Part One: Punta Arenas

What will follow is an abbreviated story of my 7th voyage into the Southern Ocean and its sub-Antarctic islands. It begins on January 10th when our international team of 20 started assembling in Punta Arenas, Chile. We planned to begin our voyage to Bouvet Island three days later.

We did not achieve our goal of landing on Bouvet. Nature (wind, rough seas, clouds, and fog); mechanical issues with our ship and human factors collided to make completing this expedition impossible. But we all arrived home safely – somewhat discouraged and disappointed – but home and safe.

I’ll divide this article into five topics: Punta Arenas, The Voyage, Bouvet Island, The Retreat to Cape Town, South Africa and the Epilog. This was my fifth visit to the southern tip of Chile and the city of Punta Arenas. The attached photos depict a bit of that city and its contrasts. It’s a maritime city with many European descendants.
The city is uniquely positioned on the Straits of Magellan to allow access to the Pacific and Atlantic Oceans and Antarctica.

The climate of Punta Arenas is maritime and moderated by its proximity to the sea. It is a windy place.

Upon arrival in Punta Arenas we were met with delays. Our ship was being converted from a factory fishing vessel to a passenger and expedition ship and the reconfiguration was not complete. We spent 8 days waiting in two hotels; the last 6 of these days were in a hotel called The Yellow Submarine. Is there an omen in this name? At 3 AM on January 17th, three of us were allowed to inspect the vessel. After two more days of anxious waiting, our entire team was welcomed aboard our ship, The Betanzos, to begin our voyage to Bouvet.
Part Two: The Voyage

On January 19th, vans picked us up at the Yellow Submarine Hotel and took the team and our luggage to our ship. We were processed through Customs and Immigration and taken to the pier where the Betanzos was moored.

The vessel lay there listing to starboard by about 5 degrees. Helicopters had been landed on the vessel, had their blades removed and were covered in protective black canvas. Barrels of gasoline for our generators and over 3,000 gallons of JP-1 fuel for the helicopters took up most of the space on the main deck. A few ceremonious toasts celebrated the maiden voyage of the newly refurbished vessel, tugs moved the Betanzos away from the pier and we were underway.

We sailed eastward in the Magellan Straits, watched Punta Arenas fade into the horizon and then entered the open ocean. We passed to the south of the Falkland Islands and then on January 24th sailed along the north coast of South Georgia. I have visited both of these islands previously. South Georgia with its rich history, magnificent scenery and abundant wildlife is truly one of the most unique places on our planet.

Once past South Georgia, things began to change. Temperatures dropped, the wind increased, the seas became rougher, northerly drifting icebergs appeared and points of failure began revealing themselves. Although it was relatively quiet on one afternoon, a great commotion and ruckus erupted in cabin one. It seems that during the ship’s refurbishing, two ends of a fresh water line had not been connected and when the crew began swabbing the deck water gushed out of the ceiling of cabin one. Two very wet and very surprised occupants emerged and water surged over the door lip and down the hallway. On a particularly rough night, brackets securing furniture to the floor failed. Couches, chairs and tables broke loose and flew about the room breaking off various parts. A little later, a new leak appeared.

Anyone seasick?
As we neared Bouvet, we sorted the equipment in our containers, staging it for landing. Other problems with the ship manifested themselves, like water shooting upward out of the toilets at inopportune times; a particular problem for those dealing with severe seasickness. Through it all, the Flex radios and the coax and antennas from DX Engineering were there for our maritime mobile operation as we passed through the rare maidenhead grid squares of the Southern Ocean.

**Part Three: The Island**

As we neared Bouvet, we practiced erecting our shelters and queued their components for landing. They were stowed in a large open area of the ship’s bow. We were immediately concerned about how heavy the floors of the shelters had been constructed and how this would impact our helicopter loading. We also became very concerned when we discovered an unsealed hatch that could result in flooding of this large area. The crew immediately attended to the hatch after we pointed out the neglect.

Early in the morning of January 31st we saw Bouvet. At first it was a faint shadow obscured by shrouds of fog, but as hours passed visibility began to improve. The winds were peaking at 20 to 22 knots and our inclinometer indicated 12 to 15 degree rolls. As the ship’s starboard listing decreased, our rolling seemed to increase, but we put that thought aside and began serious discussions with our helicopter pilots. We stressed the need to capitalize on short weather windows. There was no resultant effort to prep the helicopters or move zodiacs out of the way from the aircraft.

The following day we navigated up and down the east coast of Bouvet, doing some soundings and identifying anchorages. Our pilots informed us that rolls of the ship had to be 5 degrees or less for them to fly.

About mid-day, we had a weather window, but again there was no effort to prepare the helicopters. When confronted, the chief pilot said he saw a cloud approaching the island from the west and that it would be over us in about two hours and that was reason enough not to fly. Indeed the cloud did come, but we lost a two hour window. The helicopters remained covered and the zodiacs blocking them in place were not moved.
Anxious to get a team ashore, I was on the bridge at 4 AM the next morning. The seas were calm, but the ship was still rolling at 5 degrees. It always rolled. The winds were about 10 knots and visibility was 3 to 4 miles, but the officer on watch and I were the only ones around. There were no pilots, no mechanic and no one uncovering the helicopters or moving the zodiacs. The pilots showed up at about 8 AM as the weather closed in. We had lost another window. “Oh,” they said, “We really should have a 24 hour window to fully evaluate the island.” On Bouvet that is very, very unlikely to happen. We had told them that. Another flying window was lost.

Also on that day, one of the officers took me aside. He said to me, “How are you going to do this? One of you looks and acts like he is 85.” Then somehow the term, “New Plan” became the buzz word and diversion. However, this new plan was really no different than our original plan, to sequence our landing operations, so the on-island infrastructure would always support the number of people ashore. Nothing changed.

Our urging finally did stimulate some action on the helicopter deck. Some of the ship’s crew assembled to move the zodiacs. What ensued was a cluster of errors with a barely functional crane dangerously jerking and swinging so wildly that efforts were abandoned. The weather worsened and we bounced around a fair amount as we went to bed that night. It would be a night we would never forget.
At 11:30 PM local time my roommates and I awoke suddenly, almost simultaneously, and with the same terrifying thought, FIRE! The smell of smoke in our cabin was building rapidly. We bolted from our bunks and opened our door. The hallway was filled with smoke. The smell and our shouts awakened everyone.

We hastily put on whatever clothes we could find, put on life jackets and moved quickly outside to the main deck area and counted ourselves. We were all there. Shock and fear was written on our faces as we contemplated how it would end: in milliseconds when the 3,000 gallons of jet fuel next to us exploded, in moments of hypothermia in the frigid waters, or after days of dehydration in the lifeboat that contained no food, water, or other provisions? And, with the malfunctioning crane it seemed the only way the lifeboat could be launched would be by floating off the deck as the ship went down. Through all of this, the ship’s fire alarms never went off and the smoke detectors never sounded.

In time the source of the smoke was identified. A flexible coupling in the shaft between the starboard engine and the gear box had overheated, most likely due to improper alignment of the two components of the drive shaft. When the smoke cleared we returned to our quarters with the ship down to one engine and 2,700 miles from Punta Arenas.

What we awoke to the following morning was surreal. Bouvet was sparkling in the sun with the ceiling and visibility essentially unlimited and the winds light and variable. It was a perfect day for landing on Bouvet, but with only one engine functional, the captain deemed it unsafe to continue our stay at Bouvet. Our mission was aborted.

We began our return to Punta Arenas, but with one engine running conservatively and against the wind, we made little forward progress. We were all disheartened. The captain tried to console us by telling us the weather at Bouvet was forecast to be bad for the next ten days and that we would not have been able to land anyway. Later we would learn that the men at the Norwegian base were safely taken off Bouvet by helicopter without incident two days after our departure.

**Part Four: The Voyage to Cape Town**

We lumbered toward Punta Arenas against the winds and slogging through the heavy on-coming seas. Like a metronome from the underworld, each time the ship would roll more than 20 degrees the shower doors would bang and water would erupt from the toilet bowl; the bidet from hell.

February 5, 2018: The ship carried a spare flexible coupling, and the crew decided to put it in place in the disabled starboard propulsion system. That night the team was involved in another cluster. We again found ourselves on the pitch black, cold, and windy deck in our lifejackets until the heat and smoke of the second failed coupling subsided. Disbelief, disgust, and distrust were written on our faces yet again. What else could go wrong? We changed course for Cape Town.
Then came February 7th. About half of the team was in the lounge area. We were moving at about 7 or 8 miles per hour on our single engine and rolling about 10 degrees. Suddenly dirty blackish water emerged from beneath the mopboards or trim boards covering the junction between the walls and floor. With each roll cycle, water streamed across the floor to the opposite wall and back again, gaining volume with each cycle. Pent-up foul language ensued from team members. Shortly, crew members arrived with mops and buckets, but they could not keep up with the inflow.

The greatest volume of water seemed to be coming from the rear starboard corner of the room. Pry bars were fetched and sheets of paneling were ripped off the wall, revealing the problem. Behind the paneling was an open 16-inch pipe that communicated with an open tank on the deck. Rain and sea water had collected in the tank, drained into the pipe, and then flowed into the lounge. Closing this access had been neglected. It was merely covered over with paneling. Repairs ensued, the paneling was replaced and things dried out.

Some sense of ability, order, and skill came from watching the seabirds following us. These magnificent creatures were with us almost constantly while we were in the

Sailing to Cape Town
colder ocean waters. They seldom flapped a wing. Rather, they soared effortlessly and gracefully on wind currents generated by the ocean swells. They are hatched on sub-Antarctic islands, and depending on the species, their first flight will take them to sea and will last from two to three years before they return to land. During its lifetime an albatross will fly the equivalent of circumnavigating the globe 12 times and parents will fly 600 miles to find the right food for their chicks. We looked at them in awe and envy -- THEY were the ones fit for purpose.

Two hundred miles from Cape Town we saw the first evidence of other human beings since leaving the Straits of Magellan. Two Chinese oil tankers crossed behind us from our port side. The seas grew noticeably quieter, but we continued to roll disproportionately. I decided to ask a crew member about this. “Oh,” he replied. “When the heavy fish factory machinery was removed there was no weight added to compensate. Tons of concrete should have been added for ballast.” I cannot verify his assessment, but it certainly sounds logical and explains why we rolled so much, even in the Cape Town harbor.

As we neared Cape Town, the ship’s officers communicated with South African Customs and Immigration. They relayed to us that we would need to show our passports and documents confirming our flights out of the country.

We had not planned on being here and had no internet to go on line and obtain airline reservations, and when we called the airlines on our satellite phone, the waiting time was in excess of two hours. That’s very costly waiting time. We sailed on.

Shortly after entering the harbor on February 17th, we noticed a 32 foot ketch bearing down on us. As it neared us, it began blaring “CQ” on its horn. Aboard was an eclectic collection of hams from southern Africa who sailed out to welcome us. They even facilitated getting our clearance to cross the breakwater.
Finally, when the ship was moored, we were able to set up a hot spot, go online and secure our travel documents. Of course, when we did pass through immigration, no one asked for these documents.

Nineteen of us enjoyed the company of the local hams and a banquet they sponsored. Poor Nodir had to remain on the Betanzos because of visa problems and our unexpected arrival. Later he would have a police escort to the airport.

The following evening, after 31 days at sea, I began my 20 hour flight home to Minnesota via Amsterdam.

**Part Five: Epilogue**

Considering the magnitude of the Bouvet Island DXpedition; the number of team members, the budget, and the time and distances involved; this DXpedition was a disappointment of epic proportion. We may try to crawl out of this cauldron of ruination in which we find ourselves by looking for excuses that justify what happened, for absolution for the carnage in...
our wake, and by seeking where to lay blame.

We cannot blame the weather. It was what we expected, not worse. Again and again in our preparations, we impressed upon our captain and our pilots that they must be ready for Bouvet’s weather. We talked with each other about 100+ MPH winds and selected our shelters based on those conditions. Any member of our team or the ship’s crew who did not understand Bouvet’s weather was simply not listening or comprehending.

We cannot blame the island. We knew of its foreboding shores, rough seas, icy surface, changeable weather, and infamous winds. We examined weather data ad nauseam and spoke with and learned from others who have visited Bouvet successfully. The island was an entity well known to us for its hostility and challenge. It presented itself honestly.

We cannot blame the sea. The fury and rage of the Southern Ocean are legendary, not some hidden secret. Our ship’s captain is said to have visited the waters around Bouvet on previous voyages. He certainly should not have been surprised by the sea conditions at Bouvet.

We cannot blame the team members. They came prepared with proper clothing and equipment. Most were sufficiently physically fit and came fully informed of the risks and dangers of this adventure. They were ready.

But when we look to the larger community - the ship’s crew, the pilots, and the ship owners - we begin to see a breakdown. By intent or design, the ship’s owners would only talk to one of us. Others’ emails with questions and concerns went unanswered. The ship’s crew doubted the physical abilities of some of us. The helicopter pilots sensed the unease and expressed concerns about the
ship being stable enough for flight operations.

As you have read the previous sections, you know that every failure, every accident, and every potential for death or disaster was related to the ship. In the previous section I described a few of the calamities that occurred on the vessel. However, we as a team listed 54 deficiencies that we identified during our time aboard the ship. They were what we saw. We don’t know what additional potential dangers lurked beneath the deck, behind the paneling, or deep in the engine room of the Betanzos.

But we can’t really blame the ship either. Ships are inanimate objects – things. They have no will, intent, science, or intelligence. They do not credential, inspect, or vet themselves. People, human beings, do that. The marketing, vetting, and contract agreements conducted by human beings put the 3YØZ team aboard this ruination bound vessel. Intuition, uneasy feelings, perceived red flags, and negative gut feelings were somehow ignored and trumped by false reassurances. We had the opportunity to stop, set things right and begin again. But we did not.

We sailed to Bouvet and spent three and one-half days offshore. Then, after a major mechanical malfunction in the ship’s propulsion system, we dawdled our way to Cape Town and finally, after 31 days at sea, stepped off the Betanzos. Our efforts need not be viewed as heroic or valiant in the face of uncontrollable natural forces, because in the end, it was simple human judgment that failed us. What we do need is the courage to admit our mistakes, the strength to correct them, and the intellect to not make them again.
No tower? No beam? No problem. I finally got my 5BDXCC award and did it with compromised antennas.

When I joined the TCDXA in 2003 I had no DXCC awards and just operated phone. When I applied for my 1st DXCC award Larry WØPR said "what no CW ? " Also doing no CW really limited my contest efforts. I really like DX contests as they are a smorgasbord of DX!

So seeing that CW was a much more efficient mode and with my compromised antenna's it seemed that it was needed. I started operating CW and without it there would be no 5BDXCC for me. I earned my 10, 15, and 20 meter DXCC's pretty easily but really needed CW to get 100 entities on 40 meters.

I also started operating RTTY which gave me another efficient mode and more "new ones".

But I still considered 80 meters as out of reach for me. With only a couple low wire antennas I concentrated on getting 12 and 17 meter awards.

OK got them; now what? I then learned about digital modes; first JT65, then JT9 and finally FT8. I also put up a Butternut vertical for 40, 80 and 160 meters, and using these new modes with some knowledge learned from hanging around all the great DXers at our meetings, I brought my numbers up. 80 meters was a problem no more. On 30 meters I have 95 entities with no tuned antenna. (Bert has since confirmed over 100 entities on 30 meters. Ed)

And 160 might be too big a challenge for me, although I have gone from 12 to 39 in the last 6 months. Time will tell all.
The other BIG help I got was from LoTW. I never would have sent for and gotten all the QSL's needed without it, I’m not sure how you guys did it without LoTW. Maybe there should be an asterisk by those of us who earned it with mainly LoTW? Bottom line is any antenna beats no antenna. FT8 rocks and so does LoTW. All you have to do is try. Its there for the taking. 73, good DX, Bert WBØN
Dick Roberts, NØUC and I left a day early for Dayton this year so we could visit the National Voice of America Museum in West Chester, Ohio. It is barely forty minutes south of Dayton and is well worth the side trip.

This is the site of the VOA Bethany Relay Station that operated from 1942 until 1994. The towers are down but the building is now the site of the National VOA Museum. As you approach the museum you can feel the lingering power that was unleashed from this one-square-mile historical site.

The scale model of the site shows the enormity of the transmitting towers and the antenna matrix behind the building. Behind the main building, the Antenna Matrix Switch is an impressive wood pole structure designed to switch the six 250KW transmitters to 24 different antenna arrays capable of broadcasting to millions of listeners in Europe, Africa and South America. (Wouldn’t you love to have this antenna farm for 160 meters?)
A plaque sits on the lawn in front of the building. It commemorates the role that the Bethany Relay station played during World War II and through the Cold War. The location was chosen for its abundance of electrical power, its proximity to the Crosley Company which was a pioneer in high power radio transmitters and its distance from the coasts so it was less susceptible to attack by enemy ships and planes.

A curious fact is that for all the transmitting power, there was never a single microphone on site. If the site was attacked and overtaken by underground enemy forces, there was no way for them to begin broadcasting! All broadcasts were fed from VOA headquarters in Washington, D.C.

The VOA Control Room is quite impressive with all the original equipment still there...no empty rack spaces. A close-up of the teletype machine in the control room confirms the day and time of the final transmission from the Bethany Relay Station.

The National VOA Museum is maintained by the West Chester Amateur Radio Association. The museum is a work in progress and some areas are still a bit rough while a full renovation is underway. Nonetheless, you can see made-from-scratch high power equipment that was barely imaginable for its day.

The museum is also noted for its collection of Drake radios. It has one of every Drake product ever produced, taken off the pro-
duction line and never put on the air. This is only one glass case of many different exhibits including one specifically for Collins S-Line as well as many early broadcast radios.

The VOA Club station has no fewer than seven well equipped operating positions that visiting amateurs are encouraged to operate. The station antennas are a collection of tri-banders and wire antennas.

The museum is normally only open on Saturday and Sunday but the club extended visiting hours to Thursday and Friday for Hamvention visitors. I’m glad they did!

More information can be found at www.voamuseum.org.
My introduction to amateur radio was probably a little different than the norm; it came through an article in the “World Book Encyclopedia”. I was one of those geeky kids who would read the encyclopedia for fun, just to see what was in there. About all I can remember from the article on Amateur Radio is the lead picture. It showed a few young men sitting in front of some very cool looking big boxes covered with knobs and dials, and a sign on the wall with some funny looking characters on it. I didn’t realize it at the time, but the very first Amateur Radio call sign I ever saw was a portable zero.

We had a globe sitting on top of the bookcase that held the encyclopedias. It was fun to look at different places around the world and wonder what they might be like. My dad had a world atlas from one of his college classes, “Goode’s Standard School Atlas, 1952 edition”, and I liked looking through that, too. Maps have always fascinated me, and I still have that atlas in my collection, along with several others dating back to the 1800s. Perhaps this is where the seeds were sown for becoming a DXer later in life.
Our high school had a radio club, W9PEM, but none of us at the time had a license. The station was in a small room attached to Mr. Lawton’s physics classroom, and he would occasionally let us go back there and play with the receiver.

After high school, I signed up for a four year hitch in the Navy. College was too expensive, and figured I would get drafted anyway. I joined the Navy to get the GI Bill so I could afford to go to school. Uncle Sam decided to stop the draft a few months after I enlisted, but at least I had the GL Bill for school.

My first license didn’t come until 1975 at age 21, thanks to a chance meeting with WA3SZC in a local Radio Shack. Joe took me under his wing and helped me get started. Joe has always been a workbench ham, one of those guys who loves to build and can fix pretty much anything. We still keep in touch, even though I’m now in MN and he has retired and moved down to FL.

It took me almost ten years after being licensed to discover DXing; after playing with repeaters, AM phone, traffic nets, Navy MARS and QRP. When was back in Chicago in graduate school I met WA9MAG who introduced me to the Northern IL DX Association. Larry was my DX Elmer, and the two of us have kept in close touch over the years. Thanks to a LOT of help and advice from Larry and the NIDXA gang, I made DXCC in September 1987 with my trusty Drake C Line and rusty piece of wire stung out of my window. I was now on the bottom step of the DXCC ladder. Like many hams, my activity levels waxed and waned over the years, but Honor Roll was achieved in August of 1993. I managed to miss P5/4L4FN when he was on, so I still need North Korea for top of the Honor Roll.

Along with discovering DXing, graduate school brought another change to my life. Some friends kept trying to fix me up with this crazy singer from Ashland WI: “…oh Michael, we know the perfect girl for you, you’ve just got to meet her!” No, thanks, I’m not interested. She was even less interested. We finally agreed to go out to dinner, just once, so our friends would stop bugging us. Susan and I were married less than a year later. Three kids and 32 years down the road, it seems to be working out pretty well. She even helps with tower work.

My professional life was completely non-technical and about as far removed from radio as it’s possible to get. I feel very fortunate to have been able to make a living playing the trombone for nearly 40 years. After being on the road with a rock band, having a few small time symphony orchestra jobs, and doing a lot of free-lance playing in the Chicago area, I settled down as bass trombonist with the US Navy Band in Washington DC. After 26 years in the Navy, I was declared Navy Surplus and retired in January of 2011. Looking back, it just boggles my mind that people actually paid me money to play that silly horn for all of those years!

Shortly after going back into the Navy and moving to DC in early 1989, a meeting with Lenny Chertok, W3GRF led to the start of a “second career” doing tower and antenna work. Lenny was one of the founding fathers of Potomac Valley Radio Club, was a big gun contesteer in his day and had his own tower company.
I talked Lenny into hiring me part time and was soon out “moonlighting” doing tower work. Unfortunately, Lenny became a Silent Key a few years later. The other partners gradually lost interest in the tower business and started referring all of the work to me. Whenever Uncle Sam gave me a few days off, I would be out doing antenna work for other hams in the area. That turned into a nice part time job and I was able to turn it into a full time job when I retired from the Navy.

Susan and I spent nearly 25 years in the DC area and raised our family there, but it never felt like home. Most of my family is in the Chicago area and hers is scattered around northern MN. We always talked about going back home, someday, after I got out of the Navy. Someday arrived in the summer of 2013, when Susan was offered a teaching job with Rochester public schools. Like many school teachers, she was hired two weeks before school started, so she loaded up her little Prius and took off, leaving the boys and me to fix up and sell our house. We followed ten months later, and are MUCH happier to be back home in the Midwest. The boys are all now in Duluth, alternating between working and going to school at UMD and I am busy being a retired bum, riding my bicycle and building a ham station here in rural southern MN.

The shack is pretty simple on the inside: a K3, an Alpha for HF, converted SB-220 for 6 meters and a bunch of switches. A Lenovo Thinkpad takes care of logging and the digital modes. Outside are two type AB-105 military surplus towers, a 6 meter beam, a small tribander, a pair of larger tribanders, a WARC band tribander, a pair of 40 meter beams, dipoles for 80 and 160 and some receive antennas. Susan and the boys helped with the entire installation. KØCID, KIØF, and NØBUI have all helped with repairs and maintenance. Future plans include a bigger 6 meter beam, something vertically polarized and directional for 80 meters, something vertically polarized for 160 meters and maybe some more receive antennas.

Operation is about 95% CW but I play in all modes from time to time. The new digital modes have helped add some new ones on 6 and 160. My operating concentrates mainly on the DXCC Challenge (2780), 5BWAZ (need 3 zones on 80 meters), 6 Meter VUCC (350 grids, same as my country count!) and a lot of CW rag chewing. I also enjoy chasing the different European Provincial awards, especially the ones whose certificates have maps, flags, or coats of arms. The little kid’s fascination with maps has not worn off.

Chasing DX is great fun, but for me, the greatest rewards from Amateur Radio are the friendships I have made over the years. We have the opportunity to meet people from all walks of life, from all over the world, one on one, as equals. It’s a wonderful way to make friends.
Dayton Hamvention Photo Gallery, 2018

From the local Dayton newspaper (Photo by W1CC)

Putting up with the rain at KØGX’s flea market stand (Photo by W1CC)
(Asphalt millings on ground to reduce mud. Ed)

Storm threat on Saturday afternoon (Photo by W1CC)

DX seminar (Photo by W1CC)
Waiting for gates to open on Friday morning (Photo by W1CC)

Nice Collins gear on wet ground in flea market (Photo by W1CC)

DX Dinner on Friday night (Photo by W1CC)

W1CC with new name badge (Photo by W1CC)

Left: New asphalt path in flea market reduced mud problem (Photo by W1CC)

Robotics area (Photo by W1CC)
Interesting talk in the RTTY Forum (Photo by KØAD)

KØAD and KØPC join the band at the Crown Plaza on Friday night (Photo by K8CX)

New Kenwood radio (Photo by KØAD)

New Yaesu radio (Photo by KØAD)

Will Digital Contesting Migrate from RTTY to FT8?

Ned Stearns
19 May 2018

Interesting talk in the RTTY Forum (Photo by KØAD)
Free Stuff in flea market (Photo by KØBBC)

Wet flea market (Photo by KØBBC)

AEØEE in Contest Suite (Photo by KØBBC)

Richard Nixon (aka WØZF) on Air Force One (Photo by KØBBC)

Super Contest Suite (Photo by KØBBC)
New Russian SDR (Photo by KØMD)

Steve Wiebke – WØSTV
(Photo by KØMD)

New headset by INRAD
(Photo by KØMD)
Stan Cram – AIØM  
(Photo by KØMD)

RH6LHF – Designer of Expert SDR  
(Photo by KØMD)

Right: Breakfast at the Waffle House (Photo by KØBBC)
Field Day is a big focus of activity for local radio clubs, and in many ways is similar to the radio operations of a DXpedition. At Field Day there are several radios and antennas for various HF (and maybe VHF+) bands in close proximity and they are kept as busy as practically possible. However, having several radios on the air at once brings in a challenge that isn't found at a typical one-operator, one-radio station: inter-station interference.

A single-operator one-radio station doesn't worry about their signal on 40 meters being so loud that they can't hear on 20 meters simultaneously, nor does their 80 meter signal wipe out the 40 meter station's receive capability. During Field Day, these interference issues can cause big headaches and can mean that only one of two wide-open bands might be usable.

To avoid these problems, stations use band-pass filters to reduce the out-of-band signals. Bandpass filters rated for 100 watts are not terribly expensive and are very helpful when transmitters and antennas are close together. Unfortunately these filters are unsuitable for high-power operation---not that my Field Day operation will be running amplifiers, but a DXpedition might. High-power filters using discrete components are available but quite expensive to buy or build.

Another way to deal with filtering is to use tuned coaxial cable stubs. These stubs provide very high impedance on the transmitted band, but very low impedance on the unwanted bands where the signals then self-interfere destructively. By using good-quality coaxial cable, these can handle legal limit power on the transmitted band and reduce the interfering bands by 20-30 dB.

(The stubs are placed in the feedline in a tee configuration. Ed)

Building coaxial cable stub filters is relatively straightforward, but can take a bit of time. The basic steps involved are putting connectors on the cable, measuring the length, cutting the cable, analyzing the cable, and finishing the end (either shorted or open). A good quality antenna analyzer will make the process quick and easy.

Recently, Dan Royer (KEØOR, Taty Krogstad (KEØROG/OA4ABC), Rolf Krogstad (NRØT), and I got together to build a set of filters for our Field Day operation. Having a connector on the end of a roughly 500'
length of spare RG11 cable TV coax, we started by determining the velocity factor using a smaller piece, cut assuming a velocity factor of 1. Once it was tuned to resonance at 7.030 MHz, we measured again and used the results to get the velocity factor (0.837 give or take some frequency dependence, consistent with the foam-type insulation).

Subsequent stubs were cut to length much more quickly, because we knew just how long to make them using the velocity factor we had determined. The slowest part in the process was putting the connector on the end and finishing by either shorting or insulating to prevent a short at a high-voltage point.

Even with a few setbacks with the connectors (it turns out the cable was a crimp-type, not solder-type), we made a set of four stubs covering 80, 40, and 20 meter operation in about four hours. Subsequent stubs would have been faster to build as we settled into a routine for assembly, particularly if we had the proper crimp-type connectors.

Testing the effectiveness of the stubs was a bit more difficult. We found that when running two radios with dummy loads next to each other, the stubs ended up coupling and making the interference greater. We may adopt the PI4CC practice of placing stubs into metal paint cans to shield them from each other.

We listened to loud signals on 20 meters. The stub designed to minimize interference on 20 from the 40 meter station worked. The unwanted signal was attenuated by 24-30 dB. With the right test equipment we could find out more precisely how much filtering these stubs are doing, but the qualitative impression we got was that they are working as well as suggested by our references.


For the time being, our stubs are placed very near the radio. Depending on the output filtering of the radio or amplifier, they may perform better when placed a quarter-wave (at the higher harmonic) down the feedline. We may experiment with this in the remaining days before Field Day.

All in all, we had a good time learning about stub filters, measuring velocity factors and building the set of stub filters. Come Field Day, we should be able to keep several transmitters on the bands without interference. We'll hear you on the bands!
Greetings. We only received one request for DXpedition funding this quarter. The Mediterranean DX Group requested a donation for their upcoming trip to Zimbabwe, Z23MD. Our club guidelines call for funding only those countries in the top 100 on Club Log’s global most needed list. Z2 ranks #136 and has been on the air regularly, so there was no need to put this one before the club for a vote. I wrote them a polite note saying we could not support them and invited them to request funds in the future if they go to a more needed country.

In other news, after an exchange of emails and an in-person chat at Dayton with K4UEE, we can expect a partial refund of our $5000 donation to the recent attempt on Bouvet. The final amount won’t be determined until their equipment container is returned to the states, all the gear is returned, and all the bills are paid.

Supporting DXpeditions is the main function of our club. We can be justifiably proud of our track record over the years as one of the most generous groups in the country. One thing that disturbs me is that while we have over 150 members on our roster, only 50 to 70 people vote on DXpedition funding. This is your money we are spending; please let us know how you want it spent. Vote! Thank you.

73,
Mike WØVTT
## Treasurer's Report from Pat Cain, KØPC, treasurer

### TOP LINE SUMMARY

**TCDXA OPERATING BUDGET FY 2018**  
(Sep 2017 - Aug 2018)  
June 1, 2018

<table>
<thead>
<tr>
<th>Category</th>
<th>Actual</th>
<th>Budget</th>
<th>Actual 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus from FY 2017 (balance 8/31/2017)</td>
<td>2689.68</td>
<td>5200.00</td>
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</tr>
<tr>
<td>Member Dues 2018 by Cash/Checks/PayPal</td>
<td>4578.52</td>
<td>4500.00</td>
<td>4649.36</td>
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<tr>
<td>Door Prize Ticket Sales club share</td>
<td>657.00</td>
<td>500.00</td>
<td>602.00</td>
</tr>
<tr>
<td>Donations (estates, wills, etc.)</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refunds and Reversals</td>
<td>0.00</td>
<td></td>
<td>5.79</td>
</tr>
<tr>
<td><strong>TOTAL INCOME</strong></td>
<td>7925.20</td>
<td>5000.00</td>
<td>10457.35</td>
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<tr>
<td><strong>EXPENSES</strong></td>
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<tr>
<td>Member Recruitment/Retention</td>
<td>0.00</td>
<td>(300.00)</td>
<td>0.00</td>
</tr>
<tr>
<td>Website ISP &amp; Domain Name</td>
<td>(65.69)</td>
<td>(70.00)</td>
<td>(65.88)</td>
</tr>
<tr>
<td>Office Supplies, Miscellaneous expenses</td>
<td>(23.57)</td>
<td>(150.00)</td>
<td>(87.96)</td>
</tr>
<tr>
<td>Flowers &lt;SK&gt; and Hospital gifts</td>
<td>0.00</td>
<td>(200.00)</td>
<td>0.00</td>
</tr>
<tr>
<td>Holiday Party 2017</td>
<td>(526.64)</td>
<td>(500.00)</td>
<td>(433.15)</td>
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<tr>
<td>ARRL Spectrum Defense Fund</td>
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<td>(100.00)</td>
<td>(100.00)</td>
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<td>NCDXF Donation</td>
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<td>(250.00)</td>
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<td>MVVA Plaque</td>
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<td>(75.00)</td>
<td>(75.00)</td>
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<td>DXpedition Contributions Total</td>
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<td>(3000.00)</td>
<td>(6755.68)</td>
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<tr>
<td>#1 DXpedition - VK9MA Mellish Reef</td>
<td>(500.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2 DXpedition - 3B7 St. Brandon</td>
<td>(500.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#3 DXpedition - 3C0L Anonbon</td>
<td>(251.26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4 DXpedition - KH1 Baker Island</td>
<td>(2000.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#5 DXpedition - GO6O Somalia</td>
<td>(251.25)</td>
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<td></td>
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<tr>
<td>#6 DXpedition - VP5D Ducie Island</td>
<td>(500.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#7 DXpedition</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>#8 DXpedition</td>
<td>0.00</td>
<td></td>
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<tr>
<td>#9 DXpedition</td>
<td>0.00</td>
<td></td>
<td></td>
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<td><strong>TOTAL EXPENSES</strong></td>
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<td>(4645.00)</td>
<td>(7767.67)</td>
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<td>355.00</td>
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<tr>
<td>PayPal balance</td>
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<tr>
<td>Cash / Checks on Hand</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NET BALANCE</strong></td>
<td>3229.79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FT8 DXpedition mode, Fox and Hound

I am sure most readers are by now, quite familiar with FT8 (Franke-Taylor design, 8-FSK modulation). It is a nearly year old mode that was developed by Joe Taylor, K1JT and Steve Franke, K9AN. The mode was created primarily for 6 meters where fast propagation changes hindered the use of JT65 and JT9. FT8 has taken the amateur radio world by storm and is now widely used on HF. A full exchange on FT8 required 90 seconds (if no repeats are required). While this is fine for normal operation, the best theoretical rate of QSOs is 40 per hour. This is not good enough for major DXpeditions trying to get as many calls in the log in a short time. The new “Fox and Hound” version of FT8 allows theoretical rates of up to 500 per hour. Actual rates of over 200 per hour have been achieved in trials. This now makes FT8 a useful tool for DXpeditions. The upcoming KH1/KH7 DXpedition will be the first major DXpedition to use Fox and Hound. In fact, the team from this DXpedition worked with Joe Taylor and his group in the development of Fox and Hound. [http://baker2018.net/pages/news.html](http://baker2018.net/pages/news.html)

This DXpedition is tentative scheduled to begin operations on June 26, 2018. In order to use the new DXpedition mode, you must be using the latest full release of WSJT-X, 1.9.1. Please, read the instructions carefully before you try to use the DXpedition mode. Instructions for using the DXpedition mode can be found here. [http://physics.princeton.edu/pulsar/k1jt/FT8_DXpedition_Mode.pdf](http://physics.princeton.edu/pulsar/k1jt/FT8_DXpedition_Mode.pdf)

Instructions for downloading the latest version of WSJT-X, 1.9.1 can be found here. [http://physics.princeton.edu/pulsar/k1jt/wsjtx.html](http://physics.princeton.edu/pulsar/k1jt/wsjtx.html)

Six meters

We have been enjoying a very good start to this year’s summer sporadic E season. During the first week of June, six has been open nearly every day and often into the night. There have been quite a few North America to Europe contacts, mostly from the east coast and the Caribbean. I have heard a few but not worked any myself. I only have four elements at 40 feet. I made nearly 100 contacts in the last week, all limited to North America.

The Gray Line Report

The staff of the Gray Line consists of Al Dewey, KØAD, Keith Freeouf, K9WAG and me, WØJMP. Al is the big cheese, scaring up articles and directing the effort. I do the layout and Keith does a great job of proofreading. Proofreading is a lot more complex than it sounds but Keith has a tremendous grasp of the English language, grammar and style. Keith and I have both expressed an interest in ending our duties with the December 2018 issue. We would like some new volunteers. I think the newsletter is an important part of the Twin City DX Association. Do you agree? Would you like it to continue? We have had a couple people volunteer for the proofreading duties but we REALLY
need someone to step up for the layout. We use Microsoft Publisher but any desktop publishing software would work. I can help a new person learn Publisher skills and, if they are in the area, can sit side by side with them while they learn. I also have a couple guides that I could pass on to the new person.

As in most organizations, five percent of the people do 95 percent of the work. Jim, KØJUH, Dave, KØIEA and Bob, WØBV did a great job with the newsletter for many years and we have stood on their shoulders. I am not leaving the newsletter staff to reduce my work load; I want to be more involved in other areas of the organization. But taking another role on top of the newsletter is just too much for me (and my wife would not be too pleased).

So PLEASE, if you are willing to learn MS Publisher or already know it, volunteer. If you know anything about Word, Excel or PowerPoint, you can learn Publisher.

New Amplifier
I finally received my new amplifier on June 7th. It is a Elecraft KPA 1500 which I ordered last fall. I saw the first prototype at Dayton, 2017 and I finally have one. Look for an evaluation in an upcoming issue.

The TCDXA welcomes the following new members:

-Bruce Hegrenes, KØOE, Duluth MN

-Donald Dvorak, KØDDX, North Branch MN

-Mike Songstad, KBØVXN, Blue Earth MN

Dan, WØJMP with the Elecraft legal limit solid-state amplifier prototype at 2017 Dayton, photo by K9WAG

Finally! The box from Elecraft

New KPA1500, power supply in cabinet on left and amplifier on right
Special CW Ops Call Signs Available

From time to time, I have spoken of CW Ops. I continue to believe that CW Ops is a great organization. The CW Academy has resulted in numerous new (and many veteran) hams learning the code. In order to bring CW Ops to everyone’s attention, a number of small clubs have been formed to procure special call signs ending in CWO. These calls are available to use for a temporary event or contest. CW Ops members using the call must contact the call’s trustee to acquire the call for a contest or special event.

A Dakota Division club has formed a club and acquired the call, WØCWO. Pat Cain, KØPC is the trustee of the call. Those wishing to use WØCWO for a contest or special event should contact KØPC (k0pc@mchsi.com). The only thing that Pat requests is that an ADIF file of contacts made by you be provided back to him when you are done using the call.

Again, those who reserve the call must be CW Ops member. (http://cwops.org/)

Great Contest Efforts by MWA Members

During the 2017 – 2018 Contest Season, members of the Minnesota Wireless Association scored well both worldwide and nationally. The MWA Leaders chart highlights some of the winning scores submitted by MWA last season. Not too bad considering the propagation we have had recently.
Simplifying my SO2R Contesting Station

I first laid my eyes on the Flex 6600M at the Dayton Hamvention in 2017. I was intrigued by the possibility of greatly simplifying my SO2R (i.e. Single Operator – Two Radio) contesting station. After studying the comments from users, I put one on order in early March of this year and took delivery in May just before Dayton.

Paul, WØAD, has been very helpful in helping me learn the radio. I plan to publish a detailed review of my experiences with the radio later in the year. In the meantime, I thought I would share a “before” and “after” view of my station after installing the 6600M. As I run this new radio through its paces, I hope to see you all in the pile-ups!
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/sponsoreddxpedtions.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: Bill Mitchell, AEØEE, President & Director, wsmitchell3@gmail.com, Bert Benjaminson, WBØN, Vice President & Director, Pat Cain, KØPC, Secretary/Treasurer & Director, k0pc@arrl.net, Mike Cizek, WØVTT, Director & DX Donation Manager and Doug Arnston, KØPX, 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.
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 Most Wanted Survey
- 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/](http://tcdxa.org/).