



NCDXF newsletter

www.ncdxf.org

Spring 2018

The VK9MA Story

Rob Fanfant, N7QT

MY 2015 WILLIS ISLAND DXPEDITION partner, Hawk Eriksson, SM5AQD, and I began plotting our next adventure together in early January 2017. After studying Club Log's Most Wanted list, we narrowed it down to Kiribati (T31) and Mellish Reef (VK9M). Having already worked with the Australian government, as well as having an experienced charter boat and skipper, Mellish Reef was the obvious choice. This is the story of how we pulled the team together and were able to accomplish the VK9MA planning and execution of this expedition in less than 11 months.

An azimuthal map with Mellish Reef in the center point shows the US and Europe roughly 90 degrees apart, NE and NW respectively; Japan is due north, with the rest of the world comprising the remaining directions. Based on Club Log's Most Wanted list, Mellish Reef was ranked number 22 on the most-wanted in Europe, while the US was number 58, meaning Mellish

Reef was needed more in Europe than the USA.

The team

Hawk and I determined we would assemble an international team to keep our operational focus worldwide during the expedition. Our only other requirement was that the team composition be such that we would all work well together, in light of the fact the team was going to spend almost one month together and, sometimes, in very difficult working and living conditions. Therefore, our team was selected from operators we had worked with in the past, or operators highly recommended from someone we knew and respected.



provide near real-time reporting of QSOs made during the DXpedition to the Club Log website. We believed the team could further reduce the number of duplicate contacts if operators were able to quickly confirm their QSOs shortly after contacts were made; however, we were on a deserted
continued on page 3

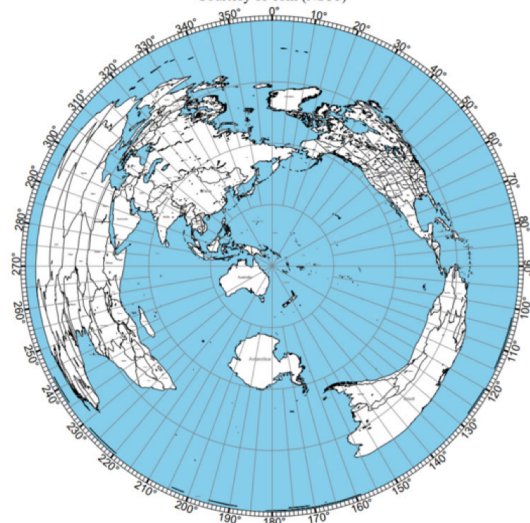
Initial planning

Bianca Charters was selected to transport the team from Port Douglas, Australia, to Mellish Reef and back, and the charter boat, MV *Phoenix*, piloted by Captain Pete of Port Douglas. The MV *Phoenix* was able to safely carry a maximum of nine passengers; nine operators could easily keep four stations running full-time, which determined the number of stations we would run while on the island.

One goal of this expedition was to

Azimuthal map of Mellish Reef wrt the rest of the world.

Center: 17°23'45"S 155°52'30"E
Courtesy of Tom (NS6T)



INSIDE THIS ISSUE

| | |
|---|----|
| Mellish Reef, VK9MA | 1 |
| President's message | 2 |
| Republic of Equatorial Guinea, 3C0L, 3C1L | 8 |
| CTU Dayton | 13 |
| Cycle 25 Fund & Cycle 25 Society | 13 |
| Burundi, 9U4M | 14 |
| Bouvet, 3Y0Z | 15 |
| NCDXF lending library | 15 |
| Bangladesh, S21 | 16 |
| NCDXF Contributions | 19 |
| A Blast from the Past | 20 |
| NCDXF products | 20 |

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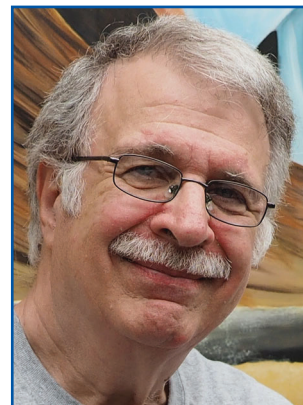
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From the President's desk

THANKS TO YOUR GENEROUS CONTRIBUTIONS, WELL over \$200,000 has been granted to DXpeditions and other projects in 2017, including Baker/Howland (KH1/KH7Z); Bangladesh (S21ZEE); Bouvet (3YØZ); Burundi (9U4M); Ducie (VP6D); Mellish Reef (VK9MA); St. Brandon (3B7); the ARRL Ham Aid Fund (Haiti); tuition for DX and Contest Universities; the Youth DXA; WRTC 2018, and the NCDXF worldwide Beacon system. I want to personally thank you — our generous donors. These projects would not be possible without your contributions. You are the backbone of NCDXF!



If you've worked a Z6 station during the last few months, pioneering DXpeditioner Martti Laine, OH2BH, deserves your thanks. Martti has worked tirelessly for over 10 years to get the Republic of Kosovo added to the DXCC list, overcoming many obstacles along the way, and it finally happened on 21 January 2018, when Kosovo became DXCC No. 340. As the keynote speaker at the International DX Convention in Visalia, CA on 21 April 2018, Martti will tell us "the rest of the Kosovo story." www.dxconvention.org

How would you like a beautiful certificate for your shack and at the same time help NCDXF? The Metro DX Club of Illinois issues the Worked U.S. Territories Award (WUST) to those who can prove contacts with 13 or more of the 15 U.S. Territories. The award costs \$8 and these fees help fund Metro DX Club's annual contribution to NCDXF. Check it out at www.metrodxclub.com/wust_award.htm

If you're interested in working DX using the new FT8 digital operating mode, you'll appreciate this comprehensive 54-page operating guide. Author Gary Hinson's (ZL2IFB) goal is to promote better FT8 operating standards on HF. Get yours at www.g4ifb.com/FT8_Hinson_tips_for_HF_DXers.pdf

Finally, I'm honored to be a team member on the upcoming DXpedition to KH1 Baker Island this June/July. The DXpedition will commemorate the 81st anniversary of Amelia Earhart's disappearance on 2 July 1937 near Baker & Howland Islands. Fellow NCDXF Board members AA7A, K6TD, N1DG, ND2T and I will be looking for you in the pileups! Visit www.baker2018.net

As always, if you have comments or suggestions to help improve NCDXF, please contact me directly. I would love to hear from you.

73 and Good DXing!

John K6MM

The primary mission of NCDXF is to provide necessary financial support for well-organized DXpeditions to the rarest, most difficult, most expensive DXCC entities. We do this with funds contributed by DXers worldwide.



MV Phoenix fueling up at the loading dock.

island with no Internet connectivity and would have to rely on satellite-based communications to the outside world. An older Hughes 9201 SAT COM device was purchased for this purpose.

We used N1MM+ as our expedition logging software, with all four stations reporting into the central/master N1MM+ database.

To provide near real-time uploads to Club Log, Brian Moran, N9ADG, wrote a software application to run on a \$35 Raspberry Pi computer. The application checked the central N1MM+ master database at one-minute intervals to identify all changed QSO records since the previous check. Every new, updated or deleted QSO was then placed into a compressed file and uploaded to the Club Log website.

While working on our Raspberry Pi application, Brian discovered that incoming text messages to our Hughes 9201 satellite device were free! Everyone loves free, right? We decided to utilize this feature to receive Internet spots on our laptops during the DXpedition, as well as regular news updates. Brian wrote a software application to run on Amazon's Lightsail cloud service to gather any DX cluster spot containing the text "VK9MA." This software application would also grab news headline feeds and package them into text messages and, using our satellite provider's website, send the text messages to our Hughes 9201 satellite communications device.

Brian also wrote a separate application for the Raspberry Pi which queried the Hughes 9201 device at regular intervals for incoming text messages,

posting the incoming text message to the N1MM+ IRC chat window, allowing any N1MM+ client to view the incoming text messages in near real-time. Future DXpeditions should seriously consider using this feature to receive incoming information for no charge, reducing satellite data charges.

Solar cycle

Our biggest concern planning this DXpedition was the approaching solar minimum of the current solar cycle. After experiencing many weeks of near-zero sunspots and dreadful propagation this past summer, we knew that keeping four stations active during the day was going to be problematic. Our biggest challenge was going to be keeping four stations busy during the day with no guarantee that 10M/12M/15M would be open to North America and Europe. We believed that 17M and 20M would most likely be open most days; therefore, our solution was to be prepared to simultaneously operate two stations on 20M and two on 17M.

During evening hours, however, we knew we could easily keep four stations operating, as the lower bands (30M/40M/80M/160M) would most likely be open. We determined operating from two locations would be necessary, with both locations separated by at least 10 wavelengths on 20M (approximately 200 meters/660 feet). This was required to reduce any possible interference between the stations. After further investigation, it was also determined that stations operating on the same band could not both operate vertically polarized antennas. One

station must select a vertically polarized antenna, while the other station used a horizontally polarized antenna. With the exception of 17M/20M, the remaining bands would only support one station per band.

Operating from two locations introduced further complications, one of which was having to build two generator shelters, as well as separating our fuel storage into two locations. The other complication had to do with keeping all stations networked to achieve our goal of near real-time logging. Brian, N9ADG, and Bengt Norum, K7ADD, designed a WiFi network providing all four stations a good WiFi signal, even though they were approximately 700 feet apart.

Our operating schedule was originally formed with a rotating shift of four hours on, four hours off, for 32 hours, then eight hours off. This cycle would repeat for each operator for the duration of the trip. About halfway through the operation, the team decided to form SSB/CW/Digital teams to better respond to our pilot's requests to be on the air at certain times and modes.

Goals

Another goal was to distribute the overall QSO counts evenly among the big three (NA/SA, EU, Asia). African (AF) and Oceania (OC) operators



Titanex vertical with a homemade 160M base constructed from two sawhorses, straps and 2x4 boards.

make up a very small percentage of worldwide operators but were just as important to the success of the DXpedition, so it was decided that we would work those regions of the world at any time, regardless of what region of the world we were calling.

Another key goal was to provide the Amateur Radio community a minimum of 1,500 to 2,000 160M contacts. The team had access to a 90-foot Titanex vertical which would provide a great transmit signal throughout the world. We also were in need of a dedicated 160M RX antenna. Our go-to RX antenna for 80M/160M was the DHDL designed by Harry/George for the TX3A expedition. Brian and I created an improved version of this antenna, allowing the ability to change its RX direction by 180 degrees, with the flip of a switch. The DHDL has a relative directivity factor (RDF) of approximately 10dB.

To further improve our 160M RX antenna systems, DX Engineering (DXE) supplied us with a Hi-Z 80M/160M 4-square RX array with an RDF of 13dB. As built, the array would not work for us out of the box because we planned to have stations on both 80M as well as 160M at the same time and we quickly realized that further work was needed to allow the RX array to operate, even if we oper-



Off hours with Morten, LB8DC (left) and Brian, N9ADG.

ated on both 80M and 160M bands simultaneously. Thankfully, Tim Duffy, DXE's COO, pointed us to the solution: an article written by Tom Rauch, W8JI, and another written by both Joel Harrison, W5ZN, and Bob McGwier, N4HY. The articles explained how to resonate the 4-square to either 80M or the 160M band with a custom matching network. Over the few months we had, the team focused on designing, build-

ing and testing the 4-square, improving on Frank's design, specifically allowing us the ability to tune/match each vertical to within 1Hz of the desired frequency, with an SWR of 1:1, in less than two minutes. We obtained a 30dB front-to-back in the 160M band and about a 20dB front-to-back when listening to AM stations in the AM band. Many thanks to the following individuals for their help in making this 4-square design a resounding success: Grant Saviers, KZ1W; Justin McAllister, K5EM, and Brian, N9ADG, along with myself.

November was chosen as the safest time to schedule the expedition, as it was the start of the cyclone season as well as the summer season, yet late enough into the calendar year for a concerted 160M effort.

Executing to plan

With confirmation of our dates from Bianca Charters we decided to move forward with the DXpedition. I started working with the Wireless Institute of Australia and Australian Communications and Media Authority to obtain the appropriate Amateur Radio license. I also contacted the Coral Sea Management Reserve in order to obtain landing rights to Mellish Reef. It was truly a pleasure working with such a profes-



The generator shelter located at the main camp.

sional group of individuals and government agencies. They were helpful in every aspect of the word.

Our next challenge was to get the majority of our radio equipment delivered before the departure date to Port Douglas, Australia, where the MV *Phoenix* was docked. The Laguna DX Club in Germany was kind enough to supply us with a majority of our low-band transmit antennas, including a 4-square for 20M-80M, as well as the 90-foot Titanex 160M vertical. Hawk, SM5AQD, volunteered to take responsibility for getting this equipment delivered to Port Douglas from Germany, making the round trip from Stockholm, Sweden, with a trailer in tow, and making the shipping arrangements by freighter to and from Port Douglas. I made the arrangements to get the rest of our station equipment to Cairns via air freight.

Departure day

Brian, N9ADG, and I arrived in Cairns, Australia seven days before the rest of the team, spending that time to purchase the bulk of our support equipment which spanned multiple written pages of “stuff.” These included the purchase of four 2kW Honda EU20i generators, as well as a 3.5kW Trade Tested (Chinese generator), canvas tents, plywood tent flooring, tables, chairs, pens, paper, etc. All of our gear was temporarily stored at the home of Paul Newman, VK4APN (not the actor), who graciously volunteered his basement for this purpose. With the entire team in Cairns, we spent the next four days assembling, testing and organizing the gear to ensure it all arrived safely and worked properly. Some of the equipment, like the SteppIR two-



A Noddy bird in flight.



The team: Eric Jonsson, SM1ALH; Dave Farnsworth, WJ2O; Dietmar Kaspar, DL3DXX; Hawk Eriksson, SM5AQD; Lasse Moell, SM5GLC; Morten Kvernmoen, LB8DC; Rob Fanfant, N7QT; David Assaf, W5XU, and Brian Moran, N9ADG.

element Yagis, we assembled, tested, then partially disassembled to make installation on Mellish Reef quicker. Our Yagis were supported by 27-foot extension ladders purchased in Cairns; the remaining antennas were verticals on the beach.

Early the morning of 4 November, half the team met at Paul’s house to load up a rental delivery van with all the gear stored in Paul’s basement, and then went to a storage locker in Port Douglas to pick up the rest of our equipment shipped from Sweden and deliver it to the loading dock where the MV *Phoenix* was fueling.

The other half of the crew took a charter bus the 1½-hour trip north to Port Douglas to meet the delivery van and start loading everything onto the MV *Phoenix*. Captain Pete directed his crew and our team in the loading process.

The MV *Phoenix* took over six hours to fuel, giving us enough time to load our equipment. The job was completed shortly after 4 p.m. and the team spent the final hours prior to departure cleaning up from the hard day’s work; we departed for Mellish Reef around 6 p.m. on 31 October.

The trip was mostly uneventful with only one or two rough days at sea. Those rough days made it impossible to stay comfortable. Several of us had to hang on for dear life, anchored to whatever we could find when sleeping or walking around, or we would find ourselves flung to the ground or into furniture multiple times during the day or night. Despite using patches

for seasickness, some team members still got sick from the severe motion of the boat. We spent a significant part of the four-day voyage prioritizing our unloading and build-out strategy, as well as reviewing individual operating schedules.

The fun begins

We arrived at Mellish Reef in pitch darkness, early on the morning of 4 November and just after daybreak an expeditionary team landed on the island to mark our operating locations and antenna placements while the rest of the crew began off-loading our 2½ tons of gear into the two tenders, which took 30 round trips. The team started building the tent shelters, followed by the installation of the generator shelters, radio gear and antenna systems. We were able to get three of the four stations operational that evening and were on the air by darkness.

The next two to three days were spent building out our antenna systems. The SteppIR CrankIRs and two-element Yagis were the first to go up, followed by the 30-meter 4-square array, and 160M 90-foot Titanex vertical transmit antenna. During the install of the 160M we were extremely dismayed to find out the Titanex base used to elevate/isolate the vertical from ground was nowhere to be found, and most likely was still in Germany. Captain Pete was a “MacGyver” sort of fellow, coming to the rescue by building a support mechanism using a couple of sawhorses, winch straps and four 2x4s. All who worked us on 160M owe

Captain Pete a big round of applause! It was all hands on deck when raising that 90-foot behemoth.

The next antenna to go up was the 80M, 60-foot Spiderbeam vertical, followed by the custom designed 160M Hi-Z RX 4-square. By the end of the third day, our team was fully operational from 10M-160M. Dietmar, DL3DXX, who provided most of our 160M contacts, went from logging 6 to 10 QSOs per hour using just the 90-foot Titanex vertical, to more than 50 to 60 QSOs per hour with the addition of our custom Hi-Z RX 4-square array.

Even with the use of LBS band-pass filters, we immediately experienced some cross-station interference from the 80M vertical which was installed 150 feet from our two stations operating at our mid-island location. The following day, we decided to move the 80M vertical 300 feet away to the southernmost tip of the island, thus solving the problem.

At this point, all seemed to be going well, until our first attempt to work EU at gray line on 80M. Our pilots were reporting most EU stations hearing us super well, but we were experiencing S9 noise levels, and only on 80M. The following day, a few of us decided to determine if the 80M noise was atmospheric or man-made.

Our first attempt in the investigation process was to turn off every piece of electrical equipment at the station, with the exception of the 80M station's Honda generator, the switching PS and K3 radio, only to find out that we still had S9 noise levels. Brian, N9ADG, had a brilliant idea of powering the K3S on battery power to see if it was indeed man-made noise, but we hadn't brought a 12V battery. We had, on the other hand, brought headlamps with rechargeable 1.5V lithium batteries, so we taped several of those batteries together in series — enough to power the K3S — and we were elated to find out we had S0 noise levels on 80M; therefore, the noise was being generated by our newly-purchased Honda EU20i generators.

After trying our best to remove the generator noise to no avail, we swapped out the Honda with a Trade Tested (Chinese) generator. To our



The signed photograph for our Platinum donors.

amazement, we still had S0 noise level, so we used that generator to power the 80M station. That night we were able to work dozens of EU stations at gray line and continued doing so for the remainder of the DXpedition. In an effort to further improve our 80M/160M RX antennas, we installed several DHDL loop antennas (www.TX3A.com), to take advantage of Diversity mode of the K3S radios. Diversity mode uses both K3S phased locked receivers, allowing the operator to “simultaneously hear” signals from two independent RX antennas. Those on the team who had never experienced the use of the Diversity mode were truly shocked how well it improved RX over using either antenna independently.

Island life

Our remaining 12 days on the island were uneventful. Operating 12 hours per day with eight hours off every 1½ days took its toll, as we all were tired and sometimes a bit cranky. Evening temperatures were in the mid 70s, which made sleeping at night comfortable; daytime temperatures, however, in the lower 90s with high humidity, created sleeping difficulties for those who were working the night shifts.

There was work to be done at all

times, including the regular generator and antenna maintenance. After a major rainstorm, we awoke to find our 160M Titanex vertical had nearly folded over, with its tip only 30 feet off the ground. All hands were required to retighten the guy-wires and straighten the antenna back up.

The crew of the MV *Phoenix* delivered our meals — breakfast, lunch and dinner — as well as plenty of liquid refreshments.

During operator down times, we would often swim in the reef, and then rinse off the salt in an impromptu shower made for us by Captain Pete: a two-liter coke bottle filled with fresh water and warmed by the sun.

Operating conditions were a major challenge as we experienced a major solar flare, disrupting operations on the upper bands, making them nearly useless with very deep and rapid QSB. We predicted between 40k to 50k QSOs at the start of the DXpedition and ended up with just over 45k QSOs, averaging just over 4,000 QSOs per day, meeting our QSO goals. I was also very pleased with our 160M effort, which ended up with about 1,700 QSOs.

Most surprising was the non-stop noisy, chattering bird life on the island. They never seemed to sleep during

our entire stay, constantly flying about. Commonly seen species were terns, noddies, masked and brown boobies.

Packing up

The night of 15 November, our last night of operation, we decided to take down two of our four stations and dismantle the 30M and 160M stations, operating only on 40M and 80M. Four team members stayed on the island, while the rest spent the night on the boat.

We signed off the radios the morning of 16 November around 7 a.m., and started the long process of tearing down the tents and packing up all our gear. Half the team remained on the island, loading the tenders with our gear and garbage for transport to the MV *Phoenix*, anchored a half-mile offshore. The other half of the team helped the crew off-load our equipment from tenders.

One of my promises to the Australian Marine Reserve was to leave Mellish Reef a cleaner place than how we found it. During the expedition many of us picked up man-made debris which floated onto the island from everywhere around the world. What surprised us was how much of this debris made it up to the very top of the island. We picked up debris around the edge of the island and rarely strayed into the major nesting areas as not to disturb the wildlife or bird nesting areas. We collected about 160 pounds of garbage, which was typical of what was found on Willis Reef in 2015, and included flip-flops, empty liquor, water and pop bottles and bottle caps and even a hard hat.

We departed Mellish Reef on 16 November around 1 p.m. for our 4-day journey back to Port Douglas. All were a bit exhausted and a bit sunburned, but happy to have provided those lucky enough with “all-time-new-ones” (ATNOs) and many band fills.

We arrived into Port Douglas on 19 November and unloaded the MV *Phoenix* the following morning, repacking all the gear headed back to Germany via Sweden, as well as the equipment destined back to Redmond, WA, via airfreight. The equipment purchased in Australia was donated to charity.

Band/Mode breakdown

| Band | SSB | CW | PSK | FT8 | RTTY | JT9 | Total | Total % |
|--------|--------|--------|-----|-------|-------|-----|--------|---------|
| 160 | 1 | 1,635 | 1 | 74 | 0 | 0 | 1,711 | 3.8% |
| 80 | 55 | 2,747 | 0 | 0 | 0 | 0 | 2,802 | 6.2% |
| 40 | 2,946 | 2,812 | 0 | 120 | 143 | 0 | 6,021 | 13.4% |
| 30 | 0 | 5,591 | 0 | 5 | 537 | 0 | 6,133 | 13.6% |
| 20 | 2,901 | 4,569 | 1 | 659 | 1,430 | 11 | 9,571 | 21.2% |
| 17 | 2,466 | 5,540 | 0 | 329 | 280 | 0 | 8,615 | 19.1% |
| 15 | 1,599 | 3,620 | 0 | 92 | 493 | 0 | 5,804 | 12.9% |
| 12 | 936 | 1,572 | 0 | 4 | 2 | 0 | 2,514 | 5.6% |
| 10 | 823 | 910 | 0 | 10 | 129 | 0 | 1,872 | 4.2% |
| Totals | 11,727 | 28,996 | 2 | 1,293 | 3,014 | 11 | 45,043 | |

Continent by Mode

| Band | SSB | CW | PSK | RTTY | FT8 | JT9 | Total | Total % |
|--------|--------|--------|-----|-------|-------|-----|--------|---------|
| AF | 54 | 115 | 0 | 19 | 13 | 0 | 201 | 0.4% |
| AN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% |
| AS | 4,639 | 10,502 | 0 | 1,235 | 522 | 0 | 16,898 | 37.5% |
| EU | 3,572 | 9,435 | 2 | 1,129 | 124 | 5 | 14,267 | 31.7% |
| NA | 2,336 | 7,739 | 0 | 471 | 344 | 6 | 10,896 | 24.2% |
| OC | 1,025 | 932 | 0 | 134 | 263 | 0 | 2,354 | 5.2% |
| SA | 101 | 273 | 0 | 26 | 27 | 0 | 427 | 0.9% |
| Totals | 11,727 | 28,996 | 2 | 3,014 | 1,293 | 11 | 45,043 | |

Summary

The VK9MA team’s QSO statistics can be found on the Club Log website (<https://clublog.org/charts/?c=VK9MA#r>).

With so many to thank, there is no better time to thank our pilots — Mike, K4PI; Andre, V51B; Bjorn, ON9CFG; and John, G3XHZ — who provided us with valuable feedback from the Amateur Radio community before and during the DXpedition.

Also, a very big thank you to all our sponsors — both club and equipment manufacturers — who without their help, this DXpedition would not have been possible. A very special thanks to our hardware suppliers Elecraft, Expert Linear, DX Engineering and SteppIR for their incredible support in helping us obtain the necessary consulting and specialty hardware support.

The entire VK9MA team would also like to thank ALL of our sponsors who provided generous donations, making this expedition possible.



Dietmar, DL3DXX helps with island cleanup.

Republic of Equatorial Guinea

Yuris Petersons, YL2GM

AT THE BEGINNING I INTENDED THIS expedition to be a relatively quick reconnaissance expedition with a two-man team and with the main purpose to collect information and make new contacts for a larger expedition in future. The aim of this expedition was to get to know how to acquire operating licenses and to find possible QTH positions, to get familiar with living conditions and more, and of course, if possible to work on the air as well. In the end, this turned out to be much more than that.

Bumpy start

After a couple of months of preparations, our DXpedition journey finally began on 1 October 2017, as Kaspars Uztics, YL3AIW, and I met at Riga International Airport and checked in for our 13-hour flight via Paris to Malabo International Airport, on Equatorial Guinea's island of Bioko.

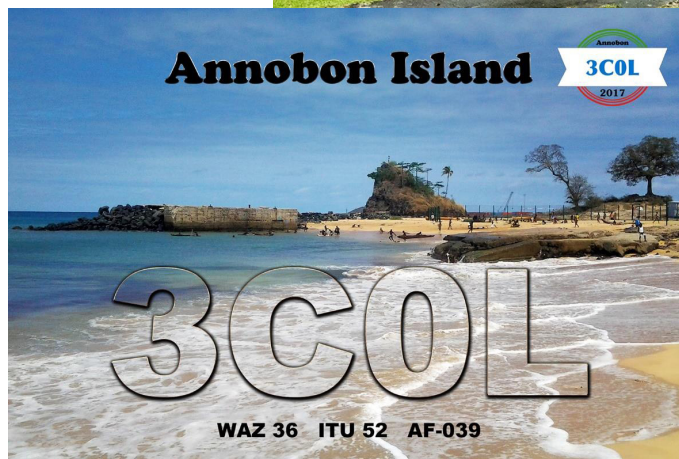
Our checked luggage exceeded the limitations, weighing a total of 134kg (295 pounds) and the antenna bag was oversized. As a result, airport security carried out a detailed check of our bags and requested more information on their contents and purpose. After we explained our mission, everything was good; we paid €75 (about US\$92) for the weight overage and we were able to proceed. In each of our hand luggage, we packed a PA, K3 and a laptop.

When we arrived at our final destination, however, one of our checked bags was missing. Perhaps a coincidence, but it was the same bag that was checked by airport security — maybe they forgot to load it, or it was caught up somewhere in the middle. When we inquired to airport employees in Malabo regarding when we could expect our luggage, the response was unclear, "Tomorrow, after tomorrow, or maybe even next week."

Malabo, Bioko Island

Our prearranged transport was waiting to take us to our hotel, Magno Suites, and when we arrived,

we chatted with the hotel's senior manager who informed us that 3C7A (LA7GIA) had also operated from there. We took some time the following day to look for a possible place to set up the antennas but found that it was not very suitable. The roof



was slanted and unfit for that; next to our hotel was an embassy and surrounding areas were too populated, and there were no parks or gardens nearby.

The senior manager also kindly helped us find an English-speaking taxi driver to take us to the Ministry of Communication and New Technologies, however, as this was a very new ministry, nobody there really understood what we wanted, so from there we went to the Director of Telecommunications department, where we were told to prepare an official application and a detailed description of our hardware and equipment (including serial numbers), and the necessary frequencies that we wanted to use. We completed and turned in the paperwork and were told to return the following morning.

That afternoon we decided to look for a more suitable hotel for our operations, but Magno Suites was the best

we could find. We set up a GP antenna and afterward walked to the city to have dinner and a look around. While out, we received phone call from the hotel manager regarding our antenna and he asked who allowed us to set it up. We returned to the hotel to see several cars with

representatives from different security services waiting for us. We humbly explained that we did not know that the rules were so strict, and to resolve this misunderstanding and show our true and sincere intentions, we immediately took down all the cables and antenna.

Working through problems

Ferming, our English-speaking taxi driver — who was ready to help and assist us during our stay — returned the following morning, taking us back to the Ministry to meet with the Director and get some information about approximate costs for the operation licenses. Firstly, I asked for a yearly license, but the price of that I better not say aloud. We agreed on a monthly license, which price was also quite impressive. We paid the fees and the Director promised the papers would be ready that evening or the next morning, which was a Saturday. The first week



Yuris meeting with the Director from the Ministry.

of our trip was over and we still did not have our licenses, but at that point all we could do was wait.

In the meantime, we searched for options on how to get to Equatorial Guinea's island of Annobón and found that the next possible flights out were on Tuesday or Saturday. Again, we had no other choice than to wait and hope. We also had to consider that not only getting to Annobón could be difficult, but getting back as well.

On Saturday morning, I called the Director and he informed me that the Minister signed our licenses and they were on the way to us from Bata; the best-case scenario was that we would have them on Monday.

That gave us some time, so we continued to look for a hotel that would be more suitable for our operations. The next closest city was Luba, 50km away. Bus service took us right to the very beautiful Hotel Nautico Luba located on the ocean's shore. We found someone from the hotel's administration and we expressed our wishes and look around the property. The only available free field was on the shoreline, but it would soon be under water from the tide. The roof was not very suitable either, because of its sloped tin roof. The administrator was very responsive and wanted to support our activities, but we had to decline.

Asking locals for information, we got directions to other hotels but none fit our requirement. We returned to our hotel in Malabo, and called the Director again. He informed us that the licenses

had arrived and all they needed were some stamps. We agree to meet the following morning at 10 a.m.

Finally, official

The Director was waiting for us with a letter and our callsigns — 3CØL for Annobón and 3C1L for Malabo. The formalities took about two hours and the result was successful. We also made a good friend in the Ministry who was willing to help us, someone we could call in case we ran into problems in the future.

Ferming reminded us that we still had to inform the local police about our operations before we started to work, which was eventually approved.

With all that accomplished, we returned to the hotel to show the approval to the hotel owner and set up the antennas, but when he finally arrived that evening, we weren't able to set up antennas on the roof. We were only able to set up our GP near the hotel and 3C1L made its first QSO with ND9G on 17M.

We managed to make around 1,500 QSOs through midday when we received word that it was possible to buy tickets for flights to Annobón. It took us 20 minutes to take down GP antenna, pack our bags and drive to the airport; however, due to bad weather conditions, the flight was delayed until the next morning. The good news was that we had our tickets.

On to Annobón

We left early the next morning for

the airport, but weather conditions didn't look promising. We waited in airport for several hours, and finally, they started to accept luggage. Before the flight, our taxi driver Jonny introduced us to Alida, who would be our guide in Annobón.

After the one-hour flight, we landed in Annobón, and there the police took our passports. Alida drove us to the police station and explained who we were, but our passports were not returned; instead we were invited to meet with the governor of Annobón on Monday — five days later.

We arrived during their national holiday, Independence Day, so we planned to spend the rest of the week looking for a QTH. We found a house for rent, but there was no place for a 160-30 vertical antenna — and all other places we saw had the same problem. The grid voltage at the house we rented fluctuated intensively so it was not very promising. We also looked to rent a generator for daytime operations, when the electricity was turned off from 6 a.m. until 6 p.m.

On Thursday, 12 October we participated with locals in their Independence Day celebration and, during the parade, we received good news from the governor's office: he will meet with us on Friday. We looked forward to this meeting because we could not operate without his approval.

We had been in Equatorial Guinea for 10 days and I think we managed to do a lot, given all the circumstances: we received licenses, we got to Annobón



3CØL QTH

and we moved into a house. Could we have done more? I don't think so, because this is Africa.

On Friday, the meeting with the governor was postponed to Monday, however, we got permission to operate, so right away we set up the 160-30 RA6LBS antenna, and after couple of hours, the vertical with radials was complete. It was located about 100 meters away from our shack because that was the closest and best suitable place we could find. The folding antenna was located just across the street.

Local issues

On top of the electricity shortage during the day, we also lost water supply and we didn't have a shower. At least we had some bottled water for drinking. At 4 p.m. a local friend brings us a 2.5kW generator, but after testing it, we find that it can't even handle one PA on 500W, so during the daytime we operated only with a 100W transceiver, and our first QSO was made with DL5LYM on 14Mc CW.

That evening we were visited by a "friend" who told us that our antennas were on his land and he asked for a payment of \$200 for two weeks,



The folding antenna.



Kaspars on air and Yuris attempting to fix K3 PS.

otherwise we would have to take our antennas down. Our local friends participated in the discussion, but we could not find common ground, so we left the discussion for the next day. During the night we managed to work first 14Mc; the pileup was very good.

Around midday, the landowner showed up again and this time he was more reasonable, asking for \$100, with some bargaining, however, we agreed on \$90 and that problem was resolved. Now we could continue to wire cables and tune our antennas.

After midnight we switch to 80M and test SWR=3. We tuned the Expert antenna and it worked and during the night we made 750 QSOs on 80M.

By morning, when the electricity was turned off, we had made around 4,000 QSOs in total. During the day we used the generator and operated with 100W on 20M and 15M. After midday we set up GP 30/20/15 and worked a little bit on 30M.

When it rains...

Monday, 16 October started with bad news: after midnight one of the transceivers stopped transmitting.

I consulted with friends and we could not find the problem, so I called my wife to arrange to have my other transceiver shipped to Malabo via DHL. Best-case scenario, it would get to Malabo on 24 October.

The police chief gave us back our passports and after that, we were on our way to meet with the governor, accompanied by our friends Alida and Eduard. We told the governor about Amateur Radio and our expedition, and about the humanitarian aid program, "Hams with Hearts," funded by the Amateur Radio community and our plan to visit local schools to give supplies to pupils and first aid needs to the school. Governor invited us to come back in a year or two when the electricity upgrades would be completed and living conditions improved.

Once back at our shack, we got more bad news. Unsuccessful generator starts resulted in voltage fluctuations and leads to a burned transceiver power supply — we are left with only one set of equipment. These problems will be a huge lesson for our future expeditions. During the night we continued to work on 40M and made around 1,300 QSOs — a total of 8,500+ QSOs after three days of operation.

Flights from the island of Annobón are not regular and the next flight, on 21 October, was canceled — the next soonest flight could be on 24 October.

Equipment

TRANSCEIVERS 2x Elecraft K3
POWER AMPLIFIERS SPE Expert
 1.3K-FA and Juma PA1000
ANTENNAS 160/80/40/30M
 bands, 18-meter high vertical
 with capacity hat; 20/10M
 bands, folding antenna, and
 30/20/15M bands, small verti-
 cal Beverages for receiving



The two 36kW generators.

From one point of view, we can operate from Annobón for three more days; however, we could lose our plane tickets home that were booked for 24 October and we would have to purchase new tickets and doing it so late would cost a fortune.

Up to this day, we managed to make 17,000+ QSOs. We also started to operate on 12M and managed about 800 QSOs and a little bit on 10M. Our days have found its rhythm and routine. During the night, while electricity is available, we operate with 1kW PA and from 6 a.m. till 6 p.m., we turn the generator on and operate with 100W;

the maximum our generator can handle.

As usual, after midday Alida visits us with delicious prepared meals, most of the time it's cooked chicken or fish with dressings and side dishes. Fish is major food supply for people living here on the island.

Back to Bioko

On Tuesday, 24 October, we took down the 18M vertical and operated with the folding hexbeam antenna and vertical on 30/20/15M. The following afternoon, we got a call from Eduard saying we had one hour to catch our plane back to Malabo. In a rush, we

packed our equipment and antennas and while doing so, we could see a plane landing on the island. Alida and friends take us to the airport where we see people gathering and waiting to board. It turns out that Equatorial Guinea's president sent his plane to the island because CEIBA Intercontinental was having problems with their planes. We were very pleased to fly on a presidential airplane.

We landed in Malabo next to some hangars that were approximately two kilometers away from the main airport and without transport available to carry us, and our 100kg of baggage, to the terminal. Jonny met us at the airport and took us to our hotel.

The following day, 26 October, found us unsuccessful in our search for a QTH position and at Customs to receive the additional transceiver DHL shipment. State officials wanted significant amounts of money in Custom "taxes," and, like always, no responsible persons or officials with whom we have to speak were there and we were told, "Come back tomorrow."

On Friday, 27 October, we returned to Customs to resolve our problem but we were unsuccessful. After that, we moved to another hotel located 50km from Malabo to operate with at least one station. We had found this hotel before and it was the best option for a QTH, located near the ocean with local electricity to supply 36kW generators, so electricity should not be a problem. Until dusk, we managed to set up the folding antenna and a working station.

In the meantime, the hotel administrator consulted with the hotel owner and our papers with the letter signed by the Minister were accepted, we were given the green light to operate.

Continent by Band 3C1L

| Band | 160 | 80 | 40 | 30 | 20 | 17 | 15 | 12 | 10 | Total | Total % |
|--------|-------|-------|-------|-------|--------|-------|-------|-------|-----|--------|---------|
| AF | 3 | 9 | 18 | 41 | 97 | 51 | 59 | 17 | 7 | 302 | 0.7% |
| AN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% |
| AS | 105 | 334 | 860 | 1,349 | 1,469 | 277 | 480 | 42 | 11 | 4927 | 11.3% |
| EU | 925 | 1,437 | 2,680 | 3,309 | 5,196 | 5,141 | 5,871 | 2,088 | 617 | 27,264 | 62.5% |
| NA | 329 | 627 | 1,312 | 1,181 | 3,553 | 1,656 | 1,133 | 206 | 1 | 9,998 | 22.9% |
| OC | 1 | 1 | 8 | 17 | 23 | 18 | 17 | 4 | 7 | 96 | 0.2% |
| SA | 3 | 37 | 130 | 137 | 319 | 122 | 192 | 52 | 34 | 1026 | 2.4% |
| Totals | 1,366 | 2,445 | 5,008 | 6,034 | 10,657 | 7,265 | 7,752 | 2,409 | 677 | 43,613 | 100% |

Continent by Band 3C0L

| Band | 160 | 80 | 40 | 30 | 20 | 17 | 15 | 12 | 10 | Total | Total % |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| AF | 6 | 11 | 15 | 12 | 33 | 54 | 53 | 37 | 22 | 243 | 0.7% |
| AN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% |
| AS | 23 | 23 | 271 | 557 | 342 | 202 | 169 | 58 | 8 | 1,653 | 5.1% |
| EU | 963 | 1,111 | 1,607 | 1,750 | 2,537 | 5,266 | 3,430 | 2,190 | 812 | 19,666 | 60.6% |
| NA | 518 | 710 | 1,272 | 658 | 2,499 | 778 | 1,766 | 948 | 767 | 9,916 | 30.6% |
| OC | 1 | 3 | 10 | 5 | 15 | 4 | 5 | 4 | 1 | 48 | 0.1% |
| SA | 10 | 37 | 106 | 57 | 193 | 62 | 169 | 122 | 165 | 921 | 2.8% |
| Totals | 1,521 | 1,895 | 3,281 | 3,039 | 5,619 | 6,366 | 5,592 | 3,359 | 1,775 | 32,447 | 100% |

Band/Mode breakdown 3CØL

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|------|--------|---------|
| 160 | 0 | 1,521 | 0 | 1,521 | 4.7% |
| 80 | 0 | 1,895 | 0 | 1,895 | 5.8% |
| 40 | 0 | 3,281 | 0 | 3,281 | 10.1% |
| 30 | 0 | 3,039 | 0 | 3,039 | 9.4% |
| 20 | 2,178 | 3,441 | 0 | 5,619 | 17.3% |
| 17 | 2,029 | 4,337 | 0 | 6,366 | 19.6% |
| 15 | 1,401 | 4,191 | 0 | 5,592 | 17.2% |
| 12 | 778 | 2,581 | 0 | 3,359 | 10.4% |
| 10 | 145 | 1,630 | 0 | 1,775 | 5.5% |
| Totals | 6,531 | 25,916 | 0 | 32,447 | 100.0% |

During the night, we made around 3,000 QSOs, and in the morning, the hotel owner visited us, and we told him about Amateur Radio and demonstrated how we operated.

Afterward, we set up a vertical RA6LBS next to coastal slope and squeezed it in between the trees. By the second operating day, we had around 6,000 QSOs, working with only one station, and still trying to resolve the Customs problems for the second transceiver.

Calling in a favor

On Monday morning, I returned to Malabo to deal with the Customs issues and get the second transceiver, but nothing went as planned. The Customs chief was out of office and I was told, "Come back tomorrow." That continued for four days and, in "taxes," I had already paid close to what a new transceiver would cost! In the end, the Customs security representative told me it was forbidden to bring transmitting devices into the country without special permits from the state.

I guess it would have been easier just to send the transceiver back home, however, having spent so much energy and money on this, I tried one more option: to ask the Communication Department Director for help, the man who helped us get our operating licenses. So the following morning I paid him a visit and told him about our problems. Three hours later, the transceiver was in my hands and I was on my way back to the hotel.

Lessons learned

We need to bring our own power generator with us to Annobón, as the only local 2kW generator we could find was in very poor condition and could not supply our stations with necessary power. During the night, when power was supplied through the grid, it was frequently unstable and fluctuated which caused technical problems for our equipment. I was very satisfied, however, with the SPE Expert 1.3K-FA power amplifier performance; even with grid fluctuations from 100-240V it provided very stable output. This PA proved itself

Continent by Mode 3CØL

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|------|--------|---------|
| AF | 95 | 148 | 0 | 243 | 0.7% |
| AN | 0 | 0 | 0 | 0 | 0.0% |
| AS | 264 | 1,389 | 0 | 1,653 | 5.1% |
| EU | 3,217 | 16,449 | 0 | 19,666 | 60.6% |
| NA | 2,591 | 7,325 | 0 | 9,916 | 30.6% |
| OC | 4 | 44 | 0 | 48 | 0.1% |
| SA | 360 | 561 | 0 | 921 | 2.8% |
| Totals | 6,531 | 25,916 | 0 | 32,447 | 100.0% |

Band/Mode breakdown 3C1L

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|-------|--------|---------|
| 160 | 0 | 1,366 | 0 | 1,366 | 3.1% |
| 80 | 0 | 2,445 | 0 | 2,445 | 5.6% |
| 40 | 0 | 4,985 | 23 | 5,008 | 11.5% |
| 30 | 0 | 5,412 | 622 | 6,034 | 13.8% |
| 20 | 4,396 | 5,865 | 396 | 10,657 | 24.4% |
| 17 | 1,469 | 5,281 | 515 | 7,265 | 16.7% |
| 15 | 1,913 | 5,322 | 517 | 7,752 | 17.8% |
| 12 | 0 | 2,409 | 0 | 2,409 | 5.5% |
| 10 | 0 | 677 | 0 | 677 | 1.6% |
| Totals | 7,778 | 33,762 | 2,073 | 43,613 | 100% |

in our previous expeditions and it definitely is on top of my list.

Instead of four weeks, this expedition turned out to be six weeks, but it was still successful and I am satisfied with the results, given our conditions. In total, we made around 76,000 QSOs and we gained great experience and learned new things for future expeditions. 🌐



Kaspar, YL3AIW and Yuris, YL2GM

Continent by Mode 3C1L

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|-------|--------|---------|
| AF | 105 | 177 | 20 | 302 | 0.7% |
| AN | 0 | 0 | 0 | 0 | 0.0% |
| AS | 608 | 4,050 | 269 | 4,927 | 11.3% |
| EU | 4,464 | 21,383 | 1,417 | 27,264 | 62.5% |
| NA | 2,307 | 7,374 | 317 | 9,998 | 22.9% |
| OC | 14 | 78 | 4 | 96 | 0.2% |
| SA | 280 | 700 | 46 | 1,026 | 2.4% |
| Totals | 7,778 | 33,762 | 2,073 | 43,613 | 100% |

Contest University Dayton

Tim Duffy, K3LR
Chairman Contest University

FOR THE PAST SEVERAL YEARS NCDXF has graciously sponsored youth Amateur Radio operators who want to attend the full day Contest University (CTU) in Dayton, Ohio. CTU is held on the Thursday before the Dayton Hamvention and last year the total attendance was 375, which included at least 15 students aged 25 years old or younger. Most of them had their \$85 student tuition donated by NCDXF.


Some of these young Amateur Radio students have attended CTU for several years and it is amazing to see the quick progress they have made with their abilities to operate and enjoy HF Amateur Radio. Their operating

time is not just DXing and Contesting; many of these students participate in emergency-related drills and real life emergency situations. The mentoring and patience shown by the CTU professors during the event is amazing and that is a key area — the students feel comfortable and absorb the knowledge like a sponge. It is not uncommon for the young attendees to bond with some of the older attendees or professors and follow up through email throughout the year.

An unintended byproduct of NCDXF sponsorship of these young people to CTU is that a tableful of these young high school and college students

also attend the Saturday night contest dinner and this year I have been advised that there will be two tables! These tables we affectionately refer to as the “Smart Kids” tables.

Thinking about the future, there may be additional areas where CTU and NCDXF can partner to enhance the operating side of our hobby. I’d like to open the lines of communications for ideas that are not centric to in-person sessions, but ones that can be made available to a much larger audience. I also think there is an opportunity for us to follow the college and career paths of the CTU scholarship recipients to see “where they are now” and how CTU affected some of their choices.

Thanks to the entire NCDXF Board of Directors for your continued support of an important source of growth for our Amateur Radio hobby at Contest University. 




Cycle 25 Fund & Cycle 25 Society

TO HELP SUPPLEMENT NCDXF’s mission to provide necessary financial support for well-organized DXpeditions to rare and financially demanding DXCC entities, NCDXF established the Cycle 25 Fund in 2016. The goal of the Cycle 25 Fund is to double NCDXF’s endowment through significant estate gifts from current DXers, which will allow NCDXF to continue its mission throughout sunspot Cycle 25 and beyond.

NCDXF Director Craig Thompson, K9CT, who oversees the Cycle 25 Fund, has established a Cycle 25 Society for those who participate. Thompson said, “The Cycle 25 Society is for honoring

those special individuals who commit to estate giving before the next sunspot maximum. When you let us know your plans, we will honor you on our website and send you a special Cycle 25 Society pin as a memento of your thoughtfulness.”

Craig invites DXers interested in the

Cycle 25 Society to visit the NCDXF website www.ncdxf.org/pages/estate.html for more information. You can also contact Craig to discuss Cycle 25 Fund funding options, including specific bequests, designation of IRA beneficiaries and purchase of an annuity or life insurance. 

Since the announcement of the Fund, the following individuals have made estate-planning commitments:

Ned Stearns, AA7A
Al Burnham, K6RIM
Craig Thompson, K9CT
Alan Rovner, K7AR
Rich Seifert, KE1B
Tom Berson, ND2T

Glenn Johnson, WØGJ
Rich Haendel, W3ACO
Dan White, W5DNT
Charles Spetnagel, W6KK
Rusty Epps, W6OAT

9U4M DXpedition

Antonio Cannataro, IZ8CCW



THE DXPEDITION TO BURUNDI (6-17 November 2017) was organized by the Méditerranéo DX Club (MDXC) and was composed of Italian, French, Belgian, Swiss, Romanian and Welsh operators.

On 5 November, the 21-person team gathered in Milan, Italy, to the Aribusto Radio Club. The welcome from our Italian friends was, as always, a very warm one, and the traditional pasta party ended with a superb cake made by Roberta, XYL of Gabriele Villa, I2VGW, our team leader.

Around 16:30, it was time to head to Milan Malpensa Airport for our 22-hour journey to Burundi, which included a 5-hour stopover in Addis Ababa, Ethiopia. Check-in and registration formalities can be complicated, given the amount of equipment we had, and indeed, though the leaders had planned everything out, we were still in the boarding area for four hours. And, of course, the maximum weight allowed was exceeded,

Bujumbura, Burundi

The trouble started when we hit the ground. There were no problems with the team members, but as we passed through to Customs, most of the equipment was seized for administrative reasons — which were very vague. The few transceivers in our cabin baggage saved us, but all the antennas and amplifiers plus some transceivers were held by the Customs administration.

The **Hôtel Club du Lac Tanganyika**, thankfully, lived up to its reputation, making things a little bit less frustrating. We got to our rooms and started installing the stations; two shacks separated by more than 200 meters were planned, one for CW, the other for the SSB and digital modes. It's a good idea to avoid the QRM from one mode to the other in the same band.

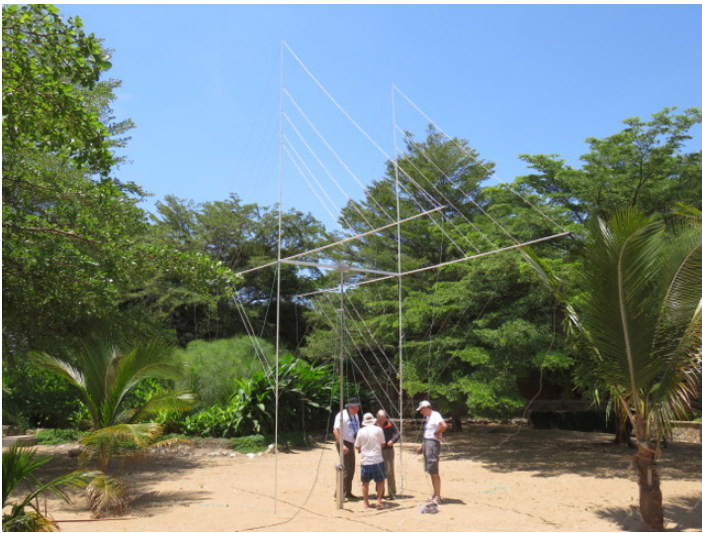
Making do

The team set about making up wire antennas with the sparse amount of materials available — an inverted V

for 40M and 20M was mounted at eight meters on bamboo poles on the beach; the CW team made up 30M delta loop and some quarter-wave elevated verticals for 20M and 17M. That was the best we could do with the limited materials.

We were on the air — a poor signal maybe — but they worked. More wire





antennas were made over the next days, as a large CME had caused a lot of fading and low signals and we had a hard time making ourselves heard. The propagation under the equator was difficult.

Progress made

On the evening of 8 November, our equipment arrived, Customs having released it subject to a financial bond.

The hotel provided spotlights, but it was not easy — we will remember the mosquitos that evening as we installed the antennas. Four Spiderbeams, 30M, 40M, 80M and 160M verticals Ls, four squares and phased arrays, a 5-band 10M>20M and 4e 6M Status quads were installed, RX antennas used were LBS Beverage on ground (BOG) type. On 9 November, more antennas were added, trimmed in and secured. Finally, we could run using band pass filters on all the transmitters with very little

interference between the stations. Significant improvements with directional antennas installed.


Over the next eight days, 50,000 QSOs were made in four modes, with Jean Luis, F6BPZ, putting FT8 on the air for the first time.

Station CW1 specialized in the low bands using a TS590 SG, a ACOM 1011 amp (700W), a Micro Keyer II, and a receiving antenna switching system BOG. Station CW2 was equipped with a K3, an amp ACOM 600 (600W) and a homemade CW interface. Everything was controlled by two PCs running under Wintest, and all worked perfectly from the first to the last hour without interruption, which proves, once again, the reliability of this material.

The only small glitches were due to the Internet connection; a direct link with Clublog to transfer the QSOs in real time to the online log. Interesting

solution, but the flip side of the coin when the Internet link lags.


SSB stations were using a Kenwood 590 and Elecraft with Spiderbeam, a 40M square and an 80M vertical. DATA using Kenwood 590s, Icom 7200, Spiderbeams 30 J pole 40M and 80M verticals.

On the infrastructure side, the hotel was very well equipped and there was Internet in most rooms plus a reliable electricity network because the power cuts were compensated by a generator starting in less than 15 seconds. 

3YØZ Bouvet DXpedition

WHILE WE WERE ALL DISAPPOINTED TO LEARN THAT THE BOUVET DXPEDITION was aborted, no one was more disappointed than NCDXF Directors Craig Thompson, K9CT and Glenn Johnson, WØGJ, who were on the Bouvet team.

After two difficult weeks at sea, they reached the island but while waiting for the weather to clear, one of the ship's engines failed. The captain of the vessel declared it was unsafe to continue the project and decided to return to Cape Town, SA, instead of Chile.

We salute the valiant effort of these DXpedition team members and are grateful for their safe return. Rumor has it that Bouvet 2.0 is already in the planning stage. Stay tuned. 



DXPEDITION LENDING LIBRARY

NCDXF has a number of VHS/DVD videos and Microsoft® Power Point presentations on CD-ROM available for loan to organizations wishing to show them at their meetings.

There is no charge to use the programs in the FOUNDATION'S library, but clubs borrowing materials are responsible for postage in both directions. To view the complete listing of programs available for your club's use, visit our website, www.ncdxf.org, and click on "Videos."

BANGLADESH S21

A lesson in flexibility

Yuris Petersons, YL2GM

AT THE END OF 2016 I RECEIVED A question from previous DXpedition EP2A members: “What are the plans for next DXpedition?”

Preparations

At that time, I already had some ideas on where to go next and one of those options was Bangladesh, No. 56 on the most wanted DX list. After doing some research on how to acquire a license, I submitted my first request on 6 January 2017. Three weeks passed and there was no response, so I called and learned that they never received the paperwork. During the course of our conversation, I decided to visit them in person a week later to discuss and obtain the license.

Together with XYL Zigrida, we flew to Dhaka. For a possible QTH, I had in mind to look for a place near Kuakata, in southern Bangladesh. It had to be outside the city to have less radio interference, and more space for building antennas, and I also wanted it to be close to the sea. The plan was to rent a car and travel from Dhaka to Kuakata,



but after realizing the different traffic culture we quickly changed our minds and used public transportation.

On our first evening, we met with Syed, S21ED, who offered to be our guide during our stay in Bangladesh, and Anup, S21TV, in Dhaka. The following morning we visited the Bangladesh Telecommunication Regulatory Commission (BTRC) and met with officials to discuss and hand in documents for a license. I had asked for a call sign with a one-letter suffix,

however all of them were taken. I also learned that foreign operators could only obtain a call sign that was good for seven days, so that is why we operated with two call signs. You could obtain a license for a longer period, but it has to be arranged through the embassy and it takes much time. We arranged our next meeting five days later to find out what call signs would be assigned.

The next morning we sailed by small ferry from Dhaka to Barisal, and from there took a bus to Kuakata. There we visited our planned QTH, a hotel with small cottages, a large field next door

for antennas, and the sea just a couple hundred meters away.

Bangladesh has a lot of natural historic beauties, and one of them is the Bay of Bengal, with many beautiful beaches. The white sandy beaches and blue skies plus the sunrises and sunsets are unbelievable.

After four days of travel, we returned to Dhaka and the BTRC, where I received verbal confirmation of two call signs — S21GM and S21KW — and that a written form (license) would be



The team (from left): Oleg, US7UX; Igor, UT5UJO; Dimitry, UT7UJ; Sasha, UT7UV; Anup, S21TV; Syed, S21ED; Yuris, YL2GM; Ingus, YL2TW, and Kaspars, YL3AIW.



Installing a Spiderbeam antenna on the rooftop (left) of our QTH (upper right), but intense winds ripped out the binding wires, bending the pole.

issued only two days before operation. We also discussed the matters regarding equipment.

Just two weeks after our first publication about the DXpedition, I received an email from the BTRC stating that we wouldn't be able to use the previous call signs because foreign amateurs can only get call signs with three-letter suffixes starting with letter Z.

The team and equipment

The most important and complicated task for organizing expeditions is completing the team. This time we had some new members: Kaspars Uztics, YL3AIW, Ingus Selevskis, YL2TW, and Igor Pukhlik, UT5UJO. Because of health issues, we had to go without Larry Sintsov, YL3CW, and because of work, Andrey Forey, UX1UF could not join us.

Three weeks before the DXpedition I flew to Kiev and met with Ukrainian team members to discuss expedition equipment, antennas and other matters.

I also met with local amateurs and had the opportunity to talk about our previous DXpedition EP2A and our next project S21. After my presentation RigExpert founder Serge, UX1UA, gave me their newest antenna analyzer, AA-55 ZOOM, to support our DXpeditions; it was the perfect tool for antenna tuning and it helped us significantly.

In addition, I also brought two bags of antenna equipment to manage logistics. We still had some problems with baggage limitations later, flying

from Kiev to Dhaka as Turkish Airlines permitted only 20kg baggage per person; each additional kilogram cost \$21. I turned to Turkish Airlines affiliate in Riga with a baggage sponsorship request for DXpedition without success; the flight was from Kiev and not Riga. There were no affiliates in Ukraine, so I had to limit the team's personal baggage to the minimum.

For this expedition we had two separate positions in our QTH and we used IC-7300 and that was a great choice, they operated very well especially in RTTY and SSB modes. On low bands and CW we preferred Elecraft K3. As power amplifiers we used SPE Expert 1.3k-FA that is the best option for expeditions. For receiving, we used a 250-meter Beverage that gave good results on 80M and 160M.

To Bangladesh

Early in the morning on 13 March 2017, we landed in Dhaka. Nobody was waiting for us and we could not get our visas because we didn't have hotel reservations. After four hours, Syed, S21ED arrived straight from the BTRC with a permission letter and we could finally receive our visas. Further formalities went without any setbacks.

We went to Syed's brothers' apartment to wait for the bus to Kuakata scheduled for that afternoon, but because it was also peak traffic time, by the time we arrived at the bus station, we were more than an hour late. Everything was resolved when we

contacted the transportation company, which then waited for us. Then, in a very comfortable ride, we drove all night for about 400km, even taking two ferries. We arrived in Kuakata around 9 a.m. the next morning, where we were warmly welcomed by my friends and acquaintances I had met on my previous visit.

There were also seven bicycle carts awaiting us, onto which we loaded our equipment and boarded them to head for the Cinderella Resort Town. After a 6km drive, we arrived at the resort and were welcomed with nice breakfast. After a meal and coffee, we started setting up antennas and made our first radio check.

On the air

The first installed antenna was a Spiderbeam, followed by 4SQ on 40M and 30M; the first QSO was made by Dmitry Davidenko, UT7UJ, on 40M.

During the rest of the day we worked on the 160M/80M antenna. The field where we built it was soaking wet after a rainfall and was full of puddles and mud, so that was quite challenging. We also made the mistake of setting up the 160M/80M antenna where a local rancher pastures his cows and goats and they liked to walk over the radials.

The second station was planned to be set up the first night, however, because the land owner was away in Canada and didn't leave any notes behind, we had to make another plan. After breakfast the next morning, Syed, S21ED,

Band/Mode breakdown S21ZED

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|------|--------|---------|
| 160 | 0 | 322 | 0 | 322 | 0.015 |
| 80 | 0 | 1,393 | 0 | 1,393 | 0.063 |
| 40 | 468 | 4,100 | 0 | 4,568 | 0.208 |
| 30 | 0 | 2,768 | 106 | 2,874 | 0.131 |
| 20 | 886 | 2,146 | 122 | 3,154 | 0.144 |
| 17 | 776 | 2,891 | 0 | 3,667 | 0.167 |
| 15 | 955 | 2,794 | 543 | 4,292 | 0.196 |
| 12 | 284 | 858 | 0 | 1,142 | 0.052 |
| 10 | 251 | 280 | 0 | 531 | 0.024 |
| Totals | 3,620 | 17,552 | 771 | 21,943 | |

and I went to look for another place for the second position, visiting multiple hotels and houses. Most of them had problems with fields for antennas and power, but after finding suitable place Ingus, YL2TW, Sasha Ananyev, UT7UV and I took all equipment and went to build the second position. In the evening, we had set up a Spiderbeam and RA6LBS vertical 160M-30M so the second position could start to operate. First communications were made on SSB and RTTY.

And right after that we received bad news.

The 160M/80M antenna in the first position had disappeared. It turned out that one of the cows had run into the cables and tore the antenna to the ground. Since it was already dark, we decided to wait until morning to repair it and place it closer to our position; we also put up a rope perimeter to limit any movement around the antennas.

Later that evening it started to rain, growing in intensity so much that we had some minor flooding in our house. Wind gusts were also intense

and during the night the binding wires ripped apart and the pole on one of our Spiderbeams was bent, but we didn't stop operating; we had an extra emergency three-bander 14/21/28. In the morning, the rain stopped and in two hours we managed to fix the Spiderbeam.

The second position operated on SSB and RTTY and we did what we could, and what was within our influence, regarding low bands. We put a lot of intention for NA, but the propagation was bad. Every morning and evening we were on 14M for NA.

On the morning of our last day Dmitry, UT7UJ, managed to work W8LRL on top-band, which was our only QSO with North America on 160M. Long distance QSOs on 160M and 80M bands would not be possible without Beverage antennas.

After that we took down the antennas, packed up and had farewell dinner at the Cinderella Resort Town, our home for two weeks.

On this DXpedition, the title of "CW machine" went to Kaspars, YL3AIW,

Band/Mode breakdown S21ZEE

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|-------|--------|---------|
| 160 | 0 | 582 | 0 | 582 | 0.019 |
| 80 | 0 | 2,006 | 0 | 2,006 | 0.067 |
| 40 | 354 | 3,968 | 670 | 4,992 | 0.166 |
| 30 | 0 | 2,776 | 152 | 2,928 | 0.078 |
| 20 | 1,245 | 3,334 | 1,246 | 5,825 | 0.194 |
| 17 | 1,362 | 3,878 | 837 | 6,077 | 0.203 |
| 15 | 1,555 | 3,086 | 925 | 5,566 | 0.186 |
| 12 | 425 | 794 | 1 | 1,220 | 0.041 |
| 10 | 204 | 469 | 119 | 792 | 0.026 |
| Totals | 5,145 | 20,893 | 3,950 | 29,988 | |

for making more than 10,000 QSOs out of a total 51,892.

Lessons learned

We have to pay more attention to equipment preparation and tuning before the expedition in order to avoid interference between stations.

For this expedition, I acquired used laptops for each station and we had some performance issues. For the next DXpedition, new computers are going to be priority.

We need to take into account equipment transportation limitations and plan accordingly. It's not always possible to take all bandpass filters with us because of their size, and coaxial cables RF240LTA are heavy (800 meters is approximately 36kg). Radial wires for verticals, transformer wires d=0.7mm, approximately 1km are also significant in weight. I see two options: seek lighter equipment and/or different transportation options regarding their limitations.

Finally, the most important lesson I had to learn once more not to publish

Continent by Mode S21ZED

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|------|--------|---------|
| AF | 19 | 50 | 0 | 69 | 0.3% |
| AN | 0 | 0 | 0 | 0 | 0.0% |
| AS | 1,900 | 6,608 | 451 | 8,959 | 40.8% |
| EU | 1,622 | 9,795 | 314 | 11,731 | 53.5% |
| NA | 15 | 856 | 0 | 871 | 4.0% |
| OC | 50 | 157 | 6 | 213 | 1.0% |
| SA | 14 | 86 | 0 | 100 | 0.5% |
| Totals | 3,620 | 17,552 | 771 | 21,943 | |

Continent by Mode S21ZEE

| Band | PH | CW | RTTY | Total | Total % |
|--------|-------|--------|-------|--------|---------|
| AF | 16 | 91 | 11 | 118 | 0.4% |
| AN | 0 | 2 | 0 | 2 | 0.0% |
| AS | 2,117 | 5,968 | 1,465 | 9,550 | 31.8% |
| EU | 2,846 | 13,565 | 2,281 | 18,692 | 62.3% |
| NA | 91 | 966 | 162 | 1,219 | 4.1% |
| OC | 65 | 150 | 19 | 234 | 0.8% |
| SA | 10 | 151 | 12 | 173 | 0.6% |
| Totals | 5,145 | 20,893 | 3,950 | 29,988 | |



Operators Dimitry, UT7UJ (left) and Kaspars, YL3AIW (right).

any information about a DXpedition prior it starting. We had some problems because of this and I will think more on this issue and how to do this in future.

Conclusion

DXpedition S21ZED/S21ZEE was the second expedition I organized after EP2A in 2016. Propagation was worse

and it was difficult to work with American stations.

Because of special Bangladesh state regulations we had to use two call signs and, thanks to Syed S21ED and Anup S21TV, everything went smooth; without their help this would not have been possible.

Our team was made up of men ready

for action and new adventures. I am willing to go with them to any place in the world. Thank you team, and thanks to our team support back home. Thank you too, to everyone who supported and followed us in our DXpedition journey to Bangladesh.

For more information, visit www.lral.lv/s21zed/index.html



Continent by Band S21ZED

| Band | 160 | 80 | 40 | 30 | 20 | 17 | 15 | 12 | 10 | Total | Total % |
|--------|-----|-------|-------|-------|-------|-------|-------|-------|-----|--------|---------|
| AF | 1 | 5 | 25 | 13 | 11 | 4 | 8 | 2 | 0 | 69 | 0.3% |
| AN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0% |
| AS | 80 | 470 | 1,223 | 1,052 | 1,536 | 1,678 | 1,517 | 888 | 515 | 8,959 | 40.8% |
| EU | 240 | 872 | 2,991 | 1,461 | 1,255 | 1,940 | 2,731 | 237 | 4 | 11,731 | 53.5% |
| NA | 0 | 30 | 230 | 300 | 307 | 3 | 1 | 0 | 0 | 871 | 4.0% |
| OC | 1 | 6 | 32 | 31 | 41 | 41 | 34 | 15 | 12 | 213 | 1.0% |
| SA | 0 | 10 | 67 | 17 | 4 | 1 | 1 | 10 | 0 | 100 | 0.5% |
| Totals | 322 | 1,393 | 4,568 | 2,874 | 3,154 | 3,667 | 4,292 | 1,142 | 531 | 21,943 | |

Continent by Band S21ZEE

| Band | 160 | 80 | 40 | 30 | 20 | 17 | 15 | 12 | 10 | Total | Total % |
|--------|-----|-------|-------|-------|-------|-------|-------|-------|-----|--------|---------|
| AF | 3 | 8 | 19 | 12 | 38 | 21 | 15 | 2 | 0 | 118 | 0.4% |
| AN | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0.0% |
| AS | 154 | 526 | 1,339 | 689 | 1,303 | 1,794 | 2,048 | 103 | 684 | 9,550 | 31.8% |
| EU | 423 | 1,383 | 3,380 | 2,067 | 3,689 | 4,053 | 3,415 | 184 | 98 | 18,692 | 62.3% |
| NA | 1 | 60 | 145 | 119 | 727 | 160 | 7 | 0 | 0 | 1,219 | 4.1% |
| OC | 1 | 13 | 30 | 23 | 49 | 41 | 52 | 19 | 6 | 234 | 0.8% |
| SA | 0 | 16 | 79 | 17 | 19 | 7 | 29 | 2 | 4 | 173 | 0.6% |
| Totals | 582 | 2,006 | 4,992 | 2,928 | 5,825 | 6,077 | 5,566 | 1,220 | 792 | 29,988 | |

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Blast from the Past

West Coast DX Bulletin

40 years ago

March 28, 1978

One of the local QRPer was up the hill last week, he already having worked Clipperton on 10, 15 and 20.

“What’s the story on Iraq?” he asked and we showed him the latest dispatches from the front.

“Looks good,” the QRPer said, “but what is coming after that? South Sandwich maybe? Or China or Burma? Or what?”

We had to admit that there was no late or encouraging information on any of these, and disapproval was evident.

“Look,” the QRPer said, “What’s all this talk about the Great Days of DXing? After I work Iraq what will I have to look forward to? Where is all this DX that is supposed to be around?”

Son of a Gun! What does one say to something like this... and just after a 20 year wait for Clipperton has ended?

“What did you do before Clipperton came on?” we asked and got the usual informative grunt.

“Why, I just sat there over the three hundred mark and twiddled my thumbs,” the QRPer said. “What else could I do but twiddle?”

We knew then that we were up against one of the Eternal Enigmas and the fact that no DXer ever admits to having enough.

“Just keep twiddling,” was our advice, for all DXers must worry about the morrow and what DX it will bring.

— John, K6MM

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