

# VKØEK HEARD ISLAND 2016

## Part 1 - PLANNING: Not A Little Exercise

Robert W. Schmieder KK6EK, with Rich Holoch KY6R,  
Dave Lloyd K3EL, and Kenneth Karr NG2H

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*AudioLog 24 February 2016 Walnut Creek, California. Well, one week from now I will board a flight for Cape Town, South Africa, to start the final preparations for the launch of the Heard Island expedition. As you might guess, there are many, many details to attend. Happily, I can report that it appears that all the critical elements are in place, and we're mostly doing the details: updating the expedition website, handling donations and paying bills, updating the biosecurity plan, logistics, local communications, QSL policy and procedures, and final acquisition of supplies. By the way, the souvenir store is open!*

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About a half-million dollars. A month on the open seas, two months away from home. Cold, cold. A campsite on lava. Nonstop work for three weeks. Not for the uncommitted and not for the impuissant. Now, there's a postcard home about your summer vacation!

Perhaps the most amazing aspect about the 2016 Heard Island Expedition VKØEK was that there were lots of people who were eager to do this, and a group who actually did it. What the team of 14 men, the extended team of about 50 amateur radio operators and scientists, plus more than 10,000 sponsors, accomplished was remarkable; it was one of the most difficult DXpeditions, ever. We hope you had some part in it, and we appreciate your support.

Through the courtesy of editor Carl Smith N4AA, this special issue of DX Magazine is our opportunity to share with you what it took to carry off this 4-year project safely and effectively. In this article, we describe the planning process, and in the subsequent articles, the expedition itself, the radio operations, the infotech, the environmental field work, and finally a perspective on the future of DXpeditions.

### How Did All This Happen?

In some sense, VKØEK was defined in February, 1994. I was returning from the Peter I Island DXpedition 3YØPI. I was contemplating the future, when suddenly it occurred to me that it was less important *where* would we go next, than *what* would we *do* next? The next year my close friend Carlos Nascimento NP4IW and I planned and led the 1995 Easter Island/Salas y Gomez XRØY/Z DXpedition, and in 1997 we produced the VKØIR Heard Island DXpedition. The former was the first to bring the internet into DXpeditions, and the latter proved what a good thing that is. I became obsessed with Heard Island, probably one of the most motivating pieces of

land on the Earth. With a titanic live volcano, hundreds of thousands of penguins and seals, and glaciers that are melting before our eyes, its attraction is more than its geo- and glacio-structures—it is a living island, a mysterious mountain that draws you in with an unavoidable fascination of the place itself. The fact that it is one of the most desired radio sites on the planet is enough to start the engines of planning for a visit, one that occurs perhaps once in a lifetime.

The trigger for the 2016 expedition occurred in 2012, during the preparation for the Clipperton Island DXpedition TX5K the next year. My partner for that one was Chris Janssen DL1MGB. While in the midst of another ambitious DXpedition, we wondered what to do as a follow-up.

“Well,” I said. “If we really want to be brave, we could consider a return to Heard Island.”

Chris was intrigued and we began to produce long documents describing how it could be done.

After the TX5K project was completed, I was on my own, and began to seriously think about what it would take to get back to Heard Island. As usual, I started with the broadest assumptions:

- *The radio community can't fund it alone, therefore it must be multidisciplinary*
- *Multidisciplinary means radio, IT, and science*
- *The team should be 30-50, a month on the island.*

An unquestioned assumption from the beginning was that we would develop and implement new technology, much—or most—based on access to the internet. Of course we would deploy our exclusive real-time system DXA, giving DXers log confirmation within one minute of their QSO. But there was so much more that could be done, and we wanted to do as much of it as we could.

## Blowing Our Cover

At Visalia 2012, I talked openly about a return to Heard Island, as a means for finding out whether anyone else had similar plans. Not a single person gave any hint that they were plotting, so the next week I made a news release announcing my plans to organize and lead the expedition. Silly me...I thought we could do it in 2014. Boy, how I underestimated the difficulty, and the delay!



Strategy meeting. (Front) KY6R, W6DEI, ND2T. (Standing) Nigel Jolly, KJ4Z, KK6EK, N6TQ, W6OAT, N6MM, Anders Jepsen, NP4IW.

A near-miracle arrived in the person of Rich Holoch KY6R. Rich had worked hard on the TX5K project, and we had become close friends—we live only 5 miles apart. Rich brought with him a combination of core capabilities that helped define the nature of the project: software development, deep immersion into social media, and an unconstrained ambition to rise into the celestial realm of DXCC Honor Roll. As we did variations on what we could, and should, attempt to do, we encountered—or created—a whole new world of possibilities: outreach, real-time communications, and internet-based services.

## Building an Expedition

Rich and I engaged in a continuous series of brainstorming sessions. My focus was on the overall goals and the challenge of stitching together a multidisciplinary project; Rich's focus was on the technical implementation of outreach to the radio community. We called "open" meetings, and invited anyone who would come. We had a few luminary radio ops, but mostly the big names in DXing stayed away, I suppose because they were suspicious of a multi-disciplinary project. My title was Expedition Organizer/Leader; Rich was co-organizer. After vacillating, he finally decided his role should be offsite, to ensure that the interface between the

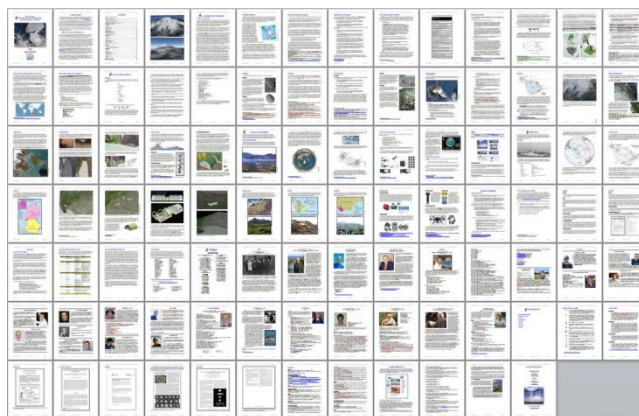
expedition on the island and the radio community would function properly. Of course, he needed Heard Island in his log, but of course that wasn't part of his considerations!

My time began to be devoted to traveling and writing. I made trips to France to try to arrange passage on one of the French vessels that go to Kerguelen, and twice to Tasmania, to interact with the Australian Antarctic Division, the people who were going to give us our visit permit, we assumed.

The paperwork was far beyond what we had needed in 1997. Before the project was over I wrote the following:

- AAD Permit Application Cover Letter (4 pp)
- Consistency w/HIMI Management Plan (2 pp)
- Environmental Approvals Application (20 pp)
- Participants' Handbook (450 pp)
- Participation Agreement (1 p)
- Policies (8 pp)
- Project Description document (96 pp)
- Proposals for Scientific Specimen Collection (115 pp)
- Public Liability Insurance (4 pp)
- Risk Management Plan (10 pp).

Here is a thumbnail of just one of these documents, the Project Description. My estimate is that I put in about 2000 hours writing the documents necessary to make the expedition happen.



The Project Description

The Participants' Handbook was by far the largest, but it wasn't the most difficult. Essentially I patched it together from various emails, charts, photos, web pages, and other material that we had accumulated in the past 3 years. It included a large amount of reference information, material we probably wouldn't need, unless something went wrong. Parts of it were critical to our operations, and parts were probably never looked at.



*The Participants' Handbook (450 pp)*

Team-building was an up-and-down affair. As we developed some visibility, a variety of well-known DXpeditioners approached us and joined the team. But as the months and years dragged on due to delays in vessels, permits, and funding, some of them found reasons to go elsewhere. To our astonishment, we received some rather nasty and unfair criticism. We simply didn't respond to any of it—we had better things to think about.

The search for transportation to Heard Island became a frustrating odyssey. We made what seemed like strong agreements with three vessels, each having the capacity for about 40 persons. We searched for team members, and most of the time we had a roster of 30 to 40 persons, mostly radio ops but also some scientists, mountain climbers, a filmmaker, and even a couple of surfers (which would do the intertidal collections). It was indescribably frustrating that each of the three vessels did a bait-and-switch, apparently thinking that we were a huge, rich commercial organization they could exploit for big bucks. For instance, the Agulhas II thought we should charter the entire 400-ft. vessel for about \$15,000/day, and take along as our guests 80 cadets in training. The Shokalskii made a secret deal to do contract work elsewhere, leaving us on Heard Island for the duration, and when I said that wouldn't work—we needed a support ship onsite—they angrily cancelled the contract. By that time, it was mid-2015, already 2 years after our original target date.

The fundraising was an ongoing effort. We maintained an excellent website, and listed every single sponsor in various categories of donation amounts. Every donor received a personal letter of thanks. The "budget" was actually a running "cash position"—it showed how much we still needed to raise and where we thought we would get it. With a big vessel and a team of 40, the budget hovered around

\$1.5 million, which seemed silly big, but it seemed to work. I wrote a program to allow sliding amounts for team member charges, vessel costs, equipment purchases, shipping, QSL costs, etc., and spent endless hours chasing the optimum so the colored bar would be green not red. We were honored with a \$50,000 grant from the Northern California DX Foundation (NCDXF), and especially generous grants from the German DX Foundation, INDEXA, the ARRL, and numerous others.



*KK6EK accepting the grant from the Northern California DX Foundation. At right, W6OAT and NG2T*

When the Shokalskii cancelled, we thought we might be done. We had delayed so long we simply could not flop over into another year's delay. We needed that proverbial miracle. And there it was! Through friends, I was able to connect with Nigel Jolly, owner/operator of the Braveheart, the famous vessel that has taken upwards of a dozen DXpeditions and countless other voyages in the Southern Ocean. The really great news was that Nigel thought he could take us, in March/April. The bad news was that it meant a major restructuring of the expedition. The Braveheart takes only 14 passengers. That would mean no climbing teams, no filmmaker or professional photographers, no historian, and no surfers. It also meant that the legendary explorers of Heard Island, Grahame Budd, and his two companions could not go. There would be room only for radio ops, and perhaps 2 team members to do the minimal environmental field science that was essential for our support. Dropping from 40 to 14 was heartbreaking, but it was either that, or no expedition. I was the only member from the 1997 VKØIR DXpedition able to make this return expedition. In spite of the loss, we enjoyed the fact that we were also 14 men, providing a link to the original 14 men who went to Heard Island in 1947.



## Engineering



Even as I struggled to stabilize the team, transportation, funding, and paperwork, the engineering of the expedition was underway. Rich and his local team (Diablo DXers) acquired the computers and networking hardware, and assembled and tested the entire system. Rich and radio team leader Dave

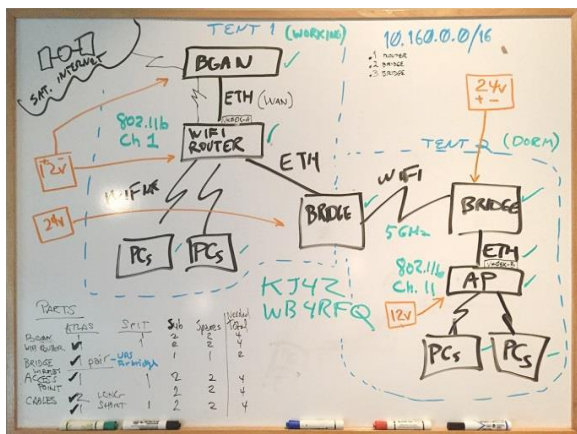
Lloyd K3EL obtained donations and loans of radios, antennas, coax, and many other items that are essential to a multi-station radio operation. There were dozens of working meetings at our homes, and the warehouse in Richmond, California, where we were able to store the equipment as it accumulated.



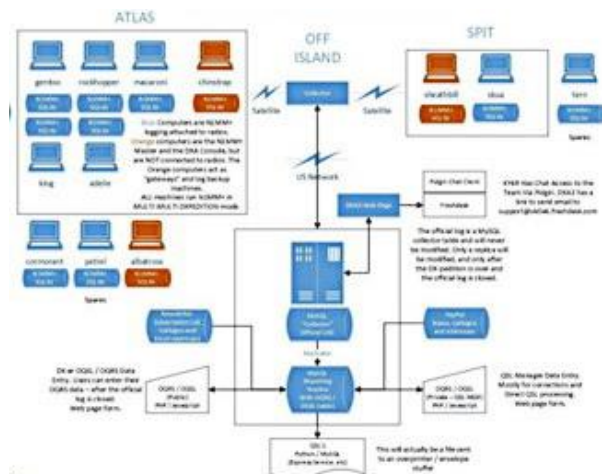
Rich KY6R and Mike KJ4Z develop the computers



The extended team tests the networks



The whiteboard was a critical piece of gear

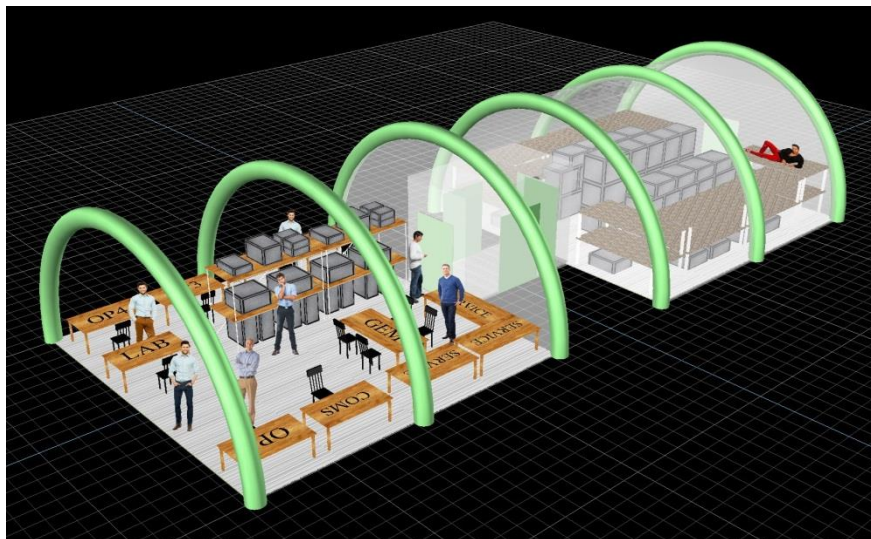


A draft of the VKØEK data architecture

## Equipment

An extremely important sponsor was HDT Global. They manufacture a line of inflating tents called AirBeam. After being staked to the ground, these shelters fully inflate in about 15 minutes. HDT lent us two of these shelters, each 20 ft. x 20 ft. Another critical sponsorship was Inmarsat, arranged by team member Ken Karr NG2H. Inmarsat provided four

Inmarsat BGAN terminals and unlimited access to the internet, enabling an unprecedented level of outreach and real-time communication. Disc-O-Bed provided eight of their high-quality stacking cots. Acoustic Solutions provided soundproofing panels. Other sponsors provided shipping cases, specimen bottles, and other materials.



*Conceptual design of the campsite with the AirBeam shelters*



*The Inmarsat Explorer 710 BGAN terminal*



*Dave K3EL packs equipment in the shipping cases*



*About half of the cargo, ready for shipping*

Equipment that was accumulated in California was shipped to Virginia, where it was combined with equipment accumulating on the East Coast. In December, 2015, the entire cargo was put on a freighter bound for Cape Town, South Africa, providing a good 2 months to make it to Cape Town. In fact, it made it in one month and spent the next month resting in a warehouse. We would next see it on the dock there, in early March, 2016, in a building about 100 m from the Braveheart.

The next two months were comparatively quiet, although I was still working intensely to complete the paperwork. Unexpectedly the AAD requested considerable details about our motivation and plans to collect specimens. With so much else to do, I had to take time to write seven separate proposals, totaling more than 100 pages, stating why collecting specimens was crucial to the project. They approved them without comment, and I was later told that they found nothing wrong with any of them.



## Outreach

A central part of the project was to significantly extend the outreach to the radio community, and to our sponsors. As the project progressed we inevitably created a set of logos:



Cordell Expeditions



VKØEK



Diablo DXers

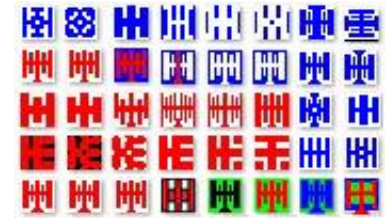


Expedition Leader

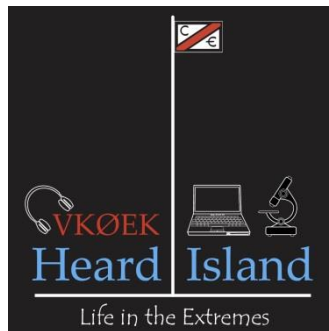


Station sign

A slightly silly task occupied more than its fair share of time: On many web pages is a tiny icon on the tab called a favicon. For our main website [www.heardisland.org](http://www.heardisland.org), I worked assiduously to design an appropriate favicon. It had to capture the alphabetical letter HI (for Heard Island), and had to represent the three main goals of the expedition (radio, IT, field science). Here is part of the designs I developed. The one I selected is row 2, column 7.



Another task was designing and implementing the souvenirs. Cordell Expeditions has a tradition of offering a 3-color front/back logo on a pure black background. I did a variation of the one we used for TX5K for mugs and tee-shirts. Rich arranged for a much classier polo shirt as a souvenir.

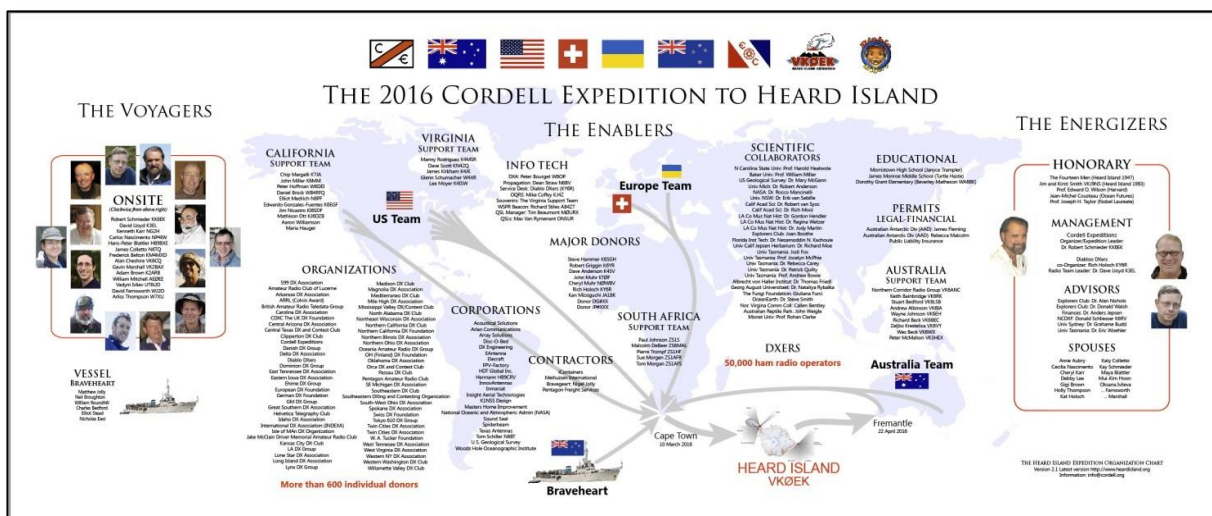


REAR FRONT



Front Back

As the plan matured we put together a wide poster listing the major sponsors, the national flags and logos, the onsite and principal offsite team members, and the paths that would be followed by the team, the cargo, and the Braveheart, converging on Cape Town and ending in Fremantle, Western Australia.



The map on the poster showed the major legs of the expedition. Ten of the 14 team members came from the USA (K2ARB, K3EL, NG2H, KM4MXD, AEØEE, N6TQ, NP4IW, WJ2O, KK6EK, W7XU), one from Switzerland (HB9BXE), one from Ukraine UT6UD), and two from Australia (VK6CQ, VK2BAX). As March 1 approached, the sequence represented on this map came alive: the team and the vessel began to converge on Cape Town, South Africa.



Collaborators in the planning included Aaron Williamson, Alan Nichols (Explorers Club), Anders Jepsen (Financial), Andrew Albinson VK6IA, Callen Bentley (GigaPan), Chip Margelli K7JA, Daniel Brock WB4RFQ, Dave Scott KN4ZQ, Dean Straw N6BV (Propagation), Dennis Wells ZS1AU, Don Walsh (Explorers Club), Donald Schliesser K6RV, Dr. Patrick Quilty (Univ. Tasmania), Eduardo Gonzales-Fuentes K6EGF, Elliot Medrich N6PF, Glenn Schumacher W4XR, Grahame Budd (Heard Island), Jack Burris K6JEB, James Kirkham K4JK, Jim Nicastro KI6SDF, Keith Bainbridge VK6RK Stuart Bedford VK6LSB, Lee Moyer K4ISW, Malcolm DeBeer ZS6MAL, Manny Rodriguez K4MSR, Mary McGann (U.S. Geological Survey), Mathison Ott KJ6DZB, Max Van Rymenant ON5UR, Mike Coffey KJ4Z, Paul Johnson ZS1S, Peter Bourget W6OP, Peter Hoffman W6DEI, Peter McMahon VK3HEX, Pierre Trompf ZS1HF, Rebecca Carey (Univ. Tasmania), Richard Beck VK6BEC, Robert Anderson, Saran Tumnee, Steve Smith (Explorers Club), Sue Morgan ZS1AFR Tom Morgan ZS1AFS, Tim Beaumont MØURX, Tom Schiller N6BT, Wayne Johnson VK6EH, Wes Beck VK6WX, and Zeljko Krestelica VK6VY.

Corporations making major donations in kind included HDT Global, Inmarsat, Inmarsat Government, Disc-O-Bed, Sound Seal, Acoustical Solutions, Elecraft, DX Engineering, Array Solutions, Arlan Communications, Spiderbeam, K1NSS Design, and others.