembly was that the standoffs for the linear loading wires were all seized. I tried penetrating oil, but that didn't work. I was able to remove all the standoffs by snapping the bolt heads off just by wrenching on them. Tom, N6BT, the Founder of Force12 Antennas, gave me the name of McMaster-Carr as a supplier for the standoffs. As I don't own a drill press, I made a small fixture to hold the standoffs in place under a drill block so that I could drill straight holes at the proper spot in each standoff.



The completed standoff assemblies are pictured above.

The next challenge was sourcing the linear loading wire. Originally the antenna came with #12 Alum-O-Weld solid core wire. This is a steel wire with an aluminum coating. I found two sources for this wire but couldn't get either supplier to respond to my emails or phone calls. Back to McMaster-Carr where I found Round Bend-and Stay Multipurpose 304 Stainless Steel Wire of the proper diameter. It wasn't as stiff as the Alum-O-Weld, but the specs on it seemed respectable with a tensile strength of 75,000 psi. (Not sure what that means, but it sounds like a lot!)



“My Antenna Dilemma (cont.)”

The solid rod fiberglass spreaders for the linear loading wires were sourced from MGS Max-Gain Systems. I was able to use some leftover tubing from the element tips so I could fabricate the rods per the original specs.



I drilled out the rivets on the element portions that were original so I could clean the contact surfaces and penetrax them before reassembling them. All the new element contact surfaces were treated as well before riveting them in place.

On the right is one half of the reassembled beam, less the element tips. I waited to fasten those to the antenna until I was ready to lift it up and install it on the mast. I didn't want to make a misstep and end up bending one of them.



“My Antenna Dilemma (cont.)”

My son and his family came up for a visit one weekend, and I rented a manlift for one of the days they were here. Although I managed on my own up till this point, I was grateful for the help up in the bucket with the installation of the rebuilt 240/230. I will probably rent a lift one more time this fall to double check my work. The last thing I want to go through is another “Winter of Discontent”, so one more check on my work will help me sleep at night.

Below is a picture of my new antenna stack. It is performing well, and turned out to be a fun project that I hope will serve me well for years to come.



Beverage on Ground at W0VTT

Mike Cizek W0VTT-mgcizek@gmail.com



The first winter we were here in Minnesota, there were no low band receive antennas at W0VTT. At that time, I had just over 100 countries on top band, so there was still plenty of DX out there to work, but I couldn't hear a lot of it. I had remembered seeing an article about a Beverage antenna that was just a piece of wire laid on the ground and wondered if it could possibly work. The concept was surprisingly simple; seemingly too simple to be of any value, but I decided to try it anyway.

The Beverage on Ground, or BOG, is simply a 200' length of insulated wire on the ground, fed through a 4:1 transformer (UNUN) and terminated with a 200 ohm non-inductive resistor to ground. The article gave a turns ratio of 2:4 on a small #73 mix binocular core. (FairRite Products 2873000202, \$0.70 each from Digikey). I had some old carbon 1w resistors that measured close enough to 200 ohms, so used one of those. More reading showed that by running some tests, a better front to back ratio may be obtained by trying different resistor values, but the 200 ohm one seemed to work fine. It still works fine 8 years later. That was it; 200' of wire, one resistor, one toroid, 2 ground rods, and some bits of hardware.

SO - how does it work? I didn't make 160m WAZ or win the 160 contest, but I could now hear a LOT more stations on top band than I could before. Switching between the BOG and the transmit antenna, an inverted V with the apex at 120' proved that the BOG hears much better than the inverted V. After the first winter of moving the single BOG from NE in the evenings to NW in the mornings, I added a second one to save all that trudging through the snow. I have since put up regular Beverages and a YCCC vertical array, and am considering a Shared Apex Loop Array for this coming winter. I still roll out the BOGs every fall and use them all winter.



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160 Meter Shunt Fed Tower System

by Mark, WA0MHJ

As a latecomer to the 160 meter band, I had no antennas for this band until Steve - K0SF, decided to model a shunt fed system for us to install sometime in late 2003? Steve arrived with details for a Shunt-C/Series-C matching system with the ballpark values for needed capacitance. With a handful of doorknobs, and a couple of variable capacitors, we were able to quickly tune the antenna to resonance at 1830. As it turned out, Steve's ballpark calculations would be exactly correct.

This antenna has been in place to this day, with just a few changes as described below.

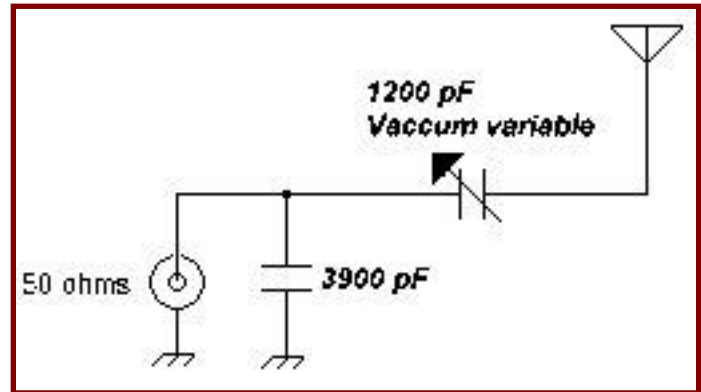
The tower is 100 feet of Rohn 45 with a KLM tri-bander, and a 2 element 40 meter yagi at the top. The shunt portion is a three wire cage. Each wire runs up the tower spaced approximately 32 inches from each leg, and straps to the tower at the first set of guy cables. (33 feet).



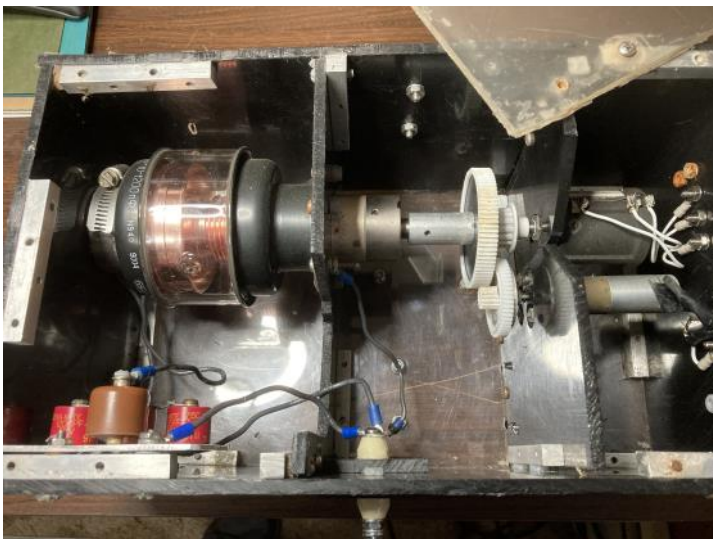
160 Meter Shunt Fed Tower System (cont.)

The matching system schematic is shown below.

The shunt capacitor is a fixed 3900 pF made up of three doorknob capacitors. Should the need arise that these need to be replaced; I have a VERY large / VERY high voltage single 3900 pF capacitor handy. (Picture two hockey pucks, one on top of the other)



The series capacitor was replaced early on with a vacuum variable capacitor. This is driven by a small DC gear motor, and has a 10 turn Helipot potentiometer for positional feedback. All of this was placed in a homemade Plexiglas enclosure, sealed with generous amount of silicone.



160 Meter Shunt Fed Tower System (cont.)

The control unit in the shack is a homebrew box, which has an up/down toggle switch controlling the motor driven vacuum variable to adjust for the selected frequency. The digital “readout” is also a homebrewed “ohmmeter”.

With a reference chart, I can adjust to the frequency of operation, (although not instantly), and get about 35 kHz of 2:1 bandwidth from any given setting. (Tuning chart is on the next page)



Conclusion:

As I have never had any other antenna system to compare it to, I can only say that it appears to me to be a good performer. Very rarely, (yet it has occurred) that I must use another wire system as a receive antenna. The most recent in my memory was FT5ZM, who was zero copy on the shunt fed tower. Blessed with low noise, I can say that if we have virtually any propagation, I am usually hearing better than almost all of the pile-up I am battling.

For many years I was also limited to just 100 watts on 160 meters, but now have KW capability. That also makes a huge difference in DX'ing on top-band.

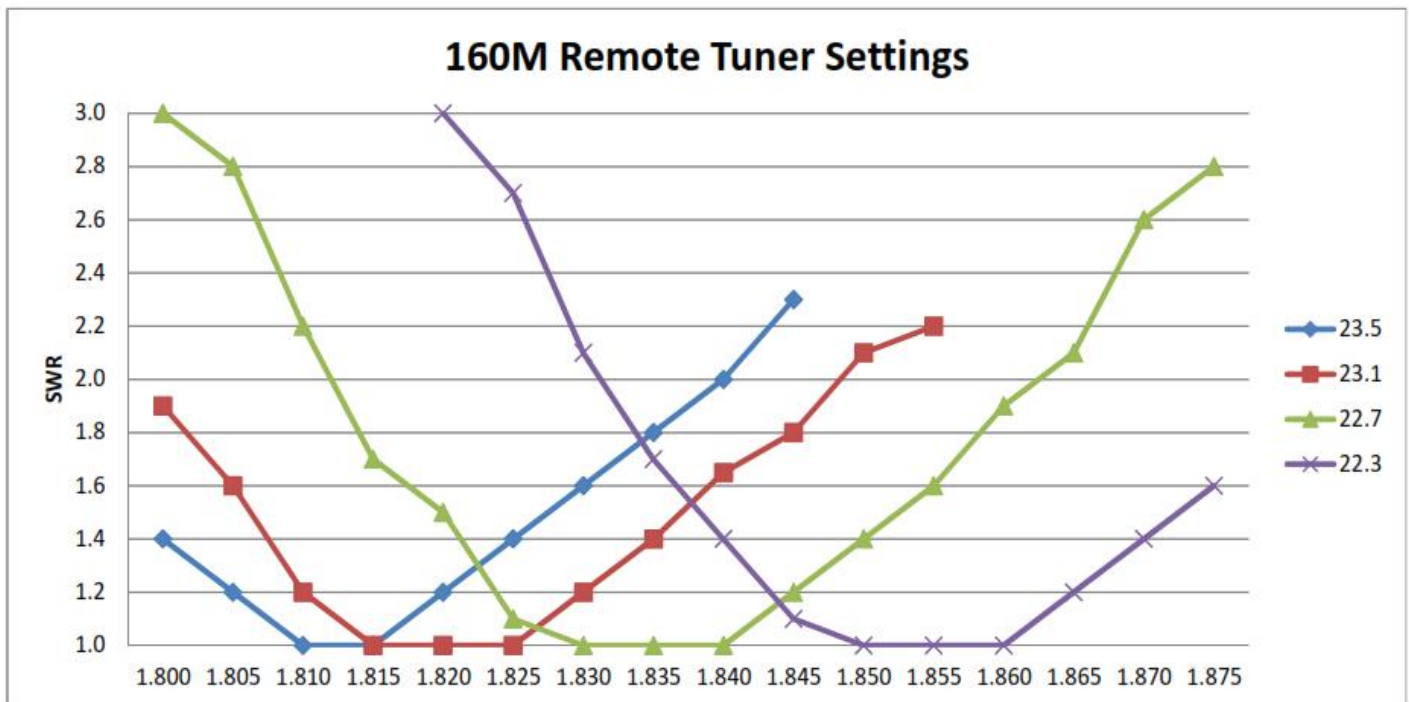
I have worked WAS on Phone, Digital, and CW, and I am currently at 166 for DXCC total.

Kudos to Steve-K0SF, for getting me started on top band with an easily maintainable, and good performing antenna system.

73 Mark WA0MHJ



160 Meter Shunt Fed Tower System (cont.)



DX Mentor PODCAST

- Become a Better DXer, no matter your current level.
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The MWA Contest Corner Transitioning to Shorter Contests

By Al Dewey, K0AD

Being Competitive

My wife accuses me of being overly competitive. “Whenever you play a game,” she says, “you always want to win!” I must admit that there is a lot of truth to what she says. I think this trait is something that has driven my love for radio contesting over the past decades. When I first started out way back in the 60’s and 70’s, I had a very modest station with wire antennas, no amplifier, etc. Still, I could sometimes compete at a local or state level and win a certificate. The CD Parties (which are very much like today’s NA QSO Parties) were popular back then and, although I could never win a national award, I was able to score higher and higher on the list as time went on. I entered my first ARRL Sweepstakes in the late 1960s and, although I came nowhere near winning any kind of national award, I enjoyed seeing my call in QST move ever so slightly up the list of participants as time went on. As my station improved over the decades, I moved higher up the list and occasionally snagged a Division Plaque. Finally, after getting my first tower and yagi in 2013, I started showing up in the Top Ten boxes for contests like the ARRL Sweepstakes, ARRL RTTY Round Up, and the IARU HF Championship. This really motivated me, and I made a concerted effort to operate the full 24 hours in each of those events for many years.



Twenty Four Hours of operation over a day or two was pretty much my limit. For longer contests, I would often operate either part time at home (not particularly motivating to me) or as visitor at a Multi-Op effort (much more fun!).



Transitioning to Shorter Contests (cont.)

Time Marches On

Last month, I celebrated my 77th birthday. As much as I hate to admit it, I find myself slowing down a bit. No matter how hard I try, I can no longer set in the operating chair for 24 straight hours (or even 24 out of 30 hours). Staying up late, in particular, is very hard for me and I am not even sure it is healthy. So, reluctantly, I have decided to no longer attempt full time efforts in contests like ARRL Sweepstakes, ARRL RTTY Round Up, or the IARU HF Championships. Although I will still operate in these events, I no longer do so with the goal of making the top ten box. To be honest, operating part time in longer contests (such as the ARRL and CW DX contests) is often done out duty to MWA rather than personal motivation.

Shorter Contests

The solution to this dilemma (at least for me) is obvious, of course. Operate shorter contests!!! In my opinion, there is a BIG difference (and advantage to) operating a complete “short contest” compared with operating the same number of hours as a part time effort in a longer contest. By operating a complete contest, you are playing the entire game and can plan a strategy accordingly. Your goal (at least for me) is clear. You are competing against those who operated the entire contest.

Longer contests usually end up dragging for me after the first few hours of high rates, new multipliers, etc. Things slow down and I get bored (and tired). One of the hardest things for me in contesting has been trying to get through Sunday afternoon in ARRL Sweepstakes.

My Favorite Short Contests

Here are a few of my favorite “short contests”. I enjoy most of these enough that I will often schedule other life events around them.



Transitioning to Shorter Contests (cont.)

Wednesday CWTs (1 Hour)

The Wednesday CWTs are one hour CW contests that run three times every Wednesday at 1300Z, 1900Z, and 0300Z(Thursday). The exchange is simple (name and CW OPS member number). Non CW OPS members can just send their state / province / country. There are separate high power, low power, and QRP categories. Rates are great for most of the hour. I have usually been able to make the top five in the low power category and have even won that category a few times. Top scorers in the low power category typically make 140+ QSOs during the one-hour event. Participants in the high-power category often make over 250 Qs for the hour! I have no problem keeping the adrenaline up for the full hour. A “lull” in a contest like this is when a full minute goes by with no Qs! I have found that the 1900Z CWT is the one where it is most possible to be competitive from the upper Midwest. Scoring is on the honor system. Participants simply post their scores at www.3830scores.com. More information on the Wednesday CWTs can be found at <https://cwops.org/cwops-tests/>.

Thursday NS Sprints (30 Minutes)

These run every Thursday night at 0230z (actually Friday UTC). Exchange is Serial Number, First Name, and State/Prov. Operation usually starts on the highest band open (ie. 15 or 20 meters) and then moves to 40, 80, and 160 as the thirty minutes go by. The Sprints are famous for their “QSY Rule” which means you must QSY after making one S&P QSO and one follow up contact. If you are CQing, you can make only ONE QSO before having to QSY. No staying on one frequency and running in this one. Obviously the 30 minutes moves fast! Power is limited to 100 watts for everyone. A really good score in this one is 2000 points. I have yet to achieve that. Rules for this contest can be found at <https://www.ncccsprint.com/>. Four-hour versions of this contest are held in September and February. Although I used to operate the four hour sprints every year, I now find the amount of activity does not warrant the full four hours.



Transitioning to Shorter Contests (cont.)

Also, although high power stations have their own category, it makes it much more frustrating for low power stations to win “jump balls” than in the Thursday night Sprints.

CW Open (4 Hours)

The CW Open typically runs over the first weekend in September. There are three 4-hour sessions (one on Friday night, and two on Saturday). You can operate any or all the sessions. The exchange is Serial Number, Name, and State/Prov. There is a High, Low, and QRP category. Top scorers manage somewhere between 400 to 600 Qs in each session. This is a fun event for those of us that prefer short contests. You can do 12 hours of contesting over the weekend and not be tired! I have managed to win a plaque for being the top scorer in Session 1 in 2014. I wish this event was held more than once a year! Information on the CW Open is available at <https://cwops.org/cwops-tests/cw-open/> .

North American QSO Party (10 Hours)

The CW version of North American QSO Party (NAQP) is at the top of my list of favorite contests. They are held twice a year in January and August. The contest hours are noon to midnight in the winter and 1 PM to 1 AM in the summer (Minnesota Time). You get to operate 10 of those 12 hours. I can handle that! Exchange is name and state / province. Power is limited to 100 watts so there are no big amplifiers to compete with. Multipliers count once per band which adds another element of strategy. There is a LOT of activity in these events. An average rate of 100 Qs per hour for the duration of the event is very achievable for many participants. I like this event because it keeps me busy for the full ten hours! Although I have won Minnesota a few times in this NAQP, I have never placed nationally in it. It's very competitive. One of the things that keeps me motivated for the full ten hours is some “friendly” competition with some local contesting friends. Information on this event can be found at <https://ncjweb.com/naqp/>.



Transitioning to Shorter Contests (cont.)

Minnesota QSO Party (10 Hours)

QSO parties are a good example of an event you can sometimes operate in it's entirety without burning yourself out. For those who can operate mobile, it can be a blast as you are treated like rare DX as you drive county to county. I did this for a while in the Minnesota QSO Party and it was fun! You are so busy making QSOs that you don't have time to get bored! Now that I don't operate mobile, I still have fun operating from home. For me, the timing of this event is perfect! With the 8:00 AM start time, I'm up, alert, and ready to go. By switching from band to band and mode to mode, one can keep busy all day even if you take some small breaks for lunch, etc. And it's all over by 6 PM in time for dinner! I often have a conflict that day but was able to snag the Minnesota Low Power plaque in 2017. Information on the Minnesota QSO Party can be found at <https://www.w0aa.org/mn-qso-party/>.

Final Thoughts

Short contests are not for everyone. And contesting would die if a large number of contesters didn't operate part time in long contests such as the major DX contests. Also, there are clearly reasons for operating a contest other than trying to win or place. It's a good way to check out that new radio or antenna as well as learning more about propagation. Improving your code speed and operating practices can also be a benefit of part time contesting.

In today's busy world, many (if not most) contesters simply do not have time for full efforts in longer contests. Some of the most common comments I see in contest writeups on places like the MWA reflector are things like:

"I was only able to operate N hours."

"A lot of conflicts over the weekend cut into my operating time."

"I had trouble staying up late for the low bands."

"Things really slowed down for me on the second day."

And so on.

There's nothing wrong with any of these comments and I make them myself sometimes. More often, however, you will find me doing a full effort in a short contest rather than a part time effort in a long contest.

See you in the pileups!



My Tribute to Dick George, W0TRF

By Ted Kirst, W1GL

I first met Dick, W0TRF, in 1964 when I began an eight year tenure with the Honeywell Corporate Research Center in Hopkins, MN. We quickly discovered we were both hams and liked to work DX! Dick was eleven years my senior, but that never got in the way of a friendship which lasted nearly 60 years.

We were famous in those early years for taking a “lunch break” at Dick’s QTH in Minnetonka, in order to try to log a new one currently QRV. If I remember those years correctly, he was using a Meisner Signal Shifter driving a homemade 400 watt amplifier and a 75A4 receiver. The antenna was a TH6DX at 50 feet. His QTH was very close to the highest point in Hennepin county, so had great falloff in all directions.

One incident at the “Lab” was memorable in that my XYL of 58 years worked there and we ended up getting engaged. So, Dick said to her, “I hope you know what you are getting into marrying a ham!” He always had a sense of humor which could not be easily matched. In 1971, there was a big layoff at the Lab. One needed 10 years to stay and I had eight, so I was laid off but Dick was not. My XYL was expecting our first child at the time. I was unable to find work in the cities, so decided to reach out further, resulting in only one offer from Brown University in RI. I asked to start after the baby was born but they wanted me to begin right away, so I drove out leaving the XYL to fair for herself. Dick stepped right in! His wife said it’s time to go and Dick drove her to the hospital! What a blessing! I heard of the birth via a QSO the next morning between me at K1AD, the University club station and W0TRF; thank you Dick!

We stayed in close contact over those years with many skeds and visits, both when we would drive back to Minnesota and he and Joan would drive out here and stay with us in RI. Two of the most memorable visits were when they “crashed” our daughter’s wedding, totally without any hint of doing so! To this day, I do not know how they pulled that off! The other was a visit to W1AW. (See Photo at End)



My Tribute to Dick George, W0TRF (cont.)

After I took an early retirement and returned to Minnesota to work DX in the Alexandria area, we were able to get together more often. Dick did not climb, so I was able to do most of his tower work for him. He was more of a phone man than I, so one time we were at his QTH chasing a new one on SSB. I first tried calling many times, split, and failed. Dick said, "give me the mic" (D-104) with the Drake C-line and a homebrew pair of 4-400s at that time. Dick nailed the guy with the first call. I decided to stay with CW DXing.

Unfortunately, we (the wife and I) got older, Hi. Thus the lobby from the two daughters was very strong for our return to W1-land, so they could watch over us. In 2016 the "dream QTH" was sold and back we came, once again making it tough to be around Dick. But we still had skeds and we would stop by enroute to Alex for a visit. Many times Dick would surprise me with the presence of Dave, K0IEA, and others at those visits! We would often go to Maynards for lunch with Dave, Dennis, KF0QR, Jim, K0JUH, and Tom, W0ZR. Dick would always enjoy his walleye.

It is quite possible, although I never confronted Dick with the thought, that he had a greater passion for collecting old ham gear and radios than for DXing! At one point, his basement was jam-packed with a superb collection of equipment going back to the very earliest of days. The walls were lined with nice cabinets offering a great display. He enjoyed finding a "new one" at the flea markets! His junk boxes were the best I have ever witnessed to this day and he loved to home brew stuff. He would often gift me with goodies for my antenna help.

After the C-line he decided to go with Ten-Tec gear, owning an Omni V and VI. When he reached his 80s, he decided to start downsizing, so sold off much of his collection. We took down the tilt-over crank up second tower in the backyard and took down the 48 foot Spaulding in the front. But just when you thought he was QRT, he put up a 30 foot small tower and hooked a 40 meter loop to it and a tree! I offered my Omni V for sale on the Reflector when I was moving to CT in 2016 and he bought it. W0TRF was QRV once again! He would tell me of his QSOs with great delight! Because of COVID-19, my last visit with Dick was in 2019. Little did we know that would be the last.



My Tribute to Dick George, W0TRF (cont.)

Much more could be shared about this man I loved like an older brother, but let it be said, the good Lord blessed this relationship beyond all expectations. I am a better ham and human being for my dear friend's contribution to my life. Thank you Dick; I will always love you!



1984 Visit to W1GL in RI



1995: W1GL, W0YDB and W0TRF



1998: Take down of Ed, W0JS's KT-34



1970s: Dick's C-Line and home brew
4-400A Amp.



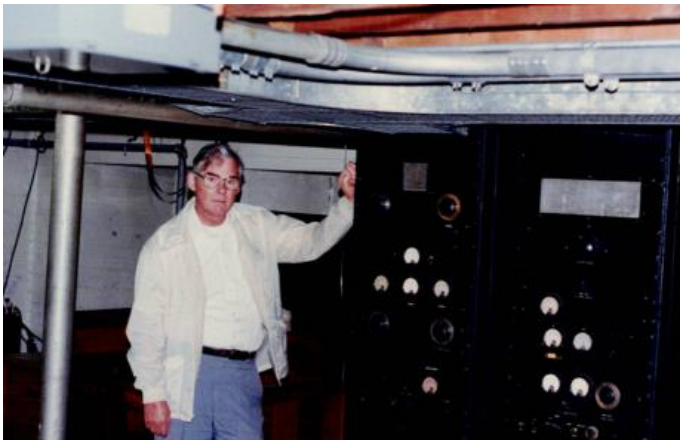
My Tribute to Dick George, W0TRF (cont.)



TH-6 and homebrew 10M yagi @ W0TRF



Dick homebrewing ladder line



Basement of W1AW: Retired amps



Early 2000s: W0TRF and W1GL assembling new Mosley TA-34



Early TCDXA gathering: L to R=
W0YDB, W0HP, K0EKR/W1GL,
W0HZ,
W0TRF, W0JS and W0HW



Congratulations!!

As you know, TCDXA sponsors the Mobile Plaque
in the Minnesota QSO Party.

The winner this year was an outstanding operator who took home the
hardware. Congratulations to Pat, KØPC!



**TCDXA OPERATING BUDGET FY 2023
(Sep 2022 - Aug 2023)**

August 31, 2023



INCOME	ACTUAL	BUDGET	Actual 2022
Surplus from FY 2022 (balance 8/31 /2022)	10024.48		12915.93
Member Dues 2023	4600.84	4400.00	4461.62
Door Prize Ticket Sales club share	519.00	500.00	277.00
Donatons (estates, wills, etc.)	0.00	0.00	0.00
Refunds and Reversals	0.00	0.00	0.00
TOTAL INCOME	15144.32	4900.00	17654.55
EXPENSES			
		BUDGET	Actual 2022
Member Recruitment/Retention/Zoom	(195.96)	(300.00)	(195.96)
Website ISP & Domain Name	(97.77)	(150.00)	(97.77)
Office Supplies, Miscellaneous expenses	(200.00)	(50.00)	(15.94)
Meeting Room Rental	(500.00)	(600.00)	0.00
Holiday Party Dec	(451.28)	(500.00)	0.00
ARRL Spectrum Defense Fund	(250.00)	(250.00)	(250.00)
NCDXF Donation	(250.00)	(250.00)	(250.00)
MVA Plaque	(80.00)	(80.00)	(80.00)
DXpedition Contributions Total	(3,051.58)	(5000.00)	(6896.07)
#1 Dxpediton - TN8K Republic of Congo	(251.07)		
#2 Dxpediton - 3B7M St. Brandon	(504.98)		
#3 DXpedition - FT8VWV Crozet	(500.69)		
#4 Dxpediton - TX5S Clipperton	(1,000.00)		
#5 Dxpediton - VU7WV Lakshadweep Isl.	(500.00)		
#6 Dxpediton - 3Y0J Refund	482.06		
#7 Dxpediton - E6AM Niue	(254.99)		
#8 Dxpediton - T2C Tuvalu	(521.91)		
#9 Dxpediton -	0.00		
#10 Dxpediton -	0.00		
TOTAL EXPENSES	(5076.59)	(7180.00)	(7785.74)
NET	10067.73	-2280.00	
Checking balance	10017.73		
PayPal balance	0.00		
Cash / Checks on Hand	0.00		
NET BALANCE	10017.73		

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/>.

