

TCDXA
TWIN CITY DX ASSOCIATION



Minnesota

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Gray Line Staff

**KØAD
K9WAG
WØJMP**

The GRAY LINE REPORT

DXing from Minnesota - Land of 10,000 Lakes

A Visit to Friedrichshafen, 2017

By Matt Holden, KØBBC



Matt, KØBBC (Center) with IZ8CCW (left) and I2VGW (right) in the 9U4M booth

Amateur radio operators from around Europe (and the world) gather annually, along the shores of Lake Constance, for the convention known as HAM RADIO. Friedrichshafen, Germany hosts the event at their massive convention center called the Messe. The three-day event is indoors including two event halls for the flea market. The major radio vendors are present with exhibits like those at Hamvention in Xenia, Ohio. Many European vendors don't make the trip to Hamvention

and were interesting to see. Antenna and mast sales are geared to hams with space restrictions. Cubical quads and dipoles that could be used on a condominium roof or apartment balcony were prominently displayed. Software defined radios were popular. Several vendors were selling receive only or 1-10W transceivers for prices lower than the popular brands familiar in the United States.

dition and it was refreshing to talk about their operating plans, logistical challenges of getting permission to operate in the African nation and providing room and board for the team. (See Figure 1)

Friedrichshafen hosts numerous national radio societies at HAM RADIO. The German, British and our own ARRL have booths in the exhibit hall. The ARRL booth provided award card checking, publication

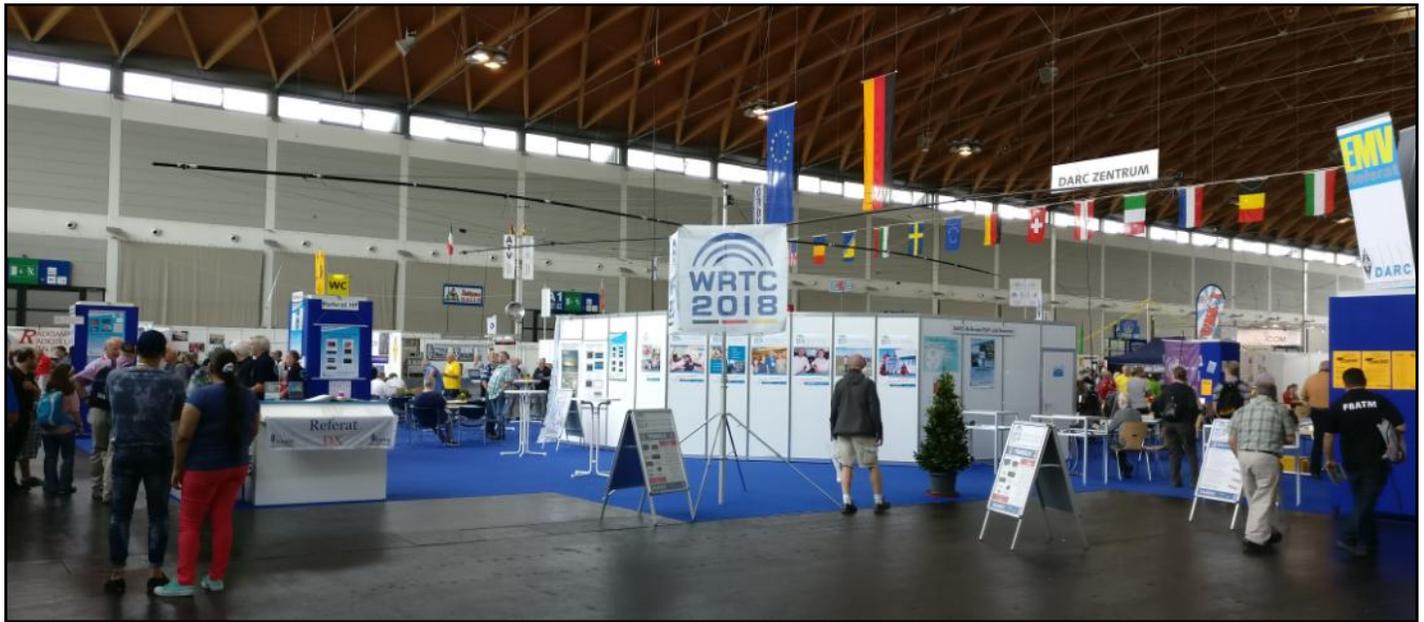


Matt, KØBBC (left) with D41CV (right)

DXpeditioners and contesters gather at HAM RADIO too. I met the leaders of the D4C Cape Verde contest team. Their station is high on a mountain that is subject to storm and wind damage. They spend a lot of time and money keeping the station functioning and enhancing the operation. I also had the opportunity to meet the 9U4M Burundi DXpedition team leaders. The TCDXA approved a donation to this DXpe-

sales, membership renewals and an opportunity to talk face-to-face with ARRL leaders. Numerous small country societies, from across Europe and the Middle East were present. Japan and Thailand radio delegations made the trip too. It was fun visiting with them to discuss reciprocal operating privileges, challenges in their country to protect existing spectrum allocations and adding new bands, as well as the ins





WRTC 2018 Booth

and outs getting radios through customs. Jay Bellows, ARRL 1st Vice President of International Affairs, made the most of his visit to Friedrichshafen to visit with IARU (International Amateur Radio Union) Region One (Europe and Middle East) delegates. Jay is a member of the IARU Region Two (North and South America) team of volunteers that works to coordinate activities of individual countries amateur radio member societies to improve amateur radio worldwide. With over 20 countries' radio societies, in attendance, Friedrichshafen is the perfect place for IARU volunteers to meet and exchange ideas.

Beyond the hamfest, the region has many places to explore. You're on the border of Germany and Switzerland with Austria and Liechtenstein not too far away. Options to get around via rail or car would make this great family vacation. Friedrichshafen Sommerfest took place the same weekend as HAM RADIO 2017. Beer gardens with traditional German bands, food stands, carni-

val rides and Saturday night fireworks filled the lake walk. I met a few people in the tents and had a good time. Friday night I drank with two guys on a work trip from Augusta, Georgia and Saturday night, a local family let me join their table. After a few glasses of fresh German beer, strangers become friends.

The floating airship was perfected in Friedrichshafen, Germany. Graf Von Zeppelin took to the skies in his hydrogen filled airships from this very town. Two modern Zeppelins are flying from there today. The Helium filled Zeppelins (don't call them blimps) take sixteen passengers on a 30-120 minute ride around the lake and surrounding area. The Zeppelins do not get too close to the mountains to avoid unstable air caused by updrafts and downdrafts created by mountains. I took a 60 minute ride to see the chateaus, churches and small towns that dot the Swiss and German sides of Lake Constance. Clipping along at 35 knots, at an altitude of 3,000 feet, allowed tourists to



open the windows and take a few pictures. When we got back to the ground, we had a champagne toast to Graf Von Zeppelin and his invention.

Getting to Friedrichshafen is an adventure of its own. I flew Delta Air Lines from Minneapolis to Amsterdam, Netherlands and KLM to Zurich, Switzerland. The airport train station sold me a round trip ticket that would be a one hour train ride to Lake Constance and a 41 minute ferry crossing from Romanshorn,

Switzerland to Friedrichshafen, Germany. Connections were smooth and the ride comfortable. The staff spoke English, so getting the correct ticket and finding the correct train and boat were not a problem. HAM RADIO 2018 will be the first weekend of June. Hotels fill up fast, so, make your plans now if you wish attend. Visit <http://www.hamradio-friedrichshafen.de/ham-en/> for more information.



ARRL Booth including Jay, KØQB



Rebuilding my Force 12 Forty Meter Beam

By Al Dewey, KØAD

When I finally got the chance to put up my first tower and yagi about ten years ago, I wanted something somewhat low profile that would cover 10 through 40 meters. I selected the Force 12 C4SXL. This was a combination of Force 12's popular C3S tribander and the EF240s two element 40 meter beam all on the same boom. I bought it new so had the fun of putting it all together. The forty meter elements used a linear loading wire on each element to make up for the length that the



The rebuilt Force 12 C4SXL yagi at KØAD. The two elements with the coils are the new 40 meter driven element and reflector.

elements did not have. The linear loading wires were difficult to set up and a bear to tune. To tune them, there was a shorting stub that had to be moved up and down over the linear loading wire. I eventually did get it tuned OK and it worked pretty well for a while. Although the beam did not quite have the F/B ratio I expected, I always felt loud when using the beam even with low power. About two years ago, I was operating on a windy evening and my SWR on 40 M suddenly went high. I couldn't do anything to bring it down. The next morning, I went out and saw the problem. One of the linear loading wires had broken off the standoff insulator and was flapping in the wind. Unfortunately, it was on the reflector so I could not reach it from the tower. My only alternative was to rent a bucket truck and reattach the wire. When I got up to the antenna, I noticed that the standoff insulator had deteriorated which caused the wire to break. I had ordered a couple spare insulators so I replaced the one that had broken as well as one other that looked like it was well on its way.

When I tested the antenna after the repair, it worked for a few minutes and then the SWR went high again! I tried everything to bring it down including replacing the balun and the coax to the antenna. I also replaced the linear loading jumpers that I could reach from the tower and cleaned their connections. It did not solve the problem. I spoke with our local Force 12 expert, Scott (KØMD), for advice. He suggested that I replace the 40 meter





One of the original 40 meter elements using the linear loading wire. Pictured is KTØR (SK)

Most of the standoffs that held the 40M linear loading wire had deteriorated pretty badly over 10 years

elements with the newer elements from Force 12 that had coils instead of the linear loading wires. I contacted Force 12 about purchasing the new elements and they hesitated about confirming that this would work. They said that it might affect the operation of the antenna on other bands. That sounded strange to me so I contacted the real Force 12 expert – Tom Schiller, N6BT. Tom said that this should indeed work and was the way to go. Based on work with his own antenna, Tom had developed a “conversion kit” specifically for this purpose which was perfect. I sent Tom a check and the conversion kit arrived a couple weeks later. Tom also e-mailed some



The EF240S conversion kit provided by Tom Schiller, N6BT

excellent step by step instructions (with pictures) describing how to do the conversion. I was set to go.

Planning the Project

One concern I had about this project is that I only wanted to rent the bucket truck once.





The completed 40 meter elements ready to raise and install on the boom

However, that meant that I needed to take the two 40 meter elements down, do the modifications to each, tune them, and then put the new elements back up all in the same day. Despite Tom Schiller's excellent instructions, I did not know how long the conversion would take. With the bucket truck costing \$350 per day, I certainly did not want to keep it more than a day. As I looked at my tower, I

realized that I could reach the 40 meter Driven Element from the tower. So I climbed the tower, undid the u-bolts, and carefully lowered the DE via a rope down to my wife who was waiting on the ground. It was not possible, however, to reach the 40 meter Reflector from the tower. I remember talking to K3WT at a TCDXA meeting and Tom saying that he had an antenna like mine and had also replaced his 40 meter elements. I got to wondering what Tom had done with the old elements. I contacted Tom and he told me that he had given them to Gary, KNØV who had helped him with this project. I then contacted Gary and found out that he still had Tom's old 40 meter elements from his Force 12 Beam. He had no immediate plans for them other than possibly seeing if he could convert them to 30 meters. So I asked Gary if I could "borrow" one of his elements. Using N6BT's instructions, I converted Tom's (i.e. Gary's) reflector, as well as the driven element I had taken down, so it would be all ready to go on "bucket truck day". I could then give Gary the reflector that I took down from my beam and we would be square.

Getting it Done

With conversion of both the driven element and reflector complete, I was ready to go. I talked to NØAT who has helped me before. He is an awesome ground guy and bucket lift operator. In fact, I am not sure my XYL would have let me do this project unless Ron was there to help. We agreed on a date but had to change it once because the truck I was renting had to be sent out for repairs on our original date. The new date finally arrived and the weather was perfect if not a bit hot.





The 55 foot bucket truck rental used for the project

I picked up the truck at the rental place and had it in my driveway by 8:00 AM. I gave Ron a call and he was there in about 15 minutes. One of the trickiest things about using a lift at my location is backing the truck down the sloping lawn beside our house and then positioning it under the yagi. With NØAT directing me, I was able to get it into position and breathed a sigh of relief. With the lift centered under the 40 meter reflector, Ron used the controls to raise me up to the reflector. After cutting a few wires and undoing two U-bolts, Ron brought me and the old reflector down. Ron handed me the new reflector and up I went again. It was easy to install (just 2 U-bolts). I also used some high strength, very thin rope purchased at Dayton to truss both sides of the reflector to the boom. The new coils do add some weight so this will hopefully limit any sagging especially when ice builds up. The final step was to lower the bucket a bit and check the resonance point. According to N6BT, the reflector should be resonant around 6980. Although I had it tuned to that

point hanging from a tree at about 10 feet, the resonant point was quite a bit higher with the element on the tower. Using Tom Schiller's instructions, I was able to bring the resonant point back to 6980 by adjusting the "slider" connected to each of the coils. When I was happy with the tuning, I sealed up the coils, added some black tape to keep them in place, and rotated the covers to make sure the drain holes in the cover were on the bottom. The reflector was done and Ron brought me back

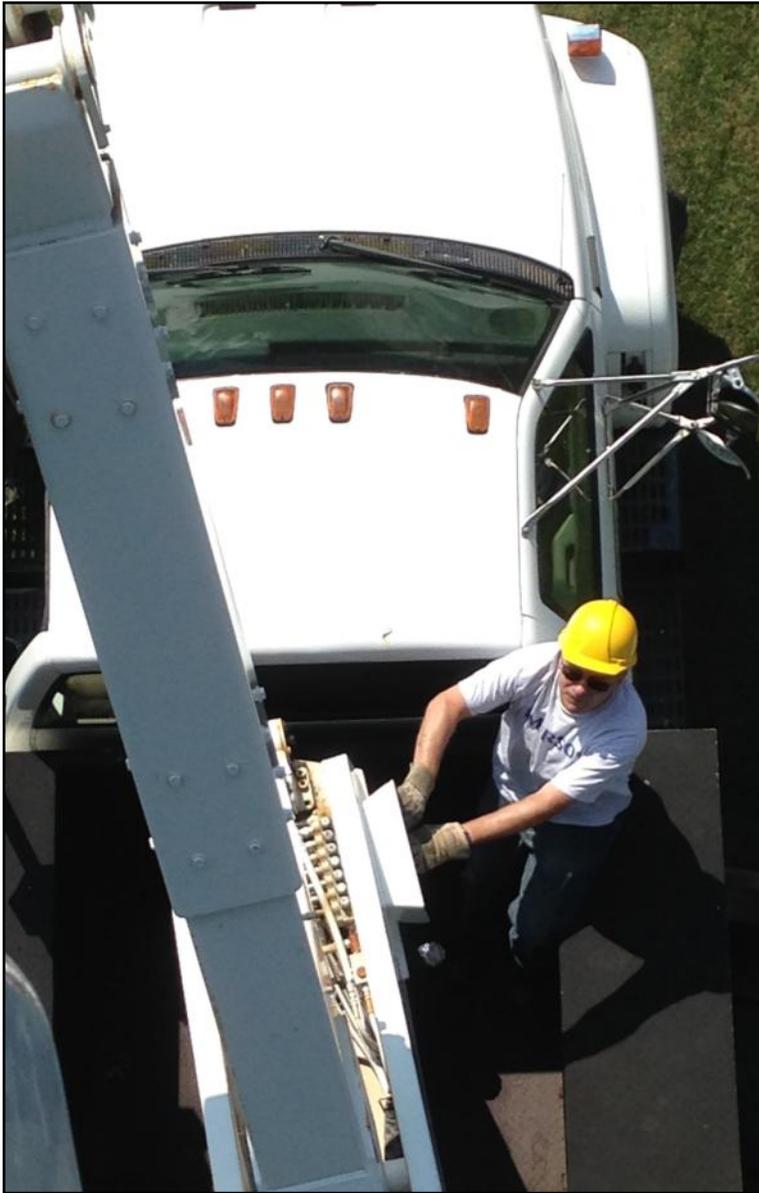
down.

Installing the driven element was very similar. I was happy to see that the resonant point was at about 7070. The SWR was a little high but I was able to bring it down by adjusting hairpin coil which spans the two sides of the element. I taped the balun to the boom and I was done. The whole thing had taken about two hours.

Other Repairs

Since I had the truck, I decided to retune the ten meter elements on my beam. I had worked on this a bit the last time I had the truck. I got the SWR way down that time but the resonant point was at 29000. After checking the C4SXL manual, I had Ron move me to both ends of the 10 meter driven element and reflector. I drilled out the rivets, moved the elements out "2 holes" and put in new rivets. The whole operation took about 15 minutes. The resonant point on 10 meters is now down to 28400 and, using the tuner in my radio, operation on ten meters is much smoother.





Ron, NØAT expertly operating the controls of the bucket truck

The only other thing I did was to replace the two coax runs to the C4SXL. In retrospect, I should have planned this better as it took me almost an hour to remove the old coax runs (which had been up about 10 years) and add the new. I color coded each run with tape so I could tell which were the old and new runs as I dressed them down the tower.

Bucket Truck Blues

Having rented lifts three times now, I have learned a few things about them. First of all,

if you have a 50 foot tower, don't assume that a "50 foot lift" will do the job. For example, my tower is mounted in a base that puts the tower at about 52 feet. My beam is mounted about 1 foot up the mast, meaning I need to comfortably reach about 53 feet to work on my beam. The first lift I rented claimed a "working height" of 50 feet meaning that the platform rose to about 45 feet. This also assumes you are directly under the point you want to work on. As it turned out, I simply could not reach my yagi from this lift. Ron and I talked ("joked") about putting a ladder in the lift but decided that was not a good idea. So I took it back and ate the cost.

There are two kinds of lifts you can rent. One type needs to be pulled by a truck which means you have to find someone with a pretty hefty truck or rent one along with the lift. This is what I did the first time. Backing the lift into position was tricky as I had to back it down a hill and then turn 90 degrees. Somehow I got it into position but when I was done, it was very difficult getting the truck and lift up the hill. The other type of lift are the ones build into a truck. I looked around town and found that Broadway Rental in Brooklyn Center had a 55 foot bucket truck.

These are rare and was just what I needed. So I rented it the second and third time. It was easier to get into position and had enough height margin that Ron was able to move me around different parts of the beam with no problem. Most bucket trucks have a chart that shows how much you lose in height when you move the buck laterally. Study that chart carefully!

If you need to drive the truck on your lawn, it is going to make some marks and/or ruts. If possible, try to do your project when it hasn't rained recently. Most of the ruts will eventually disappear.



On my last project, the stabilizing arms dug up the grass a bit so I had to do a little lawn repair but nothing major.

Most bucket trucks and lifts allow you to operate the lift either from the ground or the bucket itself. Since NØAT was so good at positioning the bucket, I preferred to have him do it allowing me to concentrate on what I was doing. This worked very well although you have to develop some hand signals as the guy on the ground is not always going to be able to hear you since the motor of the truck needs to be running when the lift is being operated.



Al, KØAD removing the old 40M Reflector from the C4SXL yagi

Performance

First and foremost, the erratic operation of my 40 meter beam is gone!. So far, running up to 500 watts is not problem. My rigs' built in antenna tuners easily tune the antenna for the entire band. Most of my operation is CW so the minimum SWR at 7070 works well. It is nice to see the SWR meter not move for most of my contest operating.

The real test, of course, will be after I have used it for a contest season. My expectation is that it will work as well, or better, than the old linear loaded version prior to when I started having problems. I would also expect it to outperform my 40 meter inverted V at 45 feet which I used for the entire 2016/2017 contest season.

So far, I have used the rebuilt yagi only in the North American CW QSO Party and a few of the CWops Wednesday contests. There were no incidents of high SWR and like I said previously, the SWR needle hardly moved during the entire contest on 40 meters. Although I don't have any documented metrics, I can say that I "felt louder" on 40 than I did with the inverted V. I am looking forward to see how it plays during some of the DX contests this season. When I get a chance, I plan to do some A / B comparisons between the new yagi and the inverted V using the reverse beacon. However, that takes a while to get a consistent, reliable comparison.

Acknowledgments

I would like to thank Scott, KØMD who first suggested I upgrade to the new coil based 40 meter elements and put me in contact with N6BT. I also want the thank Tom Schiller (N6BT) for all the help and advice he gave me including putting together the 40 meter upgrade kit. I could not have done this without N6BT's help and advice. Thanks also to Tom, K3WT and Gary, KNØV whose "loan" of the reflector from his old beam made my project much easier. And, finally, a special thanks to Ron, NØAT for being my ground guy and operating the bucket truck in first class fashion!



My Quest for 5BDXCC

By Rolf, NRØT

The morning of January 1st this year I logged into LOTW and was treated to a surprise: the last confirmation I needed for 80 Meter DXCC had arrived!

I was first licensed in the late 60s while a teenager in Duluth. After I got my Advanced license I met another nearby ham who lived in Lakeside, KØIJL (now known as NØIJ) and a ham from West Duluth, WAØQIT. These two hams got me interested in DXing. I operated several of the ARRL and CQWW contests from their QTHs while still in high school. The mid 70s and early 80s were pretty quiet on the RF front for me, but I got the bug again after buying my first home in 1985 in Bloomington, Minnesota. One of the first things I did was put up a 48 foot tower, a used Hy-Gain TH-7 and



Rolf (NRØT) proudly displaying his 5BDXCC plaque

started chasing DX. The bands were good and DXCC on 10, 15 and 20 came relatively quickly, or at least as quickly as the Bureau cards would arrive.

I then moved and only had a multi-band vertical for about 10 years. But I discovered





NO. 8,767 NRØT
January 9, 2017

A close up of 5BDXCC plaque #8767 issued to NØRT

that with enough radials and a little extra power I could work DX on 40 meters. Six or eight years later the LOTW confirmations and cards were received and I applied for the 40 meter DXCC.

I moved again in 2011, this time across the back property line, and my 48 foot tower and TH-7 were reinstalled. The beauty of this lot is that there is a 90 foot cottonwood tree and, with the assistance of NØMK and his monstrous sling shot, we got a wire up to a branch 65 feet up. I then put down about twenty radials and a 1/4 wave 80 meter vertical was born.

80 Meter DXCC took five full years to achieve. I looked at my logs for all confirmed 80 meter contacts and found the following breakdown. (Note: some countries are confirmed on more than one mode, so it does not total to 100).

CW = 80 SSB = 24 JT65 = 4

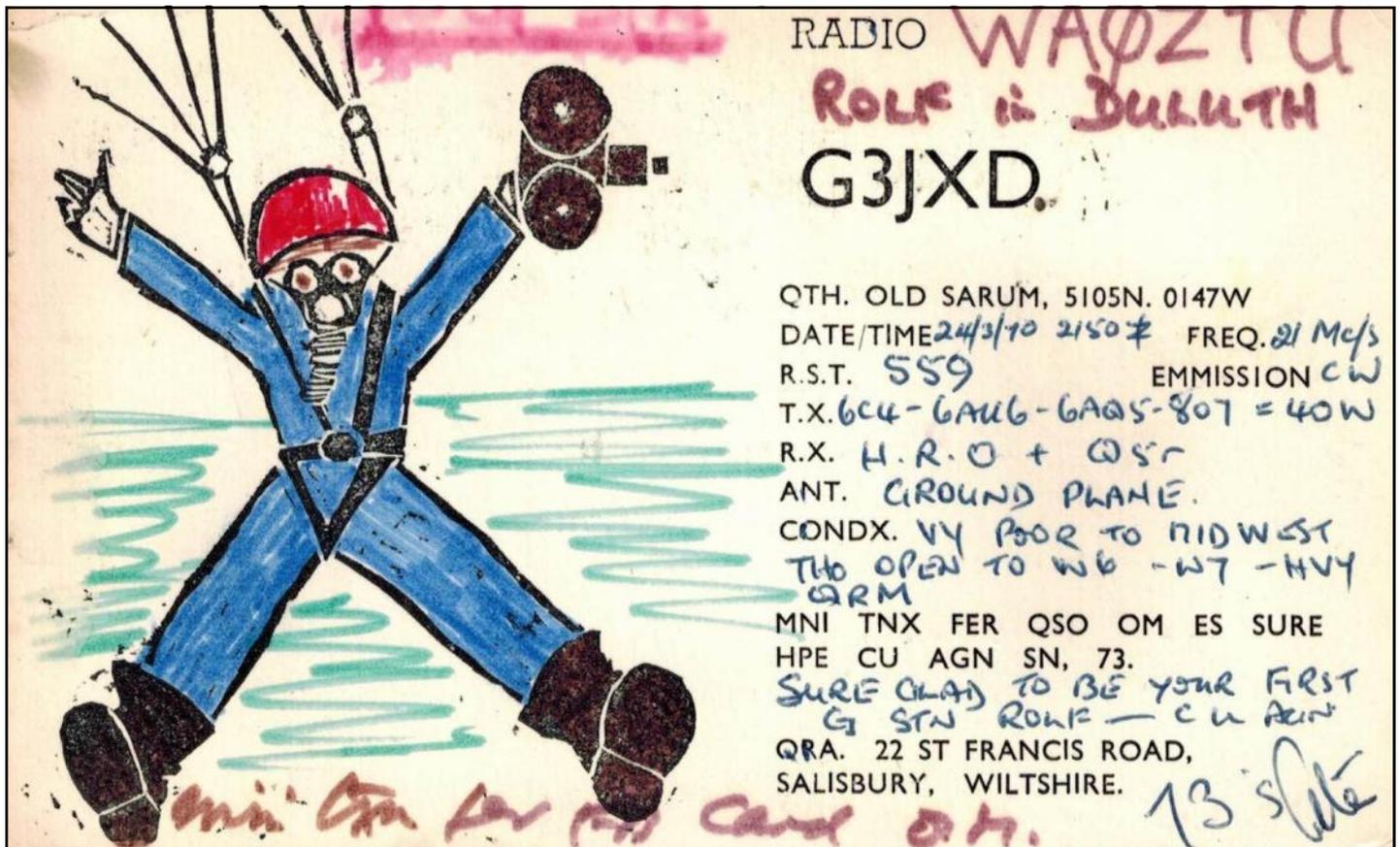
I used to think that the only way to get DXCC on 80 was to run high power. I ran 800 to 1000 watts for most of the CW and SSB contacts. In the last couple of years I have been playing on JT65. My power on JT65 is typically 30 - 50 watts. My only two 80M contacts with Australia and Samoa were on JT65, so I have changed my opinion on the need for high power for 80 meter DX.

The most exciting 80 meter QSO for me was ZL2AGY in early April of 2016. His CW signal was just a whisper above the noise, but we made contact. Working VK4KEE a few days later with only 50 watts (JT65) made for a very fun week!

I was very surprised when I received the 5 Band DXCC award to see that the number is so low. Mine is number 8767. More people should give it a try. It IS possible to work 5 Band DXCC from a suburban lot, even more so now with the advent of new digital modes.

If anyone is interested in 80 meter DX, I highly recommend a vertical for the low angle of radiation and you should definitely check out the SteppIR article "Radial Systems for Verticals" which is on the SteppIR website as a PDF document. There is a chart in the article comparing antenna efficiency for different





Rolf's very first DX QSL worked 47 years ago

number and length of radials. Unless you have the space, you don't need 120 1/4 wave long radials to work DX. In fact, a greater number of shorter radials is better than a few longer radials. For most of us, anything on 80 is going to be a compromise, but good results are possible with a less than optimal setup.

There are plenty of more milestones out there for me. For DXCC mixed I have 319 confirmed so I am 10 or so short of the Honor Roll. WARC band DXCCs are still in my future and I even have about 15 countries confirmed on Satellite. Still, there is my ultimate challenge: 160 meters.

I have added a trap to the top of my 80 meter

vertical and extended out a horizontal wire to turn it into an Inverted-L on 160. There is a manual switch at the base to swap in a different LC matching network to change the loading from 80 to 160. My first contest with this antenna yielded WAS in 8 hours and I currently have 16 countries confirmed. Lots of room for improvement there!

Over 47 years after working my first DX, G3JXD in April 1970, and despite the ease of internet communications, I still experience the excitement of connecting with someone in another country and chasing the associated awards. What a great hobby!



DXing for the Beginner

By Al Dewey, KØAD

“The New DXer’s Handbook” Second Edition

K7UA UTAH
Bryce K. Anderson

By Bryce K. Anderson
K7UA

K7UA’s new handbook is a great reference for DX beginners and veterans alike

Although his handbook is targeted for beginners, there are a number of chapters that might be a good review.... even for the veteran DXer.

Bryce Anderson (K7UA)’s book is entitled “**The New DXers Handbook**”. It is available as a free download at:

www.tinyurl.com/dxhandbook

Recently a suggestion was made that an article discussing DXing techniques for the beginner would make a great addition to The Gray Line Report. Because many of us have been chasing DX for decades, we often forget that some of the knowledge related to this pursuit might not be well understood by the newer amateur who is just getting started chasing DX. Our editorial staff reached out to the membership to see if someone in the club might be willing to tackle such an article. We received a couple responses and also a great suggestion from Bob, WØBV. Bob pointed out that K7UA has written a great handbook for the beginning DXer. I took a look at it and was very impressed with the depth and clarity that he covers all topics related to DXing.



The book has nine chapters chock-full of useful information for the pursuit of DX.

He begins by emphasizing the importance of just listening and what specifically, to listen for. He points out that although the DX Cluster is a great tool, some great DX can be found by listening up and down the band. If you're lucky, you will be able to work them before they are spotted on the DX Cluster. Of course, the DX Cluster is an important part of DXing and Bryce covers that well in the second chapter. After talking about how to get connected to the DX Cluster, he discusses some "good manners" and common sense that should be observed when using the cluster.

The third chapter highlights the major DX Awards that can be achieved with an emphasis on ARRL's DX Century Club (i.e. DXCC). Links for information on DXCC are provided. Bryce goes on to talk about endorsements, five band DXCC, and the DXCC Challenge award. A brief mention of CQ Magazine's Worked All Zones (WAZ) is also made. The fourth chapter is called "The DXer's Tool Kit" and is loaded with useful information, tools, and equipment that will benefit the DXer. Bryce starts this chapter by emphasizing the importance of persistence by a DXer. He then gives some specific tips for the DXer's station including the antenna system, the receiver, and the transmitter.

He finishes by pointing out the importance of flexibility in the DXer's station. Even though CW may be your favorite

mode, and the easiest to work DX on, it is important to realize that sometimes SSB and the digital modes may provide those new countries that you just haven't been able to snag on CW.

The fifth chapter is perhaps the most interesting (and valuable) chapter in the book. It is entitled "Split Operation and How to be Heard in a Pileup". Bryce gives a brief history of how "working split" came into being and gives some very specific instructions on how to set up your radio to work split. He talks about proper behavior in a DX pileup and touches on how you can increase your chances of working a DX station by detecting operating patterns that the DX station is using. Chapter six explains propagation and goes into a fair amount of detail about how to determine the best path between your station and the DX station that you are trying to work. There are references to a lot of great tools in this chapter. The next chapter examines the importance of using clear phonetics when trying to work DX.

For those chasing the various DX awards, getting new DX contacts confirmed is of the utmost importance. In chapter nine Bryce covers the subject of QSLing including the various electronic and on-line ways to get your DX contacts confirmed. In the final chapter (Chapter nine), Bryce identifies various sources of "DX Intelligence" for finding out the latest information on what is going on in the world of DX including the latest DXpeditions, etc.

If you're a beginning DXer, or even a veteran, I encourage you to take a look at K7UA's great handbook.



FT8: A New Mode from the K1JT Development Team, a New Tool for DXers?

By Dan Dantzler, WØJMP

The latest release from Joe Taylor, K1JT and his development team is FT8. I am sure most of you are familiar with Joe and his weak signal modes, especially JT65 and JT9. Yes, they are slow; very, very slow. Each exchange takes a full minute, so a complete QSO takes between four and six minutes. (Yawn) But they are very powerful!

FT8 is a new twist; each exchange is 15 seconds so a complete QSO can be made in a minute or a little more. That is four times faster than JT65 or JT9.

What is FT8?

It is named for its developers, Steven Franke, K9AN, and Joe Taylor, K1JT. The eight is for the mode's 8-frequency shift keying format. Tones are spaced at 6.25 Hz, and an FT8 signal occupies just 50 Hz. That is wider than JT9 but narrower than JT65. (JT65 is 177 Hz wide and JT9 is only 16 Hz.)

FT8 is fast but what is the sacrifice?

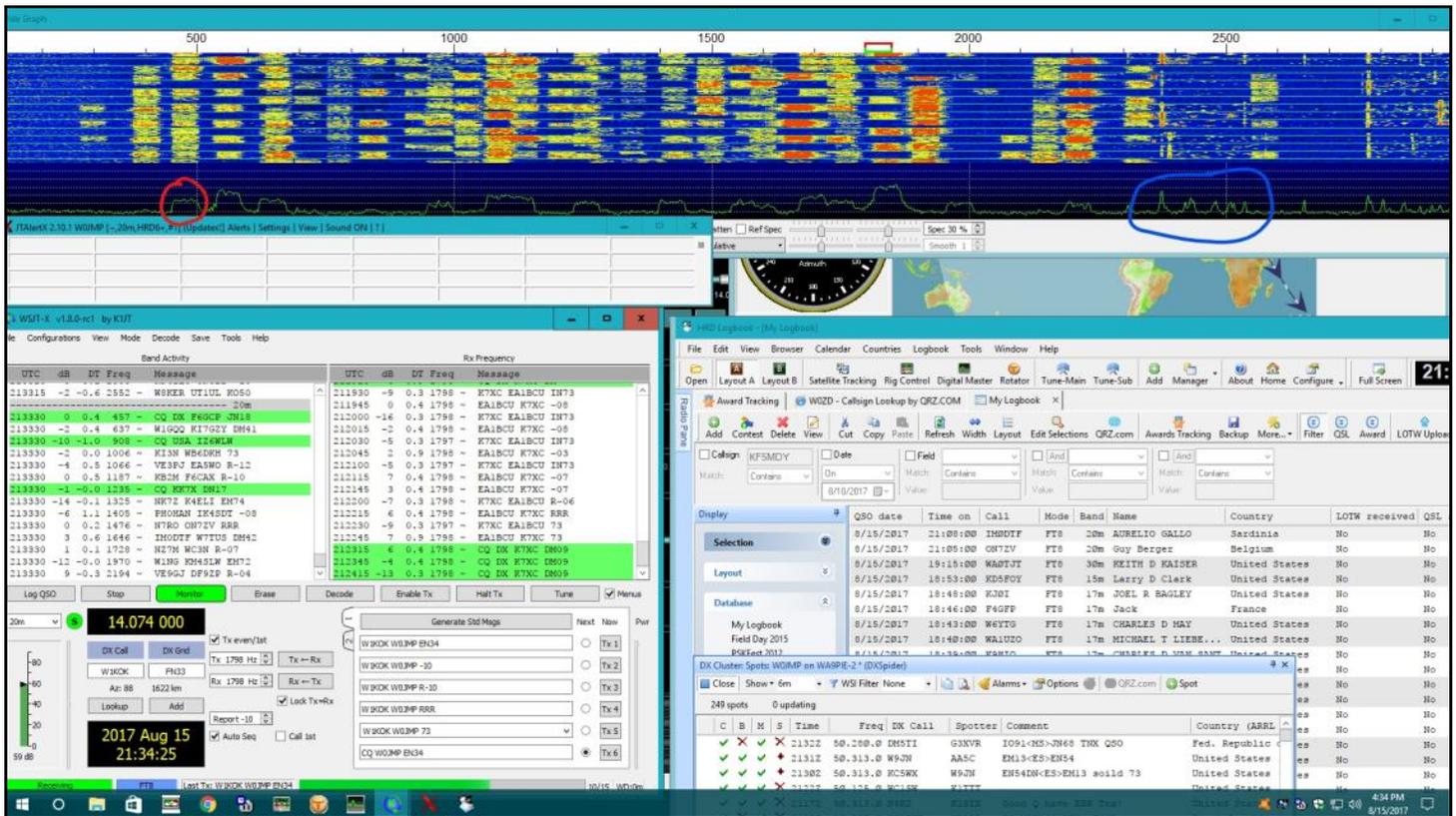
Efficiency. It is as much as 10 dB down from JT65, although I expect that to improve as the software matures. Two pass decoding and *a priori* information will be added to the next release. But it will probably never match the efficiency of JT65 or JT9. Efficiency was sacrificed for speed. FT8 was released with a new version of WSJT-X software on June 29, 2017. In my 50 plus years in amateur radio, I have never seen a new mode take off this quickly! By Sunday, August 8th, the ADIF (Amateur Data Interface File) had approved a modification allowing FT8 to be included in those files. That paved the way for the ARRL's LoTW to accept QSOs in the new mode. The ARRL was ready and at the start of business on August 9th, FT8 QSOs could be uploaded to LoTW. By 9AM that morning, the LoTW site was choking a bit from the heavy traffic but kept on ticking. By Thursday, August 17, 2017, the LoTW site choked and stopped running. The sheer volume of QSOs being uploaded was more than the system could handle. I am not aware of any new mode attracting so many users in such a short time. Figure one shows the waterfall on a busy day on 20 meters. You can see the FT8 signals on the spectrum and actually see the eight tones on most signals.

FT8; what it is and what it is not.

It is a very fast digital mode (at least compared to JT65/9). It is spectrum efficient. Technically, 60 signals could be packed into the same space as a 3K wide SSB signal. It is perfect for E layer propagation on six meters. Often Es signals are strong but build and fade quickly. Trying to make Es contacts on a rapidly changing six meter band with JT65 is challenging. The signal is often gone before the QSO can be completed. The signals on six are often strong enough that the loss of efficiency of FT8 (compared to JT65) will not be a major issue.

FT8 also seems to be attracting new adherents to digital modes. Many radio operators were put off by the glacial pace of JT65/9. In the era of the 15 second sound bite, taking 47 seconds to send 13 characters does indeed seem slow.





20 Meters Full of Digital Signals

Circled in Red is a FT8 Signal, you can almost count the eight tones
 Circled in Blue is a JT65 Signal

FT8 is fast enough to be considered for use on DXpeditions. It is being used on Market Reef as I write this. I think the results are mixed. It is not as good at sorting out signals as JT65 so the DXpeditioners are having difficulty. Future DXpeditions are considering ways to make FT8 more effective. One has announced that they will be calling higher in the band and expecting responders to spread out in the “normal” FT8 segment of the band. We will see how that works. Bouvet has announced that they will be using FT8 as a secondary digital mode. The newer release of FT8 will be available before the Bouvet Island DXpedition so I am sure that will help.

I believe that FT8 will get through when the bands are otherwise “closed”. FT8 may also be suitable for contesting. JT65/9 was considered just too slow for contesting. FT8 may change that. It is even possible to have specific FT8 contests. Certainly, it will have a place in more casual operating events like Field Day and QSO parties. FT8 is not a replacement for JT65/9. While it has taken off like a rocket, it just does not have the horsepower to dig out the really weak signals. After the initial rush to embrace FT8, I suspect the popularity will wane a bit and there will be some return to JT65/9 for DX and other weak signal applications.



What is needed to operate with FT8?

If you are currently operating with JT65/9, all you need to do is download the latest version of WSJT-X and you are good to go. The latest software can be downloaded here: <https://physics.princeton.edu/pulsar/k1jt/wsjsx.html>

If you are accustomed to operating with JT65/9, the procedures are similar. But hang onto your hat. In JT65, the transmission is 47 seconds and you have 13 seconds to decide what to do next. That is usually enough time to select a call and double click on it before the next cycle. But in FT8, you have less than two seconds! At first it seems like playing the old arcade game, “Whack a Mole”. The good news is that if you miss the first time, then next cycle only takes 15 seconds, not a full minute. But there are a couple new features that make it more usable. One is called “Auto Sequence”. If you tick the auto sequence box, once you initiate the QSO, the software will take it all the way through until logging without your intervention. That certainly helps. Once you have sent 73, the program prompts you to log the QSO and start another CQ sequence if that is what you want to do. A watchdog timer prevents your machine from sending endless CQs. The other new feature is “first call”. That feature allows your computer to automatically respond to the first station that answers your CQ.

About twenty years ago when rudimentary station automation was first being implemented, a friend and I joked that the day was coming when you could just turn your radio on and come back the next day to see who you worked. While that would not be legal or ethical, this software comes very

close to “self operating” amateur radios stations. 2017; self driving cars and self operating stations?

If you are not operating with any of the modes on WSJT-X, you will need a few other things. Of course you need a computer, a way to interface your computer to your radio and an accurate time standard. Most newer rigs have a direct USB connection so no interface is needed. Your computer clock needs to be within about a second to reliably decode messages. For more information on setting up WSJT-X modes, see page 21 of the December 2016 Gray Line Report. <http://www.tcdxa.org/Newsletters/December2016GrayLine.pdf>

While not absolutely necessary, I recommend using JT Alert by Laurie Cowcher, VK3AMA. It allows you to quickly determine stations you have worked before and entities you need. It also makes logging simple and seamless with most popular logging programs. <http://hamapps.com/>

Is FT8 a new tool for DXers?

Only time will tell. At this moment, I think it will be useful for band fills on more common entities. It remains to be seen if it will be helpful on big, expensive and difficult DXpeditions like Bouvet. Right now, CW is still the most important mode for DXing. Will a digital mode unseat CW as the king of the DXing hill? Yes, I think so. But FT8 is not that mode.

BREAKING NEWS; September 2, 2017

The WSJT team just announced a new release candidate, RC2. After a few days of using it, I can tell you it is a major improvement! The software will decode about



another 4 dB deeper, which gets it to within 6 dB of JT65. The ability to decode simultaneous transmissions has improved dramatically. It seems nearly as good as JT65. The team has also added some nice improvements in the software. For example, if a station is calling CQ and you are answering them in auto-sequence mode, in the earlier version, your station will keep trying to call even if they answered someone else. You had to watch closely to make sure you were not creating QRM. In the new version, if the station answers someone else, your station automatically shuts down your response. THIS will make it a viable tool for DXpeditions.

I have been using FT8 now for about 7 weeks. It is fun and quick. I have worked and confirmed all 50 states, confirmed on LoTW, and 64 DXCC entities. I have about 1450 FT8 entries in my log.

Bert, WBØN, is much more prolific than I. Bert has over 1700 QSOs, all 50 states and a ton of DX. Bert runs two radios at the same time, so can rack up as many as 120 QSOs per hour theoretically. He says “simplest SO2R (Single operator, two radios) you ever saw!”

So stay tuned boys and girls. The development team is still developing and have not released a “final” version of the software. Only “release candidates” have been announced. While I do not expect dramatic change between RC2 and a final release, I am sure it will get better. Joe Taylor is 77 years old but he and his team are cranking out code like a bunch of twenty-somethings at a startup!

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.



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 infor-

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>.



TCDXA Members' Field Day 2017 Experiences

WØBM

The Rochester Amateur Radio Club held Field Day at the Gamehaven Scout Reservation. I enjoyed seeing Matt Speltz's first exposure to Amateur Radio. The grin as he made his first contact was infectious. The magic is still there! He is interested in networking and is looking to take his license test in August. Matt is my son-in-law.

WØRX

After being, literally, shut down by wind during Field Day last year and the forecast this year again being for 25-30 mph winds, with rain, I opted to put the operating position in a sheltered spot. I was somewhat concerned about being surrounded by trees since I use verticals. But I don't think there was any significant signal attenuation or unwanted coupling. Since I operated on battery power I ran 50 watts, except on 80 meters Saturday night, when I ran 100. I could almost always work anything I could hear. I tried a new (old) Cushcraft R6000 instead of my stalwart R5, thinking I might benefit from a slightly longer radiator. I completely rebuilt the antenna right before Field Day and it wasn't until I had set it up that I found out it was resonant at about 21.500 on 15 meters. Every other band was dead on. I still made about 40 Qs on 15 meters thanks to the great antenna tuner in the 590S.

It was fairly uncomfortable operating this year as it got down to about 40 degrees overnight and there was a steady drizzle. The only time it rained heavily was when I had to go out and switch batteries. I made just over 300 Qs, which fell short of last year, so I'm looking forward to next year. Equipment was Kenwood TS-590S, Cushcraft R6000 and Butternut HF-2V. I used N1MM+ this year, thinking I would try some digital. But I started in on CW and stayed in that mode.

KØVG

I concentrated on 6M JT this time on FD. On Saturday, I had only a couple of contacts and only one that gave me a FD exchange, even though I was calling CQ FD on JT65. On HF I set up my old RTTY Station using a Yaesu FT-840 and KAM XL. The Kam was having a tough time coping with the crowded signals. Fortunately I had a Timewave DSP 59+ I'd left up at the cabin and put that in line. I forgot the FT 840 didn't have much for filters. I only ended up with 13 RTTY Q's, 1 JT65 Q, and 9 Phone Q's for FD. A good share of digital stations were in the 1D class along with me so I couldn't use them for Field Day points.



During mid - Sunday morning 6m, JT opened up but no one was using a the Field Day exchange. On Sunday I worked 43 6M JT stations. Most of the stations were Gulf Coast stations. I even copied a couple lines from South America, Russia, and Japan but no opening was long enough for a contact.

During the rest of the weekend I didn't have much time to get on but managed to make a couple MSK144 Q's. I'm looking forward the September VHF contest. When you have limited space you can just keep going up. The cargo door behind the table is nice for hooking up cables. (See photo, page 23.)

NRØT

My father , KEØRR (age 96) and I operated as WØPNA from rural Polk County, Minnesota (grid EN27an) from the old chicken house which has been converted to a shop. We had a vertical for 10, 15, 20 and a double-extended zepp for 40 and 80. This was the 24th Field Day we have operated together since we first started this tradition in 1991.

Vermilion Range Amateur Radio Club (VRARC)

This was the first Field Day for the Vermilion Range Amateur Radio Club (VRARC).

The VRARC was formed just one year ago (June 2016) and has a membership of 15, with half or more participating in weekly meetings. The club also boasts a VE team credentialed by both ARRL and Laurel.

The primary site chosen for Field Day 2017 activities was the historic Pioneer Iron Mine in Ely, MN with an additional, higher traffic main street site demonstrating ISS and AMSAT contacts.

Hunger was kept at bay with K9WAG's smoked & pulled pork sliders and despite the occasionally inclement weather, area residents and several local dignitaries visited our sites.

The final Field Day log was submitted with 508 QSO points plus 950 bonus points for a total of 1458.

This new club's first Field Day was deemed a success and plans are already in the works to make 2018 even better!

NØAT

The Blue Lake Brothers again operated class 2A on Blue Lake near Dorsett, MN. This year's team consisted of NØAT, NØKK, KØAD, N5QQ, and KØAUG. Ron, N5QQ, has operated previously in the Caribbean with NØAT and NØKK and decided to travel from Texas to Minnesota with his wife to see what a Minnesota Field Day was like. It was fun having him on the team this year.

We made a total of 1876 QSOs which was a little over 100 more QSOs than last year. For some reason, we did not do as well on 20 meters as usual but 40 and 80 meters were great. Almost all our QSOs were CW except for the GOTA station and 6 meters. All antennas were wires except for a small 6 meter beam. It was one of the colder field days in recent history and we even broke out a small space heater in the middle of the night. We're already looking forward to next year.





Pat, WØBM looks on as his son-in-law Matt Speltz makes his first amateur radio contact at Rochester ARC Field Day

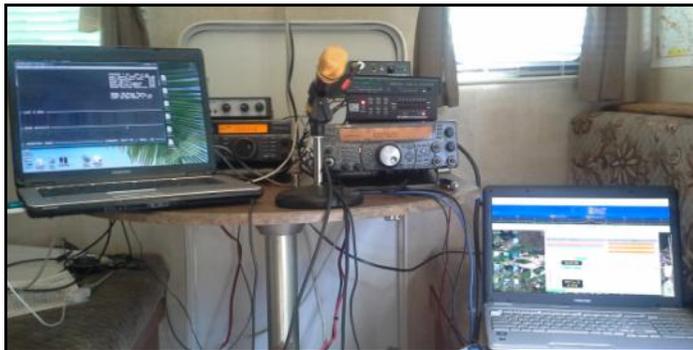


This tent provided shelter from 40 degree temperatures and rain for WØRX's field day operation this year





The Blue Lake Brothers 2017 Field Day Team (l to r) – NØKK, NØAT, KØAD, N5QQ (holding Minnesota Cup trophy), and KØAUG



KØVG squeezed a lot of equipment into a small space at during this year's field day



NØKK looking for Qs on 6 meters while NØAT runs on CW in the background





This Cushcraft R6000 and Butternut HF-2V performed well for WØRX on field day this year



NRØT (right) operated field day with his father, KEØRR (left) for the 24th time



Dipole from the Flagpole; Antenna for the first Vermillion Range Amateur Radio Club Field Day at Pioneer Mine in Ely MN.



The Bouvet DXpedition Cleared for Taxi to Runway 18

Ralph Fedor – KØIR

The Bouvet DXpedition project can be likened to a jet engine. It spooled up slowly. Time, negotiations, transportation arrangements, human resources, finances, and equipment began flowing into this engine like fuel. Last weekend's team meeting in Atlanta, Georgia was the igniter. The DXpedition roared to life and is now poised for release of the brakes and full advancement of the thrust lever.



Skype conference underway with Nico,
the CEO of our transportation company in Chile

We began our discussions with “What ifs”, and although some of them were not easy to discuss, they demanded to be addressed. What if you have an illness or accident we cannot adequately treat on the island? What if you die out there? Is your family OK with your decisions?

We moved on to discussions of safety, emergency evacuation routes in the event of a helicopter failure, obtaining a fast strike foothold on the island, the hostile weather, flying and visibility limitations, and who makes decisions. We sequenced our camp set up, developed a plan for our antenna and shelter arrangement, discussed our power grid and power demands, reviewed propagation predictions, and put forth a plan for our station layouts and their band assignments. Then, after all that, we reminded ourselves that we are not in charge on this island, Nature is. We must be ready to abandon or modify any plan and adapt to what Nature hurls at us.





Team leaders K4UEE, KØIR, and LA6VM



KØIR and HA5AO in the Bouvet sea container
Tilt up bases for the Yagi support masts are on the left





A small fraction of the DXpedition equipment in storage unit #1



Generators were fueled, run dry, and had their oil drained to be ready for shipment

When we were not in meetings, we spent time with our equipment. We unpacked, repacked, moved, organized, and inventoried for hours on end. Items need weighing so helicopter sling loads are neither dangerously heavy or inefficiently light. First in, last out sea container packing is essential. We took care to diversify packing of like items. If all our coax, all our radios, or all of our computers are in the same sling load, and that

loads falls in the ocean, we are out of business. Our emphasis is on HF, but we will do 2 and 6 meter EME which are complex systems. To be sure we were functional on EME, we set up a station and completed a QSO off the moon. We should be good to go in that arena.

Lastly, and most important of all, we discovered that as planned, we have a cohesive team that can work together, respect each other, and do all that is needed to accomplish a mutual goal; presenting the DX community with the best opportunity that we can to work a new country, a new band/mode, and enjoy what perhaps will be the ultimate chase in the history of DX.

*(The team will board the ship at King George Island and plan to sail for Bouvet Island on January 13, 2018. Depending on the winds and sea conditions, it will be a 10 to 12-day sail to Bouvet. Their **earliest** arrival date will be January 23. Time to get ashore and set up will be weather dependent. Ed)*



LA9DL assembling EME antennas



Treasurer's Report

from Pat Cain, KØPC, treasurer

| TOP LINE SUMMARY | | | |
|--|------------------|------------------|--------------------|
| TCDXA OPERATING BUDGET FY 2017 (Sep 2016 - Aug 2017) | | | |
| August 31, 2017 | | | |
|  | | | |
| INCOME | ACTUAL | BUDGET | Actual 2016 |
| Surplus from FY 2016 (balance 8/31/2016) | 5200.20 | | 4165.60 |
| Member Dues 2017 by Cash/Checks/PayPal | 4649.36 | 4800.00 | 4751.59 |
| Door Prize Ticket Sales club share | 602.00 | 500.00 | 756.00 |
| Donatons (estates, wills, etc.) | 0.00 | | |
| Refunds and Reversals | 5.79 | | 13.00 |
| TOTAL INCOME | 10457.35 | 5300.00 | 9686.19 |
| EXPENSES | | BUDGET | Actual 2016 |
| Member Recruitment/Retention | 0.00 | (300.00) | 0.00 |
| Website ISP & Domain Name | (65.88) | (70.00) | (44.26) |
| Office Supplies, Miscellaneous expenses | (87.96) | (150.00) | (30.43) |
| Flowers <SK> and Hospital gifts | 0.00 | (200.00) | 0.00 |
| Holiday Party 2016 | (433.15) | (400.00) | (257.52) |
| ARRL Spectrum Defense Fund | (100.00) | (100.00) | (100.00) |
| NCDXF Donation | (250.00) | (250.00) | (250.00) |
| MWA Plaque | (75.00) | (75.00) | (75.00) |
| DXpedition Contributions Total | (6755.68) | (6000.00) | (3801.23) |
| #1 Dxpediton - 3YØZ Bouvet | (3,000.00) | | |
| #2 Dxpediton - TL8AO Central African Rep | (250.00) | | |
| #3 DXpedition - VP6EU Pitcairn Island | (255.00) | | |
| #4 Dxpediton - XX9D Macau | (750.68) | | |
| #5 Dxpediton - XWØYO Laos | (250.00) | | |
| #6 Dxpediton - 3YØZ Bouvet | (2,000.00) | | |
| #7 Dxpediton - 9U4M Burundi | (250.00) | | |
| #8 Dxpediton | 0.00 | | |
| #9 Dxpediton | 0.00 | | |
| TOTAL EXPENSES | (7767.67) | (7545.00) | (4558.44) |
| NET | 2689.68 | -2245.00 | |
| Checking balance | 2689.68 | | |
| PayPal balance | 0.00 | | |
| Cash / Checks on Hand | 0.00 | | |
| NET BALANCE | 2689.68 | | |
| When required, Wells Fargo & PayPal online statements can provide detail not shown in this report. | | | |



Backscatter: Miscellaneous, Assorted and Sundry Items of Note

TCDXA DXpedition Donation Update

By Matt Holden, KØBBC

September 1st marks the beginning of the TCDXA fiscal year. I thought I'd look back at the donations we made in the past year. Members have been very generous the past few years. We rolled over \$5,200 from 2016 and added \$4,649 in 2017 dues and donations. The number of DXpeditions, to top 100 most wanted destinations, were lower than expected. Thus, finding DXpeditions that would provide contacts to North American hams was difficult. Small donations to Central African Republic, Pitcairn, Macau, Laos and Burundi DXpeditions were made. The only top 10 DXpedition to receive funding is 3YØZ Bouvet. Two donations were made as the logistics of reaching and operating from this remote island grew. We gave \$3,000 to help with boat transportation and a helicopter with pilot. The DXpedition team upped their game with a larger boat and two helicopters to bolster safety (and speed) of getting people and materials on and off the island. The board agreed an additional donation was justified and the members approved an additional \$2000 donation to this expertly managed journey to the South Atlantic Ocean. The fiscal year closes with \$2689 in the bank. The board is looking for top 100 DXpeditions to fund in the next year. We're keeping an eye on top ten 3B6-ST. BRANDON expedition as they develop their plan. The board would be interested in hearing from members of any DXpeditions they think are worthy of a donation.



Baker Island, KH1: Dateline DX Association has booked a charter boat for an operation on Baker island during the third week of June, 2018. The group plans to be on the Baker Island Wildlife Refuge a total of 12 days with 10 days of operation. The 11 member team will activate the 4th most wanted DX entity. For more information, see: <http://www.baker2018.net/>

Pirate: Bernie McClenny, W3UR, the editor of The Daily DX, sent this note for distribution:

“For more than a year now an Amateur Radio operator from Southern Europe has been pirating the following calls on CW. It started off with VU2TS, but only on CW. Then he was switching between VU2TS and 4U1ITU, when the club was using 4U1WRC, again CW only. Next he began using 5H3PM, CW only. The pirate has now recently switched over to 5H3MG again CW only.

I have confirmed with Tanzania Communications Regulatory Authority (TCRA) that both 5H3 calls are not currently registered calls. The signals are clearly coming from Southern Europe.

Surely someone from Southern Europe knows who is doing this and can help put an end to this.”

BitX part II: We had promised an update on the BitX in this issue. Unfortunately, both K9WAG and WØJMP have been occupied with other projects and have not had time to update their BitX transceivers. Maybe in the next issue?

NØKK
Kirk Pengelly



Kirk, NØKK in his neat home station from which he has 335 confirmed countries plus thousands of VHF and digital mode contacts

Here is my story or at least what I can remember. When I have read bios of other TCDXA members over the years I'm always amazed at the memory recall and detail in each profile. I'm also amazed at what others have done or accomplished in their own "radio careers". The bar has been set high and I have no hope of jumping over it. Hi.

My love of this hobby started like so many others and progressed over the years. It has been brought along with the help and mentoring of other hams. I know I'll leave out someone, or will have forgotten some tidbit along the way, so forgive me.

I am just past my mid 50's, I've been married 28 years and have 2 children. My wife and I are now starting to dream of grandkids and retirement. We have a passion for family time together, travel and friends.

I became a member of the TCDXA in April, 1995.

How It All Began

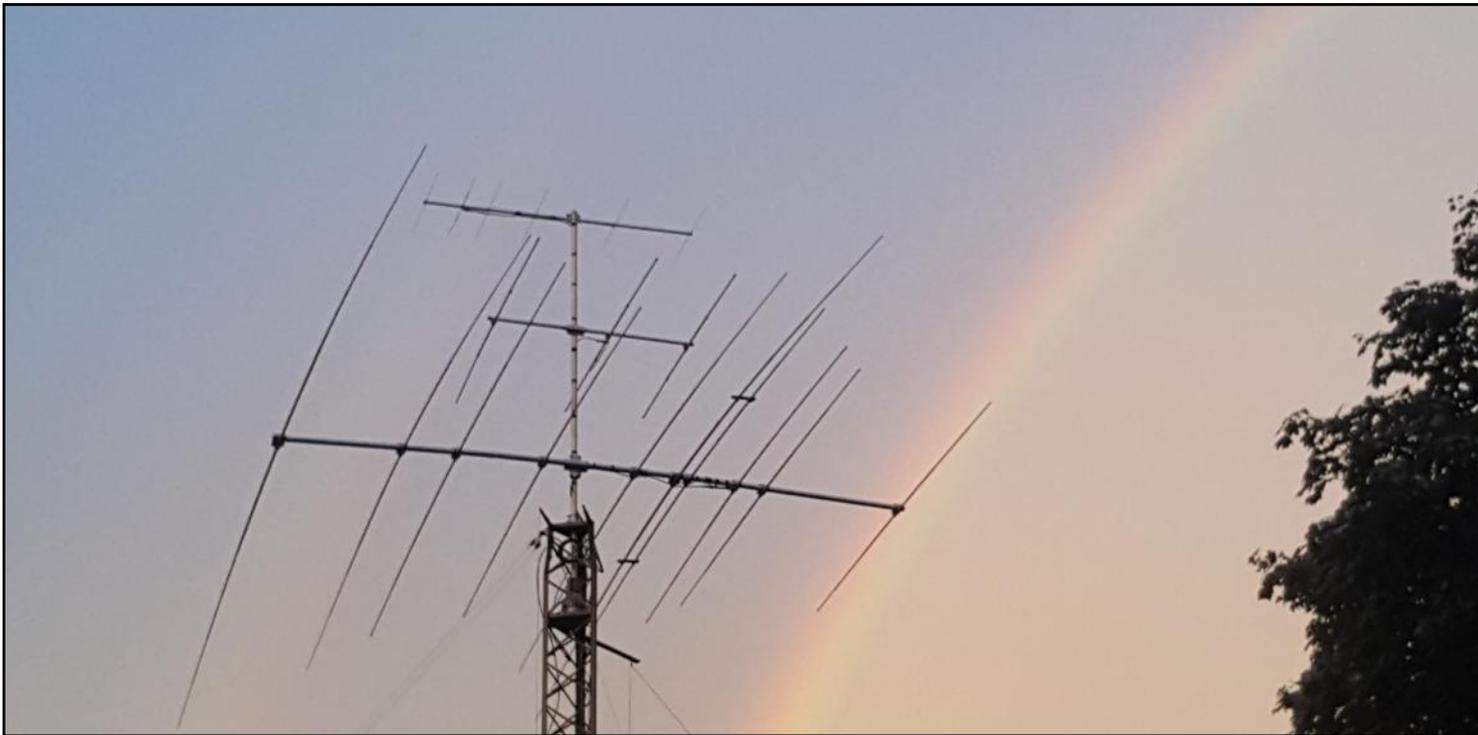
How did it begin? Sometime in the early 70's I received a very small A.M. transistor radio with a small single earpiece. At night I'd turn it on while lying in bed and tune it ever so slowly across its spectrum. I'd hear stations playing music of all kinds, stations talking about religion and talk radio stations too.



I was amazed that I could hear stations without wires. Pure magic!

I began to enjoy 2 aspects of that little radio. I could hear stations in many different states and kept a log, hoping one day to write them and let them know I heard them way up in Minneapolis. Another thing I found I enjoyed was listening to talk radio, especially WCCO programming. Hobbs House with Franklin

day purchase one of those CB radios, just like the truckers had. From my house high on a hill overlooking Hennepin County and Hwy 7 in Minnetonka, I'd be able to see the trucks coming and chat with them on the radio! Little did I know that in a few years that location would help me snag my first DXCC country and help me meet one of the top DXers in the world, KØKX (previously WAØANT)



Kirk's HF and VHF yagis pictured against a rainbow painted sky

Hobbs and Joe McFarland's evening program were my favorites even though they were local shows. That little radio was my ticket to a bigger world and filled my head with thoughts of faraway places.

Also during this time, around 1974, CB radios were gaining popularity and the hit TV show "Movin' On" was on the air. The story was about Will and Sonny, two truckers crossing the nation and using radios! To this 13 year old it was a fantasy to be just like them, seeing the country and talking on a radio! I had a friend, Mark Anderson. He was in my grade, liked that show and had a CB! I was now saving every penny. I had to one

In late 1974 or 1975 I bought a CB from some guy in a van at a local gas station. A 23 channel Royce...all beat up, but it was mine. A small vertical was attached to a pole in my yard and I was on the air. I would be on every day talking to truckers and getting to chat with many local adults that were on the air. Mark and I figured out that if we tuned the radio just right between channels we could hear the USB signals. We'd hear guys in TX, OK, and LA talking about their boots (aka amplifiers), base stations and sending QSL cards to each other.

Never content to just sit idle, I got the idea that I should start a CB club where all the locals I'd chat with could come together to eat and talk.



I helped form a group that would end up meeting a few times at the Shakey's Pizza on Hwy 7. Keep in mind I'm still only 13 or 14 years old and sound like a girl on the radio.

It was during those chats on the CB, and at our meetings over pizza, that this little guy met fellows like Ralph Riddle and Jim Boylan. Both would help me in a couple years when ham radio took over.

Ham Radio! Unleash the beast!

I was in the 8th grade at Minnetonka Jr High walking the halls when one day I heard beeping tones coming from a small room. Always curious, I went to investigate. There hanging off the wall was a cabinet that attracted the attention of a couple of kids. In that cabinet was the school's amateur radio station. Not knowing anything about what I was looking at, other than it was a radio of some sort, I began asking questions. I was told that it was a Heathkit ham radio, and that the sounds were Morse code. The kids were "talking" to another station in Illinois. Say what? I had to know more about this!

I was invited by the adult leader to come to the radio club meeting to find out more. It was run by a teacher; Jerry Bartow. I believe he taught social studies. Years later I ran into Jerry at a TCFMC meeting and I told him that after all these years, I am still excited about radio. I was so glad to have had the opportunity to thank him for his part in that. With Jerry's help I learned Morse code and got my first ham ticket. It was a novice ticket with the call WBØZUV.

Now I could operate the school radios! I took the city bus from Minnetonka to Hopkins on several occasions to visit the Heathkit store. I would just stand there in awe of the other rigs. The HW-16 was the radio that seemed most likely. At least it seemed like it had a price point I'd one day be able to afford.

My parents were not blind to my serious in-

terest in radio. For Christmas 1976 they presented me with a Heathkit HW-8 kit. Each day after school and every night I'd sit there meticulously working at assembling that radio. Finally it was finished! With a bit of help I was able to get a few kinks worked out and get it aligned as close as was possible for the HW-8. I was on the air with a piece of wire I'd hung in a tree. I could barely hear stations and couldn't contact anyone.

Enter Mr. Larry Alberts

As a fifteen year old I was sneaky. I saw another antenna in my neighborhood; a vertical. That guy must be a ham I thought. So to get some inside information from him, I offered to mow his grass if I could see his station and pick his brain. One day after mowing, Mr. Alberts invited me into his shack. He had a brand new Kenwood – a TS520 I believe. I'd only seen Heathkits. It was beautiful! After mowing his lawn several times, I was offered some on the air QSOs with SSB. He also built me a small antenna tuner to match my old TV coax and random wire to my HW-8. With that tuner I was able to start making some stateside QSOs on 40 and 80 meters using a 30 or 40 foot piece of wire 10 feet off the ground. My HW-8 ran approximately 1 watt on a good day.

Enter Mark Franklin

The HW-8 front end was no match for one particular station - WAØANT. I heard this guy EVERYWHERE and on EVERY band and at times could hear nothing else. I had to solve this problem. From my QTH high above Hennepin County I could look out and see his yagi on a tower. Time to go door knocking! Keep in mind this 16 year old was crafty; I met Mark (now KØKX). He showed me his Drake C-Line and told me all about DX. He told me that if I wanted to work any DX, I'd have to have real antennas and a real radio that would not have a front end that was easily swamped by strong signals.



After that meeting the hunt for a “real” antenna was on! I do not recall where I found my first yagi, but I do remember that it was a Mosely TA33 JR. It was huge! Of course now I had to ask my dad if I could put it on the house. He agreed if I could find the needed parts.

Mark, KØKX, worked at ECI in Minneapolis. He mentioned they had tripods. So my other friend Mark and I hopped on a city bus in Glen Lake, paid our ten cents, and headed to MPLS to buy a tripod. I remember standing on Hennepin Ave. after purchasing a six or eight foot tripod, waiting for the bus wondering how we would ever get this onto the bus. The driver gave us some grief but agreed to let us put it in the aisle and get us back to our home in Minnetonka. He probably thought we were just a couple of crazy kids. There is no way they would allow that today. Once in Glen Lake, Mark and I carried that tripod the two plus miles to my home. Soon after, my father made good on his promise and installed the tripod, the yagi and a small rotor on the roof.

Unleash The DXer!

It was not long after the yagi went up that I began to learn how to listen and work DX with my little HW-8. I still have those early logs. Fun times. This all took place between 1976 and 1980. But once I graduated from high school in 1980 and moved away from home, I only made a handful of QSO's from 1980 and 1992. As so often happens, life began for me. Job opportunities, girlfriends, relocations and other interests all competed for my time.

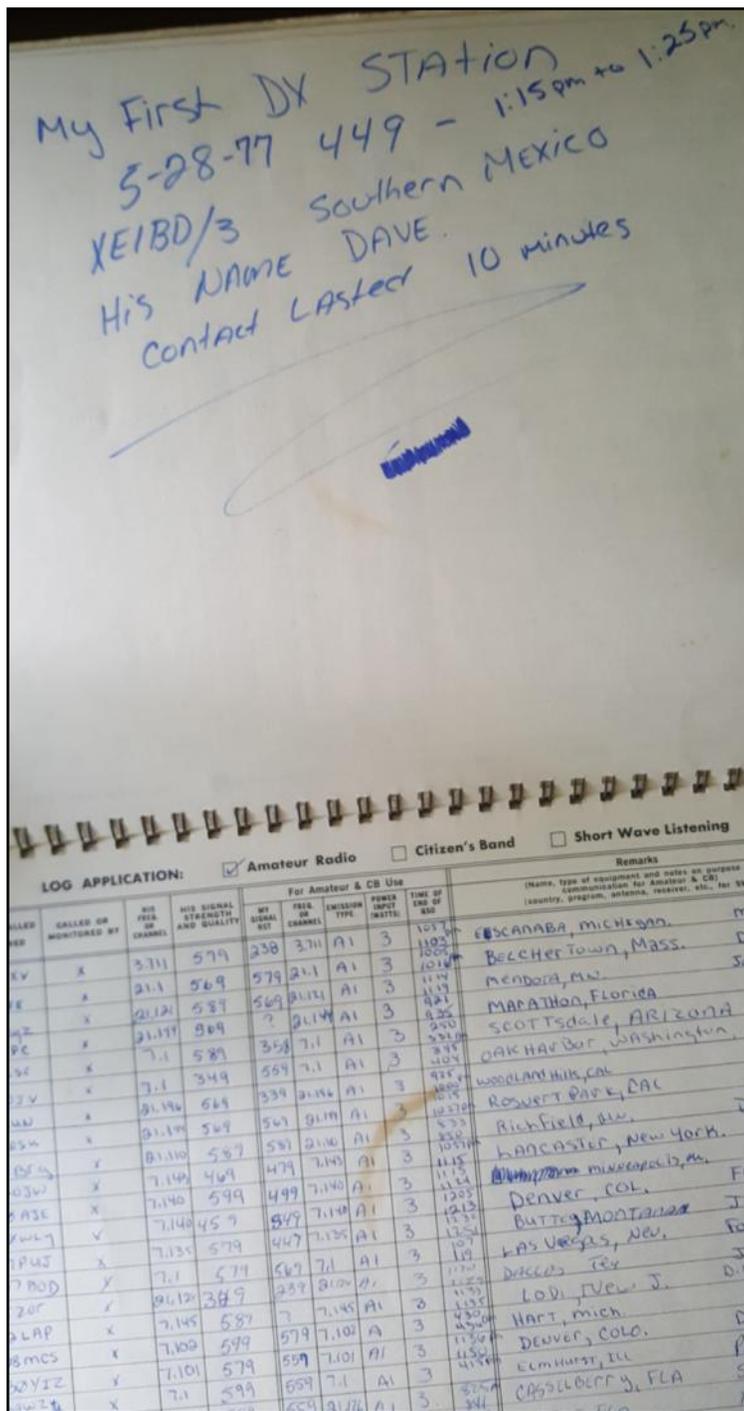
When we purchased our first home in 1991 the HW-8 came out of the box and my new wife found out about ham radio. By the summer of 1992 I wanted to get on the air but discovered my ticket had expired and I'd have to start over. I had lost track of the guys I'd known a decade earlier. I sought help and found out about the Anoka Radio Club during a visit to Radio City.

LOG APPLICATION: Amateur Radio Citizen

| DATE TIME | STATION CALLED OR MONITORED | CALLED OR MONITORED BY | HIS FREQ. OR CHANNEL | HIS SIGNAL STRENGTH AND QUALITY | For Amateur | | | | TIME OF END OF QSO |
|-----------|-----------------------------|------------------------|----------------------|---------------------------------|---------------|------------------|---------------|---------------------|--------------------|
| | | | | | MY SIGNAL RST | FREQ. OR CHANNEL | EMISSION TYPE | POWER INPUT (WATTS) | |
| 3-77 | WBØHJL | WBØZUV | 7.1 | 599 | 599 | 7.1 | A-1 | 3 | 3:55 |
| 3-77 | WBØURA | WBØZUV | 7.1 | — | — | — | A1 | 3 | 4:15 |
| 3-77 | WBØOVP | X | 21.1 | — | — | — | A1 | 3 | 4:45 |
| 3-77 | WBØZIW | X | 80 | 599 | 569 | — | A1 | 3 | 4:45 |
| 3-77 | WBØTRL | X | 80 | 599 | 589 | 80 | A1 | 3 | 5:15 |
| 3-77 | WBØTRL | X | 80 | 599 | 99 | 80 | A1 | 3 | 6:00 |
| 3-77 | WBØWUM | X | 80 | — | — | 80 | A1 | 3 | 6:10 |
| 3-77 | CQ | X | — | — | — | 7.1 | A1 | 3 | 7:10 |
| 3-77 | CQ | X | — | — | — | 7.1 | A1 | 3 | 8:35 |
| 3-77 | WBØLQE | WBØZUV | 37.45 | 589 | 569 | 37.45 | A1 | 3 | 9:08 |
| 3-77 | CQ | X | 7.1 | — | — | 7.1 | A1 | 3 | 9:55 |
| 3-77 | WBØWUM | X | 37.0 | 579 | 569 | 37.0 | A1 | 3 | 6:30 AM |
| 3-77 | WBØYXV | X | 37.0 | 577 | 599 | 37.0 | A1 | 3 | 6:50 AM |
| 3-77 | CQ | X | 80m | — | — | 80 | A1 | 3 | 7:30 |
| 3-77 | CQ | WBØKBL | 21.1 | 589 | 599 | 21.1 | A1 | 3 | 4:00 PM |
| | WBØVMY | X | 7.1 | 589 | 561 | 7.1 | A1 | 3 | 7:10 |
| | CQ | WBØZNB | 37.35 | 599 | 599 | 37.35 | A1 | 3 | 5:20 PM |
| | WBØSLD | X | 37.0 | — | — | 37.0 | A1 | 3 | 6:05 |
| | WBØQNP | X | 37.0 | 669 | 459 | 37.0 | A1 | 3 | 5:50 |
| 3-77 | CQ | X | X | — | — | 37.0 | A1 | 3 | 5:55 |
| | WBØUGM | X | 37.0 | 459 | 359 | 37.0 | A1 | 3 | 5:20 |
| | WBØZJF | X | 37.0 | 589 | 589 | 37.0 | A1 | 3 | 5:28 |
| | WBØTTJ | X | 37.0 | — | — | 37.0 | A1 | 3 | 6:15 |
| | WBØVPH | X | 7.1 | 567 | 557 | 7.1 | A1 | 3 | 6:40 |
| | WBØSNO | X | 7.1 | 459 | 339 | 7.1 | A1 | 3 | 6:45 |
| | WBØVGN | X | 3.7 | 979 | 559 | 3.7 | A1 | 3 | 6:25 |
| 10 | WBØWKA | X | 3.7 | 599 | 579 | 3.7 | A1 | 3 | 6:40 |

Page 1 from Kirk's very first logbook. His call was WBØZUV at the time. Note how even unanswered CQs were logged.





A note in an early logbook of Kirk's in which he noted his very first DX Contact!

Enter Tod Olson, KØTO (SK)

On my first visit to the Anoka Radio Club, I was paired up with a fellow by the name of Roger Beach (SK). He was kind enough to get me started in the right direction with licensing requirements and in short order I

passed my general. During the next several years, I had the calls: KBØKHO, NØTHT, AAØOD and AAØVQ as I progressed from General to Extra. I then chose NØKK as a vanity call. At this time my station consisted of a dipole fed with ladder line up 15 ft and a TEN-TEC Century 22 (and my HW-8). By 1995 my wire had turned into a tower with a small yagi atop. NØKK was on the air chasing DX as often as time would allow.

Those times with the fellows at Anoka Radio were great. I was heavily involved with their Field Day efforts for three years doing much of the coordination. Field Day was my first contest-style event back in 1978 with Ralph, WØLYM, and Jim, WNØAK on the shores of Lake Minnewashta. It was at those Anoka meetings that I met KØHB, KØTO, WWØJ, KØOB and others. We mostly talked about DX and contesting.

Two particular conversations stand out. One was a conversation with Bill, WWØJ. He told me of a "farm" where guys go to contest near Eau Claire WI. He knew Jim Dokmo, KØFVF, who coordinated the events. Bill had been out to the farm himself. There was an upcoming contest. If interested, he'd be happy to take me there to see what they did during contests. Of course that farm was the QTH of Paul Bittner, WØAIH.

One funny note: after some time standing over Jim's, KØFVF shoulder listening to him run European stations on 40 meter CW, he said, "Did you just come to stand there or did you come to operate?" Well, if you've ever been to the chalet at the farm, you know how intimidating that room can be the first time you are there. Radios, switches, banks of rotor control heads and BIG amplifiers are everywhere. There were also several other operators sitting at their stations, headphones on with nothing but the sound of blowers



keeping those big ALPHAS and Paul's large homebrew rack cool. I timidly sat down asking Jim what frequency should I operate on. He just spun the dial a small amount, hit the CQ button to fire up those 4-1000 tubes and said, "This one!" I was blown away with the largest pile-up of DX had ever heard.

Unleash the Contester!

I've learned much from WØAIH over the years. I spent many weekends contesting from his location. I met, and sat next to some fantastic contest operators from around the globe. Many are local radio ops like KØAD, KMØO, NØIJ, NE9U, KTØR, KSØT, WØUC, KØTI, KØTG and so many others. Too many to acknowledge here.

Spending contest weekends at "The Farm" improved my knowledge of propagation paths and rare openings. My skills were honed by hours sitting behind a radio with so many great antennas! It was at WØAIH that I learned about long path openings, polar openings for rare multipliers and many other things. That knowledge really helped me as a DX operator as well as a contest operator. It was awesome to be told "you're the only USA station we are hearing"!

Someone brought an ARRL Sweepstakes plaque to an Anoka Radio club meeting. This created a "second conversion" for me.. I

wanted to become an operator that could do well enough to win one for myself. I recall Tod, KØTO, telling Greg, KØOB, and me that he had no doubt that we'd win many contest awards if we stuck with it. He also told me that there was a local ham not far from where I lived who was really good at contesting and I should just call him.

That ham was Ron, NØAT.

Enter NØAT

Ron, NØAT, has been my friend and mentor now for about 25 years. With his help I've learned so much about radios, software, computers, interfaces, antennas, contest operating and DX.

It has been with Ron's mentoring that I won my first of over 25 ARRL Sweepstakes plaques including two First Place Overall wins in that event for CW and SSB.

Ron and I were able to be the DX twice for CQWW CW and SSB. While at J3, we placed #7 world in multi-multi. The other time, while at VP5, we placed #5 world in Multi-ONE category. There have been many fun times with AT. Another was running Europeans on 10m while walleye fishing from his boat. We sat there pulling Lindy rigs across Blue Lake taking turns running the pile up! There is no doubt in my mind, had it



Kirk's original HW8 radio is still operational in his current station.

not been for Ron's friendship, I'd not be as involved in the hobby as much as I am today. We continue to share time contesting together as well as vacationing with our wives.

The KK Station: Nutin' Fancy Here

My station over the years has changed many times though my antennas have pretty much remained the same. I've been an ICOM guy as long as I can remember. I've owned, and



enjoyed, several of their radios. I currently am using the 7600 and 746PRO (because it has 2 meters). I use ACOM amplifiers with both radios and a microHam MK2R+ for radio and software control. Outside I have a 40' Rohn self-supporting tower. I use a Force 12 XR5 multiband yagi, a Cushcraft 3 element yagi on 6m and a K1FO 6 element yagi for 2 meter tropo and meteor scatter. My 2 meter amplifier is a Linear UK Discovery 1.5kw. I will use a 4X7 array from M2 for 2 meter EME with JT65b this winter. 80 meters is the shunt fed tower. 40 meters, 30 meters and 160 meters are wire slopers or a 6BTV Hustler vertical. You'll notice the lack of any receive antennas. Living in the "burbs" has left me challenged both on antenna height and available space for any RX antenna. There is not even room for a K9AY loop in my yard.

Despite these limitations and with lots of patience, and persistence, I have achieved, from my home QTH: 277 countries on 10 meters, 288 on 12 meters, 307 on 15 meters, 314 on 17 meters, 328 on 20 meters, 203 on 30 meters, 273 on 40 meters, 225 on 80 meters, 96 on 160 meters for a total of 335 confirmed DXCC countries.

I'm anxious to add Bouvet in early 2018, which will leave me waiting for T5, P5, BS7H, FT (Crozet). My other goals are 9BDXCC, where I'm four DXCC countries short. All are needed on 160 meters, of course. (I've had the hardest time getting QSL's for the 160 contacts.) I'd like also like to complete 5BWAZ. I have 40 zones on 40, 20 and 15 but am one zone shy on 10 meters and five short on 80. It's good to have something to chase.

To keep the DX part of the hobby interest-

ing when I neared 50 years old, I took a look at RTTY. NØAT joked with me over the years that one had to be at least 50 to run RTTY as RTTY was for old guys. With his help building the necessary audio and TX cables for WriteLog software, I was off and running in RTTY contests as well as adding to my DXCC digital totals.

I enjoy RTTY and no longer have many countries to chase. I read an article in QST DEC 2008: "Ghost QSOs -Olivia Returns from the Noise". I discovered I had all the needed equipment described in the article to complete Olivia QSOs, so I gave it a go. Soon I was making QSOs using Olivia in the NEGATIVE dB range! Since 2008 I've tried to stay on top of the Digital DX wave adding to my DXCC totals with an emphasis on the weak signal modes of WSJT and the newer WSJT-X. Currently I'm focusing on 2 meter EME during the winter months. Though very challenging, I find decoding signals as low as minus 33dB rewarding and fun! Additionally, I'm adding to my 2 meter DXCC totals!

Lasting Relationships

Since getting back into the hobby in 1992, I've enjoyed chasing DX, contesting and buying and selling used equipment. I like to try out different gear available. I have had the privilege of being invited to be a guest operator at some wonderful stations like NØAT, WØAIH, KØIR, WØGJ, NØIJ and KØKX. I'm excited to try out new modes and I encourage others to try new things as well.

Most importantly, the past forty years have allowed me to develop many friendships. It's those relationships I value most. There it is. That's my simple story. See you in the pile ups! 73, KK.





The MWA Contest Corner

Growing New CW Contesters

by Al Dewey, KØAD



Like many MWAers, I really enjoy contesting – especially CW events. Each year, as I operate events like CW Sweepstakes, ARRL Field Day, or the NA CW QSO Parties, I wonder how much longer there will be enough CW contesters around to make these events fun. The topic of recruiting new contesters is not new and has been discussed at length for years. Some in MWA are going out of their way to sponsor Multi-Op efforts at their home stations to expose newer hams to the fun of contesting. Others are exposing new hams to contesting at events like Field Day. I applaud these efforts to

bring new contesters into the fold.

However, growing new CW contesters is a unique challenge. To do so requires that the new (or even veteran) ham know and enjoy operating CW. When no-code licensing was instituted years ago, it was a shot in the arm for Amateur Radio and I welcome all the new hams that have joined our ranks since then. With no CW requirement, however, many of these newer hams have shown little interest in learning the Morse code. Some are content to just operate VHF with their hand held or mobile rig while others enjoy operating HF and digital modes with state of the art equipment.

In the March, 2017 issue of the Gray Line Report, I mentioned the CW Operators Club (CWops) and the fact that they had a CW Academy whose purpose was to teach the Morse code to new hams. Since then, I found out that they had a list of hundreds of hams wanting to learn the Morse code. Despite the many on-line tools that exist for learning the code, many are finding it difficult to learn the code well on their own. Also, it is one thing to learn the code and another to learn how to use it in an actual QSO on the air. CW Academy has a corps of advisors who work with these students. A while back, they put out an urgent call for new advisors to work with hams who wanted to learn the code. With some time on my hands now that I am retired, I said “I could do this” and volunteered to mentor a “Level 1” class. Level 1 means that the students are starting from scratch. I was assigned five students and we met twice a week for eight weeks via Skype. K6RB designed the curriculum as well as a computer based tool for practice that followed the curriculum. As I got to know my students, this turned out to be a lot of fun. I spent a fair amount of time talking about, and demonstrating, using CW in actual on the air QSOs. By the end of the class, we ended up doing some simulated contest exchanges during our class. Several of the students mentioned to me that this was the furthest they had gotten in learning the code and that having someone working with them to keep them accountable made a big difference. Two of my students actually ventured



on the air to make a CW QSO and were thrilled to tell us about it. Can you remember how nervous you were when you made your first CW QSO on the air?

Those who “graduate” from Level 1 training can enroll in Level 2 and 3 courses where speeds are increased and there is much more in depth training and actual on the air operation in including CW contesting.

If any CWops members have the time, I encourage you to contact Jerry, AC4BT and indicate that you would like to be a CW advisor. I think you will find it very rewarding. It is, indeed, one small step you can take toward the objective of “growing new CQ contesters.”

Getting Ready for the 2017-2018 Contest Season

By the time you read this, the 2017-2018 contest season will be almost ready to start. For MWA, the “season” kicks off with the CQ World Wide RTTY Contest on the weekend of Sept 23-24. The 11 events that MWA participates in as a club are shown in the contest calendar. Although I encourage you to operate in as many of these events as possible, I also recommend that you pick at least one or two of these for a “major” effort. This means putting these dates on your calendars and putting in as many hours as possible that weekend. For me, I usually try a full effort in ARRL CW Sweepstakes as well as the ARRL RTTY Roundup. If possible I try to arrange to operate at least one of the CQ or ARRL DX contests as a multi-op from somewhere. If you want to do a “close to full” effort in a contest this season without burning a whole weekend, consider the ARRL 160 or 10 meter contests. Propagation dictates that you typically only operate these events at night (for 160) or during the day (for 10

Meters). And, of course, the Minnesota QSO Party only takes 10 hours on a Saturday.

If you haven’t done so this summer, now is the time to make those final antenna and station tweaks. For me, upgrading my 40 meter beam was my major antenna project for the summer. My story of this upgrade is described elsewhere in this issue. Maybe you have some glitches in your station that need to be repaired. Or maybe your computer and/or contesting software needs an upgrade. The first contest of the MWA season is only weeks away. Make sure your antennas and station are ready to go! See you in the pile-ups.

MWA 2017 – 2018 Contest Calendar

2017

CW World Wide RTTY – September 23,24

CW World Wide Phone – October 28,29

ARRL Sweepstakes CW – November 4 – 6

ARRL Sweepstakes Phone – November 18-20

CQ World Wide CW – November 25-26

ARRL 160 Meter – December 1 -3

ARRL 10 Meter – December 9-10

2018

ARRL RTTY Round Up – January 6 – 7

Minnesota QSO Party – February 3

ARRL DX CW – February 17 – 18

ARRL DX Phone – March 3 - 4

The MWA 2017/2018 Contest Calendar





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#MenuBar1>.

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: President Michael Sigelman, KØBUD; Vice President Mark Endorf, WAØMHJ; Secretary-Treasurer Pat Cain, KØPC; DXpedition Funding Manager Matt Holden, KØBBC and Director Scott Wright, KØMD.

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 | 7O6T | K5P |
| VU4AN | 3CØE | VU4KV | TX5C | NH8S | FT4JA |
| VU7RG | TT8TT | EP6T | 9XØR | PTØS | PZ5W |
| VK9DWX | 9M4SLL | 3GØZC | 9U4U | FT5ZM | ZL9A |

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, Matt, KØBBC, k0bbc@arrl.net. 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

- | | |
|---|---|
| <ul style="list-style-type: none"> DXpedition destination Ranking on <i>Most Wanted Survey</i> Most wanted ranking by TCDXA Members Logistics and transportation costs Number of operators and their credentials Number of stations on the air Bands, modes and duration of operation Equipment: antennas, radios, amps, etc. Stateside and/or foreign QSL manager | <ul style="list-style-type: none"> Website with logos of club sponsors QSLs with logos of club sponsors Online logs and pilot stations Up front cost to each operator Support by NCDXF & other clubs LoTW log submissions Previous operations by same group Valid license and DXCC approval Donation address: USA and/or foreign |
|---|---|

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

