

# PREPARING FOR THE EXPEDITION



## Early Preparations

Our first steps into the project were educational. Ralph sent Peter and me a large color map, and told us about the book "Fourteen Men," written by Donald Scholes about the original 1947 ANARE expedition. That's where we first came to grips with the reality of Heard Island:

"As the ship approached the island, the bleak and dismal coastline became apparent. It accorded with my preconceived ideas land looked as though it would have knocked the heart out of any adventurer.

"Dangerous reefs and treacherous shoals surrounded this island. Watchers who ventured on deck counted numerous glaciers through the breaks in the snow and mist. Some of the glaciers ran into the sea, forming fantastic shapes and patterns. There were tall pinnacles, like cathedral spires, and white grottoes, like pictures from a children's book of fairyland. The slopes above the glaciers ran for thousands of feet into the clouds.

"Atlas Cove stretched out almost in a complete circle. The beach was stony and littered with hundreds of old dried bones, beaks, and animal skeletons. Here lay the bleached skeleton of a whale. Not a tree or shrub could be seen in the dismal landscape. Only the lower slopes and pressure ice ridges were visible through the hanging clouds and mist.

"The elephant seals lay in heaps of four and five. They belched and threw up their heads when we approached. Opening wide their cavernous mouths, they made a disgusting noise, half-belch and half-growl, as if clearing their throats. 'Reeerrrrk, arrrrrrrk....arrrrk!' After this effort they relapsed into timeless slumber.

"The petrels were revolting when they vomited, lightening their load to get airborne. Their companion birds pounced on these tasty morsels and wolfed them down. The island teemed with a grim prehistoric life, in which there was no room for the halt or maimed.

"On the whole, the island was a depressing place. There was little beauty in the gaunt grey rocks, the barren flat and grim precipitous coastline. But despite that, there was something of almost indefinable loveliness about it. In the morning sunrise, the great mountain was a heap of sparking diamonds, reflecting flashing tints. When the sky behind the dome was the pale clear blue of the Antarctic, the mountain was awesome. When a full moon glinted round the ice slopes the dome shone like silver. At sunset, when the shadows flitted in long lines across the glaciers, the mountain top was a dome of gold."

We all re-read Kirsti Smith's book "Heard Island Odyssey," the vivid account of the 1983 expedition organized by Jim and herself.

Ralph characterized what we had learned:

"These materials give great insight into the potential difficulties—fresh water sources, anchoring tents and shelters, surf, hurricanes, alternating snow and sand storms, distances to traverse on the island, wildlife, etc. I think it imperative that we do it with reliable ships. Weather, temperatures, propagation, etc. all come into play here."

These kinds of thoughts dominated our conversations in these early months. There were so many unknowns. No wonder there was little competition for Heard Island!

Ralph continued:

"The more I learn about Heard, the more I feel that we will likely need to combine resources with other interests to accomplish this goal."

The more we thought about it, the more clear it became that we would need a lot of help. This would be no walk in the park.

A significant concern was getting the landing permit. The rumors were that you couldn't get one. We spent a fair amount of time finding our best posture for the AAD in Hobart, Tasmania. I drafted a proposal for scientific work, partly to support the radio expedition and party because I really wanted to do the field work. The proposal was, in places, very carefully worded:

"Heard Island provides both an excellent opportunity to extend our understanding of the subpolar environment and its ecosystems, and a challenge to prevent any unwanted intrusion and alteration of the site. Foremost in our mind is the fact that since 1980 there have been no recognized introduced species. This provides a rather stringent requirement for control of any proposed operation. By the same token, it provides excellent motivation for intermittent monitoring, and these two activities must be reconciled. We believe that with proper care, a brief visit can be made that will provide useful data while keeping the risks negligibly low."

I went on to propose that we examine the cryptofauna: protozoa, insects and other arthropods, annelids (if any), and other small, interstitial species living in the sand, soil, plants, structures, or on the rocks. Among the most interesting animals, naturally, would be the tardigrades.

Ralph favored moving slowly, putting all the major components in place before applying for the permit and going public. Peter and I were less cautious.

"Let's file a request ASAP!" we said in unison.

Ralph responded and soon we were issued Permit 95-1. Ralph's response was pure Minnesotan:

"Just one thing to do now....get there and get back home!"

In a moment of introspection, Peter asked me privately:

"I wonder if there is anything we could do more to support Ralph. People forget that without Ralph, there would not have been a 3YØPI."

My response to Peter was simple:

"We can best honor 3YØPI by delivering Heard Island."

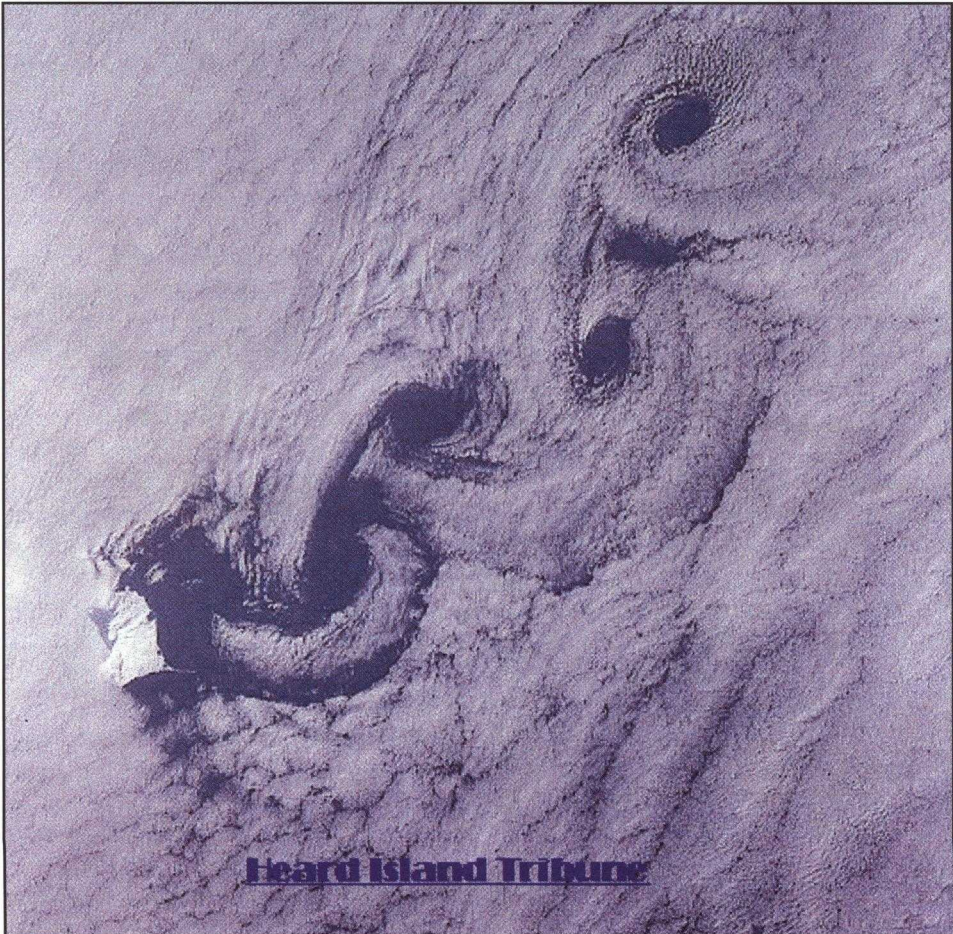
I elaborated: We had to do it right—safely, reliably, openly—or not at all. Peter

agreed, and as if a switch had been turned on, he drafted a beginning list of policies, goals, responsibilities, and guidelines. It covered preparation, setting up, duration, operating, equipment, services to the community, food, sponsorship, operators, skeds, and souvenirs. Almost every aspect of the expedition was included. We had begun the formalities.

About that time I delivered another document, a letter from a friend of mine in New Zealand:

"I have been very much aware of your interesting and challenging expeditions over many years. The reputation of you and your scientific friends is highly regarded, and I believe that your planned trip to Heard Island would not only produce useful scientific information, but would do no harm to the Island's sensitive environment. I certainly hope that the AAD in Kingston, Tasmania, gives sympathetic consideration to your project. (signed) Sir Edmund Hillary

*Heard Island not only has bad weather; it creates bad weather!*



NASA photo.

### The 1995 Attempt

After the permit, transportation was unquestionably our biggest challenge. The three of us launched a major search effort. Ralph apprised us of the French presence in the Indian Ocean:

"Heard is 2500 miles from civilization (except Kerguelen). Kerguelen is French. If we could use Kerguelen as a staging area or starting/stopping point it may shave some time off the expedition and maximize our time on Heard."

Peter contacted the French officials in Paris and got a quick answer:

"There is a possibility to go to the different French Antarctic and Sub Antarctic islands using the vessel 'Le Marion Dufresne.' They take tourist passengers at the price of FF29,100 to FF55,000 (US \$5,500 to 10,300). The ship leaves out of Reunion about every 2 months off season, every month in the high season. Permission is needed from the French Antarctic Institute (called T.A.A.F.—short for Territoires Australes et Antarctiques Francais). They do not foresee any problems."

The problem unfortunately was on our end: we simply didn't foresee the financial resources to consider this option. Ultimately we would be very sorry we didn't follow this idea from the beginning. Right now we were so poor we couldn't afford thinking about it.

Meanwhile, Ralph set up an "HI Think Tank" and the three of us made regular idea deposits in it. Typical:

"Make special effort to involve the Pacific Basin."

"Suggest networking the logging computers."

"No cardboard boxes for primary shipping containers."

"Can we buy sea elephant repellent?!"

It went on and on, a growing list of items to consider. We reviewed what we had learned from 3YØPI, including taking fire extinguishers, better inter-station communications, and more socks.

We began to discuss logistics and site plans. There was the possibility of using the ANARE buildings. I wrote to Ralph:

"My sense is that the Aussies are very concerned about introducing foreign species and altering the natural ecosystem. If so, they may prefer that any visitors not bother the old structures, which one might imagine are equilibrated. Incursion could introduce foreign organisms that could be protected within the structures, thereby overcoming a threshold for establishment at HI."

Another discussion had to do with how much gear to take. Ralph:

"A rule of thumb for persons going on Antarctic expeditions (before our modern technology and rescue equipment) was: Take what you will need while you are out .... plus a one year reserve."

Transportation was our main issue. Ralph again:

"It keeps coming haunting me—2500 miles from Australia to Heard. And, another 2500 miles back again. If somehow we could be picked up from Kerguelen..."

At this time, I was also deeply involved in preparing the expedition to Easter Island/Salas y Gómez (EI/SyG). A good part of the motivation for EI/SyG had been to develop techniques that would enhance future DXpeditions to remote sites, like Heard Island. It was not coincidence that HI would occur right after EI/SyG.

From April 1995 on, the central concern was finding the transportation. It became a massive, worldwide undertaking. We did internet Web searches to locate ship brokers in every country with beachfront property in the Indian Ocean. It was natural to look within Australia, but we were hampered by lack of any personal contact there. We were so desperate that one evening I got on 20 meters and called CQ VK6. I did get a station, but he couldn't help us.

It seemed that Peter queried everyone: AARI (CIS), Scott Polar (UK), Alfred Wegner Institut (DL), British Antarctic Survey, Dept of Environmental Affairs (RSA), MV Offshore (Estonia), Stichting Onderzoek der Zeeën (Holland), TAAF (F), SWchartering (UK), Polar Shipping Consultants (UK), etc., etc. With multiple independent inquiries, we started tripping over ourselves.

At one point Peter made another of those prescient suggestions that in hindsight was brilliant:

"Should one of us not just fly to VK6 and shop for a ship?"

Oh, that we had done that! We continued searching.

Then in late May Ralph had a startling announcement:

"After months of searching, I do have what appears to be reliable and reasonable transportation to Heard Island. The owner is named Kris Mitchell; the vessel is the Tallerook."

Before we could whoop with joy, he added:

"In complex expeditions such as this, there is always uncertainty and the risk of cancellation and financial loss. There is a chance of the mission having to be aborted with all of us losing everything we have invested..."

I faxed him one word, in 80-point type: "IN" Peter did the same.

Ralph went on to describe the boat:

"The owner/manager of the shipping company has become, it seems, somewhat enamored with the idea of going to Heard Island, ham radio expeditioning, and the internet. He has been to Heard previously and all this has rekindled his interest in the place. He wants to go along. In addition, he states that his company can handle our shipment of cargo from the U.S. (and, I suppose elsewhere too). And, since his company has a travel agency within it, he thinks he can save us some money on airline tickets."

Then he added:

"This looks so good, in fact, that I am suspicious."

And well we should have been. We had no idea the shipowner was lying about almost everything. We were by that time, desperate. Having made the commitment, assembled a candidate team, and obtained the landing permit, we were ready for any solution, no matter how good it looked.

With the transportation in place, we went public, announcing the plan and the team: Ralph KØIR, Bob KK6EK, Peter ON6TT, Arie PA3DUU, Harry RA3AUU, Willy HB9AHL, Bob N6EK, and Jun JH4RHF. We had room for a couple more. Peter released the news to every conceivable organization: EU packet BBS, EU cluster, Russian cluster, DX News Sheet, Les Nouvelles DX, DXpress, French CQ magazine, 599 report, 425 DX REPORT, DXNL, OPDX, OE1WHC (Radio Austria), 4X1TT, DX News Sheet, Funkamateur (DL), Darc, SM DX editor, ON DX, EUDXF, Clipperton DX club, GMDX group, URE, Lynx, Lake Wettern DX group, Flanders

DX group, Danish DX Group, French DX Info Net, UBA, Children DX Group, RSGB, ARI, and more. There seemed to be no end to the acronyms.

Then for the next four months we carried on an extended technical discussion about what to do and how to do it. It had a lot to do with internet, pacsat, Inmarsat, laptop computers, etc. We were clearly going to take advantage of some of the techniques I was developing for EI/SyG, but not all.

Now and then we drifted from seriousness. At one point I described a piece of breakthrough technology:

"I have engineered, constructed, and will take with me a clothes dryer. It's a masterpiece of simplicity: a plastic clothes bag, 12x18x60 inches, with a zipper side. On the bottom I made a mount for a hair dryer. We hang wet clothes inside, turn on the dryer, and presto! they're dry! Believe me, it works!!"

We even got silly. I aimed this message at "my fellow nut cases:"

"Whoa!!!! You're not really serious about this HI thing! Have you stopped to think about the heartbreak of chapped lips?"

"On the boat: Let's see...170 ft. long, 12,000 tons, 12 knots, 15 passengers. This is only  $(170*12)/(12,000*15) = 0.011$  ft.-knot/passenger-ton. This is a very small number. On my last four trips to HI, I never had less than 0.025 ft.-knot/-passenger-ton. I would propose that we offer the skipper about half of what he is asking, or else agree that we'll stay for twice as long."

Too bad my last suggestion was not appreciated.

We continued to try to rope unsuspecting victims into the project. I invited Garry NI6T, who replied:

"I would love the opportunity to be cold and miserable for a month, in between being seasick for a week on either end, but reality is a cruel master. Besides, I NEED Heard Island!"

It was the same way everywhere: "I wish you well, you silly fools."

There was more than a negligible amount of criticism about the idea of going to such a rare spot exactly at the bottom of the solar cycle. Quite a few very knowledgeable and authoritative DXers put their reputations on the line with predictions of complete ionospheric failure.

Overall, it was going swimmingly. We assembled our gear and shipped it to Australia. We put out a series of press releases. We started dreaming about pile-ups. We searched our checking accounts for more money and our calendars for more time. We made reservations to fly to Perth.

Then on October 18, Ralph delivered the bomb:

"The three of us have been through a lot together. I pray that I am over reacting. It is my job to be paranoid and suspicious, but I am very concerned about events that are transpiring (rather, not transpiring) in Australia."

He went on to say that the skipper of the boat seemed to have vanished. Attempts to reach him in his office, on the mobile phone, at home, at the boat, were fruitless. Ralph raised the possibility that Mitchell had been running this as a con from the beginning. Later that day he located the Tallerook, and Mitchell, in Cairns, thousands of miles from where they should have been. I called the shipyard and asked a local surveyor to inspect the boat. The report was not good: The Tallerook was a converted WW II wooden minesweeper that was not only unsuited for a

southern passage, but it was in miserable condition. It was a derelict, and everyone down there knew it. There was no way this vessel could go to Heard Island. Leaving port would have meant certain death for all of us.

With our equipment in Australia, we decided we had little choice but to go there and mop up. Ralph, Willy, Harry, Jun, and I prepared to fly to Perth, and search for a solution. Peter was already in the air, with Arie, bound for Perth. I faxed him at the home of Neil VK6NE:

"We need a miracle, Peter. Only you can find it. Godspeed. Bring us a miracle, Peter."

But Peter was unable to bring us a miracle. He and Arie tracked off to Cairns. It was close to midnight when they arrived. The car turned slowly around the corner of one of the piers and with a telephoto lens, they zoomed in on the vessel. 'Tallarook' was painted on the front side. Peter took a deep breath.

"Impossible," he sighed as he handed over the camera to Arie. "That thing will never do the job."

"No," said Arie. "She won't."

Then walking up to the boat, they confronted Mitchell on the landing. He had a handful of excuses, but revealed his guilt, and his intentions:

"Don't worry. I'm not going to make a run for it."

But that's exactly what he did. In the middle of the night. And we never saw him again. He took with him our \$100K, paid in advance on the contract. A few weeks later the boat was located a few hundred miles away, sinking. It was towed and put under constraint. But we had little legal recourse. Not enough time, no understanding of the Australian legal system, and everywhere we turned we seemed to encounter crooks. We began to give up hope of seeing our money again. We collected at the home of Bill VK6UE, and worked the problem.

At first we thought that we could find another vessel, and get on toward Heard in about a week. But after several days of searching, we came to the awful realization that we had only about a quarter of the funds needed for a vessel. We couldn't do it. Not now. Maybe never.

Finally, Ralph and I went for a walk. I spoke sadly but seriously.

"I think we have to accept reality. I think we should delay this expedition one year, reschedule it, regroup, reorganize, re-fund, and then do it right. I'm ready to help make that happen, if you want."

It was a brutal moment for Ralph. He had done almost all the work of arranging the permits, transportation, and equipment. With Peter in Africa and I involved with the Easter Island expedition, the major burden for HI had been taken by Ralph. Now it looked as if he would never get to Heard Island. After a vigorous and extended discussion, we agreed to try again for Heard in the next Antarctic season. Ralph would ask Peter and myself to take over the role as expedition leaders for the new attempt. Painful as it was, we made a public announcement of our troubles and our decision.

The response was comforting. Derek AA5BT wrote:

"Thanks for being sensible about this. We don't want to lose you!"

Peter helped salve our wounds by putting it into perspective:

"Last week in Goma, on a road I use a lot, a mine exploded under an UNHCR

vehicle, maiming several people. In Angola, a WFP plane that I fly on crashed, killing all 5 passengers."

It was cathartic. As bad as we felt, we were reminded that, in world terms, our troubles were slight. Now, with more than a year ahead to plan a new expedition, we went home, did a penetrating analysis of what went wrong, and made a new commitment: This time, this time, ... we would do it right!

### **Reorganization**

Our first next step was to post an explanation of our troubles on the VE7TCP DX reflector. The statement was carefully written by Ralph, to set the stage for the reorganization:

"As most of you are aware, the Heard Island DXpedition team ran into difficulty in Australia. As a result, we must postpone the trip. Our losses are substantial. However, no outside contributions have been spent. The Heard Island team members will honor our commitment to you, and will cover the loss. I have asked KK6EK and ON6TT to assume the leadership role in developing our future plans."

Peter and I got right to work. Our first task was to agree on our respective roles. It was a very natural division: KK6EK would be mostly logistics, ON6TT would be mostly radio. KK6EK would have authority for deciding when and where to land, camp location and layout, living arrangements, when to declare a rescue-emergency, authorizing excursions away from camp, using local materials, enforcing protection of the environment, when and how to break camp, etc. ON6TT would have authority for deciding where and how to set up radio stations and antennas, supply of electrical power, operator assignments and schedules, handling of radio logs and data, and selection of bands, etc. It would work nicely, and in fact, it did.

The next task was to make a new budget. We worked it through, and through again. By now we knew how much the transportation would cost. We were concerned with safety, sanitation, living facilities, unexpected fees and surcharges, additional gear, and contingencies. The driver was the cost of the ship. Unwilling to risk another fiasco, we knew we would have to go for reliability, or not go. We estimated it would be \$200K. The rest of the items, including food, fuel, shipping, scientific gear, etc., added to about \$120K. So there it was: \$320K. A staggering sum, we agreed, but there was no way around it. If we wanted to go to Heard Island, this is what it would take. We really, really wanted to go to Heard Island.

The budget generated a chain reaction: We increased the team size to 20 to pay for the vessel. But that would mean more shelters, more food, and more potential social problems.

It was not easy for the team to come to grips with the loss. When they heard that we needed them to pay another \$10K, some balked. They thought that since they had already put up their \$10K, they shouldn't have to put it up again. Some did the budget differently, miraculously finding money that didn't exist. I had to work hard to convince everyone that, yes, Mr. Mitchell really did steal our money, and we had to start over.

We had long discussions about the basic approach to management. I put the following proposals to Peter:



1. Give ourselves time to work.
2. Share the plans among the team members.
3. Go more public all along the way.
4. Introduce some formality in the project.

I underwrote it with a manifesto:

"Heard Island is too dangerous to be left to people who have little experience in actually fielding expeditions. There is a strong tendency on the part of inexperienced people to assume that everything will be fine, and there will be no problems. The experienced expeditioner will have planned for trouble from the beginning. As we go into this, let's agree that safety and backup plans will be a central part of the planning. I'd like to set a new standard for safety in amateur radio expeditions."

Peter, of course, agreed. I hardly needed to educate him, but I wanted to make sure we were walking the same path. We were.

By late November, we had worked through the philosophy, and were onto pragmatics. Peter generated a draft schedule, covering every month from that point until landing on Heard Island. All the 1995 team members elected to stay in, but we needed perhaps 15 new people. We started soliciting by word of mouth, e-mail, phone, fax, and semaphore. I pulsed Garry NI6T again:

"The new Heard Island DXpedition (1996-97) has an opening for a great bearded humorist. The pay is not good, but you can pay more if you like. Why don't you talk to yourself and see if you might be interested? Otherwise, do you realize how low your chances are on 40 m?"

Garry responded in kind:

"I would love to go. It isn't every day one gets the opportunity to become dramatically poor, but up 'til now, I have used slower, more conventional means. You guys certainly one-upped everyone who ever came before!" Yes, I agreed, wistfully.

On Nov. 22, we made a public announcement:

"As we have all come to realize, getting to Heard Island and back alive is neither easy nor cheap. It will require probably the greatest effort ever fielded for this kind of operation, and it will depend on the support and assistance of many people and many organizations. The project will, of necessity, be international. We will be giving our best, and asking for your best. We have no doubt that the project is worth doing, but only if it is done right. Safety will be a central and determining factor in all plans. We expect to set a new world record for the number of contacts from a DXpedition."

The last was pretty heady, considering that there were no sunspots. Everyone ignored our brag, except us, of course.

In early December, I defined an executive board for the project, and appointed Ralph, Peter, Bob N6EK, Carlos NP4IW, and myself to it. Majority rule. With a lot of input from Peter, Ralph, and others, I wrote the Scoping Document. It defined our goals and policies, outlined our operations, estimated the schedule, listed the current personnel, and presented the budget. It was published and posted on our new web site on Dec. 15.

### January 1996 - Team selection

As our plans became known, we received numerous suggestions to delay the expedition for several years, to get better propagation, or to stand down and give someone else a chance. We took all these suggestions seriously, and debated them vigorously. I solicited opinions from about 30 people not intimately involved in the project. The consensus in and out of the group was: "Go for it, now!" And so we did.

There were two major items this month: find the team and find the vessel.

The team, in fact, found us. We were besieged with inquiries and offers. We set up a procedure for nominating candidates, passing their vitae around the Board, and voting. It was all done quite fairly. We adopted the following grading scheme:

- A - We should move Heaven and Earth to include him.
- B - Would be a fine team member. I'd like him on the team.
- C - I don't know him, or don't care one way or the other.
- D - Not a good choice for this DXpedition (a Prince otherwise!)
- F - If he goes, I don't.

By the middle of January, we had a list of 28 candidates, and we issued formal invitations. We were careful to explain some of the boundary conditions, which we also put on ourselves. For instance:

"The fee is not refundable, except in the case that the Expedition is canceled." Not everyone took that seriously. They did take seriously the estimate of 8 weeks required for the expedition.

These rules may have seemed draconian, but they worked well. Not everyone wanted to make the commitment up front. But enough did that by Jan. 31, we had our team of 20, all men. Most of these eventually made it to Heard Island.

The second major item was, of course, the ship. Peter went back to the French, and in a marathon negotiating session, confirmed that they were willing to take the team on the Marion Dufresne, for the (surprise!) total price \$200K. Plus helicopter, food, gasoline, propane, and incidentals.

Peter guided us to the TAAF web page, where we could see a picture of the boat. He was very excited.

"The Marion Dufresne is a brand new boat, which was taken in service on June 23, 1995. She looks reaaaaal big. If I am not mistaken, I can even see 2 helidecks, or one helideck and one catapult for a plane... Have a look and get thrilled. God I hope that they will help us."

A few days later he provided the vitae:

Length:	120.75 m
Width:	20.60 m
Depth under water:	6.95 m
Capacity:	8,700 tons
Displacement:	10,130 tons
Passenger capacity:	110 passengers
Crew:	15 to 25

Cargo capacity:	4,950 tons
Number of 20 ft containers:	110
Landing crafts:	2 launch boats, 2 LST, zodiacs

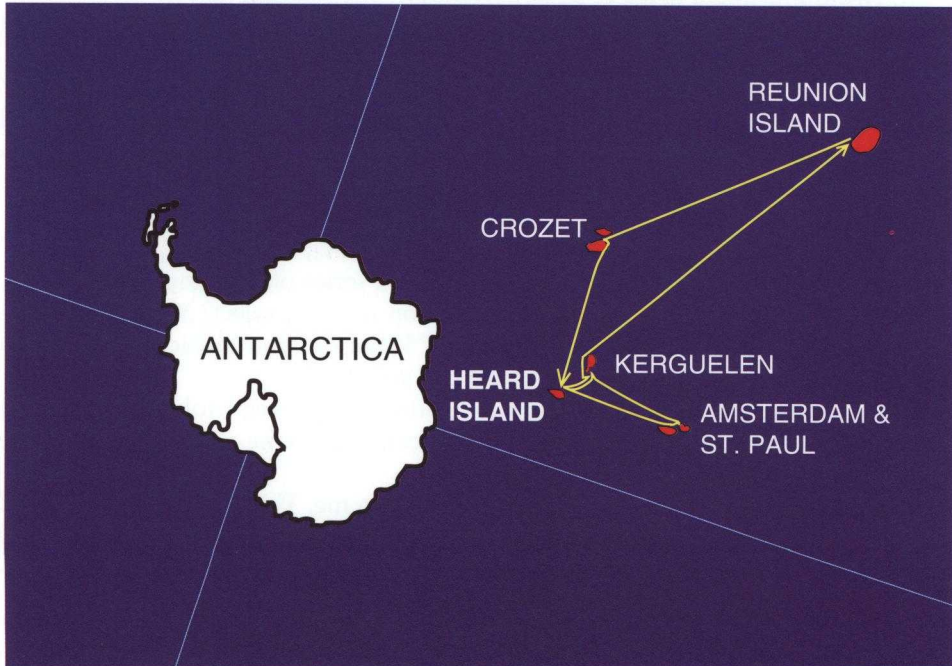
Well, we thought, it was minimal, but we could live with it. But then Peter told us the French had agreed to shift their cruise schedule to accommodate us. We could keep the entire trip to five weeks! This was crucial, since it would mean some people could join the team who could not be away longer than 5 weeks. Expedition potential rose. I wrote to Peter:

“This is truly a dream. You really made a good connection, and worked it perfectly. I can’t believe how good this is. I’m almost speechless. This will truly be an extraordinary trip.” And of course, it was.

*The Marion Dufresne.*



*The planned track of the vessel.*



### February 1996 - Break

By the end of January, we had the transportation, the permit, and the team. Nothing left to do, in Ralph's words, but to "go there and get back again." Of course there were a few details...

We discussed fundraising, and the consequences of seeking commercial sponsorship for the project, to the likely ire of some radio amateurs. In jest, I provided the following list that people could choose from:

1. I support commercializing your DXpedition, and appreciate the QSO.
2. I do not support commercializing DXpeditions, and enclose \$1000 to help keep the project in the hands of amateurs.
3. I do not support commercialization, and have sold all my commercially-built radio equipment. From now on, I will only use radio gear that I personally make from dirt.

I added: "Let he who is offended strike the QSO from his log."

Meanwhile, Italy came out with their most wanted list. It showed Heard as #1, with 95.2% of DXers needing it. Yes! we said.

This seemed like a good time for a break. I wrote to the team:

"At this point, I would like to propose a short break to think it over. As the year goes by, we will become deeply involved in the mechanics, and we'll have little time for reflection and philosophy. Right now there is no urgent matter for us that cannot wait a few weeks. Therefore, I propose we use the rest of February to reflect on the project, and get our hearts and minds in shape for the work ahead."

I went on to describe how I intended to manage the project:

"Two things seem to me to be of paramount importance: (1) The personal satisfaction of the team members; (2) The professionalism with which we carry out the expedition.

"The first item is THE most important by far. One of the lessons from XRØY/Z was that the personal satisfaction of the team members is THE priority, and I intend to use that as my #1 consideration in the HI project. I will work as hard as I can to achieve that, and I will ask your help in this endeavor."

### March 1996 - Team building

On March 1 I woke the team up again with a series of questions:

"What will bring you personal satisfaction in this project? What will make you happy? What is your bottom line payoff? What will you consider a minimum payoff? How do you think this could fail (for you)?"

Responding to my inquiry was not required. However, I told them: "If you choose to NOT express yourself, you are effectively giving up your claim to be outraged that it didn't go as you expected."

To be fair, I told the team what to expect from me. This included the printed scoping document, a team training session, identifying major responsibilities and people to take them, the gear, and searching for funding, a new permit application, our radio permit, backup team members, and the web pages.

Mindful that some of the team members had never seen snow, Ralph described how we might expect a day on Heard Island:

"You awaken at daybreak to what sounds like machine gun fire. It is the fabric of the shelter being whipped by the wind. You begin the transition from the warmth of your sleeping bag to the frigid world outside of it. You pull cold jeans over your long underwear, put a fleece over your chamois shirt, and cover your jeans with Gortex storm pants. Your boots are stiff and icy cold as you lace them with stiff, cold fingers. You ease your way between your sleeping comrades, being careful not to awaken them.

"A blast of cold air rushes into the shelter as you open the door. You try to exit as quickly as possible, but the groans of your teammates lets you know they felt the cold wind enter the shelter as you left. Leaning against the wind and taking care not to slip in the mixture of snow, mud, and guano, you make your way to the cook tent. You find it empty and cold. You run a little cold water over your hands and into the 5 gallon bucket on the floor. You note that it's about time to empty it, and wonder if it's your turn.

"You survey the camp and see that the night's winds have taken an A3's elements out of a single horizontal plane. The director is nearly vertical and will have to be straightened. Guys on one of the verticals have become dangerously slack and must be tightened. Jerry cans are empty and need filling. A box of supplies needs to be moved but has frozen down during the night. The 15 meter beam tie down came loose during the night and the antenna is swinging freely from southwest to east. Screams come from one of the station tents ... the door's zipper has iced up during the night and the 80 meter operator cannot get out. A yellowish stream has been flowing through the camp, a mixture of water from the melting glacier and penguin urine. It froze during the night and in crossing it you slip, landing on your rear end. Others have since emerged from their sleeping quarters and laugh at your plight.

"Today is your day for a shower, and you decide to do it before dinner. Inside the large crate you stand stark naked in a square plastic dishpan with a gallon and a half of warm water in it. You wet down, lather up, rinse, and repeat the process. You have been told that shivering conserves heat. You finish drying off and check that nothing has turned blue, or worse yet black. Clean shorts and a clean tee shirt go under the long underwear you previously had on. You put on your outer gear. Wolf whistles greet you as you enter the tent for dinner.

"Bedtime. Inside the sleeping shelter there is unhappiness. Someone's sleeping bag slid off a cot and onto the floor. It is soaked. Arrangements are made with a friend to borrow the bag of an operator who will be up all night. Your bag is icy cold as you slide into it but you know it will eventually warm from your body heat. A team member has gotten to sleep before you and snores irregularly.

"What seems like only moments later, someone is shaking you. 'You're scheduled to be on 80 in 20 minutes.' You repeat the process of getting dressed, exit the shelter, and walk carefully past three sleeping fur seals on your way to the operating tent. The paradox plays in your mind: 'Never in my life have I had such a wonderful time being miserable'."

### April 1996 - Czars

About this time I defined the Czar system. The Czars would have not only the responsibility for delivering a major portion of the project, but also the power to find and implement resources for that task. I made it very clear that I would not second-guess the Czars; they had the power, for their domain. I wrote:

"The czars will run this expedition. If you are one of them, you are expected to develop a plan for implementing your responsibility. You do not have to do all the work, just ensure that it is done, and done right, on time, on budget. You have the right to expect the rest of the team members, including other czars, to help you. You are encouraged to offer your body and soul to your favorite czar, but be aware that it won't exempt you from being appropriated by another czar. The czars are going to be pontificating and huffing and puffing, but unless they actually get someone to do the work, they're going to look silly. You can be the power behind them, and reap glory for yourself by making it actually happen. If you're really good, you might even get one of their jobs!"

To find the Czars, I placed classified ads on the team reflector. By the end of the month, we had essentially all of them filled:

Logistics and Campsite	KK6EK Robert Schmieder
Radio Operations	ON6TT Peter Casier
Equipment	NP4IW Carlos Nascimento
Food Services	HB9AHL Willy Rusch
Clean	WAØPUJ Glenn Johnson
Medical	K9AJ Mike McGirr
Antennas	KØIR Ralph Fedor
Computers, Networks, and Logs	N6EK Bob Fabry
Safety and Emergency	VK2TQM David Muller
Power	W8FMG Wes Lamboley
Pilots	ON4UN John Devoldere
Documentation	9V1YC James Brooks
Science	KK6EK Robert Schmieder
Satellite Communications	PA3DUU Arie Nugteren

To start the Czars, and to challenge to the team, I challenged them to invent "What-ifs." These are short statements of things that could go wrong, and what we could do about it if it did. For example:

- "If someone has a heart attack, then we will \_\_\_"
- "If the wind is too strong to erect our antennas, then \_\_\_"
- "If someone sustains a septic animal bite, then \_\_\_"
- "If one person operates beyond his assigned time, then \_\_\_"
- "If crate number X falls into the ocean and is lost, then \_\_\_"
- "If we run out of gasoline, then \_\_\_"
- "If we forgot to bring the \_\_, then \_\_\_"
- "If one person is missing from camp, then \_\_\_"
- "If a shelter is destroyed by winds or fire, then \_\_\_"

The input I got from the team served two purposes: It helped me prepare for these potentialities, and it helped the team understand that we weren't fooling.

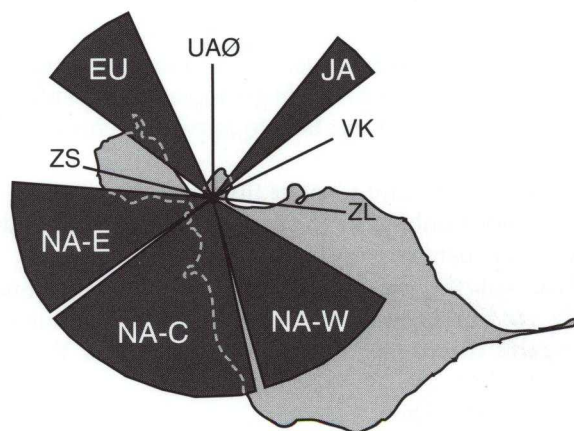
## May 1996 - Plans

The chatter on our reflector was incessant. Dozens of threads were born, raised, matured, and died, as we worked our way through one issue after another.

An example was the idea to hire a professional public-relations agent. It seemed that for a moderate fee we might be able to get access to large amounts of corporate funding, but we would need a professional to help us. I asked the team how much of the treasury money they would be willing to spend for such an agent. Interestingly, some said \$5K, some said \$15K, and some said nothing, period. Apparently there was no one with enough time to actually find a PR person and get him up and running. The idea simply starved for lack of a sponsor.

Another thread that we worked for several months was the antenna inventory and layout. Ralph was the antenna czar, but the rest of us wanted to have our say. The inventory was growing like coat hangers, and they were exotic imported coat hangers at that. ON4UN developed an 80m monoband vertical with elevated radials that would electrocute you if you walked into them. We obtained a "Special Battle Creek Special," this one strengthened to withstand hurricane winds. Team member Glenn WØGJ developed a set of four-square antennas for 40m, 80m, and 160m. These were ultimately dubbed the "Heard Island Specials." It was a daring plan: no DXpedition that we knew of had taken 4-squares. We got plenty of advice about keeping it simple, wind blowing one corner down, and so on. While Glenn was building the crates, someone drove in and asked if they were coffins! This thread continued until all the antennas were shipped, and then it shifted to which we should put up first.

A related thread was the directions we should point the antennas. There were two unfortunate problems. First, the U. S. was smeared out across perhaps 120° of our horizon. Second, Big Ben, 9000 feet high, lay smack between us and California. Then there was the difficult question of where to locate the antennas. If they went in a line, they might cause inter-station interference. If not, they might do the same.



*If only we could have put our antennas on the top of Big Ben. At least then we wouldn't have the titanic mountain smack in the direction of the North American West Coast!*

Yet another thread was our fresh water supply. We had several options. We could take all the water with us from the ship, which was expensive. Or we could collect rain water, which would involve additional gear and uncertainty. Or we could collect water from the wallows, which would probably taste like elephant seals and penguins. Or we could make the hike to a glacier, which would consume several hours each day. Or we could use a water purifier, using reverse osmosis, if we could find a rich angel. Or we could just add bleach to puddle water which would probably make our tongues white. Ultimately we brought it all with us in nine large plastic tanks. Getting water meant opening a valve.

Bob N6EK announced that he had arranged with the NCDXF to lend us one of their 5-band beacons. Of course, Bob (with Jack W6ISQ) had designed and built them! Bob also arranged with Don WB2DND (now N1DG) to provide the team with laptop computers at a ridiculously low price. We would have plenty of computers.

At this time we were still \$60K short of the budget. It was the old 240/60 rule: The first \$240K is easy to raise; the last \$60K is not.

### June 1996 - Management

To make it easy to give money to the expedition, I established the following very romantic categories for sponsors:

>\$20000	Corporations, foundations, saints
>\$10000	Patrons
>\$5000	Benefactors
>\$1000	Big-Benders
>\$500	Elephant Seal Society
>\$100	Cormorant Club
>\$25	Penguin Partners
>\$1	Tardigrade Trust

Many people watched the web pages to make certain they were listed in the correct category. When I fell behind in the updates, they let me know promptly.

Others had interest in joining us. We got inquiries from an Australian mountain climbing team, and from a female geologist in Copenhagen who had been to Heard Island in 1987. We did our best to appear fetching, but we were unable to seduce them into going.

I continued to lob brilliant ideas at the team:

"What about hot-bunking it? We could save half the shelters."

"NO WAY!" the team responded in unison.

"What about splitting the expedition into two camps, one at Atlas Cove and one at Spit Bay, on the opposite side of Heard Island? This would ease management problems and would *really* separate the antennas. We could operate ten stations simultaneously!"

"Uh, Bob. No." they said.

Peter also worked with the team, putting forth a series of questions:



- What do you assume our main goals are, how to achieve them?
- What kind of operating schedule should we keep?
- What is your opinion on schedules with family, friends, etc.?
- What is your opinion on working people from home countries?
- What do we do if an operator is not able to handle a pileup well?
- How do we tackle conflicts among team members?

Peter used the input from the team to develop his plans for managing the radio operations, and to set the stage for policies we could all live and work with. Conflict management was a serious issue. A big team, a lot of stress, and unknown conditions spelled potential problems. I shared my opinion with Peter:

"You and I should define ourselves as the place to put problems. If there is a problem with one of *us*, the person goes to the other. If there is a problem with both of us, it will go to Ralph. If there is still no resolution, we convene the Board, whose decision is final. We should have many meetings, at least one per day, of the whole group. I think the combination of having planned thoroughly and clearly letting people exercise their responsibility (e.g., the Czars) will generate an attitude of cooperation."

Then I said it:

"I think we won't have any conflicts."

Perhaps that was arrogant, but it was ultimately proved true.

### July 1996 - Site Engineering

Wind. We were warned about the wind.

"100 mph. Tears everything apart. Watch for flying debris."

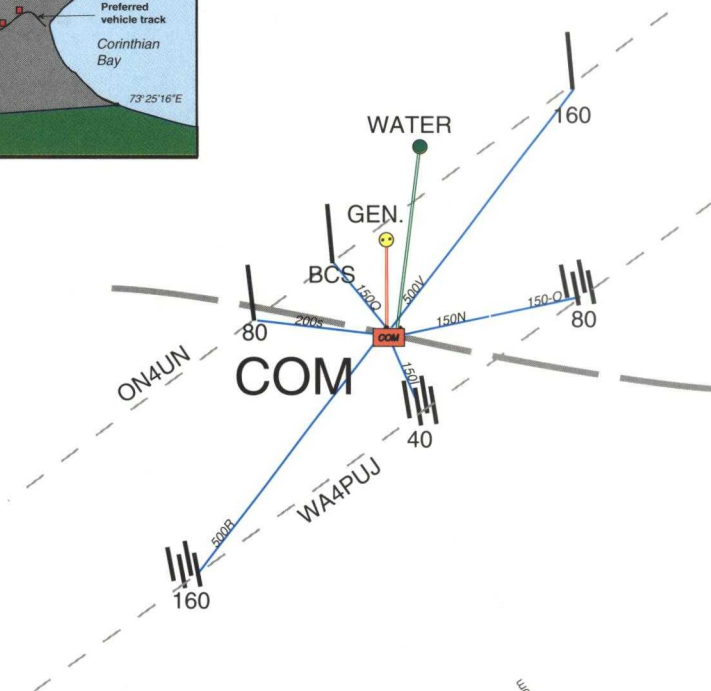
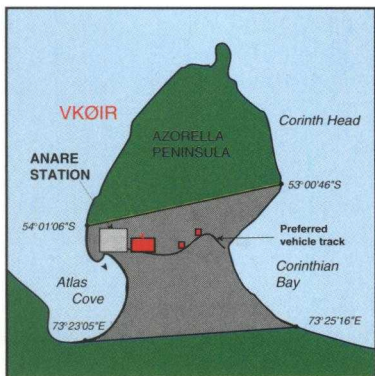
One thing we worried a lot about was the entire shelters lifting up and blowing away. I remembered lying in identical shelters on Peter I, realizing that they are shaped like airplane wings. And we all know airplanes fly.

There were two main issues: (1) village layout; (2) anchoring.

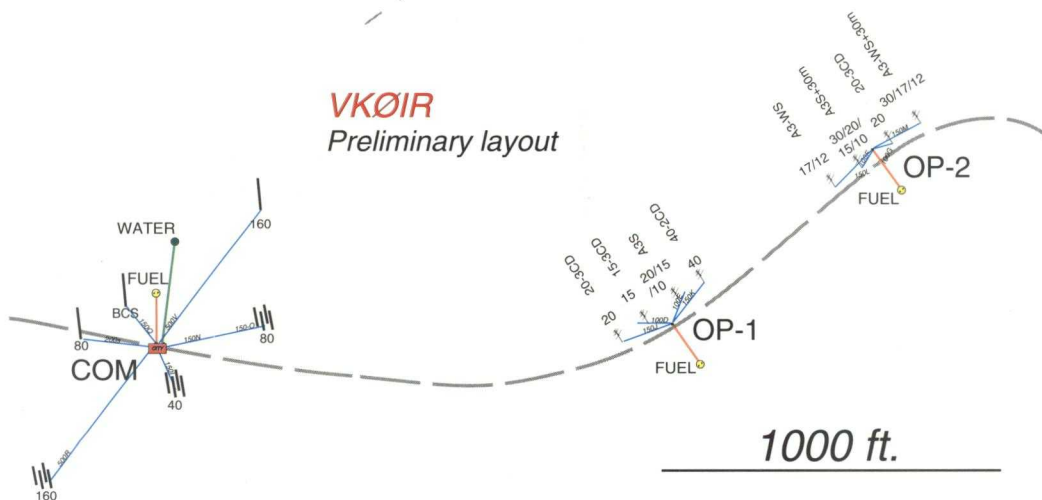
The first issue was the layout of our village. I spent many hours with my drawing programs, sliding rectangles and antenna icons around. Always I assumed that the wind would come from the West, as we had been assured. For weeks I arranged the shelters back to the wind. Then it hit me: face the wagons, er, shelters, in a circle! Of course! By placing the doors facing each other and orienting the shelters longitudinally with the wind, we would shield the doors from the wind. I also recommended we tie all the shelters together with heavy-duty web strapping. The idea was to distribute the wind load over as large a structure as possible, to prevent a localized failure.

The arrangement immediately provided an opportunity: In between the shelters we could put a wooden walkway, so you could walk between them without stepping on the ground. Between the shelters we could put the hot tub and the drying room. At the end of the walkway we could put an outhouse.

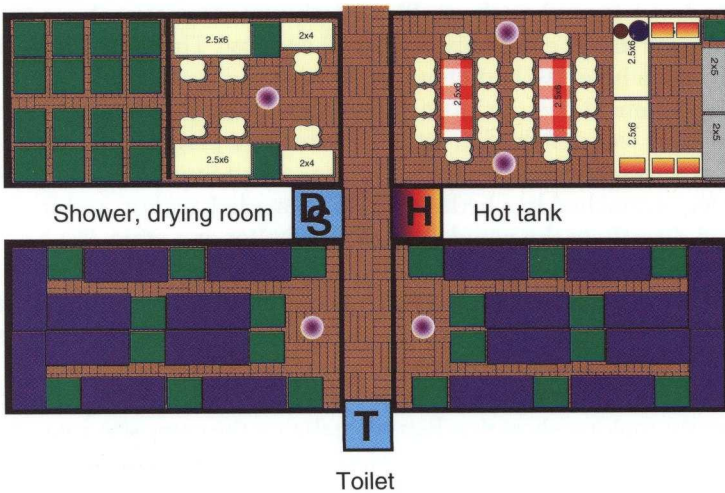
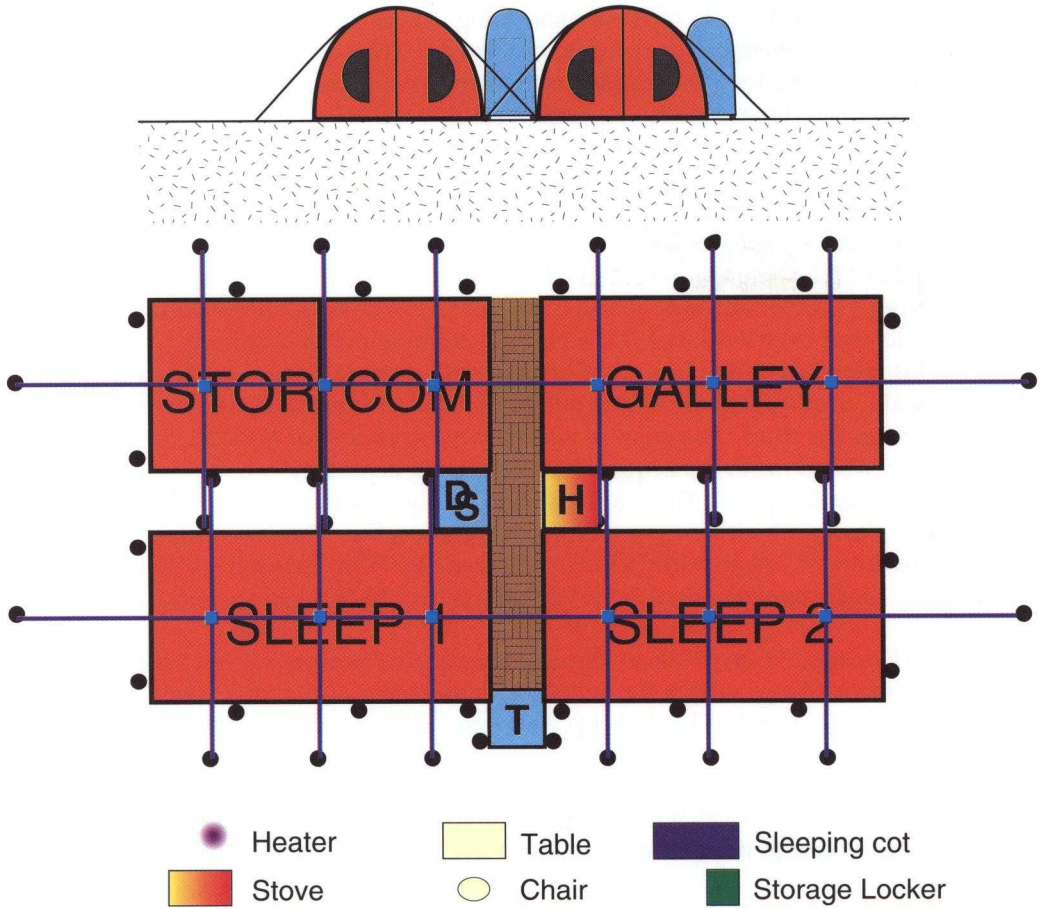
An outhouse! As outrageous as it seemed at first, the more we thought about it, the more sensible it was. As cargo it would be merely a big fiberglass box; we could pack things in it like bedrolls and cans of mixed nuts. On Heard Island it may (literally) save our asses. In one of those marvelously funny romantic adven-



**VKØIR**  
Preliminary layout



Parts of the site plans developed for VKØIR. Compare these with the actual site layouts, pp. 76-77.



*Design of the VKØIR village. Compare these with the actual village construction, pp. 76-77.*

tures, Martha and I went outhouse shopping. About 20 miles from our house, we found a whole business devoted to outhouses. They had hundreds of 'em! We wandered around their lot, looking into them, trying the seats, learning the differences between them. Finally we settled on a "deluxe" model. In addition to the business part, it had a urinal, a sink with water pump, towel and soap dispensers, and a mirror (in case anyone wanted to look at himself on Heard Island). It cost \$200, and we joyfully carried it home in the bed of Martha's Nissan truck.

The second issue was anchoring the shelters to the ground. But as we learned more about the terrain, we were more and more concerned. It would be one of the following: (1) hard, impenetrable volcanic rock; (2) a layer of unconsolidated coarse volcanic sand over hard rock; (3) wet mud reaching down to infinity.

But there just had to be a solution. After all, mountain climbers hang on sheer rock walls, armies in North Africa put up tents on shifting sand, and we could stay away from the mud. The answer was to have a variety of anchors, in excess of what we would need. We acquired the following inventory:

(1) Threaded posts. These are inserted in a hole drilled in solid bedrock, and held in place with either epoxy or an expansion plug. You screw whatever you want to the post. We acquired a killer drill made by Hilti. To test it I drilled a bunch of holes in my concrete driveway. We had about 200 of these anchors, of various styles.

(2) Corrugated steel stakes. These Army-surplus items are about 2 inches wide and 14 inches long, with a flat head for hammering and a short length of steel cable ending in a spring-loaded clip. These cost all of a dollar, and we laid in about 200 of them.

(3) Duckworth anchors. This is an eccentric tube somewhat like a duck's bill. It is driven into soft earth with a rod. When you pull on the attached cable, the bill rotates and jams in the ground. You *never* get it out. We had 30 duckworths, in 2 sizes.

(4) Steel stakes. Long steel angle, pointed at one end. About 50.

(5) Deadman (snow) anchors. Pleated aluminum plates about the size of a dinner plate, for use in extremely weak soil or snow. They have a bridle rope attached through a hole. We had about 30 of these.

(6) Various tent stakes, including large nail stakes, plastic stakes, metal stakes with hooks, and wooden garden stakes. There were perhaps 300 of these.

(7) 90° steel angle brackets. These had legs about four inches long, each with a hole. One leg is attached to a bedrock (Hilti) threaded anchor, and the other leg is lag-screwed directly to the wood floor of the shelter or a crate. We had hundreds of these.

By the time our anchor fling was complete, the inventory contained about five times as many as we needed. We didn't know which of these we would eventually need, but by George, we were ready!

This was a very busy time for Carlos NP4IW, our equipment czar, and me. We met frequently, making shopping lists, visualizing the campsite, imagining how it would be. We calculated that we would have to ship our gear in two 20-ft. containers; one would not hold it all. We got an education about these containers. It's was cheaper for us to buy them than to rent them and use them on the expedition.

We worked closely with Rick Newman at Exploration Products, the suppliers of the shelters. It would be necessary to orient the zipper doors and utility feed-thrus correctly, and we wanted a patch kit. We had two 12x12-ft shelters we wanted to join into a 12x24-ft one, and this required a sealing sleeve. There was no end to the details, but we were highly motivated: bad planning might mean no operation, or a calamity.

Carlos and I developed a plan for protecting some of the gear during landing on Heard Island. We acquired 18 large fiberglass transit cases, the clamshell kind with a dozen clips around the side. We packed Alphas, coax, and electrical power cables in these. Once emptied, the cases would be used by the team members for their personal effects, next to their bunks. I also ordered 40 very heavy canvas bags, custom made with handles and drawstrings. These would be available to carry miscellaneous items, and provided expandable storage capacity.

Carlos and I also evolved a strategy for packing the containers:

"In the first, we pack a complete set of gear for a reduced team. If there is a terrible disaster with the second container, and it doesn't arrive, we can still do the expedition. We would send part of the team to Crozet, part Kerguelen, etc. The rest can do HI. This is the basic BACKUP PLAN. The rationale for sending the first container early is that we will determine that it has arrived and can make certain plans. If it does not arrive on time, we have time to track it. The probability of loss of the first container is no greater than for a single larger container."

There arose a protracted discussion of the ancillary electronic services we would provide. After XRØY showed that not only were things like log servers and e-QSLs possible but they were also highly popular, we engaged in a free-wheeling debate over which to do from Heard Island. The team was much more conservative than the Easter Island team had been, concerned about our image and the consequences of failing or error. While I had my opinions, I adhered to the promise I had made to the Czars. When the decision was made to not send out e-QSLs, I disagreed, but posted the following:

"Bob N6EK is the Czar on this. I will support whatever decision is made."

There was so much discussion about these issues that Lyndon set up a second reflector just for the team, called, appropriately "heard-nerds."

In midmonth I wrote to the Board:

"Today July 15 we have a scheduled go-nogo decision entitled "Funding is Adequate." Here is my take: Funding is NOT adequate. We lack about \$50K. The correct answer is to cancel the project. However, I think this would lead to my personal death at the hands of the team. Therefore I propose the following: Dec. 1, 1996 is the drop-dead date for the funding to be complete. This means that all funds must be *in the account*, or we don't go."

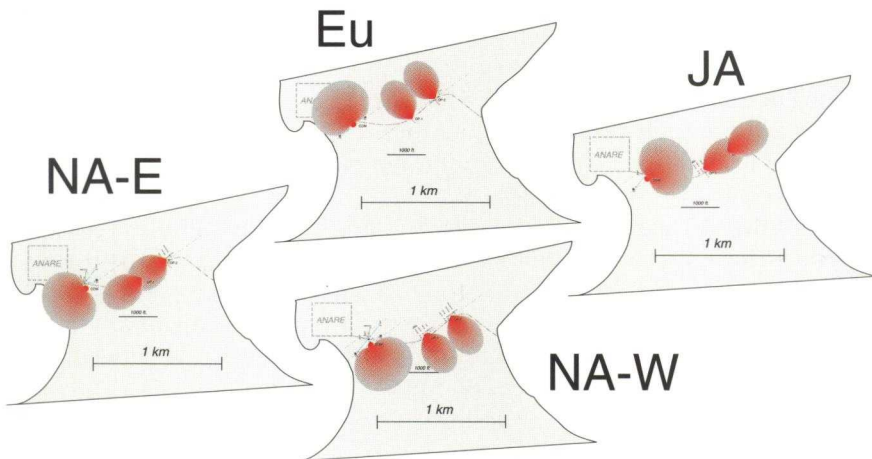
I wasn't fooling. I couldn't float this thing. We had to find \$50K in the next four months. That was it. Period.

### August 1996 - Planning

Planning the camp site was now occupying us almost full time. It was a collective networked brainstorming session, done entirely over the internet. About 100 messages were exchanged every day. We were concerned about what we would have to buy, and what we could obtain from the inventory of previous expeditions, e.g., 3YØPI and XRØY. I made a bit of policy as we went along:

"These are judgment questions that must be made by working with the site drawing, moving things around, trading compromises. We do not intend to buy anything that increases our capability by a small amount. But if we can buy a significant increase in performance (say twice the effective power), we should give that serious consideration. The budget is designed to ensure that the project will succeed. The money allocated for new equipment is less than 10% of the total, which is a very modest ratio."

The debate about coax was an good example of this compromise. I made a draft site layout and posted it on the web for the team. We agreed that we wanted several stations as far separated as possible, but several on the team wanted to maintain flexibility by linking the sites with coax. When they asked for a 500-ft length of coax, I felt constrained to remind everyone of the cable losses:



*It was all well and good to put the antennas in a line to reduce interstation interference. But this would work only for EU and NA-W. The plan called for separating the stations as much as possible, here about a half mile overall. But some team members wanted to connect some of the antennas to more than one station for flexibility. The losses in the coax militated against that plan. A piece of software that could simulate the site would have been very valuable.*

“Carlos and I calculated the losses in the coax for each of the antennas. Here is an example of the power delivered to the antennas by the lines to the antennas. Assume the transmitter puts out 1000W. This table shows how much power comes out the end at the antenna.”

<u>Band</u>	<u>RG-213</u>	<u>RG-58</u>
160m	847W	721W
80m	785W	616W
40m	693W	480W
30m	794W	630W
20m	776W	602W
17m	741W	550W
15m	708W	501W
12m	676W	457W
10m	617W	380W

“We feel that a 3 dB loss, which drops 1 kW to 500 W is rather serious. An alternative to coax is open feedline. That would have negligible loss, but will present mechanical problems. We are asking for your advice, please.”

Carlos and I were overruled in favor of simplicity. The team wanted coax, period.

“Fine,” we said. “Good discussion. Issue is closed. We’ll get RG213, RG8, and RG58.”

Another similar issue was the gasoline. I sent a message to Willy HB9AHL:

“We need to know how the gasoline will be provided for our generators. The standard 55-gallon drums have a 2-inch threaded plug, usually 2 of them, on the top. We might want to make up connectors for these so we can use the drums directly to feed the generators, but I must know if the drum that will be supplied have metric threads, what the openings are like, etc. Can you get this information from the French?”

This one was finally decided in favor of jerry cans, the traditional approach.

On August 30, Carlos and I shipped the first container of equipment. I shared my opinion with the team on how we were doing:

“In a word, we’re doing absolutely *great*. Our team is holding together, we have the equipment well underway, the various Czars are on top of their areas, the schedule is holding. What we need now is money...”

At the same time, a lot of our concern was about team functioning and compatibility, and personal satisfaction. Ralph contributed his share of advice and ideas:

“On equality: It will be the kiss of death if we divide the team into good operators and bad operators, apply measuring sticks to people’s performance without their consent, or skip or delay someone’s rotation because he doesn’t measure up to standards. Force this on someone or a group of people and the group will fractionate into un-cooperating segments filled with ill-will.

“I think that after the weather, the biggest challenge of Heard Island will be group dynamics. If we mess that up, God help us.”

“Amen,” I said. “Amen.”

### September 1996 - Training

I was constantly looking for ways to prudently avoid disaster. I kept lists of various ways, including such gems as:

“Make Plan A and Plan B simultaneously.

“Eschew heroics.

“Augment coadjuvancy.”

To augment coadjuvancy, I scheduled a training session. I figured that it would be very wise for us to know how to erect the shelters before we had to. Reading the manual was fine, but doing it was finer.

About half the team was there. We raided the warehouse where Carlos and I had the gear stashed and carried it over to the open park on Coast Guard Island, Alameda. There, on nice green grass with a restaurant nearby, we put up one of the large shelters, making notes and shooting video. On the ship four months later we would be sharing this experience with the rest of the team. The only threat to us at this moment was the possibility that the lawn sprinklers might unexpectedly come on.

We didn't just put up the shelter. We installed a generator, radio, triband beam, cook table, cots, lockers, and chart table. The next day we held an open house; the Heard Team invited the world. In fact, some of the Easter Island XRØY team showed up (John W3UM and Barb flew in all the way from the East Coast). Mike N6MZ couldn't wait to get on the air, and we began logging stations right there in Alameda. In an effort to make the experience as realistic as possible, I urged the team to prepare an expedition dinner for our guests, but that plan fell dead at birth. Instead of cooking, the team opted to discuss generators and antennas.

The training session accomplished more than learning how to put up a tent. It got the team together, and got it working together. We began to get calibrated, rubbing off sharp edges, smoothing bumps.

One bump was the generators we had on hand. The group didn't like them.

“OK,” I said. “Find us some that are acceptable and affordable.”

They did, and in a few hours we had two shiny new Honda 5 kW models running on the grass.

They didn't like the thirty or so antennas we had packed, either. Not enough, they said.

“OK,” I said. “Add what you want.”

They did, taking some from the Easter Island inventory and buying some new ones. Tabulating all the antennas we had shipped or planned to ship, I was a bit amazed. I made a list:

- 2 Cushcraft A4S Tribander
- 3 Cushcraft A3S Tribander, one with 10 meter add-on
- 2 Cushcraft A3WS WARC antenna, one with 30 meter add-on
- 1 Cushcraft 15-3CD Three element monoband Yagi for 15 meters
- 2 Cushcraft 20-3CD Three element monoband Yagi for 20 meters
- 2 Cushcraft 40-2CD Two element Yagi for 40 meters
- 1 Cushcraft R7 vertical for 10-40 meters
- 1 Battle Creek Special for 160, 80, & 40
- 1 Heard Island Special (ON4UN) Vertical for 80 m
- 1 Heard Island Special (WØGJ) Four square array for 40 meters



- 1 Heard Island Special (WØGJ) Four square array for 80 meters
- 1 Heard Island Special (WØGJ) Four square array for 160 meters
- 1 Twin vertical array for 30 meters
- 1 Back-up vertical for 20 meters.
- 1 Force-12 C-3 tribander
- 1 Force-12 320 monobander
- 1 set pacsat antennas (PA3DUU)

Pretty impressive, I thought. Of course, we had no intentions of deploying all these antennas. Only about half of them. The other half would be backups, in case the wind tore some of them to pieces.

Coming face-to-face with the antenna inventory, I realized how poor was our engineering ability. We thought that we understood the problem well, and were planning well. But then I put the question to the team:

“I have a challenge for you: Determine the best positions of the antennas on Heard Island.”

The problem was complicated by the fact that we would have to rotate our beams through 360° to hit all parts of the world. If we put them in a line, rotating 90° would make for maximum inter-station interference. Then there was the question of coax lengths and line losses, of how many generators, of which bands we might want to use at the same time. The problem was multidimensional. There were unpredictable parts, such as solar conditions. There were logistical limits, some of which we could only guess. There was the disparate abilities and interests of the team members. There was the worldwide distribution of hams, and varying amounts of radio and internet savvy. There was Big Ben smack between us and California.

Clearly there were multiple conflicting requirements, and the optimum solution probably would have to be dynamic: we may have to alter the arrangement if the conditions changed. One indication of how difficult the problem was was the fact that I got no takers for my challenge. We went ahead, confident that we would do well, even if we didn't understand it.

### October 1996 - Shipping

A few days after our training session, Carlos and I did the final shopping and packing. It was a huge undertaking, the climax of months of list-making, shopping, and a lot of time off from our day jobs. Into the second 20-ft. container we put the outhouse, the two new Honda generators, two small Coleman generators, all the antennas, two new Weatherhaven shelters, all the Alphas and the computers (which we packed in the outhouse), the tools for setting up camp, the galley equipment, all the expedition's green transit cases, a large wagon, some food, office supplies, electrical equipment, heavy tools such as shovels and picks, lots of extra bedding, 22 cots, numerous toolboxes, the medical kit, the 40 large white canvass bags, lots of rope and radial wires, all the shelter anchors, and several of the personal cases of team members.

As the last item was put in, I noted that there was about 4 feet of space remaining. To the astonishment of my colleagues, I asked the driver to move the container to the nearest Home Depot, a large warehouse store. There we bought a small tractor—actually a riding lawnmower—and loaded it in the remaining space.

Off went the container, on its way to Reunion Island, with the tractor.

The tractor was in fact not a whim; I had secretly planned it for months, subject to the availability of space. I reasoned as follows:

The gear weighed 11,342 kg, or 24,952 lbs, about 10 metric tons, plus the food, gasoline, propane, and water. Therefore we expected a good 15 metric tons total to be landed on the beach on Heard Island. If we had 15 good workers (plus 5 with bad backs), each man would have to move one ton. One person can carry maximum 50 kg, meaning 20 trips for his ton. Taken 1/2 mile (average), this means a 10-mile hike with a 50 kg pack for every person, once in and once out. Clearly, we would have no energy left for anything else the first day and the last. It would be even worse, since some of the containers were large and awkward, and would require much more work than a simple 110-lb pack. I deemed it impossible for the team to move the cargo using human power. The defense was to buy the little tractor, naturally! Even if we had the helicopter, moving all this stuff around our campsite would be a major chore, and we would be thankful for the tractor. Ironically, the wagon, which was about 4x6 ft. with detachable sides, cost more than the tractor.

Carlos and I informed the team:

"At this point, the equipment for the expedition is on its way to Reunion. There is everything we will need to live in safety and comfort. We know that those of you who were unable to help with this part of the preparations are going to be eager to do so at the next stage, namely putting this gear onto Heard Island and setting up the camp. Carlos and I will be overseeing this, since we know where things are. But we don't want to be too selfish about the fun of loading and unloading, so we will be giving you the spotlight. We will be, shall we say, managers. You will be, shall we say, managees. We suggest you wear your work clothes, and we know you'll love it."

About this time Bob Allphin volunteered to be Publicity Czar. Very soon he was putting out a series of press releases, and the community began to become aware that something was about to happen.

About this time, up popped my good friend and sage Garry NI6T:

"I counted up and found that I am a friend, associate, dinner companion, DXpeditioner, or correspondent with *half* of your team!"

"That won't help you on 40 meters!" I warned him. He continued with an editorial on our large gear inventory:

"Foursquares are elaborate—and vulnerable—structures. You might consider an alternative: two Battle Creek Specials, deployed as either a broadside or inline array toward North America."

Garry was appropriately discussing the issue of taking too much stuff. Clearly, we were taking a lot of stuff. I responded:

"There is another factor that I must deal with. The image of the team at a retreat for 2 weeks working out the optimum arrangement for a trip to HI is lovely, but as you well know, it doesn't happen that way. Part of the material I have to work with is amateurs doing their individual interest thing.

"Antennas are an example," I continued. "While I do not have a fully developed engineering assessment of the correctness of the large number of antennas

we are taking, I am in no position to leave them home. The medical kit is the same: the doctors shipped me a small trunk full of practically everything needed to do a heart-lung transplant. Generators are another example: we'll have plenty, too many in fact. What we failed to do was the system engineering to determine what was reasonable."

"Here we are shipping a lot of gear, about 10 tons of it. A lot of it is life support, but that's OK. I am determined to get this team there and back safely. Besides doing radio, I am trying to provide an example for future DXpeditions. No injuries or deaths on my watch, thank you."

Garry's final comment was fun:

"I am gonna lay in a large supply of incense and candles and books on sorcery and witchcraft."

"But Garry," I said. "All the HI antennas will pointed directly at NI6T. You'd better put in a fuse on your feedline, and provide a pan for melting aluminum." I have no idea if he did.

Late this month we received a panic message about getting our visas for visiting the French islands. For the first time, there were some sharp words exchanged between team members. I sought to quench the fire:

"The flap about the visas is a little reminder that we are getting excited about the expedition. I'm excited, too, and looking forward to it happening. If I may, though, I'd like to ask that we all be gentle and charitable with each other. We're suffering from a bit of stage fright, and we may be a bit too energetic in our personal interactions and communications. This is normal and expected. However, the expedition is in good shape (money notwithstanding), and we are poised to do it very well. We are, by very far, the best prepared expedition team that has EVER been put together. Absolutely nothing will stop us, I guarantee."

Around that time, I began responding to question about how we were doing with a simple 3-word declarative:

"We can't fail."

### **November 1996 - Crisis**

While I was putting together the logistics, life support, and funding, Peter and his colleagues were putting together the radio operations. Peter talked Yaesu into lending us five FT1000MP transceivers, and paying for the QSL cards to be printed. He was obtaining wide financial support from Europe, and constantly interfacing with the media. He worked with John ON4UN to devise the Pilot plan. He established the pacsat technology with Arie PA3DUU, and together they arranged with Andre ON1AIG to receive the pacsat messages and distribute them worldwide on the internet. He arranged with Rob PA3BXR to operate the packet BBS for a log server.

Peter did most of this remotely from Africa, where he was on assignment with the Red Cross. In charge of a communications team, Peter was in the middle of a full-scale civil uprising. People were being killed all around him. I wrote to the team:

"Peter is deep in a war zone, and his life is in peril. He is very, very busy. I reiterate to all the team that Peter is co-leader, and will have complete authority to

make decisions on matters affecting the radio operations. This has always been the case, and will always be the case.”

On November 4, I had a piece of bad news for the team:

“This is a very important message. The short version is that we need \$44K cash in the bank by Dec. 1 to complete the expedition. Any less than that, and we will be unable to do it.”

I added that we did not need good ideas; we needed money. I provided them with the original budget, a (mildly) revised budget, the deficit, suggestions as to where to find the money, and the consequences if we didn’t. The message was not brief; it rambled through about 6 pages. I made it clear that even the last \$44K was not the end of fundraising; it was only the threshold I had defined for being able to pay our up-front bills. We still counted on receiving major donations from generous hams.

The team responded to this message with an amazing display of energy. Almost everyone put in writing what they were going to do to help find the money. Glenn W6OTC had to drop out due to business reasons, but left his \$10K in and added another \$2.5K. K4UEE’s campaign was yielding significant donations. About half the team sent another \$2-5K as a contingency fund.

On Nov. 27 I let out a whoop:

“Just minutes ago I received word from Dave Sumner K1ZZ that the Colvin Award Grants Committee has voted to grant \$5000 to the Heard Island DXpedition.”

Then, suddenly, as if by magic, it was all there:

“Congratulations!!! As of today, Dec. 1, I have received \$46.7K, covering the \$44K minimum we needed for a GO decision. Unless anyone knows any reason why we should stay home, LET’S GO! My most, most sincere respect and thanks for making this happen. We’re on our way... Start packing!!!!!!!!!!!!

I proclaimed, myself amazed at the dedication of this team, thanked them profusely.

With the funding assured, we had some room for humor. I put out the following:

“Let’s test your HIQ (Heard IQ, HI Quickness, Heard Interest Quotient):

1. When was the last radio amateur operation from HI?
2. What is the size (length, area) of HI?
3. What is the overriding consideration for this expedition?
4. What four islands will we visit, and in which order?
5. What is the latitude and longitude of HI?
6. What bird is endemic to HI? What does endemic mean?
7. Who owns the rights to the photographs you will take on HI?
8. What does ANARE stand for?
9. Who is the Honorary Expedition Leader?
10. What will the temperature be at our campsite?

“All the answers to these questions are in your Scoping Document. If you’re stumped, I’ll help you.”

Our pilot Don N1DG was the easy winner:

1. VKØRR by Romeo in 1994. We really know where he was, and it wasn't P5.
2. Size is not important according to my first wife.
3. Keep warm?
4. Bermuda, Azores, South Sandwich, and Scuba Tchaikovsky.
5. South of Mexico and slightly to the east of Brooklyn.
6. The goonie. Endemic means get it to the ER for an enema.
7. Kodak? Ross Perot?
8. When the penguin shit hits your eye like a big pizza pie, that's

ANARE?

9. Columbus?
10. -80°C on a warm day

### December 1996 - Final steps

In early December, there was a noticeable drop in the internet traffic. Apparently almost everything had been said. Perhaps we knew that if we weren't ready now, we would never be, or perhaps we were just too busy to talk.

I spent most of the month pulling together the Participant's Handbook. I solicited final revised final final copies of all the Czar Plans, and updated the web pages. I assembled the reference data such as team contact points, permits, team bios, packing lists, policies, and bibliography. It compiled to about 150 pages, and contained an incredible amount of technical details. I put a neat cover on it with pictures of our coffee mugs, and printed a copy for every team member and pilot.

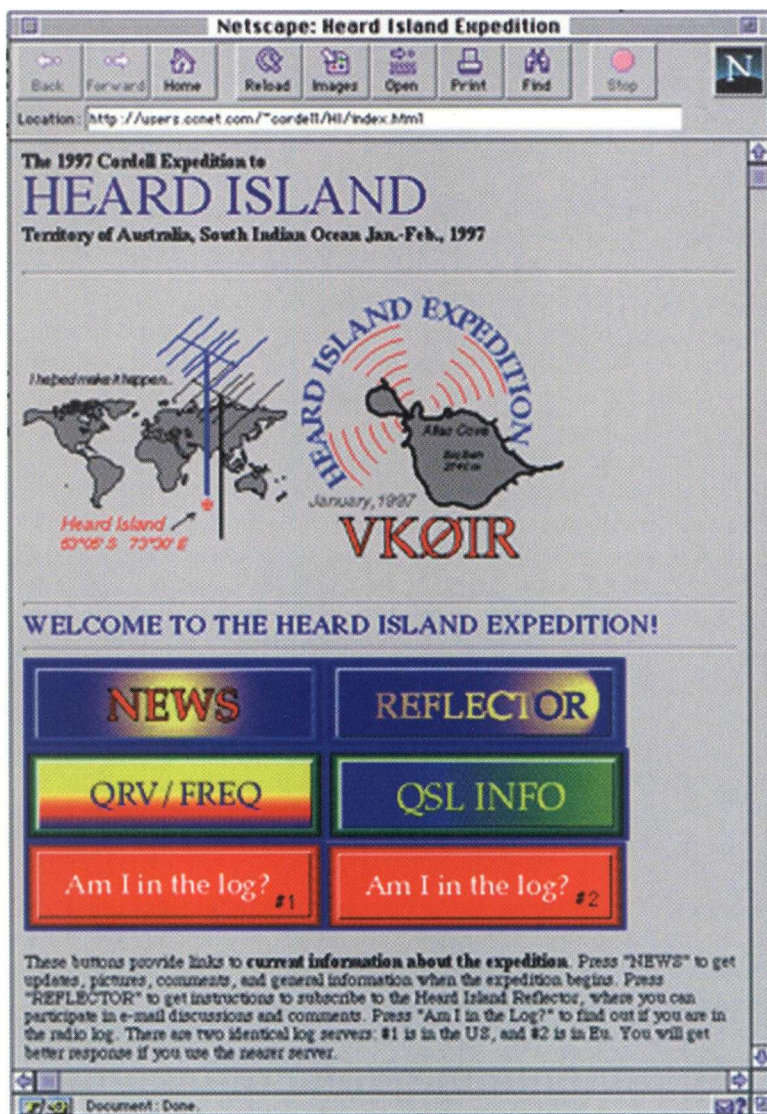
My other task was updating the website. By now Don N1DG had implemented the auxiliary site, the one where the uploads from Heard island would be put. I had to provide a link from our site to it, and it had to work. I spent hours designing pretty pseudo-buttons, and testing them.

There was a fair amount of tooth-gnashing about the log-servers. We were almost packing our suitcases, and still there had not been a full-scale test of the system. We were essaying to upload data and pictures over pacsat to internet, and we had not yet done one such complete test. There would probably need to be a lot of debugging. We were worried. There were messages saying that one person was so busy he was unable to read his e-mail, and that another person was swamped with his day job. Don's internet provider went down, and for about a week we were thinking that all we would be able to do on Heard Island was radio...

Then suddenly it was all done. The pacsat links worked. Don's site came up as the "Heard Island Tribune." I prepared to make the last changes to the main web site, scheduling them for about an hour before I would have to leave the house.

To our consternation, the team was actually only 19 men. With only a couple weeks to go, Peter miraculously found Ghis ON5NT, and Willy miraculously found Hans HB9BHW. We made an executive decision to include 21, in case one person could not make it all the way to Heard Island. It was an extraordinarily good decision.

There was a flurry of communications with Maxine, the AAD representative in Tasmania. There was the matter of deratting the ship, and insurance on the team. Responding to a plea from Hal Heatwole's associate Randy Miller, they (finally) approved the permit to collect tardigrades, although refused to approve collecting anything else, except beach debris. Maxine apparently was still sending urgent messages when I stopped reading my mail.



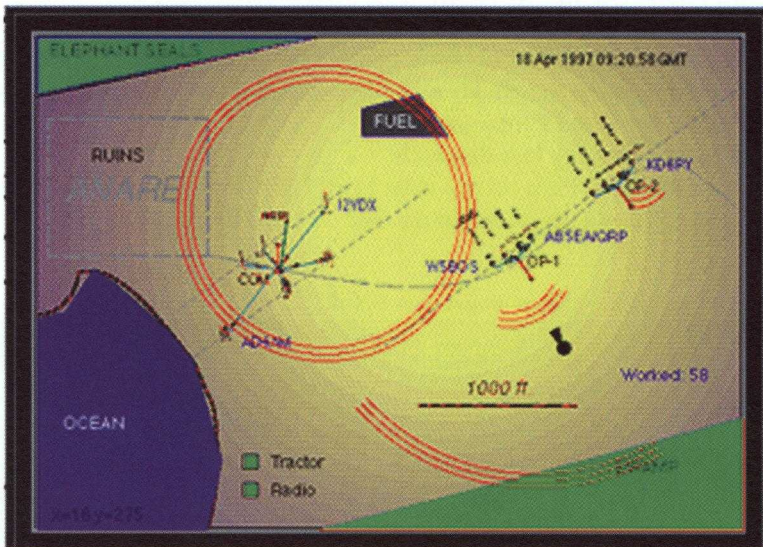
This is the home page of the web site. From here you could get information about essentially every aspect of the operation, including a copy of the entire Handbook that the team used during the operation. The REFLECTOR button showed you how to subscribe to the Heard internet reflector. The NEWS button would show you the bulletins and photos uploaded each day from Heard Island. The "Am I in the log?" buttons were connected to the log servers in the US and in Eu. The site itself was on of the main means by which the team communicated with itself before the operation. The site was last updated from Reunion Island, a few hours before the team sailed.

By mid-month, Peter was back in Belgium, pulling together a myriad details. On the 13th he couldn't sleep, and wrote a private note to me:

"I keep on asking myself: why do we do all this? It is so much money, such a financial risk, consumed so much time... Why? Maybe it is the challenge: going where no man has gone before. Doing things in a way others will think impossible. But why? To prove ourselves? Will we be as successful with Heard? We have the potential, if only propagation... But is it all worth it? I mean, I could have spent 3 months being quiet and relaxed. Not like now, running around like crazy. And I do not dare to think of all the things that could go wrong: not getting the gear out of customs in time, gear not arriving or arriving damaged, storm, cannot land, too much time to put up camp, bad propagation, not enough USA, etc., etc..."

I knew Peter had no real doubts, but it was satisfying to see that his thoughts and mine were similar. We couldn't help but run the whole thing over and over, like a goose roasting on a spit. Would it be a feast, or would it just burn? I did have some rhetorical answers for Peter, which he knew as well as I:

"Not to worry, Peter. We are, by far, by very far, the best prepared radio team ever. Most of the people know each other. We have a system of shared responsibility in place. We have complete gear, medical, life support. We have emergency plans. We have backup antennas, and backups for those. We have more paper plans that you can imagine. We are, quite simply, ready."



*If you had a Java-enabled browser, you could view the animated site simulation. As you watched, the simulation produced expanding radio waves (from radial and beam antennas) and displayed the call signs of the stations worked. The stations made QSOs at rates appropriate to the individual bands. A counter kept a running tally of how many stations were in the log. The tractor drove madly around the site trying to avoid obstacles. If it encountered the ocean, the ANARE ruins, the swamp, or a radio station, it stopped and reversed to get away from the danger. If it hit the fuel dump, the entire site exploded.*

On December 23, both Peter and I, and most of the rest of the team had our bags packed. Peter wrote his farewell message to everyone:

"Within a few hours, I leave for Reunion island. This is a time to be a little introspective. This expedition took 28 months to prepare. After the Australian problems last year, I had doubts if we could pull this one off. But one by one, we overcame the big hurdles: gathering the financials, the team, the equipment, a good boat. But we could not pull it off just by ourselves. We were also assisted by the technical support team and the pilots. All in all, it became a team of about 35 people. As the months went by, my belief that we could pull it off became stronger, and now with just a few hours before finally leaving for Heard, I am convinced we *will* pull it off. No matter how well we are prepared though, I do not dare to think of all the little or big things that still could go wrong. Cross your fingers, guys..."

Simultaneously, I wrote mine, almost identical to Peter's:

"In a few hours I leave for the first part of my journey to Heard Island. First, I want to extend my sincerest thank-you for the way the ham community has supported this undertaking. Second, we believe we are fully and properly prepared to ensure safety and the delivery of what we all want most—your callsign in the VKØIR log. Third, I hope you will remember that this is, after all, an expedition, and while we do not believe we can fail in the large part, there might be failures of small parts. We hope you will understand that much of what we are doing is done here for the first time, hence it is a joint adventure. Fourth, please understand that Heard Island has about the worst environmental conditions anywhere, and the safety of the team must remain primary, ahead of any radio operation. Fifth, our team has a continuing tradition of being gentlemen on the air. We expect this to be a fun and rewarding time for all. Finally, please send a message to your own personal God asking for Good Propagation!"

An hour later I sent my last dispatch:

"In 10 minutes time, I am on my way. I can't say how proud I am of what we have done, and what we are about to do. See you on Reunion!"

*The Marion Dufresne, waiting for us on Reunion Island.*

