



NCDXF newsletter

www.ncdxf.org

Spring 2021

NCDXF/IARU DX Beacons

Ned Stearns, AA7A, and Kevin Rowett, K6TD

OUR GOAL FOR THIS ARTICLE IS to cover the version 2 (V2) update program to the DX beacons, additions to the beacon program, and the development of a new antenna, well suited for the DX beacons, both transmitting and receiving, and for, ahem, FT8.

The DX beacons are familiar to most DXers. They are a group of 18 stations, transmitting a CW call sign and tones on all the high bands 20 Meters on up. Through a lot of international work, the frequency in each band has been licensed to operate automatic, unattended beacons. These frequencies generally remain clear of other signals. The DX beacons all share the frequency on each band using a timing scheme such that only one DX beacon is transmitting on the frequency at a time, worldwide.

The DX beacons were created on the idea to help a DXer get an idea when a band is open in a specific direction. Turn your radio on, pick a beacon frequency (i.e., 14.100Mhz), point your Yagi where you want to work, and copy the CW signals for the beacons heard. You will hear the CW call sign of the beacon at 22WPM, then a series of four dashes, one second in duration, at power levels of 100 watts, 10 watts, 1 watt and 1/10th of a watt. Your observed S-meter reading will give you an idea of DX signals you might hear in that direction.

Version 2 program

DX beacon stations are operated by volunteers — which could be an

individual operator or a club — and the equipment at each site consists of an antenna, transmit radio, custom controller, power supply and a GPS receiver. These units were first distributed and installed in 1995, and 20 years later, the equipment reached the end of its life. In 2013, we began the V2 program.

A new custom controller was designed, based on an Arduino Leonardo MCU board. The custom shield contained circuits to interface to ICOM CI-V, power, display, and a 12-channel GPS receiver.

The remainder of the equipment consists of an Astron PSU, an ICOM IC-7200, a MA5V antenna, a GPS timing standard antenna plus various cables and coaxes. The units were tested, burned in, and shipping commenced to each of the 18 locations.

As of this writing, the V2 units have been installed at 15 of the 18 locations, with shipments completed to 17. The last location, RR9O, will complete shortly.

When the V2 program was started, we looked at alternatives, such as WSPR (FT8 hadn't been invented), but all the alternatives required specialized software to hear, decode and track the signals. CW is the "universal" mode, easy to decode with just a radio, yet software can decode and track. Hence, the V2 program was designed to replace failing hardware, yet keep the same program and concept.

The development of V2 involved a team of operators: Leigh Klotz,

WA5ZNU; Lance Ginner, K6GSJ; Tom Berson, ND2T; Peter Jennings, VE3SUN; Charlie Mason, W4NJK; Walt Wilson, N6XG, and Don Greenbaum, N1DG, along with the authors, Ned Stearns, AA7A and Kevin Rowett, K6TD.

One particular note is the support from ICOM and Ray Novak, N9JV. Ray was able to locate plenty of used IC-7200 radios, have them refurbished and supplied to the program at no cost. This was especially important and helpful, as we'd designed the V2 program around the IC-7200, and then ICOM discontinued the product in favor of the IC-7300. This program couldn't have gone forward without Ray's support and efforts. Thanks Ray!

N6XG took on the task of final testing finished units, and the logistics of V2 packages to existing ops. This involved considerable coordination

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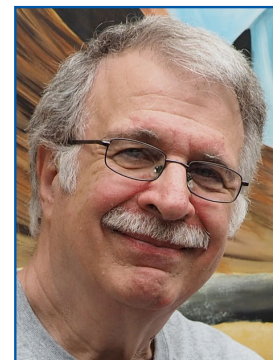
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From the President's desk

WE'RE ALL GLAD TO SEE 2020 IN OUR REAR VIEW mirror. Because of worldwide travel restrictions and the inability to secure use permits due to COVID-19, most DXpeditions were sidelined last year. But as the world becomes more vaccinated, we're all looking forward to a healthier and hopefully more robust year of DXing in 2021.



NCDXF has already provided financial support for the CYØC (Sable Island, October 2021) and we expect to support additional DXpedition grant requests to rare locations soon. We have also committed \$2,500 to the *Youth-On-The-Air Region-2 Convention* scheduled for this July in Cincinnati. YOTA's mission is to build skills and foster lasting friendships and mentors with younger hams.

Two articles authored by NCDXF directors are showcased in this newsletter:

- To improve our worldwide Beacon Network, NCDXF has funded a new Dual Band Discone (DBD) antenna program, designed to help DXers worldwide better understand what is actually happening on the bands in real time (Ned, AA7A and Kevin, K6TD).

- NCDXF has also funded the new "Radio In A Box" (RIB) program. The RIB is an entire pre-assembled station in a weather-tight enclosure. Imagine a fully remote DXpedition where all radios, antennas and generators are land-based while the operators are aboard a vessel offshore. In the future, DXpeditions using this RIB approach could become the norm, allowing easier access to environmentally sensitive areas and facilitating DXpeditions to remote areas that might otherwise never happen (George, AA7JV).

While sheltering in place, we all have had many opportunities to participate in virtual meetings to learn new skills and stay in touch with our ham radio colleagues. One example is *QSO Today's Virtual Ham Expo* which took place on 12-13 March. Two of our directors, Craig, K9CT and Glenn, WØGJ, were among the invited speakers.

As we move into Cycle 25, 17 individuals have now included NCDXF in their estate plans. 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.

Finally, we are pleased to announce "The DXcellence Award," an annual Award of Excellence for DXpeditions sponsored by the Foundation, as we approach the 50th Anniversary of NCDXF (*turn to page 9*).

On a personal note, I thank each of our contributors for your continued support. You are the backbone of NCDXF. We could not do what we do without you. A full list of individual and club contributors is always shown on our website (www.ncdxf.org). 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!

CONTRIBUTIONS NCDXF relies heavily upon the generosity of its contributors to fund various projects. We ask you to consider making an annual contribution of US\$50 or its equivalent in foreign currency. However, we do not wish to exclude anyone from the **FOUNDATION** for financial reasons. If \$50 is not within your budget, then please give what other amount you can. Naturally, we welcome contributions in excess of \$50! NCDXF is an organization described in Section 501(c)(3) of the Internal Revenue Code and all contributions are tax-deductible to the extent permitted by law for U.S. taxpayers. Send your contribution to: **NCDXF**, PO Box 2012, Cupertino, CA 95015-2012, USA. You may also contribute and order supplies online via our secure server, visit www.ncdxf.org/donate.

with the ops, learning their issues and shipping communications equipment into some countries. Walt excelled at getting each site running.

DX beacons sites and ops

Each operator has taken great care of their beacons, doing a significant amount of repair and upkeep as the beacons aged, or were affected by environmental issues, such as antenna corrosion and lightning strikes.

We also had some problems with the V2 controller, but local operators often bugged in and helped us diagnose or even repair the issue. Ruwan Abeykoon, 4S6RUA, was able to repair a V2 controller failure; Marcelo Duca, LU1AET, completely rebuilt the software, converting it to work with a different model of ICOM radio after the original 7200 failed and couldn't be repaired and there was no way to ship in a new radio. Frank Schneider, ZS6GE, repaired the LCD for the ZS6DN beacon, and Thomas Worthington, NH6Y and Alan Maenchen, AD6E, adopted KH6RS when the prior operator retired and moved off Oahu.

If it weren't for the volunteer operators the beacons would not be on the air, nor would they stay on the air.

The 4U1UN beacon has been off the air since January 2020, due to an antenna failure, and COVID-19 has made it impossible to gain access to that site. A new V2 package was shipped to the 5Z4B in 2019, but the DX beacons team has lost all contact with the operator for this beacon. If you can help, please contact www.ncdxf.org/beacons.

Monitoring tools and resources

Here is a list of monitoring tools available for the beacons.

Intended for spotting DX stations is www.reversebeacon.net. It is also used extensively to spot CW and RTTY stations during contests, and has a menu dedicated to spotting for the DX beacons. Using the Spot Analysis tool, you can learn info about band openings.

VE3SUN has written several tools for the DX beacons (visit ve3sun.com).

KiwiSDR is a wide band HF monitoring receiver with over 500 sites deployed. Peter wrote an extension for the KiwiSDR webpage, providing direct timing and monitoring of DX beacons, at a specific receiver. Peter has gone on to organize a webpage that is very helpful in tracking where the DX beacons are heard (ve3sun.com/KiwiSDR).

All of these programs provide real time audio reception of DX beacons at the location of the receiver.

Much can be learned about propagation at your location, by setting up a FAROS-based monitoring station. Peter also has a webpage providing step-by-step instructions to create a monitoring station and post the info to a webpage.

FAROS software was created by Alex Shovkopyas, VE3NEA, and it is still available; however, Alex has not updated the software to work on WIN10. The application seems to

work on WIN10 but may not survive some future update to the operating system.

Antenna development

An extensive search for alternatives to the beacon network's standard MA5V antenna took place in 2017. Slow, steady degradation of electrical and mechanical features in deployed antennas have been observed in many of the installations. Replacement antennas and parts are no longer available, so the NCDXF beacon team was tasked to find, or create, replacement antennas, with the challenge being to provide a reliable, maintainable antenna that can be shipped commercially, and will also provide acceptable technical performance that supports the beacon network's mission.

Following the exploration of alternatives, AA7A created a unique antenna concept called the Dual Band Discone (DBD) that appears to meet



The Dual Band Discone (DBD) prototype.

all of the requirements for the beacon network. The footprint of the antenna is slightly larger than the MA5V, but the electrical bandwidth is extremely wide, and the radiation pattern is superior to that of a trapped vertical. The challenge of making a single antenna that has both good SWR and low angle radiation pattern over a 2:1 frequency range (e.g., 14 to 28 MHz) is extremely high. A single discone antenna will present a good SWR over an octave frequency range but the radiation pattern at the high end is very poor. The novelty of the DBD approach is that there are essentially two discone antennas in the same location fed by a single feedline. One of the two discones essentially covers the 20 Meter band, while the second covers the 17M through 10M bands. This approach provides good SWR on all the beacon network bands while also producing very good, low-angle radiation patterns.

A prototype DBD was built in the AA7A antenna lab and tested on a small antenna range. Side-by-side comparisons of the DBD prototype and the last MA5V antenna in the inventory were performed using WSPR transmissions conducted over a time span of several weeks. The results of received signals on all the HF bands using data collected on WSPRNet indicated that the DBD's performance was consistently better than the MA5V and the favorable

performance difference of the DBD got better on the higher HF bands.

The initial DBD prototype was delivered to the W6WX beacon site in November 2018 and, for a period of time, was operated with the prototype. The signal strength comparisons between the previous MA5V vertical were compared to those using the DBD and after only a short time it was quite clear that the DBD was a superior antenna. Soon after the installation of the DBD at W6WX, a strong winter storm with 100 mph winds blew through the site and demolished the MA6V; the DBD was unaffected. As a result, the decision was made in February 2019 to operate this beacon site with the DBD and move forward with the development of a production antenna drawing package.

Five production DBD antennas have been built and are ready to ship. Clearly, this antenna requires some installation techniques that are different than those for a small trapped vertical, but the performance and reliability of the antenna will likely make the investment in time to install this antenna at remote beacon sites worth the effort.

The future

The value of the DX beacons is in using the beacon signal to learn about current propagation and how it is changing (are signals building or fading?) compared to the recent past.


This is especially useful at the operator's location.

Now that the V2 program is well on its way to completion and improvements to the antennas are in progress, the DX beacons team is moving on to providing direct aids for the use of an operator at each location.

The most helpful is a real time graph showing signal strength, per band, over a period of time. FAROS, with a local DX beacon receiver is the premier tool for that information. These days, most Ops would prefer to get relevant information via a webpage.

Our team is looking at regional, or local receiver options, methods and software for data collection, and access to the information via a webserver. One of the areas of investigation is the work done by HamSci — especially the personal space WX station — as a local receiver. The team will also join the upcoming HamSci Workshop on 19-20 March.

Cycle 25 is upon us. One NCAR solar scientist is predicting a cycle like Cycle 19 in 1959. HF propagation models, including VOACAP and ITU tell us what might happen. Knowing today, and last week, locally can also provide some insight to when and how to work those rare DXpeditions (3Y) that should start to peak about the time Cycle 25 peaks.

Over the next year, look for the DX beacons to provide info about what has actually happened on the bands. 

50 Years Ago A Blast From the Past

**West Coast DX Bulletin
published every week by the Marin County DX Group
March 23, 1971**

“There are overtones of tragedy in much of our DX efforts. One local QRPer, desperate for a Zone 34 contact to complete WAZ, finally had a schedule set up with ST2SA. The night before, he spent the evening until after midnight tuning things up to the maximum... finally blew the house fuses in the older QTH.

With the schedule at dawn, he braved the midnight darkness to crawl under the house to change the fuses... and sure enough, got stuck! There was the XYL trying to drag him loose by pulling on a leg... the QRPer thrashing around, and the neighborhood hippie leaning out of the window and bellowing in to the night: “What’s the matter, Lady? Is the old man on a bad trip?”

Son of a Gun, some trips are all bad... and how can one face the new day after a night like that? Find out... \$9.00 for a full year by 1st class... \$10.50 by Airmail. West Coast DX Bulletin.”

AN INTRODUCTION RADIO IN A BOX

George R. Wallner, AA7JV

DXPEDITIONS TO RARE LOCATIONS make exciting DX happen. During the past few years, however, it has become increasingly difficult to get landing permits to the most wanted locations and we are almost at the point where environmental concerns have completely locked Amateur Radio out of the most desirable DX entities.

Operating challenges

During the 2018 Baker Island DXpedition (KH1/KH7Z) I realized that, in the face of changing attitudes, we would have to change how we operate. Getting a USFWS Special Use Permit

for Baker was exceedingly difficult, and we had to live under many restrictions, but, grudgingly, we were allowed to set up camp on a narrow strip along the beach.

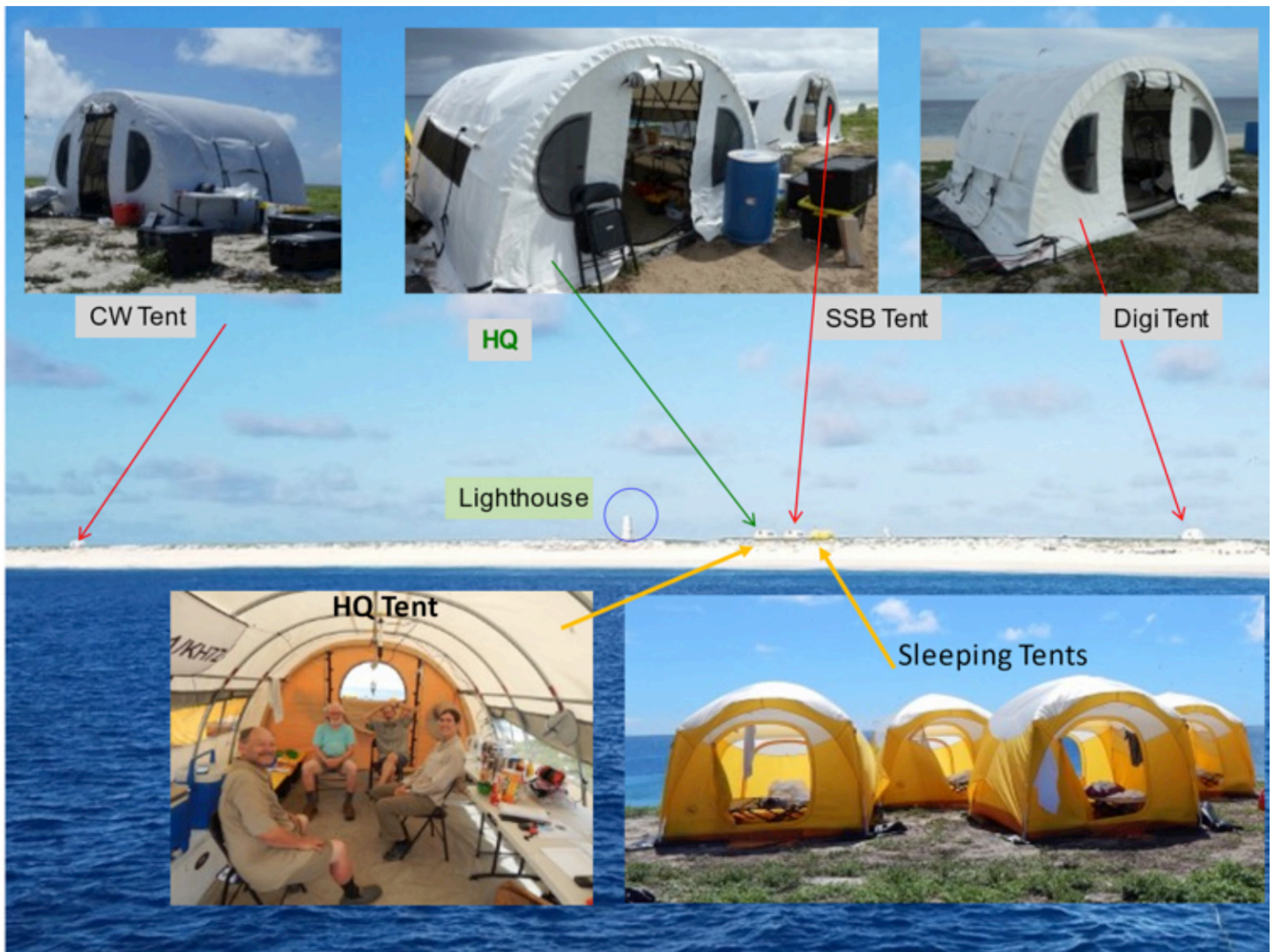
While there, we had a USFWS observer with us who watched our every move and during those two weeks, I tried to find out what it was that the FWS did not like about DXpeditions. It turned out that it was the camping that bothered them the most, not so much the antennas! In fact, our WFS observer carefully watched all our antennas for bird strikes. She was pleasantly surprised — and so were we — that during

the entire 12-day operation there was only one bird (out of 7 million) that was seen to hit one of our antenna guys. It looks like birds get it.

The camping — with latrines, showers, sleeping and operating tents, trash and all the back-and-forth activity — was the main thing on our observer's mind, although another concern was for safety. She saw middle-aged-plus men getting in and out of a small boat in high surf and waves, as they ferried back and forth to the island, and they were working in the unremitting equatorial sun building a miniature city. An accident could make the entire department and its leadership look bad, so it's easier for the USFWS to just say "No!"

A new idea

As I was picking the FWS observer's brain, an idea came to mind. What if we could do away with the whole camping



Tents, tents and tents — the Baker Island DXpedition camp.



RIB on Water Cay, Bahamas. Note the external cooling radiators.

mess? Indeed, during Baker, because we were only allowed 11 operators on the island at any time, we were hoping to have some operators work from the boat. As it turned out, technical difficulties prevented that, but the idea was there: operate from the boat. In that way, there would be no camping which meant no tents, much simpler logistics, less time to set up, and so on. And, perhaps, an easier path to obtaining a permit.

Thus was born the Radio in a Box (RIB) — an entire station pre-assembled in a weather-tight enclosure — containing a Flex 6700 transceiver, a 1kW PA, power supplies, control and networking equipment. The generator is plugged in at one end and at the other end, the antenna. A high-speed IP radio link connects it to the boat where the operator would use a Flex Maestro console (or PC) to remotely operate the radio. A couple of people would go to the island on a daily basis to top off the generators with fuel and perform antenna maintenance if required.

Thus, it would put an end to camping, trampling upon the island and messing up the environment. Of course, there would still be antennas, but they could be of a new low-profile design that wouldn't bother the birds. Most importantly, there would be no people or pollution on the island, which are what the protection rules are mostly about.

Test run

In a bold experiment, NCDXF has sponsored the development of RIBs to enable future DXpeditions to operate from places where camping is not allowed, and in November 2020 four of us — Michael Snow, KN4EEI; Gregg Marco, W6IZT; Hal Turley, W8HC, and myself, AA7JV — took four newly built RIBs to an uninhabited island in the Bahamas to test them in a simulated DXpedition. Using the call sign C6AGU and operating from the boat, the RIBs were used to make over 9,000 contacts during a 14-day period,



The RIB contains special features that allow the entire 1kW station to run on this efficient and low fuel consumption generator. Note the extended fuel tanks that allow up to 36 hours of operation on a single fill. Fewer visits to the island!

including the CQWW CW and ARRL 160 contests.

During this simulated DXpedition, we not only tested the RIBs, but also worked on minimizing the set-up time and optimizing the data link, network and antenna arrangement — all things that a real DXpedition using RIBs would have to deal with.

The RIB uses an IP network for the radio, monitoring and control. The 900 MHz IP radio bridge has 30 MBps of bandwidth. The DAQ is an analog/digital data acquisition and control system and is controlled by software running on a PC (laptop) inside the RIB. The PC contains a VNC server and is accessed from the boat using a simple VNC viewer.

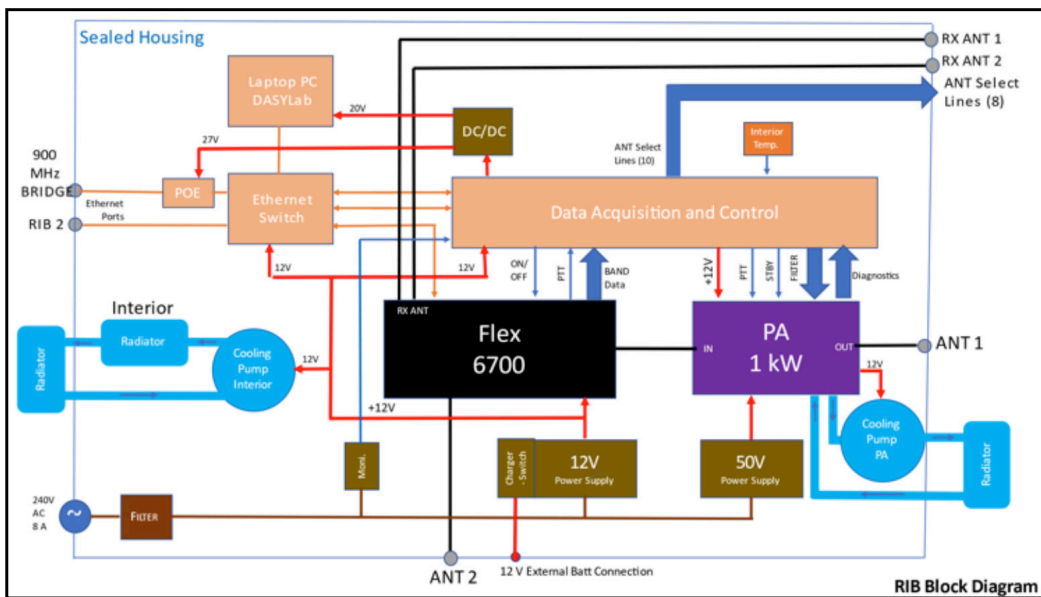
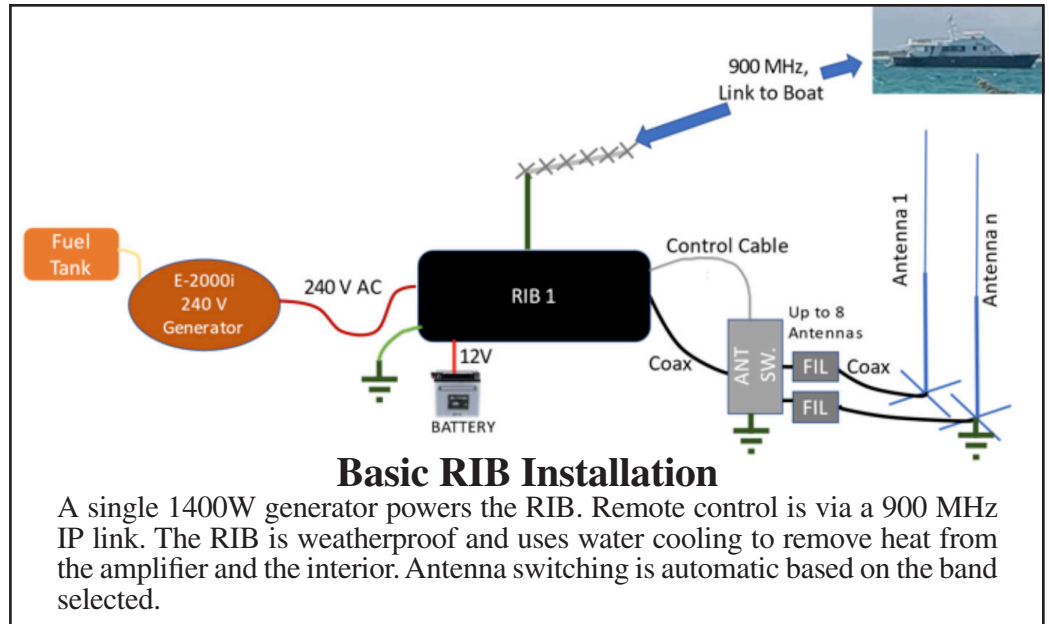
Multiple RIBs can be interconnected via a local Ethernet network and four such interconnected RIBs were tested at C6AGU, running concurrently, sharing a single 900 MHz link. The operation was smooth with no network congestion issues.

Users of Flex SDR radios know that operation via its Ethernet/IP connection is just like using a traditional radio, and at no time during our test on Wood Cay at C6AGU did we feel that we were operating a remote device. During both the CQWW and the ARRL 160M contests we were competitive, proving that you don't have to be on the island for good operating efficiency and

station control. In fact, operating from the boat resulted in a more efficient (and comfortable) operation.

Another advantage for DXpeditions with limited time is the substantial reduction in setup time. There is no infrastructure to be built and removed; food doesn't need to be ferried to the island and, apart from the daily generator refueling, people aren't being transported back and forth.

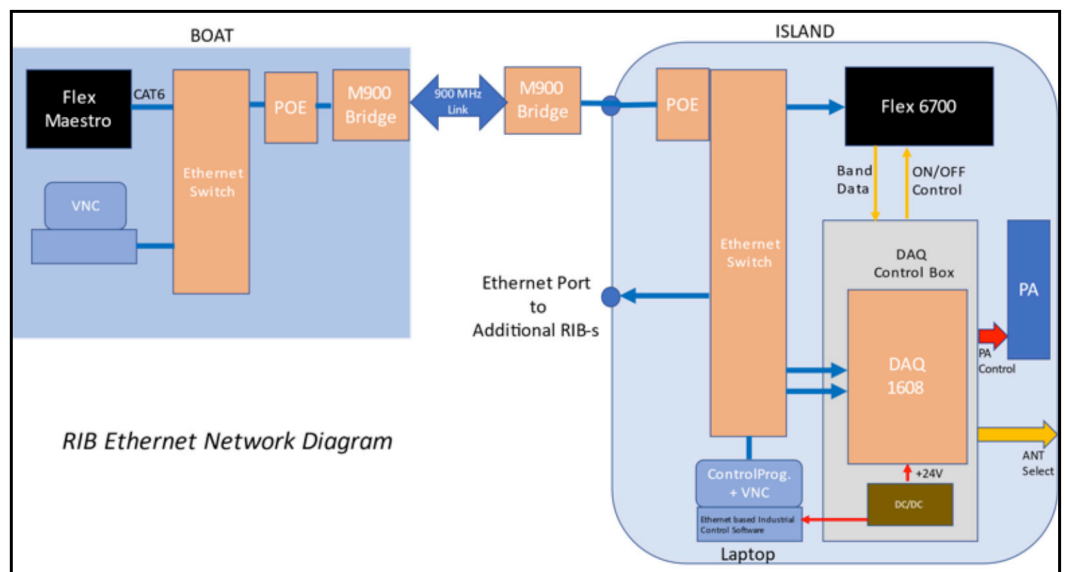
Power and fuel are major parts of the logistics and the expenses of a DXpedition. Because CW and SSB modes are "low" duty cycle modes with average power



far things are looking promising. We intend to do more testing to refine and speed up the set-up process, create an operating and troubleshooting manual, as well as generate more data on generator fuel consumption.

DXpeditions of the future will likely be different. Operating remotely using RIBs (or other solutions) will become the norm in sensitive areas. Although some of the adventure of going onto the island may be lost, more QSOs will be made and more rare locations will make it into more logs and enable DXpeditions that may never happen otherwise.

that is much less than the peak power, the RIB contains a large ultra-capacitor bank to smooth out the power drawn by the RIB PA, allowing the use of an undersized generator. In the case of C6AGU, we had a single 1400W generator to power an entire station (1 RIB) with a 1kW output (maybe a bit more). Fuel efficiency was also improved (up to 30%), as the generator ran smoother, not having to rev up and down with each dot and dash.



The future

We are not done yet, but so

Cass Awards

PRESENTED ANNUALLY, THE CASS AWARDS ENCOURAGE DXpeditions to maximize the number of DXers worked with a plaque for the Single-Operator DXpedition that works the most unique callsigns during a two-week interval, and a plaque for the “unlimited” DXpedition that works the most unique callsigns. The rules for each award

are defined on the website (www.cassaward.com). Both awards are issued in March for DXpeditions during the preceding year.

These awards honor the wisdom and spirit of Cass WA6AUD (SK), whose stories in the West Coast DX Bulletin taught a generation of DXers that DX IS!

Unlimited Cass Award

The 2019 Unlimited Cass Award was won by the 5K0K team. During October 2019, the 5K0K team (pictured at right)— Petr Bohacek, OK1BOA; Petr Spacil, OK1FCJ; Pavol Halek, OK1CRM; Pavel Novak, OK1GK; Ruda Sedlak, OK2ZA; Ludek Odehnal, OK2ZC; Karel Odehnal, OK2ZI; David Beran, OK6DJ, and Rob Rey, HK3CW — worked 20,744 unique stations from San Andrés Island, setting a new record for the Unlimited Cass Award.



Single-Operator Cass Award

For the third year in a row, Janusz Wegrzyn, SP9FIH (pictured at left), has won the Single-Operator Cass Award, this time by working 7,518 unique stations during his 14-day, one-man DXpedition to Palestine as E44WE.

Sponsored by Club Log, DXLab, and the Northern California DX Club,

the Cass Awards encourage DXpedition operating excellence by recognizing DXpeditions that work the most unique callsigns. Running leaderboards for the 2020 Cass Awards are available by clicking the links below.

Single-operator: www.clublog.org/cassaward.php

Unlimited: secure.clublog.org/cassaward-unlimited.php

Estate planning update

Craig Thompson, K9CT



DURING OUR COVID TIME, MY WIFE and I decided to dust off our wills and estate planning. Our attorney helped us clean up and update and few things and said that we weren't the only ones who decided to take a look at their estate plans. It seems the legal community was very busy during 2020 as there were lots of people who worried whether or not they would make it to 2021.

Well, we have made it this far and I

can't wait to get in the pileups for one of those rare top ten entities.

One thing that is in my estate planning is a cash award to the NCDXF. I want to make sure that future DXers get the benefit from my years of fun chasing and being DX. What a better legacy to leave to my ham radio community? I encourage you to do the same. It is not difficult to do but you need to get this in writing. Here are a few simple

suggestions:

- Learn more about estate planning in your state (www.nolo.com/legal-encyclopedia/estate-planning-your-state).

- Have your attorney modify your existing estate plan to include NCDXF.

- Review [online resources](#) to create your estate plan.

- Download our [Cycle 25 information brochure](#)

- Keep NCDXF informed of your progress via our Cycle 25 email address: cycle25@ncdxf.org

For more information, visit www.ncdxf.org/pages/estate.html

Best of health to you in 2021!

NCDXF Special Award Announcement

"The DXcellence Award"

Something New for Cycle 25 and beyond!

The Northern California DX Foundation is announcing a new annual Award of Excellence for DXpeditions sponsored by the Foundation as we approach the 50th Anniversary of NCDXF and the beginning of Cycle 25. The award will be decided each year by the NCDXF Board of Directors and presented to a DXpedition that exemplifies the best of DXpedition practices, ethics, management, transparency and impact upon the DXing community. The Award will be presented at the annual International DX convention at Visalia (or ZOOM equivalent)



The basic criteria is as follows:

The DXpedition must have been sponsored (receive funding) by the Foundation and was on the air between April 1 of the previous year and March 31 of the current year to qualify for the current year's award.

The award consists of:

- Plaque
- Cash bonus to the team
- Listing on NCDXF's Award of Excellence roster, on the webpage
- Press Release
- Bulletin on the Foundation's webpage

We would like to hear DXer's say, "Yeah, that was an excellent DXpedition and well deserving of the award!"

NCDXF Director Profile

NAME & CALL SIGN: Craig Thompson, K9CT

PAST CALLS: WN9TXL and WA9TXL Trustee for NH8S

CURRENT LOCATION: Trivoli, IL, about 15 miles west of Peoria.

WHAT ARE YOUR PREVIOUS QTHs? I grew up on a farm near Pecatonica, IL, near Rockford.

IF YOU'RE WORKING, WHAT IS YOUR CAREER? IF NOT, WHAT WAS YOUR CAREER? I am semi-retired but an active CEO and owner of an electronics system integrator, Thompson Electronics Company (www.thompsonet.com).

NCDXF LEADERSHIP OR SUPPORT POSITIONS? I have a role in encouraging estate gifts to the NCDXF Foundation known as Cycle 25. Liaison for prospective DXpedition support requests as assigned.

OTHER LEADERSHIP POSITIONS? Currently ARRL CAC Chairman; Manager of Pacific Island DX Group 501c3 Foundation; Treasurer of CW Operators Club. Past president of Society of Midwest Contesters.

CURRENT DXCC STATUS? Mixed 360/338; Phone 356/336; CW 344/335; RTTY 327/325; DXCC Challenge 2996; 10 Band DXCC

DXPEDITION EXPERIENCE? Co-leader of K5P (Palmyra Island); PJ7E (Sint Maarten); NH8S (Swains Island) and K9W (Wake Island). Team member VP6R (Pitcairn Island); K1N (Navassa); TI9KK (Cocos Island); K4M (Midway Island); 3D2C (Conway Reef); FT5ZM (Amsterdam Island) and 3YØZ (Bouvet Island).

WHAT WOULD YOU TELL SOMEONE WHO IS THINKING ABOUT CONTRIBUTING TO NCDXF? You can make DX happen! The costs of a successful DXpedition to a rare entity are quite high and it takes a large community of like-minded Hams to make it happen. NCDXF prides itself on our careful evaluation of any DXpedition effort. You can be assured that your money will be well spent.

AS AN AVID DXER WHAT SORTS OF TRENDS DO YOU SEE? Some of the entities in the top 25 have become more and more difficult. Government protections have made travel to them almost impossible. We must support those who have maneuvered the bureaucracies and been given permission to operate. Costs to gain approval and also satisfy the regulations are above and beyond the transportation costs in some cases.

ANY TIPS FOR DXERS? Listen and listen again. Call when it is the right time and only then. Know your station and the propagation. Take time away from your work when a rare one is going to be on, it might be the only time that entity is on in a decade or more.



DESCRIBE YOUR SHACK AND ANTENNA SYSTEM: Take a look at my website www.k9ct.us I have built a competitive contest and DX station with many towers and antennas for 160 through 1296. I really enjoy working on and improving the station.

MARRIED? KIDS? GRANDKIDS? I am married to an understanding wife, Ilean, who allows me to be away for contest weekends and some 5- to 6-week DXpeditions to far away places. We have one daughter, Cara, who lives on the contest station property.

ANY OTHER HOBBIES BESIDES HAM RADIO? I like to run, golf, snowmobile and attend as many Bradley University basketball games as possible.

WHAT MIGHT SOMEONE BE SURPRISED TO KNOW ABOUT YOU? When I was a teenager I played keyboards in a couple of rock bands. I often played pipe organ for church services and weddings.

ANY OTHER COMMENTS? This is a great hobby and most everyone is a friend or soon to be friend. The original social media!

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.

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 Thomp-

son, 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."

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

Tom Berson, ND2T	Alan Rovner, K7AR
Al Burnham, K6RIM	Bob Schmieder, KK6EK
Bruce Butler, W6OSP (sk)	Rich Seifert, KE1B
Rusty Epps, W6OAT	Charles Spetnagel, W6KK
John Grimm, KØYQ	Ned Stearns, AA7A
Rich Haendel, W3ACO	Randy Stegemeyer, W7HR
Glenn Johnson, WØGJ	Craig Thompson, K9CT
Hardy Landskov, N7RT (sk)	Dan White, W5DNT
Ed Muns, WØYK	

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

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."



options, including specific bequests, designation of IRA beneficiaries and purchase of an annuity or life insurance.



Show your support for NCDXF

NCDXF offers several ways for you to show your love for DXing! Impress your friends with a gold lapel pin (\$7), show up at your next hamfest sporting the NCDXF hat (\$12) or don a NCDXF T-shirt (\$15) to set up your Yagi on Field Day. Send out your QSLs with an NCDXF label (roll of 500, \$7). Mail in the attached form or visit www.ncdxf.org to order today.



Contribution & Order Form

YES! I want to contribute to NCDXF!

Contribution \$ _____
 YES! I want to show my support for NCDXF. Send me the following supplies (shipping included):

- _____ T-Shirt(s) @ \$15 each \$ _____
- (indicate size M / L / XL / 2XL / 3XL)
- _____ Hats @ \$12 each \$ _____
- _____ Lapel pin @ \$7 each \$ _____
- _____ Roll(s) of labels @ \$7 each \$ _____
- Total contribution & supplies \$ _____

Call sign _____ Name _____

Mailing Address _____

Email _____

Check enclosed or Charge to Visa / MC / AmEx

Card number _____ Exp. _____

Signature _____

Mail to NCDXF, PO Box 2012
 Cupertino, CA 95015-2012